

2019 WATER, HYGIENE AND SANITATION BAROMETER

Inventory of access to a vital resource #05 MARCH 2019

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**SOLIDARITÉS
INTERNATIONAL**

A KEY PLAYER IN THE FIGHT
FOR WATER SINCE 1980

EDITORIAL

WE'RE NOT ON TRACK TO ACHIEVE UNIVERSAL DRINKING WATER ACCESS

"The world is not on track to reach SDG 6." That is the conclusion of the United Nations' progress report on Sustainable Development Goal 6, which concerns universal drinking water access. It's true: we're way off course. By 2030, the entire world is supposed to have access to clean drinking water. Water that won't make us sick; water that won't kill us. We've still got a very long way to go. So, is the goal achievable? Not easily. Were we too ambitious? That's for sure!

As it stands, we are heading straight for a disaster that NGOs are doing all they can to avert. But what is the UN doing? What about governments? Where is the necessary funding? Nowhere to be found. The European Union and the richest countries on the planet have been conspicuously absent from discussions and the agreed-upon efforts are woefully inadequate given the urgency of the situation.

The world is thirsty and we're handing it a glass that's half full while reserves are half empty!

For over 10 years, SOLIDARITÉS INTERNATIONAL has been a vocal advocate for water access, but no one seems to want to listen. So, are we to give up? No, "give up" isn't in our vocabulary. Fueled by the reality of 2.6 million deaths each year resulting from waterborne diseases and unsanitary living conditions, our teams fight every day to bring this vital resource to those populations most in need. Because water paves the way for the future, for reconstruction, for renewed stability. In Iraq, Yemen and Syria, our teams are carrying out water access interventions, working tirelessly to ease suffering and, whenever there is a lull in violence, helping populations resettle in their home villages.

But that's just a drop in an ocean of hardship. We are not optimistic, but we have no other choice than to continue our fight.



BY ALEXANDRE GIRAUD
Managing Director
of SOLIDARITÉS INTERNATIONAL



SOLIDARITÉS INTERNATIONAL

Providing emergency assistance to those affected by armed conflicts, natural disasters and epidemics, followed by early recovery assistance, has been the defining commitment of the humanitarian NGO SOLIDARITÉS INTERNATIONAL for nearly 40 years.

Access to water, sanitation and hygiene is the focus of our teams' expertise and actions in the field. Currently present in some twenty countries, they provide vital humanitarian aid to over 5 million people solely on the basis of their needs, respecting their dignity, and without judging or taking sides, in accordance with the fundamental principles of humanitarian action.

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THE SOLIDARITÉS INTERNATIONAL WATER AGENDA

Every year on March 22, World Water Day, SOLIDARITÉS INTERNATIONAL campaigns against contaminated water to raise public awareness and force decision-makers to act. That is why, this year, we are publishing internationally the 5th issue of The Water, Sanitation and Hygiene Barometer.

SOLIDARITÉS INTERNATIONAL is a member of the French Water Partnership, Coalition Eau and the (Re)Sources think tank. In 2016, we took part in Marrakesh COP22 on the issue of water in the Sahel and attended World Water Week in Stockholm. We took part in the 8th World Water forum in Brasilia in March 2018. We will follow every step in the implementation of the SDGs and pay particular attention to the implementation of Goal 6 on universal access to drinking water and sanitation.

We work alongside French governmental organizations such as the CNDSI (Conseil National du développement et de la solidarité internationale) and the "Groupe de Concertation Humanitaire" to strengthen humanitarian relief, make the 2015-2030 SDGs possible and establish a French strategy promoting effective rights of access to drinking water all around the world.

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WHAT IF THE SDG WATER GOAL WAS JUST HOT AIR?

Today, 2.1 billion people do not have secure access to drinking water and 4.5 billion lack sanitation. There are tragic consequences behind these figures: every year, unsafe water kills 2.6 million people, mainly children, due to waterborne diseases such as diarrhoea and cholera. Yet the UN and 195 countries have pledged to ensure universal secure access as part of the 2015-2030 Sustainable Development Goals (SDGs).



BY ALAIN BOINET
Founder
of SOLIDARITÉS
INTERNATIONALE

For water stakeholders and humanitarian workers alike, saving lives is a matter of critical urgency. Doing so requires building stronger synergies between water, sanitation and hygiene, improving the transitions between the emergency, reconstruction and development phases, and encouraging multi-organization partnerships.

But this will not be enough to meet the enormous challenges of rapid population growth worldwide, especially in Africa, the exponential increases in water consumption and pollution, and the damaging effects of climate change on water resources.

These challenges are having an increasing impact on millions of men, women and children with each passing day. Tensions are growing between the various groups that use water resources: between arable and livestock farmers, rural and urban populations, industry and agriculture, as is already the case in the Horn of Africa, in India, and in Iran.

Tensions are also rising between countries bordering the major rivers of the Middle East, between Turkey, Iraq and Syria, between Egypt and Ethiopia over the bountiful Nile, between India and Bangladesh, and between China and the Tibetan Himalaya, source of the whole region's major rivers, where glaciers are threatened by climate change!

We must therefore ask a simple, yet serious and disturbing question: is there not a contradiction between SDG 6 on Water and Sanitation and these enormous challenges? Were they even

taken into consideration when the SDG goals were set? This seems doubtful because there are no overall funding plans. It also seems unlikely since there is no global intergovernmental coordination body, but instead a multitude of UN agencies.

The verdict was announced when the UN agency UN-Water issued its first report since the SDGs were launched in 2015. In July 2018, it officially declared: *"The world is not on track to reach Sustainable Development Goal 6 [SDG 6] on Water and Sanitation by the deadline set for 2030 [...] funding*

for water and sanitation services is inadequate.

In addition, governance and delivery systems are weak and fragmented".

We suspected and foretold this in the 2017 Barometer, and now it is official.

One could even ask if *"the SDG water goal isn't*

just hot air!" We can, of course, recall that a huge amount of progress was indeed made between 2000 and 2015 by means of the MDGs [Millennium Development Goals]. We could also dream and place our hopes in the positive impact of future innovations. However, the SDG deadline is 12 years away and we must bear in mind that the SDGs are non-binding objectives for the 195 countries who signed them!

The UN-Water report is there for all to see and we cannot act as if there has been no verdict! We must sound the alarm; water stakeholders and humanitarian organizations must join forces and lobby political leaders with this message: *"We need to make progress on the SDGs and on Goal 6 for Water and Sanitation".*

**THE UN-WATER
REPORT IS THERE
FOR ALL TO SEE
AND WE CANNOT
ACT AS IF THERE
HAS BEEN
NO VERDICT!**

EMERGENCY THE URGENT NEED FOR DRINKING WATER

With natural disasters becoming more and more severe, conflicts lasting for longer and longer, and refugees continuing to grow in numbers, the humanitarian situation in 2019 is alarming. More and more people are in need of food, assistance, shelter... and drinking water. Safe drinking water, which will neither kill them nor make them sick. Urgent action is required, to provide universal access to drinking water by 2030.

2.6 MILLION PEOPLE DIE EVERY YEAR DUE TO WATER-RELATED DISEASES AND INSALUBRIOUS LIVING CONDITIONS

ACCES TO WATER

- » **2.1 BILLION PEOPLE, OR 30 % OF THE WORLD POPULATION, do not have access to domestic drinking-water supply services.**
- » **844 MILLION PEOPLE** do not even have access to a basic water supply.
- » **263 MILLION PEOPLE** live more than 30 minutes away from the nearest water point.
- » **159 MILLION PEOPLE** still drink untreated surface water that is drawn from rivers, streams or lakes.

ACCES TO SANITATION

- » **4.5 BILLION PEOPLE, or 60% of the world population, do not have access to safely managed sanitation facilities.**
- » **2.3 BILLION PEOPLE** still do not have decent toilets.
- » **892 MILLION PEOPLE** defecate out in the open; this practice is on the rise in Sub-Saharan Africa and Oceania due to population growth.

HEALTH

- » **361,000 CHILDREN UNDER THE AGE OF 5 die every year from diarrhoea, OR MORE THAN 1,000 CHILDREN EVERY DAY.**
- » **842,000 PEOPLE** die every year from simple diarrhoea.
- » **50 % OF CASES OF CHILD UNDERNUTRITION** are due to recurrent diarrhoea and intestinal infections caused by unsafe drinking water, inadequate sanitation and lack of hygiene.

PRESSURE ON WATER RESOURCES

- » **40 % OF THE WORLD POPULATION** will be faced with water shortages by 2050.
- » **500 MILLION PEOPLE** suffer from severe water shortages all year round.
- » **20 % of the world's aquifers** are overexploited.

WATER & GENDER

- » **1 WOMAN OUT OF 3 IN THE WORLD** is exposed to diseases, shame, harassment or abuse because she does not have a safe place to go to the toilet.
- » **526 MILLION WOMEN** are left with no other choice than open defecation.
- » **IN AFRICA, 90 % OF WATER COLLECTION** and wood gathering tasks are left to women.
- » **Women and girls spend up to 6 HOURS PER DAY** collecting water in Africa.

CLIMATE CHANGE

- » **90 % OF ALL NATURAL HAZARDS ARE WATER-RELATED.** Their frequency and intensity are increasing.
- » **DAMAGE CAUSED BY FLOODING IN URBAN AREAS** could represent up to **1,800 BILLION DOLLARS PER YEAR BY 2080.**
- » Since 1992, floods, droughts and storms have affected **4.2 BILLION PEOPLE** (95 % of these people were hit by natural disasters) and caused **1,300 BILLION DOLLARS'** worth of damage.



WASH RESPONSE

THE WASH EMERGENCY GAP IN CONFLICT SETTINGS AND HARD TO REACH AREAS.

There is general consensus that the humanitarian sector is failing to mount timely and adequate responses in the acute phase of conflict-related emergencies. Médecins Sans Frontières (MSF) set out to explore what works for or against effective emergency responses in the Emergency Gap Project. As part of this exploration, one of the various case studies focused specifically on the WASH response.

BY **MONICA DE CASTELLARNAU** (MSF) AND **ANDREW CUNNINGHAM**

The report concluded that an emergency WASH gap exists. "There is a paucity of emergency WASH capacity, but a surplus of complacency. This report provides an overview of both historical trends and current challenges in emergency WASH programming. Some ways forward are suggested and can be summarised as three key take-home points. The first is that, as much as possible, organisations should not work in silos as this solidifies the problem. Tensions remain between emergency and development-focused strategies and perspectives. More actors need to be encouraged and supported to work in the emergency phase, and emergency actors must be more open to handing over sustainable programmes. The second point follows from this – the transition from the emergency phase to longer-term programming is the weak link between the silos, and both ends have the responsibility to build bridges. This is partly a clash of approaches, but also a structural problem with how the humanitarian system has

developed. And third, technical capacity needs boosting. This relates to human resources, research and support functions – within organisations and between peers."

Looking retrospectively, "there are not fewer WASH actors, but they are less able to intervene in emergencies. There are, in fact, many organisations in the humanitarian sector with the capacity to implement WASH activities. The question is whether this capacity can be utilised in complex humanitarian emergencies, especially in insecure contexts. There was a clear consensus by all respondents that the answer is negative – fewer organisations are willing or able to respond in the first three months of an emergency."

Almost two years after the publication of the report, the WASH cluster has decided to look further into the themes raised by MSF and has commissioned an in-depth analysis of the WASH sector's current capacity

TO MEET CRITICAL NEEDS IN HARD TO REACH AREAS.

to meet critical needs in hard to reach areas or conflict zones looking specifically at speed, quality, relevance, complementary and coverage. The analysis should also produce recommendations which MSF hopes will demonstrate and translate into a renewed commitment to remain on the ground to address critical needs and deliver responses at scale – even in the most difficult environments – guided by the principles of humanity, neutrality, impartiality and independence.



¹ You can find the Emergency Gap WASH case study at <https://arhp.msf.es/emergency-gap-final-report-bridging-emergency-gap>

JOINED UP THINKING IMPROVING HEALTH OUTCOMES FOR THE MOST VULNERABLE

Since the establishment of the UN cluster approach in 2006, co-ordination, NGO skill sets, donor funding and humanitarian assistance delivery have become increasingly compartmentalised. The cluster approach has contributed to professionalisation of some areas, but has increased the complexity of co-ordination, funding, planning and delivery of disease control efforts, reducing the efficacy of responses.



BY RICHARD ALLAN

Founding Director & C.E.O.
The MENTOR Initiative

The MENTOR Initiative is an NGO specialising in Tropical Disease Control in Humanitarian Crises. We work in remote and difficult settings in natural disasters, and new or protracted conflict zones, where the immediate living conditions and problems the people we serve face are multifaceted, complex, and intrinsically tied together. Our primary focus is the identification, prevention and treatment of the most life-threatening diseases; such as malaria, dengue fever, Leishmaniasis, Ebola etc. together with infections that are commonly grouped together and reported simply as “diarrhoeal disease”, unless cholera is identified. Prevention entails controlling disease vectors, typically mosquitoes and flies, and preventing them from contact with humans. Everywhere standing water exists, mosquitoes of one type or another can breed. Similarly, flies, will lay their eggs in any faeces or domestic waste they can rest on. Whilst sleeping under insecticide treated nets, shelters or blankets can help reduce the risk of diseases transmitted by the night biting vectors of malaria (anopheles mosquitoes) and Leishmaniasis (sandflies), most other vector borne disease can only be reduced through control of the local water and waste sources that the vectors breed in. Discarded plastic bottles, containers, tin cans, and old car tyres collecting rainwater, and open drinking water containers, can, within days of being discarded, become effective breeding sites for mosquitoes that transmit a range of life-threatening

tropical diseases, and the domestic waste and destroyed buildings that characterise middle eastern conflicts form the continuously expanding breeding sites of sandflies, which transmit disfiguring and sometimes fatal leishmaniasis. Similarly, human and animal faeces can carry at least 26 different diseases, most of which cause severe diarrhoea threatening diseases such as cholera. Infection can be passed to humans, from faeces to mouth through poor hygiene practices, or mechanically transmitted by flies. Faeces is the preferred breeding site for flies, and when they emerge from, or rest on faeces, these pick up and carry faeces on their legs and torso, together with what-ever disease pathogens that it contains, and then deposit these onto the food sources, or human faces, which they land on.

The engineering, usage and maintenance of water and waste management, or absence of these, directly affects transmission of vector borne disease. Supply of safe drinking water and distribution of water containers, can inadvertently create mosquito breeding sites. Sanitation programmes with poorly managed latrines and open defecation sites, ramp up fly populations and diarrheal disease rates amongst the very communities they were intended to serve. Health programmes can diagnose and successfully treat some of those who fall sick, but not all. Treatment for many of these diseases is compromised in malnourished patients, where the

absorption rates of oral treatments dramatically decline as the body’s intestinal structure and normal functions deteriorate. More complex, and expensive, alternative treatments become essential, to save these patients. Many suffer and die needlessly in emergency settings.

The solutions are not complex, but require joined up, and not compartmentalised, thinking, planning, funding and delivery across the WASH/HEALTH/SHELTER/FOOD/EDUCATION sectors. Proven vector control activities that are planned and delivered together with the design and provision of shelter materials and structures, and also integrated into design, management and treatment of water supplies, and domestic and human waste, will dramatically reduce disease vector populations. If hygiene, nutrition and health education are also integrated, fewer people will become infected and the burden on health services is reduced. If at the same time, linkages with, and between, health and nutrition services are improved, then our collective ability to reduce disease transmission, and successfully manage the fewer cases we fail to prevent, will improve and death rates will fall. Harnessing together the different NGO skill sets from the earliest stages of emergencies, increases the health impacts, and also creates cost efficiencies, and greater accountability. All much-needed qualities to achieve a new, and more effective, era of humanitarian aid.



Emptying latrines at a camp in the Teknaf region of Bangladesh, where hundreds of thousands of Rohingyas have taken refuge.

SAVING LIVES WITH SANITATION

In Bangladesh, hundreds of thousands of Rohingya refugees live in camps, putting pressure on sanitation infrastructure. In an effort to create healthier living conditions, SOLIDARITÉS INTERNATIONAL is taking steps such as emptying latrines to reduce the risks of waterborne disease epidemics.

BY RAFAEL MAZARRASA
Sanitation Technical Advisor

25,000

people live in this camp. According to United Nations estimates, 40 % of the latrines in the camp are full. They are full of sludge, which constitutes a very serious health hazard. The camp is affected by several diseases, especially waterborne illnesses like cholera or diarrhoea caused by close contact with water that is contaminated with bacteria. How does water become contaminated? When living conditions are unsanitary, as is the case here, and latrines are full to overflowing, people have no choice but to relieve themselves in the street. The result is an environment where waterborne diseases can easily develop, especially diarrhoeal diseases like cholera.

THE CAMP IS AFFECTED BY SEVERAL DISEASES, ESPECIALLY WATERBORNE ILLNESSES.

To help reduce the risk of disease, we are carrying out several types of activities. Building latrines is one of them, but that is not all. In view of the sanitation situation, it is also important for us to inform other NGOs and partners about latrine-emptying. There are already a huge number of latrines. The problem is that nobody empties

them. So they fill up very quickly, which causes a health hazard.

In response to this situation, we therefore decided to carry out latrine-emptying activities in these overcrowded camps. The first stage is to empty the latrine. For the moment, and to reduce costs, latrines are emptied using a manual pump. At a later stage, we will assess how motorized pumps could be used. All the contents are then transported to the latrine sludge treatment site that we have built outside the camp.



OCTOPUS

THE FIRST COLLABORATIVE ONLINE PLATFORM ON EMERGENCY FAECAL SLUDGE DISPOSAL AND TREATMENT

BY MARINE BUSSAC
OCTOPUS
project coordinator

Faecal sludge disposal and treatment is a significant problem in rapid onset emergencies. As existing resources do not always allow for appropriate decision-making, the consideration of faecal sludge treatment is too often overlooked in emergency humanitarian responses.

SHARE, DEVELOP, DECIDE

To address this lack of information, SOLIDARITÉS INTERNATIONAL is launching the first collaborative platform called OCTOPUS. Intended for sanitation practitioners, OCTOPUS aims to provide them with a space for knowledge sharing, and to guide them in the development of their projects and decision-making.

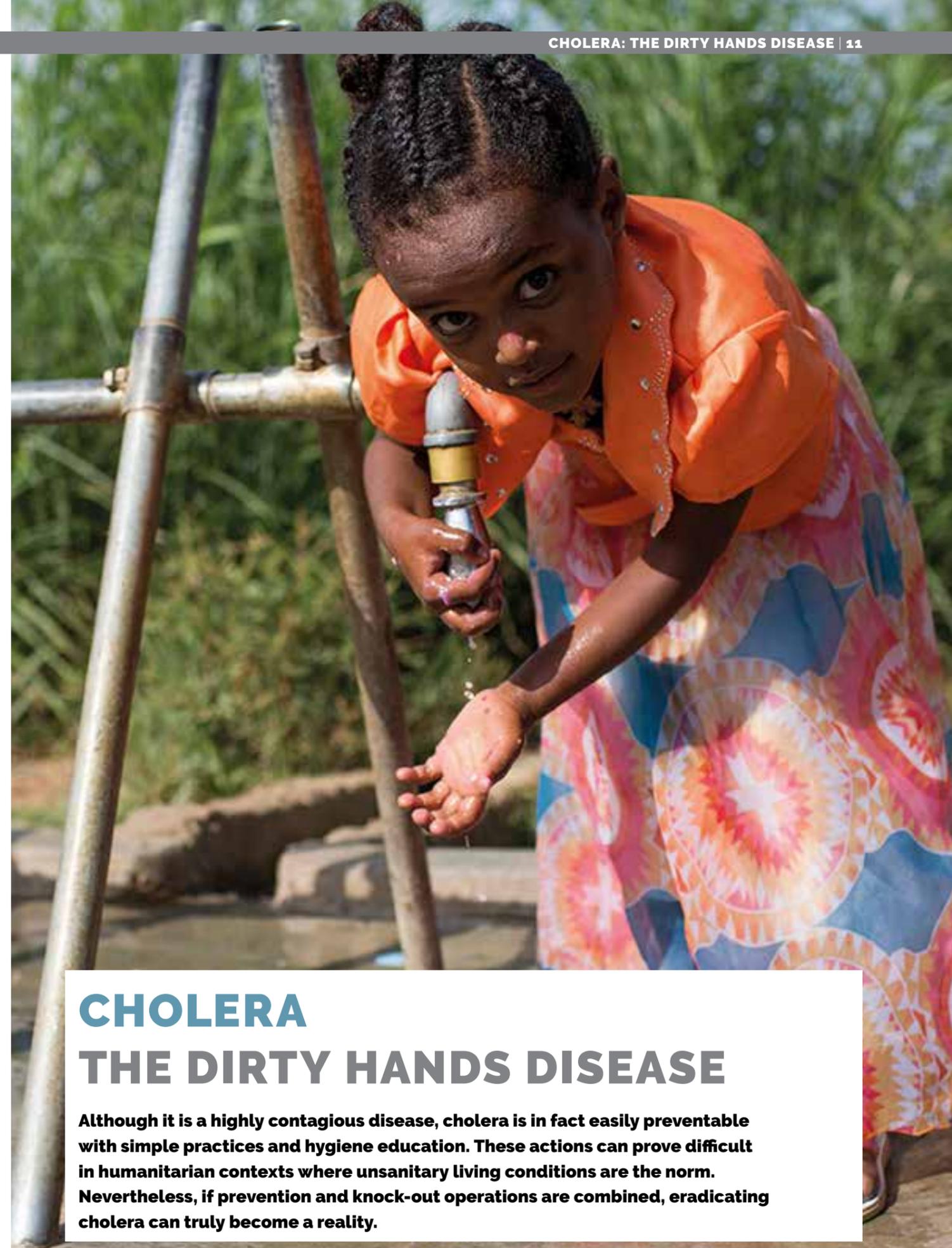
COMPARE, IMPROVE, LEARN

The main objective of the OCTOPUS collaborative platform is to improve practices. OCTOPUS ensures the link between theory and practice, and helps sanitation stakeholders adapt their interventions to the different specific contexts of the crises they operate in. Each practitioner has the opportunity to document his or her experiences, to discover those implemented by other partners, and to compare the solutions and technologies used. OCTOPUS is also a link to other sanitation resources and initiatives (SuSanA, eCompendium...).



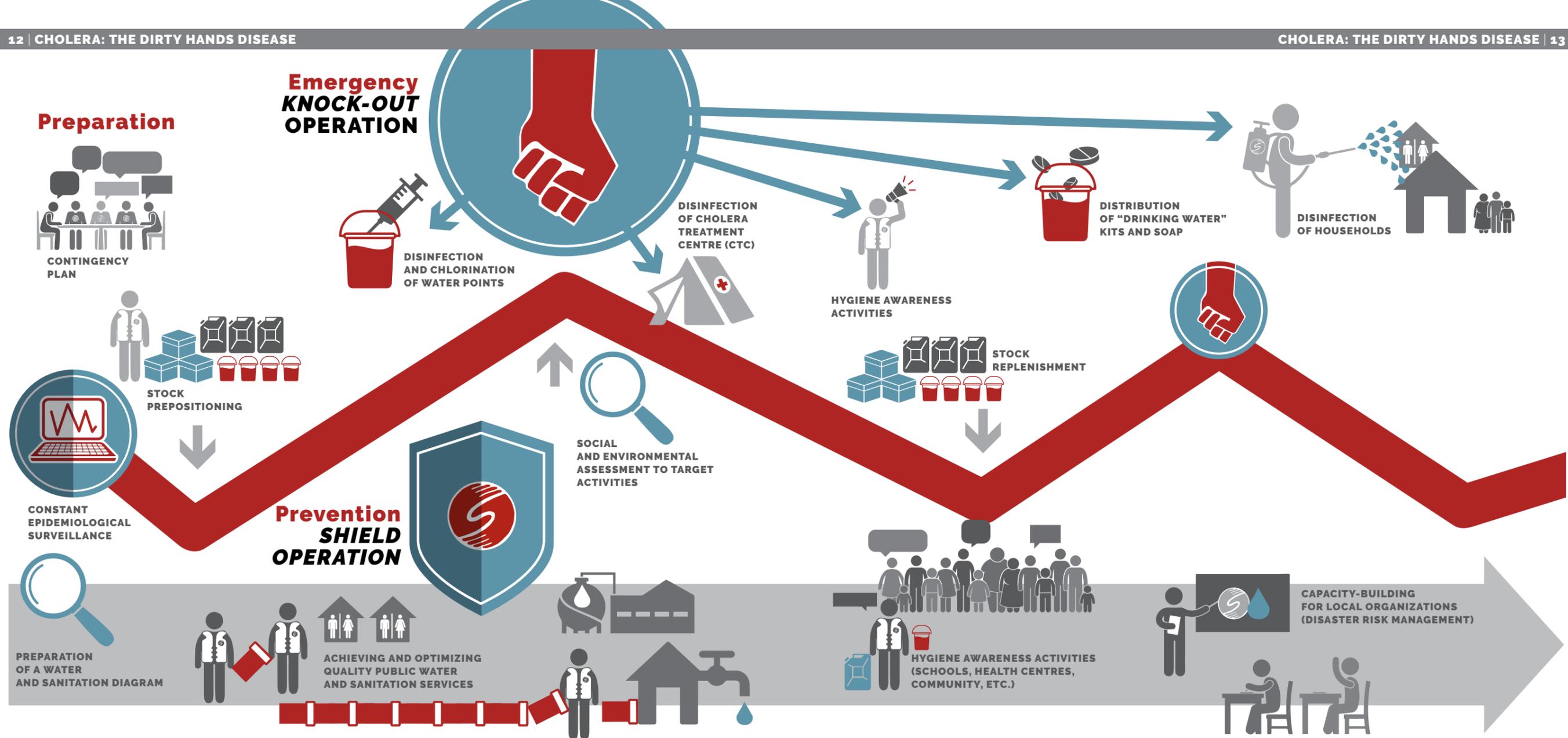
To find out more about OCTOPUS, visit us now on octopus.solidarites.org

"OCTOPUS IS THE FIRST AND ONLY COLLABORATIVE TOOL IN THE FIELD OF FAECAL SLUDGE DISPOSAL AND TREATMENT IN EMERGENCIES THAT MAKES IT POSSIBLE TO COMPARE TECHNOLOGIES AND SOLUTIONS IN DIFFERENT CRISIS CONTEXTS ON THE BASIS OF OBJECTIVE INDICATORS. THIS SPECIFICITY MAKES IT A UNIQUE INNOVATION".



CHOLERA THE DIRTY HANDS DISEASE

Although it is a highly contagious disease, cholera is in fact easily preventable with simple practices and hygiene education. These actions can prove difficult in humanitarian contexts where unsanitary living conditions are the norm. Nevertheless, if prevention and knock-out operations are combined, eradicating cholera can truly become a reality.



FIGHTING CHOLERA: SHIELD OF PREVENTION AND KNOCK-OUT OPERATIONS

Cholera is an acute diarrhoeal disease caused by consuming food or water that has been contaminated by the *Vibrio cholerae* bacterium. Cholera continues to be a global threat to public health, revealing a stark lack of equality and insufficient social development. There are an estimated 3 to 4 million cholera cases worldwide every year and between 21,000 and 143,000 deaths from the disease

SYMPTOMS

Cholera is an extremely virulent disease that can cause severe acute watery diarrhoea. Symptoms occur between 2 hours and 5 days after consuming contaminated food or water. The disease affects both children and adults, and can lead to death in a matter of hours if the patient receives no treatment.

Although most people who contract *V. cholerae* show no symptoms, their

stools will contain the bacterium for 1 to 10 days after infection, releasing it into the environment where it could potentially infect other people.

When symptoms occur, they generally remain mild to moderate for most people, while a minority of patients will develop acute watery diarrhoea in conjunction with severe dehydration. If left untreated, these symptoms can result in death.

TREATMENT

Cholera is an easily treatable disease. Most people infected with the disease can be cured if they are treated rapidly with oral rehydration salts (ORS). One standard WHO/UNICEF sachet of ORS must be dissolved in 1 litre (l) of drinking water. Up to 6 litres of ORS may be required to treat moderate dehydration in an adult patient during the first day.



TO DEFEAT CHOLERA, A DECENT DRINKING WATER NETWORK IS THE GREATEST NEED

To fight cholera, the international community generally favours emergency responses, which are only partially effective for a short period. These responses are often to curb new outbreaks of the disease, like the recent epidemics in Yemen and Zimbabwe. Evidence that longer-term investments are effective is severely lacking, and this type of funding is generally more difficult to obtain.

This article was co-written by Aurélie Jeandron, Martin Leménager, Damien Machuel, Baron Bashige Rumedeka, Jaime Mufitini Saidi and Oliver Cumming.

A research project in Uvira, South Kivu (DRC) is currently demonstrating that the rehabilitation of drinking water production and distribution infrastructure should be considered as a top public health priority.

THE STAKES ARE HIGH TO INFLUENCE PUBLIC POLICY ON CHOLERA PREVENTION

According to the World Health Organization (WHO), diarrhoeal diseases due to unsafe water, poor sanitation and lack of hygiene cause over 1,000

deaths per day in Africa. Cholera itself claims 100,000 to 120,000 lives every year.

Yet there is still debate on the most efficient actions that should be taken to prevent these diseases. Many organizations that actively

support this cause prefer to focus on rapid responses with low unit costs (household chlorination/filtration kits, distribution of small quantities for drinking water only, hygiene awareness activities, etc.). In addition, vaccination against cholera is often cited as the current priority. Many recent, widely publicized studies exist on the impact of these responses: although the results are generally positive, they only have a small-scale, short-term impact.

However, there has been no exhaustive research to provide tangible evidence on the effectiveness of drinking water infrastructure in preventing disease. There are two reasons for this lack of data. Firstly, cholera outbreaks mainly occur in very poor countries suffering from severe security crises, where it would be a major challenge to build and sustainably manage water networks. Secondly, most scientific research today only focuses on clinical trials using random assignment to treatment and control groups (randomized experiments).

Although it is easy to randomly assign tablets or hygiene awareness sessions, it would be very difficult to find a way to assign pipes since this would result in both technical and ethical problems. Since the currently prevailing paradigm of evidence-based policy calls for public action backed by scientific proof, local and international actors sometimes turn their backs on long-term solutions to root causes, simply because they are too difficult to evaluate scientifically.

At the same time, things are starting to change. There is a growing awareness among humanitarian actors that emergency responses must form part of an emergency-reconstruction-development continuum. The 'Petition to finally eradicate cholera from the DRC' that the NGO SOLIDARITÉS INTERNATIONALE launched in April 2018 is evidence of this, as are posts on blogs like *Défis humanitaires*. At the end of 2017, the WHO put forward a strategy to eradicate cholera by 2030

which encourages a multi-sectoral approach.

UNPRECEDENTED RESULTS IN UVIRA THAT CHALLENGE ACCEPTED THEORIES ON CHOLERA

Set on the banks of Lake Tanganyika, Uvira is one of the endemic cholera zones where epidemics break out, then spread throughout the whole surrounding area. A project to rehabilitate the drinking water network in Uvira, with support from the Agence Française du Développement, Veolia Foundation, the European Union and Oxfam GB, was a unique opportunity to carry out a scientifically rigorous impact study and provide evidence that

MOLECULAR BIOLOGY WILL PROVIDE A BETTER UNDERSTANDING OF CHOLERA TRANSMISSION PATHWAYS.

this type of program is effective.

With a population of 250,000 people, the town is wedged between the lake and the mountainside, forming a semi-circle. Patients suffering from severe diarrhoeal diseases are systematically treated at the specialized cholera treatment centre close to the general hospital.

With support from the national water company (Regideso) and the Congolese Ministry of Health, the London School of Hygiene and Tropical Medicine designed a rigorous, practical research protocol by intelligently synchronizing their work with the water network improvement schedule. This assessment combines a trial based on random phasing of water pipe renovation work, to determine its specific effects on the quality of the distribution network, and a follow-up study of cohorts of households, to understand how behaviours change when drinking water sources are closer and more reliable. It also includes the analysis of time series and geographical data on cholera cases to measure the impact of the overall improvement in water production capacity, and a biomolecular study to identify existing pathogens and analyse the vectors of infection.

The initial results have already been published in some of the most

reputable scientific journals on public health issues: *PLoS Medicine* and *PLoS One*. They show that 23 % of the town's cholera cases were directly caused by recurrent breakdowns of the drinking water production facility. They also reveal that hygiene practices within communities vary widely from one household to another and that they are directly influenced by the type of water connection and continuity of service that are available to the population.

Finally, confirmatory tests on patients admitted to the Uvira cholera treatment centre show that 'only' 40 % of suspected cholera patients had actually contracted the disease. This surprisingly low infection rate shows the prevalence and severity of other acute diarrhoeal diseases and demonstrates the importance of using comprehensive approaches, rather than techniques like vaccination that only target cholera.

THE RESEARCH PROJECT CONTINUES, UNDER DIFFICULT CONDITIONS

Future results will enable the health benefits resulting from improvements in water access to be assessed, for example when stoppages at water fountains have been resolved, when a communal tap is installed close by or when the household receives its own individual water supply.

Molecular biology will provide a better understanding of cholera transmission pathways, as well as other causes of the acute diarrhoeal diseases that affect the population.

Unfortunately, the political and security situation in DRC and South Kivu remains volatile, and sporadic outbreaks of violence regularly disrupt the research.

In this extremely difficult context, it is important to remember that all this progress has been achieved thanks to the determined efforts of women and men, who brave difficult circumstances and insecure working conditions to collect samples, carry out surveys and repair dilapidated pipes. Their commitment must be applauded.



KALEMIE: REHABILITATING A NETWORK THAT HAS BEEN DERELICT FOR 50 YEARS

In DRC, violent conflict has forced over 600,000 people to flee their homes. Most of those displaced are living in Kalemie, in the Tanganyika region. Half the country's cholera cases occur in this town, where SOLIDARITÉS INTERNATIONALE is present.

DIFFICULT WATER ACCESS: A MAJOR CAUSE OF CHOLERA

The population of Kalemie has grown from 50,000 to 300,000 people in 10 years. This has further exacerbated the town's drinking water access problems, which are a major cause of cholera epidemics. Indeed, a study by the London School of Hygiene and Tropical Medicine has shown that there is a direct correlation between inadequate access to drinking water and cholera epidemics.

To fight cholera in Kalemie, SOLIDARITÉS INTERNATIONALE is working with Regideso, the national agency in charge of managing and distributing water. The organization's manager, Gilbert Magala, explains the challenges that he faces. For him, "*Regideso's prime concern is to provide the population with drinking water to avoid waterborne diseases*", but that is not all. Raising the population's awareness is crucial to fight cholera epidemics. It is essential to carry out awareness activities to promote good hygiene practices, and to provide emergency chlorination points. "*We must pay attention to hygiene because cholera grabs people and sends them to their deaths*", concludes Malunga Kaite, a hygiene promotion officer for the NGO Amuka.

For all these reasons, the first priority is to restore a reliable water network.

REHABILITATING THE WATER NETWORK...

In Kalemie, "*over the last 50 years, there had been no maintenance at all on the town's water network and management system*", explains Brice Pageaud, project manager for SOLIDARITÉS INTERNATIONALE. The NGO and its partners have therefore been rehabilitating the Kalemie water network since 2011, a crucial step in reducing and eradicating cholera epidemics.

These partnerships were initiated thanks to the Oudin-Santini law, which applies to French municipalities and water agencies. This law allows them to devote 1 % of the revenue from each of their water and sanitation service budgets to international aid or development projects. One of SOLIDARITÉS INTERNATIONALE's partners is the French town of Blois, which has decided to finance part of the water network rehabilitation project in Kalemie. "*We thought that if we could do something for ourselves, why not share it and do the same for others? This is how we came to support the program in Kalemie, following our other previous projects with SOLIDARITÉS INTERNATIONALE*", explains Jérôme Boujot, deputy mayor of Blois.

... AND SOCIAL MANAGEMENT ARE ESSENTIAL TO FIGHT CHOLERA IN THE LONG-TERM

To ensure long-term management within the network and to continue fighting waterborne diseases for as long as possible, the project also involves the local community.

Public water fountains are managed by fountain operators and by members of the Association of Mothers for the Protection and Security of Water Fountains (AMPSBF), who inform families about good hygiene practices. These women therefore play a key role in managing water in Kalemie. To help them retain their role in the long-term, SOLIDARITÉS INTERNATIONALE's teams provide them with the opportunity to carry out an income-generating activity, for example selling soap. The project is making good progress but "*there are still a few steps to take*", remarks Brice Pageaud. One thing is for certain: SOLIDARITÉS INTERNATIONALE's teams are committed to providing everyone with long-term access to drinking water.

IMPROVED EVALUATION OF WASH ACTIVITIES TO PREVENT THE TRANSMISSION OF CHOLERA IN DRC

BY DANIELE LANTAGNE, KARIN GALLANDAT, GABRIELLE STRING, TRAVIS YATES
Tufts University

In February 2018, a cholera outbreak was declared in Mbuji-Mayi, DRC, the first in over a decade. In response, Solidarités International, already present in Mbuji-Mayi, was funded to implement short-term bucket chlorination and household spraying programs to break cholera transmission routes.

In a 2017 systematic review, Tufts University found many commonly-implemented cholera response WASH interventions—including bucket chlorination and household spraying—lacked an evidence base. Bucket chlorination is a water treatment intervention where an agent stationed near a water source adds a known dose of chlorine solution directly into the water collection container of the recipient. Household spraying is a disinfection intervention where a response team sprays a cholera patient's home with chlorine solution to prevent inter-familial transmission of cholera.

Supported by OFDA and R2HC, Tufts and SI collaborated to complete mixed-method field evaluations of these two WASH interventions in Mbuji-Mayi, including:

- Key informant interviews with program staff.
- Observations of bucket chlorination and household spraying.

- Chlorine concentration testing.
- Household surveys with beneficiaries.
- For bucket chlorination:
 - Focus group discussions with beneficiaries.
 - Testing of source and household water for free chlorine residual (FCR) and indicator bacteria (*E. coli* and total coliforms).
- For household spraying, testing of household surfaces before, 30 minutes, and 24 hours after spraying for *V. cholerae* and indicator bacteria.

In the bucket chlorination evaluation, 10 chlorination points were evaluated, 3 focus group discussions were held, and 197 households were surveyed. Overall, >90% of households who received bucket chlorination had household water considered low- or no-risk; a program success. However, 10 % of households had no detectable FCR. It was thus recommended to implement measures to ensure chlorine concentration consistency and continue the program.

In the household spraying evaluation, 10 surfaces were sampled in each of 5 households. Before disinfection, the highest concentrations

of *V. cholerae* were found on kitchen and latrine floors, and near the patient's bed. Program effectiveness was limited, likely due to incomplete coverage of household surfaces with chlorine. Based on results from previous evaluations, it was recommended to systematically spray household surfaces until they appeared visibly wet with chlorine.

A program strength was its use as a platform to deploy hygiene promotion activities in cholera-affected neighborhoods.

A PROGRAM STRENGTH WAS ITS USE AS A PLATFORM TO DEPLOY HYGIENE PROMOTION ACTIVITIES IN CHOLERA-AFFECTED NEIGHBORHOODS.

The evaluations of SI programs in DRC are part of larger projects evaluating bucket chlorination and household spraying in multiple cholera contexts. Results from the SI program evaluations

will be analyzed in conjunction with other results and disseminated via peer-reviewed publications, fact sheets, webinars, and presentations. Tufts staff would like to thank SI for their willingness to be evaluation collaborators, and look forward to continuing this collaboration.



ELIMINATING CHOLERA IN HAITI: UTOPIA OR REALITY?

The implementation of the National Plan for the Elimination of Cholera in Haiti (PNEC), which is directed by the Ministry of Public Health and Population (MSPP) and the National Directorate for Water Supply and Sanitation (DINEPA), relies on the support of its technical and financial partners. Additional funding is essential in early 2019 to consolidate the positive impact of the last seven years of cholera prevention activities.

BY JEAN-SÉBASTIEN MOLITOR

Country director (SI)

Cholera struck Haiti in October 2010 following the horrific earthquake that devastated the country. Since then, the disease has claimed nearly 10,000 lives, with over 800,000 suspected cases between 2010 and 2018, according to MSPP figures. In 2015, 21 % of the world's registered cholera cases occurred in Haiti. The epidemic was well controlled throughout 2017, and this trend continued in 2018 with 3,437 suspected cholera cases and 39 confirmed deaths during the first ten months of the year. Nevertheless, this trend is as yet unconfirmed, since Haiti was hardly affected by the 2018 cyclone season, which is the most favourable period for the disease to spread.

CHOLERA IS RECEDING THANKS TO COORDINATED ACTION...

The total number of suspected cases in 2017 was 67 % lower than for the same period in 2016. Between January and October 2018, 3,437 suspected cases and 39 deaths were recorded, falling by more than 65 % compared to the same period in 2017, with an incidence rate (new suspected cases / total population) of 0.27 %, which is considerably closer to the goal of 0.1 %. These encouraging results have mainly been achieved thanks to current coordination mechanisms, which enable cases to be effectively managed both in terms of medical care and community action. It is however essential to keep up surveillance efforts to prevent new outbreaks of the epidemic. The decrease in mortality rates in recent years (from 1.12 % in 2017 to 0.27 % in 2018) has also been achieved through a rapid, well-coordinated response that has reduced the number of major outbreaks, as well as through the implementation of the PNEC. The plan comprises a coordinated effort between partners and public authorities, including disease prevention, an outbreak alert and response system, and improved access to quality drinking water and sanitation in the highest-risk districts.

... AND ONGOING ACTIVITIES

The "Alert-Response" or rapid response approach implemented by the MSPP since 2013, with support from UNICEF and the World Bank, is both innovative and effective: MSPP mobile rapid intervention teams, assisted by 3 NGOs, can set up a quarantine area in less than 48 hours. During 2018, this approach enabled teams to respond to 85.6 % of suspected cases within 48 hours.

Preventive measures are also essential to reduce the number of new or recurring cases: rehabilitation of water points, capacity-building, coordination with state authorities and community organizations. Combining these activities with vaccination in the highest-risk areas will reduce exposure to the disease.

STAYING ON FULL ALERT

To reduce the risk of a new, large-scale epidemic, the international community must continue to provide support for current response operations, because cholera remains a threat despite these efforts and investments, mainly due to climate hazards. We must not forget that the number of suspected cholera cases rose by 40 % following Hurricane Matthew in 2016.

Periods of drought and heavy rains also contaminate water reserves and cause drinking water shortages, which in turn makes it more difficult for families to ensure adequate hygiene and exposes them to disease.

Future action must still include "knock-out" operations (targeted interventions before high-risk periods like the rainy season or during events involving large congregations of people) to supplement the "Alert-Response" strategy.

SEIZING THE OPPORTUNITY TO ELIMINATE CHOLERA IN HAITI

Several years of work, adjustments and advocacy were necessary before the coordinated action of various organizations produced positive results. Over \$50 million has been invested by several institutional donors. The results achieved in 2017 and 2018 must be consolidated in 2019 by pursuing the same response strategy.

The PNEC objective to eliminate the disease by 2022 will only be attained if state authorities and partner organizations continue to work together. In addition, the plan must continue to receive the necessary funding, of which only 14 % was provided in 2017.

In 2019, the eradication of cholera is within reach. At the end of October 2018, which also marked the start of the dry season in Haiti,

the weekly number of suspected cases was at an all-time low (35 cases).

By reinforcing all the components of the PNEC, especially the "Alert-Response" strategy, it may be possible to move towards –or even reach– zero cases during the coming year. The last mile is always the most difficult when it comes to eliminating a disease, but the international community must show that it is capable of providing the children of Haiti with a cholera-free country.

However, the funding that UNICEF has so far provided for cholera response NGOs will only cover the program until the first quarter of 2019.

THE PNEC OBJECTIVE TO ELIMINATE THE DISEASE BY 2022 WILL ONLY BE ATTAINED IF STATE AUTHORITIES AND PARTNER ORGANIZATIONS CONTINUE TO WORK TOGETHER.



"OUR WORK IS CRUCIAL"

In the aftermath of Hurricane Matthew at the end of 2016, fears that there would be a major upsurge of cholera were running very high. SOLIDARITÉS INTERNATIONALE's chlorination teams were fully mobilized, like Philippe Pierre and Yves-Méry.

BY PHILIPPE PIERRE AND YVES-MÉRY

Chlorine sprayers in Haiti

FROM HYGIENE AWARENESS TO DISTRIBUTION

"Our work is to chlorinate the homes of people who have been declared sick, when there is a suspicion that they may have contracted cholera. We also disinfect the surrounding houses to prevent the disease spreading," explains Philippe Pierre, 29, who forms a two-person chlorination team with Yves-Méry, 31. "But our activities do not stop there," adds Yves-Méry. "We install chlorination points next to water sources, we visit villages, churches, schools and health centres to inform the population about the risk of cholera, and we also distribute cholera kits."

"DISASTER VICTIMS ARE AWAITING ASSISTANCE, THEY NEED HELP"

In the aftermath of Cyclone Matthew in October 2016, their work was particularly exhausting. "Every day, we could see that people were desperately awaiting assistance, that they really needed help. Our work is crucial," Yves-Méry insists humbly. For a woman whose parents lost everything in the hurricane, that is not a trivial thing to say. Philippe Pierre, from Petit Goave, also lost one of his cousins, who was crushed by an uprooted tree during the hurricane. "The damage inside the town is nothing in comparison to the surrounding villages, where nothing is left."

COMBINING CHLORINATION WITH STUDYING

Although Yves-Méry, who is training to be a nurse, has not been working for SOLIDARITÉS INTERNATIONALE for very long, Philippe Pierre worked for the organization in the past, a few months after the 2010 earthquake. "At the time, I worked for several months as a hygiene promotion officer in Port-au-Prince, when the number of cholera cases was exploding every day. When I found out that SOLIDARITÉS INTERNATIONALE was recruiting again, I immediately applied. I am in fact a student in my 4th year of civil engineering, but I have also trained to be a chlorine sprayer, so that I can earn enough money to pay for my studies." Over the past 2 years, Yves-Méry and Philippe Pierre have started to reap the rewards of their work. Cholera has considerably receded in Haiti and both of them have high hopes that one day the disease will be completely eradicated from the country.

CHOLERA ALERT

In Haiti, there are high hopes that cholera will be eradicated in the years to come. The only way for this utopia to become reality is to keep up the concerted efforts of the past few years and to continue with knock-out operations in response to cholera alerts. Every day, our teams are on the ground, fully mobilized to prevent the disease from spreading.

BY PAUL DUKE

Testimony manager

**08:00
am**

An informant has raised the alarm. Cholera cases have been detected in the Canaan neighbourhood of Port-au-Prince. The cholera rapid response teams are ready to go. The atmosphere is electric: teams running around, motorbikes zooming off in all directions...

**10:00
am**

Wangcos, cholera project manager for SOLIDARITÉS INTERNATIONALE, sets out for Canaan, a very poor, shanty-town-like neighbourhood that sprung up after the earthquake in 2010, which is home to 250,000 people. On site, he joins Paulissaint, the water, sanitation and hygiene team leader, who is responsible for chlorine spraying in the area. "Every time there is a suspected case," explains Wangcos, "SOLIDARITÉS INTERNATIONALE sets up a preventive quarantine area where we spray chlorine on the 20 houses surrounding the affected household. Tests are then carried out to determine if it is indeed a cholera case, which takes several days."

**12:00
pm**

While the chlorination team sprays the area, another team of hygiene promotion officers takes all the necessary preventive measures and informs the local community on good hygiene practices. "It took a long time for the community to accept us and to understand why our action is important to prevent cholera spreading," adds Wangcos. "Today, the information we provide is more readily accepted and the local population is increasingly vigilant about hygiene and fighting cholera."

**2:00
pm**

Hygiene awareness activities continue, as does family monitoring. A good opportunity to pay a follow-up visit to a family that was affected by the disease several months ago. "My wife fell ill first, and then I caught the disease from her," explains the father of the family. "The problem was that we didn't know enough about the disease. I thought that it was harmless and would go away on its own, so I waited too long before I went to the health centre. By then, I was in a critical state of dehydration. It took me a long time to recover. Today, I know more about the disease and I am much more careful about hygiene."

**4:00
pm**

Wangcos reminds us that emergency operations are only part of the story. Fighting cholera also requires prevention and awareness activities within communities and schools. So he has made an appointment with school teachers for a fun hygiene awareness session with their pupils the next day. "Children also need to be made aware of good hygiene practices, because they have a positive influence. They are the ones who will then inform families about hygiene."

“SLUDGE MANAGEMENT HAS A DIRECT, IMMEDIATE IMPACT ON THE HEALTH OF COMMUNITIES”

Although World Toilet Day exists, there is no special day for faecal sludge treatment. Yet untreated sludge can pollute the ground and pave the way for diseases to spread. In Myanmar, Veolia Foundation has joined forces with SOLIDARITÉS INTERNATIONALE (SI) to set up a treatment plant.

INTERVIEW BY TUGDUAL DE DIEULEVEULT

What was the purpose of your field mission?

ROMAIN VERCHERE The overall objective was to audit the faecal sludge treatment system (STS), to help SOLIDARITÉS INTERNATIONALE gain a better understanding of it and improve operations. To achieve this, we set up a field laboratory. This enabled us to study the treatment plant's operations and review its design, running and monitoring documents. We also put forward proposals to improve operating procedures. Local staff received training on laboratory techniques and minor modifications were made after the 5-week field mission.

ALBERTO ACQUISTAPACE This program has 4 goals: hygiene promotion to prevent open defecation, rehabilitation of latrines, emptying of latrines and faecal sludge treatment.

Could monitoring the biochemical parameters of faecal sludge treatment be a first step to defining specific biochemical standards for sludge disposal into the environment in humanitarian contexts?

RV In some situations, national standards already exist; they are therefore applicable and must be observed. Defining humanitarian standards is a major challenge, due to the wide variety of contexts, sludge types (with differing levels of dilution or concentration) and conditions of

disposal (infiltration, discharge into rivers, sea outfalls, etc.). In our case, we could for example envisage minimum rates of reduction of pollution loads. Perhaps these values could result in the definition of standards, which would then gain acceptance among field organizations because they were thought out and designed in the field. On the whole, understanding a system like the STS and collecting data for analysis are both big steps in this direction and will enable SI to take an active role in this field in the future.

AA Yes, but such standards must be recognized in reference documents like the Sphere manual, and must also be used, or even required, by institutional donors and the WaSH Cluster.

Why is faecal sludge management so crucial during humanitarian emergencies?

AA Sludge management has a direct, immediate impact on the health of populations affected by a crisis, especially when large numbers of people live in excessively crowded conditions, for example in camps for displaced persons.

RV The most crucial thing in this type of context (large-scale population movements) is to install latrines in order to prevent open defecation, which constitutes a major health hazard.

AA In the medium to long-term, sludge can also have a major impact on the

environment, especially on water and soil, which can potentially affect the land's agricultural productivity.

How do you explain the fact that it has taken until 2019 for humanitarian actors and emergency responders to start asking the right questions about sludge management?

AA The right questions have been asked long ago. However, the answers have been a long time in coming because large-scale faecal sludge management requires not only a rapid response, but also long-term planning, and humanitarian programs are generally short-term. For many years, everyone thought that containing faecal matter was quite enough, because humanitarian crises were shorter than they are today. Times have changed, and crises go on for longer. It is now widely accepted that containment is not an appropriate solution any more.

RV Today, it is quite clear that emergency situations involving population displacements tend to go on for longer. Appropriate responses to these crises require the implementation of more complex infrastructure, and we must emphasize that SI has taken a bold step forward by installing this kind of 'system' to manage faecal sludge. Helping SI to take technical decisions and manage these installations is central to our mission. That is why our partnership is so strong.



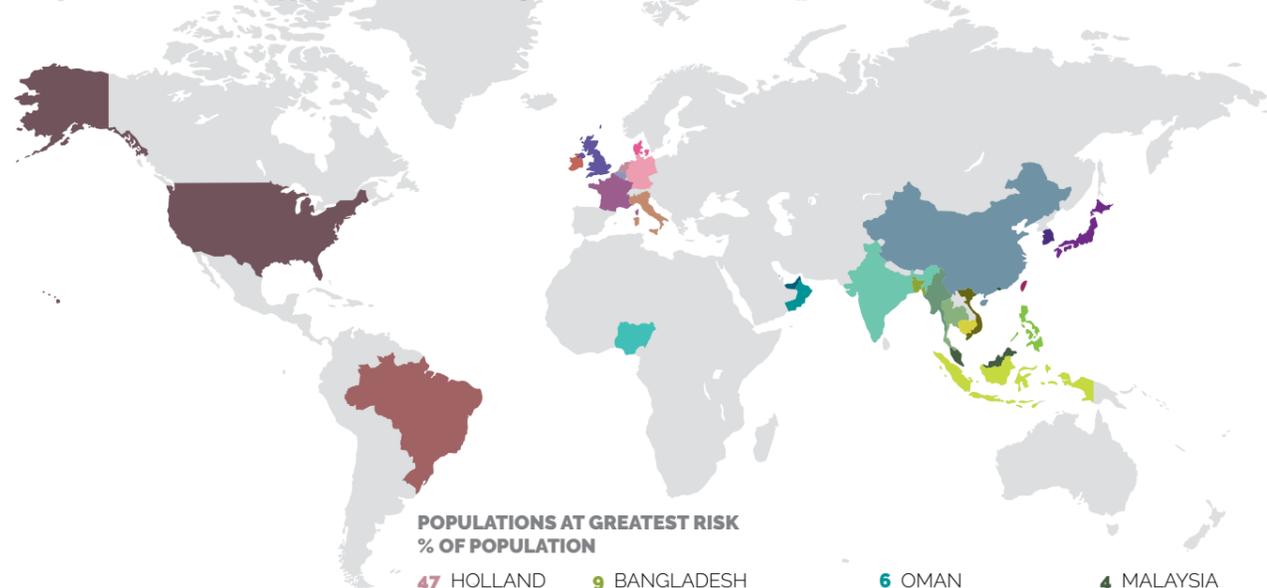
CLIMATE CHANGE

Rising sea levels, increasing temperatures, melting glaciers... The effects of climate change are already very tangible. What does the future hold? Mitigation alone will not be enough. We must also change the way we behave and help the poorest countries to adapt, in order to protect natural resources, including the most essential one among them: water.

AS SEA LEVELS RISE, WHO IS THE WORST AFFECTED?

POPULATIONS AT GREATEST RISK NUMBER OF PEOPLE

50 465 CHINA	10 157 INDONESIA	3 087 USA	1 171 MALAYSIA
23 407 VIETNAM	8 176 THAILAND	2 574 UNITED KINGDOM	1 032 TAIWAN
12 751 JAPAN	7 793 HOLLAND	1 737 BRAZIL	1 028 SOUTH KOREA
12 643 INDIA	6 205 PHILIPPINES	1 665 GERMANY	848 NIGERIA
10 230 BANGLADESH	4 742 MYANMAR	1 256 FRANCE	842 ITALY



POPULATIONS AT GREATEST RISK % OF POPULATION

47 HOLLAND	9 BANGLADESH	6 OMAN	4 MALAYSIA
26 VIETNAM	7 UNITED ARAB EMIRATES	5 TAIWAN	4 CHINA
12 THAILAND	7 PHILIPPINES	5 INDONESIA	3 HONG KONG
10 JAPAN	7 SAUDI ARABIA	4 DENMARK	3 CAMBODIA
10 MYANMAR	6 BELGIUM	4 UNITED KINGDOM	3 IRELAND

600 million people live in coastal areas that are less than 10 metres above sea level. By 2060, they could number 1 billion.

Over the last 50 years, 93% of the excess heat produced by global warming was absorbed by the oceans. The remaining 7% has warmed the lower atmosphere and continental landmasses, causing ice to melt.

It is estimated that sea levels rose 15 cm between 1900 and 1990.

Over the last 25 years, the sea has risen 3 mm per year, twice as much as during the two previous decades.

The Western Tropical Pacific is gaining 10 mm per year, over 3 times the global average. In this region, the sea level has risen 25 cm over the last 25 years.

According to the latest simulations, sea levels will probably be 40 to 75 cm higher by 2100.

70% of the world's beaches are affected by erosion.

Figures quoted from the article: *Le niveau de la mer monte lentement mais sûrement* by Anny Cazenave, a researcher at the Laboratoire en géophysique et océanographie spatiale (LEGOS) in Toulouse, published in *L'Atlas de l'Eau et des Océans* [Le Monde/La Vie].

ADAPTING WATER AND SANITATION SERVICES TO COPE WITH CLIMATE CHANGE

Although global warming is now an important issue in public debate, implementing the responses to this worldwide challenge is proving to be a struggle. Climate change is already affecting access to drinking water and sanitation, and impacting the operations of these essential services.

BY COLETTE GENEVAUX
Technical advisor (pS-Eau)

WHAT ARE THE IMPACTS ON DRINKING WATER AND SANITATION?

Climate change and its effects disrupt the natural water cycle. We are all aware of the consequences: rising sea levels, an increase in average temperatures worldwide, droughts, heat waves, disruption of seasonal rainfall patterns and increasingly frequent extreme weather events like cyclones, storms and floods.

Most of these hazards have an impact on drinking water and sanitation services. This could involve direct damage to infrastructure during floods or storms, resulting in the suspension of services. But most of the consequences are long-term. In fact, the combined impact of rising temperatures, droughts and constant increases in water consumption are gradually reducing the quality and availability of water resources in many regions of the world. This undermines water services, especially in areas where technical and financial resources are lacking.

As a result, water shortages and lack of sanitation directly affect the health, social and economic situation of communities, causing an increase in waterborne diseases, greater difficulties for women and girls who fetch water, conflict over use of resources, increased migration, etc.

ADAPTATION OF WATER AND SANITATION SERVICES

Water and sanitation services must adapt to these challenges, in order to reduce their exposure and vulnerability to climate hazards. For example, this could involve better assessment of water demand, to prepare a management strategy for periods of water scarcity. Alternatively, rainwater management within towns could be developed, using "gentle" solutions "inspired by nature", for example by facilitating the natural infiltration of rainwater into the ground. To cope with extreme weather events, it is possible to set up alert systems and train communities and service providers to respond better: this is known as a risk culture.

The distinction between climate change adaptation and development activities is a source of heated debate among water professionals and international cooperation workers. In most cases, adaptation activities are indeed engendered by strategic reflection within a "normal" development context. Therefore, specific activities to mitigate the effects of climate change and action to address the vulnerability factors affecting development—for example fighting poverty—form a continuum. Existing approaches such as integrated water resource management or water safety management plans can therefore assist in designing appropriate, long-term solutions.

The main requirement for adaptation is therefore a paradigm shift both in the priorities of political leaders and the practices of field workers. The potential impacts of climate change must therefore be taken into consideration from the outset when designing strategies and planning projects.

It is urgent to adopt this approach: it is often useful to remember that adaptation is inevitable, whether it has been planned or not. The consequences of rising average temperatures worldwide are already quite tangible and will continue to accelerate, even in the most optimistic scenarios to curtail global warming.

PS-EAU GUIDE

In 2018, pS-Eau published a guide: *WASH Services and Climate Change: Impacts and Responses*. This guide provides an overview of the issues, definitions and key principles to help water and sanitation stakeholders integrate the challenges of climate change into their practice.



CLIMATE CHANGE IN THE SAHEL REGION

FEEDBACK FROM SOLIDARITÉS INTERNATIONALE'S PROGRAMS

In the Sahel region, climate change has a direct impact on local populations. However, solutions do exist to mitigate the consequences of climate-related events such as drought or floods.

BY OLIVIER KRINS

Regional representative

AND NATACHA CALANDRE

Food security advisor

Following the droughts of the 1970s and 1990s, West African countries – especially those in the Sahel – are now suffering from the effects of climate change: an overall lack of rainfall combined with heavy rains that cause devastating floods.¹

The consequences of this new climate on Sahelian populations are particularly severe, including losses and damage to human systems, agriculture and economic infrastructure (roads, dams, buildings). This unpredictable situation leads to food insecurity, as food prices rise in markets due to unreliable harvests, causing populations to migrate to more humid areas or major towns and resulting in socio-political instability in these countries. As climate change unfolds, weather-related events could become even more violent and frequent.

This situation has prompted SOLIDARITÉS INTERNATIONALE (SI) to develop specific expertise on community Disaster Risk Reduction (DRR) systems, based on its experience in the Sahel region, in countries like Chad and Mali. SI's programs to reduce drought and/or flood risks help vulnerable agricultural and

pastoral communities to prepare and implement multi-sectoral action plans (FSL², WASH³, nutrition), based on participative capacity and vulnerability assessments. These DRR plans include preparation, mitigation and risk prevention activities, and involve developing a community early warning system and an emergency response strategy, which provide tools for monitoring, crisis prediction and contingency planning.

The key components of this approach are: building up village

food reserves (cereal and/or livestock feed banks), consolidating basic services and infrastructure (flood embankments, firebreaks, drainage canals, protection of water and sanitation infrastructure using elevated installations)

and capacity-building within the community (e.g. training on agricultural practices that are adapted to climate change). To minimize risks, support is also provided to help households diversify their sources of income, gain access to financial capital and build up a solidarity fund. Once local communities take ownership of these activities and perpetuate them, this paves the way to reinforce the governance of community structures, to form inter-

community networks and to integrate these organizations into institutional development and funding plans.

In keeping with the priorities of its 2018–2020 strategic plan, SI has opened a regional office for western and central Africa, with a strong focus on the issues affecting the Sahel and the Lake Chad basin, including resilience and climate change. This regional office will drive the development of sub-regional and transboundary approaches that aim to achieve sustainable development and to emphasize the value of SI's programs and expertise.

With these activities, SI and its partners (including Veolia Foundation and local stakeholders) intend to go beyond meeting basic needs by developing an integrated approach to water resources and infrastructure through the creation of a regional operational platform. The primary objective of this platform is to help local authorities to understand, sustainably manage, control and enhance water resources and infrastructure, in order to ensure the population's welfare and encourage regional economic development.

¹ Sahel countries: Algeria, Senegal, Mauritania, Mali, Burkina Faso, Niger, Nigeria, Chad, Sudan.

² FSL: Food Security and Livelihoods

³ WASH: Water, Sanitation and Hygiene

PRIORITIZING PROJECTS WITH A POSITIVE IMPACT ON THE ENVIRONMENT

In response to climate change, institutional donors must target projects that have a positive impact on the environment and that aim to enhance the capabilities of communities to anticipate climate risks.

BY FRANÇOIS VINCE

Project Manager, Water and Sanitation division
Agence Française de Développement (AFD)

Although reducing greenhouse gas emissions is still the top priority to tackle climate change, helping communities to prepare and adapt to climate-related hazards is gradually becoming an inevitable line of action, to prevent and mitigate their effects.

Indeed, the vast majority of current climate projections (see the 2018 GIEC report) agree on the fact that the average global temperature will rise by at least +1.5°C. This increase, which will vary from one region of the world to another, will have a major impact on the natural equilibrium that has been in place for thousands of years. The water cycle will be the first affected, modifying both rainfall patterns and the flow of rivers.

Rising temperatures will have numerous effects on the water cycle, with serious consequences that are already being felt by the most vulnerable populations and economies in developing countries:

- Due to increasing drought, water availability (both in terms of quality and quantity) is decreasing in certain areas, threatening water supplies and food security (since agriculture is the second largest consumer of water after the energy sector);
- In some areas, there is a growing risk of flooding due to increasingly violent rains, impacting both people and property;

- Finally, rising sea levels increase the risks of submersion and lower the quality of water resources in coastal areas (due to salt water intrusion).

AFD is aware of this situation and has made a commitment that its funding will support low-carbon development and resilience. Therefore, during 2018, 50 % of our funding (€6 billion out of a total of €12 billion) targeted projects with a direct, positive impact on climate change, of which 75 % was allocated to reducing greenhouse gas emissions and 25 % to adapting and reducing the vulnerability of populations to the consequences of climate change.

However, we would like to take more action in the water and sanitation field, and also increase the proportion of funds allocated to projects that specifically aim to enhance the capabilities of populations to anticipate and address climate risks. These projects focus on 3 objectives:

- The consolidation of national hydrological and meteorological services by financing monitoring networks and forecasting models, to improve knowledge of local climate-related hazards. In this respect, AFD is about to finance the consolidation of meteorological services in Cote d'Ivoire;
- The protection of water resources, both in terms of quantity through action to improve the efficiency of water use for agriculture, drinking

water and industry, and in terms of quality through the treatment of industrial and urban wastewater. For example, AFD is financing the National Framework for the Reuse of Treated Wastewater in Tunisia;

- The management of flood risks by reinforcing civil protection services and financing solutions to improve water infiltration, retention or drainage. With support from the Green Climate Fund, AFD is therefore financing preventive measures to manage flood risks and install the necessary drainage infrastructure in the Pikine neighbourhood of Dakar.

From a more general perspective, for every drinking water supply or sanitation project financed by AFD, an assessment is carried out on the impact of climate change on rainfall or natural water resources, to improve the security and resilience of essential services like drinking water supplies and sanitation.

Our action is not restricted to financing projects and we hope that our funding will strongly encourage other organizations to redirect investments towards climate change. In line with this strategy, AFD has therefore taken on the 2018–2020 presidency of the IDFC club, a network of 25 national, regional and bilateral development banks, to bring the environment to the forefront as a major issue for action and international cooperation.

ACCESS TO WATER: EDUCATION IS ESSENTIAL

Pressure on rivers and their waters, environmental transition, climate refugees... For the economist and academic **ERIK ORSENNA**, who is president of Initiatives for the Future of Great Rivers (IFGR), the future of the planet hinges on the protection of this "blue gold".

ACKNOWLEDGING THE IMPORTANCE OF RIVERS

All over the world, rivers are in distress both due to climate change and rapid urbanization. For example, look at the Colorado river (U.S.) or the Murray-Darling river (Australia), which have been so overexploited to provide towns and agricultural land with water that they no longer reach the sea; or the Ganges, one of the ten most endangered rivers in the world due to pollution and uncontrolled water usage as a result of unmanaged economic and urban development! Climate change is no longer a faraway event in the distant future; it is already very close at hand. Last autumn the powerful Rhine waterway reached an all-time low in Germany, and the River Rhone's water flow is decreasing with each passing year. How much longer will we be able to count on its incredible gift of renewable energy, in the form of hydroelectric power? How can we reconcile all the different uses of water when it is becoming scarcer and scarcer? In the Adour-Garonne river basin, there will be a deficit of one billion m³ between water resources and water consumption in 2050!

Rivers of all sizes are in distress, and yet it is on their banks that the majority of the human race has settled from the dawn of time. Water for towns, water for fields, water for energy and transport, but also water for biodiversity: rivers give life to the land, in all senses of the word. They hold some of the solutions to climate change.

If we treat them with greater respect and use them more ambitiously, they could contribute to a new kind of development that everyone knows is necessary.

This realization has prompted the CNR (Compagnie Nationale du Rhône) to launch the non-profit organization Initiatives for the Future of Great Rivers (IFGR), which alerts, builds awareness and facilitates solutions to meet identified needs. Our approach has two distinctive features: we combine different views and practices, by bringing together experts in various disciplines from all over the world, and seek an integrated vision, to fully understand all water uses along the full length of a river, regardless of country boundaries. Because water is not a purely technical issue: it also has geopolitical and cultural implications, and relates to every aspect of living together as a community. Water is the most important of all raw materials, the most essential ingredient for life, and also a mirror for human society.

A JOINT EFFORT TO MAKE SEVERAL TRANSITIONS AT ONCE

The more knowledge we acquire, the more obvious it is that our planet is one, interrelated system. Its inhabitants must stand together since we are creating a common destiny, for better or for worse. Every element is interrelated because an imbalance in one element affects the mechanism of another, as the recent study by the IPPR (Institute for Public Policy Research) points out. It forecasts a major crisis in human society with a cascade of economic, social and political crises within the global system. Are we ready to welcome millions of climate refugees from Bangladesh and Africa? Are we aware that the consequences of climate change are continuing to exacerbate social inequalities?

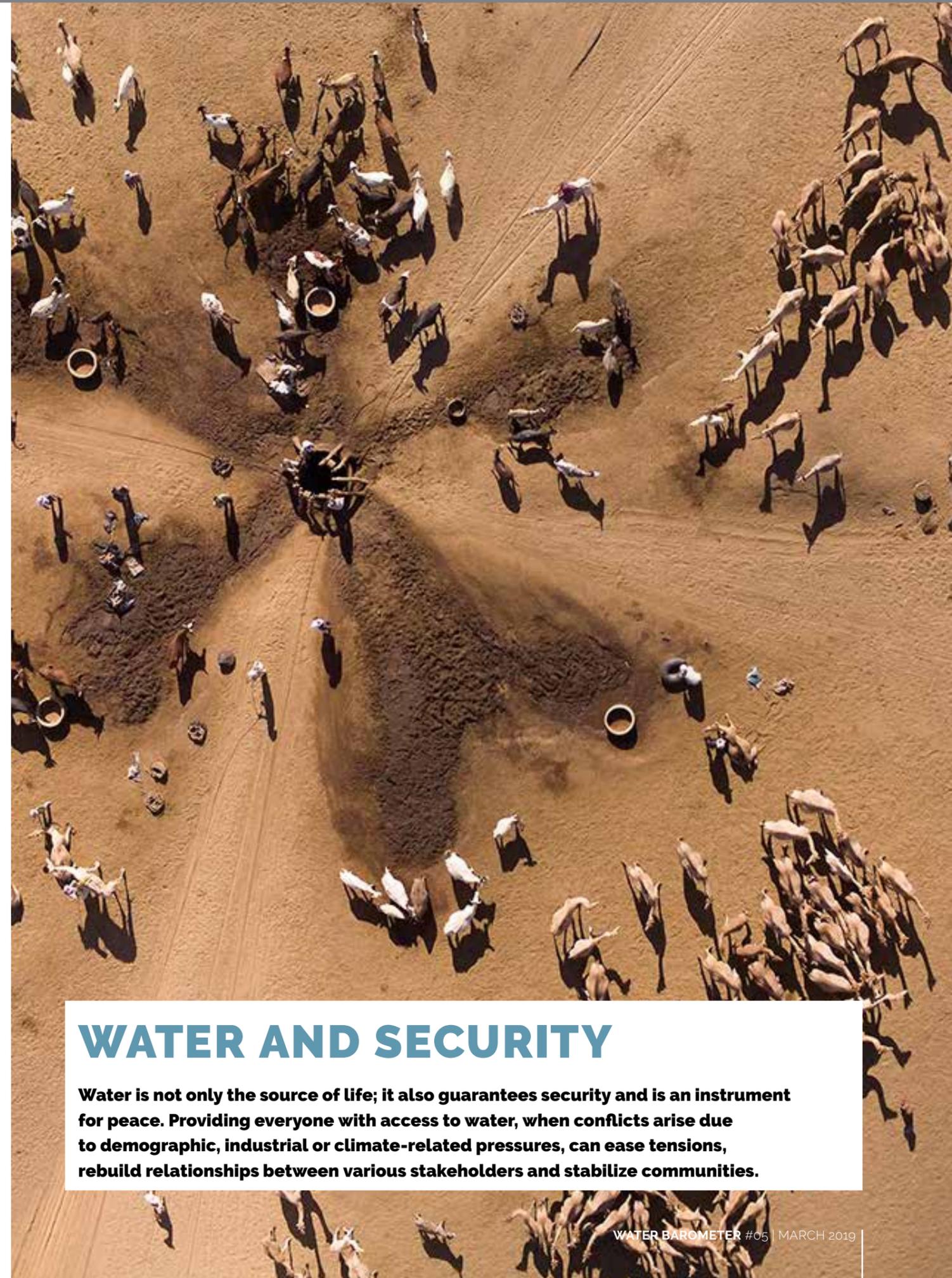
Together, we must be more intelligent and more innovative to carry out several transitions at once: environmental, agricultural, digital, energy, demographic, etc.

Policies must not be segmented. Let's take the example of plastic pollution. We accept the fact that by 2025 the oceans will contain 1 ton of plastic for every 3 tons of fish. But did you know that 80 % of ocean pollution comes from land, washed into the sea by rivers or runoff (of which 90 % comes from just 10 of the world's rivers)? Or that 50 kg of plastic are washed into the sea by rivers every second?

From a regional perspective, imagining the future of a river means considering the whole river basin: we must stop behaving like spoiled children who want everything straight away –like water at the turn of a tap– without thinking about the consequences. We must make water users aware of two things: that they are interdependent and that resources are becoming scarce. Adapting to this situation requires a collective effort, and I believe that education is essential in this respect. I believe in the power of a story to remind us of the history of a river and to imagine its future together. The government is not the only captain on board: companies, local authorities and citizens must all participate in protecting and developing this shared resource!

HEALTHY RIVERS, HEALTHY PEOPLE

Access to water and sanitation is vital for communities. Treating wastewater before it is discharged is one of the subjects that we are working on at the IFGR because, as Pasteur said, we drink 80 % of our diseases. Although the philosophy behind the Sustainable Development Goals is commendable, action must be taken nationally, or even locally, if we want it to be fast and effective. For our part, we will soon start working on the situation in the French department of Guyana, in partnership with Institut Pasteur (waterborne and infectious diseases, pollution from illegal gold mining, etc.). Our experts will work with local stakeholders in the Maroni river basin to understand the situation and suggest solutions.



WATER AND SECURITY

Water is not only the source of life; it also guarantees security and is an instrument for peace. Providing everyone with access to water, when conflicts arise due to demographic, industrial or climate-related pressures, can ease tensions, rebuild relationships between various stakeholders and stabilize communities.

WATER, A KEY INSTRUMENT FOR PEACE AND STABILITY IN THE SAHEL

Water is central to peace and development. Peace is much more than just the absence of war, and requires sustainable development to ensure stability. To achieve development, stakeholders must be capable of cooperating and resolving conflicts without the use of force. Water, a vital global resource, currently faces new challenges due to the combined pressure of overexploitation, wastage and pollution of water resources. This situation is exacerbated by climate change, which makes water availability more erratic and increases the risk of natural disasters.

Water is becoming an issue for a growing proportion of the global population, causing greater competition between its various uses. Our political institutions must show that they can rise to the complex challenge of managing water as a risk factor for conflicts; this is a local, national and also a transboundary challenge, since most surface and ground water is shared between several countries.

But water can also form the basis for cooperation. This contradictory situation has always been an aspect of water management. Never before in history has it been so urgent to leverage the enormous potential for peace and cooperation offered by water resources. This is the founding principle behind the Geneva Water Hub and the creation of the Global High-Level Panel on Water and Peace, which has been mandated by 15 countries to study the relationship between water, peace and security, and for which the Geneva Water Hub acts as secretariat. In 2017, the Panel published its recommendations in a report entitled *A Matter of Survival*, which shows the way forward to make water a key instrument for peace and cooperation by bridging the gap between the peace agenda and the development agenda. This is particularly crucial in fragile countries or regions.

Over the last six years, the security situation in the Sahel has deteriorated. Underdeveloped water access and competition for natural resources have sparked inter-community violence and alliances with armed groups, taking

precedence over ideological or religious beliefs. Power struggles between pastoral and agrarian communities have escalated. These tensions have broken out in the wake of insufficient development policies. Fragile areas have become fertile ground for pockets of terrorism. Recent multilateral initiatives, such as G5 Sahel, have taken this into account and adopted an approach that combines security and development. But in practice, security considerations seem to take precedence over development. In addition, the vital, strategic importance of access to water and basic services is underestimated.

To help seek solutions for the region, the Geneva Water Hub organized a round table in November 2018 to design practical measures that place water at the heart of development and stabilization. Experts from river basin authorities, from the fields of cooperation, development and peace-building, as well as from the armed forces, the humanitarian sector, civil society and the private sector all attended this event. Through the convergence of their expertise, they contributed to defining promising lines of action, which must now be developed and implemented.

As a result of these discussions, the following needs have become apparent: to create protected areas for development with guaranteed access to water and other basic services;

to design innovative methods to administer transboundary regions that serve the interests of nomadic populations better and provide them with water points. Alternatives must be provided, especially for younger generations, as a response

to pockets of terrorism. It will undoubtedly be necessary to use military protection to enable the implementation of these development activities.

On a more general note, water must foster stability in the Sahel. Special attention must be paid to disadvantaged areas. In this respect, several of the region's river basin authorities are leading progress in comparison with the rest of the world. These organizations are likely to form the backbone of development activities by acting as a link between river basin populations and state authorities. They are tools to leverage cooperation and must receive support.

As we prepare a roadmap to make water an instrument for peace, we must not confuse security commitments with humanitarian and development efforts, but instead understand that they must all work together.

FRANÇOIS MÜNGER
Managing Director
of the Geneva Water Hub

JEAN WILLEMIN
Project Manager

*ALTERNATIVES
MUST BE PROVIDED
[...] AS A RESPONSE
TO POCKETS
OF TERRORISM.*



KIDAL: USING SOLAR ENERGY AND REORGANIZING FACILITIES TO REDUCE WATER-RELATED CONFLICTS

In the Sahel, access to water can cause friction. To reverse this trend, SOLIDARITÉS INTERNATIONALE is using its programs to attempt to make water a source of peace.

BY BANSAGA SAGA
Water, Sanitation and Hygiene Advisor

AND EMMANUELLE MAISONNAVE
Learning Officer

One of three regions in North Mali, Kidal is situated in the heart of the Sahara. There is very little rainfall in the area (75 to 150 mm), which means that streams are as precious as they are short-lived. Insufficient water causes friction between livestock farmers, especially during dry periods. In fact, most of Kidal's inhabitants are animal herders, some of whom are nomads. Nomadic livestock farming is particularly appropriate to the local environment since it relies on gradually using pasture and water resources that are scattered over long distances.

Traditional water points can only be accessed by one person at a time, and drawing water is a lengthy, fastidious operation since it is animal-powered and requires several people. SOLIDARITÉS INTERNATIONALE launched its activities in the area in 2013, following the 2012 political and military crisis. The organization is rehabilitating the region's water points to help ease competition between sedentary and nomadic animal herders. Around 50 Improved Pastoralism Water Systems have so far been installed; they are

designed to increase water availability and to separate different uses of water.

REORGANIZING FACILITIES TO SEPARATE DIFFERENT USES OF WATER

The rehabilitated water points are in separate locations to meet the needs of both families and animals. Previously, all water users had to congregate around one well, which caused damage and contamination. There are now two types of water distribution systems. On the one hand, water fountains serve the population's domestic water needs (cooking, washing, drinking), and on the other hand, water troughs are available to feed livestock.

GREATER AVAILABILITY OF WATER

The wells and boreholes are rehabilitated, sealed with concrete and fitted with an apron and cover slab to prevent contamination. A submersible pump is installed, which is powered by solar panels. This pump is connected to a water tower, with a holding capacity of 5 to 10 m³, to ensure a continuous supply

of water all year round. The reservoir therefore acts as a buffer to supply the population with water during the well recovery time. With this system, water can be drawn by several people at the same time, which saves a considerable amount of time and energy (water is no longer drawn by hand or using animal power), which in turn eases tensions between water users.

The water tower is powered by solar energy, of which there is an almost inexhaustible supply in this area, which means there is no need for diesel fuel. Therefore, once SOLIDARITÉS INTERNATIONALE has provided the initial investment, the cost of managing the installation is low.

SOLIDARITÉS INTERNATIONALE teams have observed a clear improvement in relations between water users as a result of much shorter waiting times, greater water availability and the installation of separate water points for different uses.



IRAQ: AS THE CRISIS DRAGS ON, ARE NEEDS CHANGING?

Since Mosul was retaken from the Islamic State group in 2017, the population of northern Iraq is struggling to rebuild after the conflict. Displaced communities started to return to the area in 2018 but lack of infrastructure and access to basic services – the top priority being drinking water – is hampering resettlement.

BY SARAH CHAUVIN

Middle East Program Manager (SI)

Northern Iraq bears the scars of both the Islamic State occupation and the military offensive launched in 2017 by the central government and its allies to regain control over the whole country. This period of occupation and the ensuing hostilities resulted in the displacement of several million people, seriously damaged essential infrastructure and weakened the social fabric of Iraqi communities, which was already fragile before the conflict. In 2018, the country entered a new phase, as communities returned to their towns and villages and reconstruction efforts were launched. Despite this “new momentum”, the situation in Iraq is still extremely volatile and the risk of low-intensity armed conflict in certain areas remains relatively high. The stabilization process is now entering a complex phase: integrating the various segments of the country’s population and their differing cultural, ideological and political values. After years of conflict, these differences are now very pronounced and have distanced communities from one another. Engaging a reconciliation process and developing social cohesion are now crucial to ensure that our

actions are sustainable and to envisage a stable future for the country.

500,000 PEOPLE STILL LIVING IN CAMPS

Despite this process, living conditions are still difficult for the vast majority of the population, whether they have chosen to return home or to stay in camps. In Niniveh Governorate, 500,000 people are still living in camps, which they do not wish to leave for the moment due to lack of economic opportunities and humanitarian aid in returnee areas, or for fear of rising tensions between communities in certain parts of the country. To achieve maximum impact and a high-quality, coordinated response to needs, SOLIDARITÉS INTERNATIONAL is working with a consortium of about ten national and international NGOs to deliver services –including drinking water access– throughout the country, both in returnee areas and for displaced populations living in camps. This work is essential both within camps, where for some people the short-term prospects of returning home are quite limited, and in “pacified areas” where reconstruction must take place to enable the resettlement of communities that

have lost everything.

WATER, BETWEEN WAR AND PEACE

SOLIDARITÉS INTERNATIONAL’s teams are striving to improve access to water and sanitation in the Nimrod camp (Niniveh Governorate), where 3,000 people currently live, and in the villages to the south of Mosul. Water is particularly crucial in the current Iraqi context, because it is scarce and generally of low quality. Water is therefore an essential ingredient to enable communities to return home and successfully rebuild their lives, providing them with the means to drink, grow crops and restart their economic activities. When populations lack sustainable access to water via a network, they are generally obliged to resort to private wells, where water is often scarce and contaminated. Water is also a source of tension between communities and at a regional level. Promoting the sustainable management of this resource is therefore a key instrument to build peace, and allows communities to look to the future rather than just focusing on day-to-day survival.

WATER AND RECONSTRUCTION

Rebuilding lives in the wake of armed conflict, natural disaster or displacement requires very specific assistance. Initially, support is provided to cover basic needs, and water access is the first among them. Water is the key element, the cornerstone upon which to rebuild a new life, a family, a village. Without water, there can be no life, no work, no industry, no agriculture.

WATER AND SANITATION IN LEBANON

PROMOTING WIN-WIN SOLUTIONS FOR REFUGEES AND THE LEBANESE POPULATION

BY CAROLINE BOUVARD

Country Director (SI)

Boasting 2,000 sources, 40 watercourses and plentiful rainfall that is the envy of neighbouring countries, Lebanon is often said to be the Water Tower of the Middle East. But in fact the country is in the midst of a water management crisis. Although 78 % of the Lebanese population is connected to public water supplies, residents resort to wells or private suppliers to meet 75 % of their needs, due to persistently erratic, poor-quality water services¹. Tens of thousands of illegal wells are therefore plundering the country's resources, while over 50 % of networks are obsolete and full of leaks, resulting in the loss of 40 % of the water distributed². With regards to sanitation, only 8 % of wastewater is treated due to lack of infrastructure. In addition, as was observed last January, flooding is also a serious threat to the population due to lack of urban planning and rainwater management.

Since 2011, with the arrival of almost 1.5 million Syrian refugees, pressure on the country's infrastructure has continued to grow, exacerbating these risks. The refugees themselves are the

worst affected. Although the Lebanese government opened its borders to them, past experience with Palestinian refugees in the 1950s has prompted policies to make sure that these new arrivals will only stay temporarily. This means that there are no camps equipped to meet their basic needs, obliging them to live in towns, in accommodation that is often unfit for human habitation, or in one of the 5,800 unofficial camps dotted around the country, where they must pay for everything (rent, water, waste disposal, etc.). Moreover, the government has placed restrictions on creating infrastructure to facilitate their stay, which forces humanitarian organizations to use costly, temporary solutions such as delivering water by tanker truck.

The situation is especially difficult for the 295,000 people living in unofficial camps, where there are often no water points or septic tanks. Humanitarian organizations are less and less able to meet their needs for lack of funds. Rather than the 35 litres of water per person per day that are necessary, humanitarian workers can now only distribute 7.5 to 15 litres. Despite the fact that 51 %

of refugees have less than \$2.90 per day to live on, this situation means that many of them resort to expensive private suppliers whose services are not inspected (water quality, sewage disposal sites, etc.).

There are however sustainable "win-win" solutions that could solve these problems by providing decent living conditions for refugees and, at the same time, improving the country's infrastructure. SOLIDARITÉS INTERNATIONAL seeks to contribute to this process by using integrated approaches within neighbourhoods or villages to develop networks or irrigation/ rainwater management systems that benefit both refugees and local municipalities, by installing shared water filtration systems for refugees and the owners of their accommodation, or by contributing to better supervision of private suppliers when their services are indispensable (monitoring the quality of distributed water, registering wells, etc.).

¹ *Water Governance in Lebanon, National Report 2017*, EU – SWIM Programme

² *L'eau au Liban présentation des enjeux du secteur*, 2013, Brussels Invest&Export

LOBBYING FOR WATER

Our water access interventions take place in the field, among the most vulnerable populations. But this is not enough: institutions, financial backers and partners must also hear the cries for help from the millions of people worldwide who lack access to water. That's why SOLIDARITÉS INTERNATIONAL takes action in the field and at the institutional level to ensure that those without a voice are heard.



MANIFESTO

10 URGENT COMMITMENTS TO MAKE UNIVERSAL ACCESS TO DRINKING WATER AND SANITATION A REALITY

Water may be vital to survival, but it is also a leading cause of global mortality.

This precious yet precarious resource, already inaccessible to many, is now under threat from climate change, demography, urbanization and pollution: factors that are igniting increasingly dangerous tensions surrounding this vital resource.

This is why SOLIDARITÉS INTERNATIONALE is asking one and all to sign its manifesto for universal, adequate and unconditional access to drinking water and sanitation.

1 LET'S SAVE LIVES BY PROVIDING ACCESS TO DRINKING WATER AND SANITATION

Close to 2.1 billion people still do not have access to safe drinking water. 4.5 billion people lack secure and adequate sanitation services. As a result, unsafe drinking water kills 2.6 million people each year – a majority of them children – due to waterborne diseases like diarrhoea and cholera. Access to drinking water and sanitation is a humanitarian emergency: it's time to take action!

2 LET'S STOP PAYING LIP SERVICE TO THE HUMAN RIGHT TO WATER

In July 2010, the United Nations passed a resolution recognizing water as a Human Right. But the reality is that this right has been flouted. Although tangible progress has been made over the past 20 years, it has come much too slowly. It's time to pick up the pace.

3 LET'S HOLD UN MEMBER STATES ACCOUNTABLE FOR THEIR COMMITMENTS

In July 2015, the UN General Assembly unanimously launched the Sustainable Development Goals (SDGs) to vanquish global poverty. Among the 17 SDGs, Goal 6 seeks to achieve universal access to drinking water and sanitation by 2030. Yet, in the UN's 2018 Water Report, the United Nations acknowledges that *"the world is not on track to meet the SDGs by 2030"*. The reasons: a lack of funding, governance and capacities, particularly in less developed countries. Even if governments have adopted the SDGs, they are not binding and many of these countries cannot achieve them without external aid. A global aid plan is needed in order for less developed countries to meet Goal 6 of the SDGs.

4 LET'S PUT UP THE NECESSARY FUNDS TO MEET SDG 6

The funding required to achieve universal access to drinking water and sanitation stands at 114 billion dollars per year between 2015 and 2030. That's three times the current investments! Moreover, it is imperative that all concerned institutions finally agree on exactly where funding needs stand, on the necessary increases in financial resources and on country-specific implementation.

5 LET'S CALL FOR BETTER COORDINATION OF THE SUSTAINABLE DEVELOPMENT GOALS

It's time to move away from the silo approach and systematically coordinate water access efforts with those involving sanitation and hygiene: we are dealing with a public health emergency. Likewise, Goal 6 needs to be coordinated with each of the other SDGs concerning health, food, energy and sustainable development.

6 LET'S CALL FOR GREATER EFFICIENCY, FLEXIBILITY, COORDINATION AND IMPACT FROM THE MAJOR DEVELOPMENT INSTITUTIONS

In crisis situations, whether natural disasters or armed conflicts, it is vital that emergency responses be coordinated with reconstruction and development actions. The major development institutions are too cumbersome, too slow and not cost-effective: they must improve in efficiency, flexibility, coordination and impact.

7 LET'S PRESERVE WATER TO PRESERVE PEACE!

An estimated 40 % of the global population will face water shortages by 2050. These conditions ensure that existing tensions among water users, and even between countries, will flare and could escalate into confrontation. We urgently need to address the connection between water access and peace in order to preserve both.

8 LET'S CALL ON THE UNITED NATIONS TO APPOINT AN INTERGOVERNMENTAL COMMITTEE ON WATER

On a local level, water and sanitation can be managed directly within communities. On a global level, however, collective solidarity is required: a tall order given that more than 30 international agencies are currently dedicated to water. To enhance efficiency, the United Nations must appoint an "Intergovernmental Committee on Water" with a permanent secretariat.

9 LET'S CALL ON THE FRENCH GOVERNMENT TO INCREASE ITS PUBLIC DEVELOPMENT AID AND HUMANITARIAN AID

France must set the example and increase its Public Development Aid to 0.55 % of the GNI by 2022 as planned, then go even further to reach 0.7 %. As part of a comprehensive strategy, the French government must increase the funds available for donations, for sanitation, for countries in crisis and for the least developed countries. The proportion of French Public Development Aid funds allocated to humanitarian aid must rise to 10 % and the country must commit one billion euros per year in support for NGOs.

10 LET'S SET THE EXAMPLE

Faced with the Sustainable Development Goals, climate change and crises, the world is up against some significant challenges. If governments are the first line of accountability, it is our responsibility to remind them, but also to take action on our own, via an array of initiatives aimed at achieving universal access to drinking water, sanitation and hygiene in 2030. It is with these commitments in mind that SOLIDARITÉS INTERNATIONALE fights on a daily basis to save lives.



"GO FURTHER AND MOVE FASTER!"

"The world is not on track to reach Sustainable Development Goal 6 (SDG 6) on Water and Sanitation by the deadline set for 2030: funding for water and sanitation services is inadequate, governance and delivery systems are weak and fragmented, and a serious lack of institutional and human capacity across the water sector is constraining progress, particularly in least developed countries!" **2018 UN-WATER REPORT**



BY JEAN LAUNAY

President of the French Water Partnership

This is a devastating prognosis for the water sector, but it also holds true in many other areas: poverty and inequalities, food security, gender equality, modes of production and consumption, climate change, biodiversity, etc., for which water is a crucial common denominator.

Even if some progress has been made, we need to go further: our living planet cannot continue to provide the conditions for harmonious development for much longer; at some point the global population will be on a collision course with drastic changes that could trigger mass migrations, armed conflicts and unprecedented disasters.

We've got to move faster!

The author of this piece is not a "catastrophist"; simply a realist! He has also encountered a multitude of initiatives around the world aimed at pursuing sustainable development practices that combine economic development and social welfare with environmental preservation. All those little green lights give him hope!

The question he, along with many other sustainable development stakeholders worldwide, is asking today, is which tools could be used to speed up and bring together these initiatives to bring about a dramatic and irreversible transition in a short period of time.

These initiatives are being implemented on every continent by a number of stakeholders: companies, cities, farmers, NGOs, citizens and sometimes governments. Technological, scientific, financial and legal tools are those most commonly utilized. Yet, the latest studies conducted by the French Water Partnership on a number of cases around the world show that success is closely linked to the strong will and committed involvement of populations.

The paradigm shift that we have all been waiting for is probably going to happen via the collective commitment of the populations themselves. These populations, often well aware of the significant challenges they are up against, seek fair transitions.

Governments, in turn, have their own role to play, implementing public policies that steer societal changes. As it stands, they aren't doing enough to encourage sustainable development, especially where water is concerned.

In addition to actions aimed at policymakers, and governments in particular, it seems crucial that we reach as many people as possible and, using the many digital tools available to us, give them the means to put pressure on these policymakers.

Success also hinges on the behaviors of each and every one of us and those behaviors absolutely must change.

Let's explain the fact that our desires are infinite, that they are constantly changing and thus couldn't ever be sustainably satisfied. Let's explain that we are all connected and that what happens in one part of the world impacts the other parts.

Let's petition our leaders to establish a political entity dedicated to water at the United Nations, so that water can become a real priority of national policies.

That goes for France as well. If water and sanitation are recognized as priorities in French international policy, including in emergencies and armed conflicts, what are we to make of the fact that the main ministries involved have almost no human resources dedicated to the topic? How do we account for the over one million people across metropolitan and overseas France who lack access to drinking water, or the 40% of individual sanitation systems that do not meet current standards, or the 56 % of water bodies that don't meet the "good ecological status" criteria of the EU's Water Framework Directive?

Let's take action together to change these situations as quickly as possible. It is all of our responsibility!

To get started, let's promote the 2030 Agenda at every level, touting the 17 Sustainable Development Goals adopted in 2015, which set an ambitious course and serve as a great operational toolbox to assist policymakers, governments first and foremost, including our own.

It is with this commitment in mind that the French Water Partnership and its 200 public and private members are taking collective action – to go further and move faster!

THE FRENCH WATER PARTNERSHIP UNVEILS NEW WASH EMERGENCY GROUP

The FWP's new WASH emergency group, coordinated by the NGOs Action Against Hunger, Secours Islamique France, SOLIDARITÉS INTERNATIONALE and the secretariat of the FWP, recently convened some thirty water stakeholders, including the Agence Française de Développement (AFD), Bioforce, the Veolia Foundation, the French Red Cross, the Paris Mayor's Office, Aquassistance and the Agence de l'Eau Rhône-Méditerranée-Corse. The agenda: strengthening capacity for concerted action with the Global Wash Cluster in Geneva.

To effectively respond to situations of armed conflict or natural disaster, three objectives have been set:

- better-coordinated interventions,
- sharing and optimization of expertise,
- advocacy in France and abroad.

With these goals in mind, the WASH emergency group is developing a 3-year action plan punctuated by key events such as World Water Day, meetings with French public authorities, Water Week in Stockholm, the UN's annual COP event, and the 9th World Water Forum in Dakar in March 2021.

SDG 6 NEEDS TO INCLUDE WATER IN EMERGENCY SITUATIONS

In order to achieve universal access to drinking water, Goal 6 of the SDGs, water must be taken into consideration in emergency situations so that those affected by armed conflicts or natural disasters are no longer left behind.

One of the most transformative commitments of the 2030 Agenda is the pledge that no one will be left behind and no goal considered achieved until it has been attained for everyone. For SDG 6, this means gradually eliminating the disparities in access to securely-managed WASH services. It is no secret that lives are at stake: 844 million people have no access to drinking water, 2.3 billion people lack basic sanitation¹, and some 80 million people affected by crises require urgent WASH assistance².

Unfortunately, humanitarian concerns are hardly on the radar of the water sector and are barely addressed in the implementation of SDG 6 at the national level: this despite the fact that crises undermine WASH-related development efforts and that these crises are long-running, complex and require targeted expertise. Funding for emergency response efforts remains insufficient and is often abruptly cut off, preventing a smooth transition to development projects.

In crisis situations, access to WASH services is a matter of survival. We must be able to act as quickly as possible to provide water where there is none, whether in an IDP camp or a crisis-affected area; but also where there isn't enough, such as in host communities overwhelmed by an influx of displaced persons. Sanitary infrastructures must be constructed to prevent the

contamination of water and the spread of epidemics. These actions must be taken with a view to the post-crisis phase and the long-term sustainability of WASH services.

Secours Islamique France (SIF)³, a member of the French Water Partnership, has launched an advocacy campaign to bring attention to water-related emergency situations and the populations affected by them⁴. The implementation of SDG 6 should allow for development plans to be integrated with prevention and crisis response plans. Governments must be equipped to respond quickly and efficiently to crises and to oversee the rehabilitation of WASH services in a way that ensures their sustainability. They must also work to reduce vulnerabilities, starting by using disaggregated data collections to identify at-risk populations.

Opportunities for water and emergency aid are already on the political agenda: France has pledged to increase the humanitarian funding portion of its international solidarity policy⁵, it is strengthening its action on the "fragilities" front, and the Ministry of Europe and Foreign Affairs is currently defining its water strategy, which must imperatively include humanitarian concerns⁶. At the international level, even as the observance of international humanitarian law in conflict situations remains a permanent challenge, the Sendai framework, the Paris Agreement, the recommendations of the Global

High-Level Panel on Water and Peace, and the will expressed for increased humanitarian funding through the Grand Bargain all offer encouraging prospects.

It is clear that SDG 6 will not be achieved—and the human rights to water and sanitation not guaranteed—so long as we continue to neglect populations affected by armed conflict or natural disaster. Even if crises are sometimes beyond our control, we can nonetheless soften their impact.

ROMAIN CROCHET

WASH Advisor

LAURA LE FLOCH

Advocacy Officer

¹ JMP 2017

² Global Wash Cluster 2018

³ SIF's recent field action has included providing emergency WASH assistance in conflict zones of Mali and Syria, in the Rohingya refugee camps in Bangladesh, and in Haiti following Hurricane Matthew.

⁴ In the absence of an intergovernmental body devoted to water, we must share our message at venues such as the annual World Water Forum and World Water Week, but also at climate conferences and within the humanitarian sector alongside Action Against Hunger and SOLIDARITÉS INTERNATIONALE, members of the FWP's WASH/Urgence group

⁵ CICID February 2018

⁶ SIF is involved in this process as recorder for the Civil Society Organization

FRANCE MUST ADOPT AN AMBITIOUS WATER AND SANITATION STRATEGY!

The French government has committed to developing a new international water and sanitation strategy. This strategy must lay out clear and ambitious guidelines to ensure effective international cooperation that adequately addresses current challenges and focuses on the most vulnerable populations.



BY SANDRA MÉTAYER

Coalition Eau Coordinator

The Foreign Affairs Minister is currently seeking consultation in defining this new strategy. Coalition Eau expects the end result to affirm the government's commitment to helping achieve the UN's Sustainable Development Goal 6 "to guarantee universal access to drinking water and sanitation and to ensure sustainable management of water resources" as well as the other WASH-related targets in the 2030 Agenda.

MAKING THE HUMAN RIGHT TO WATER AND SANITATION A PRIORITY

For Coalition Eau, the primary goal of the strategy must be the effective application of the universal human right to water and sanitation. This requires a call to strengthen laws and national frameworks, while promoting good governance of services through funding methods based on a fair distribution among the various contributors. Support for local stakeholders and the construction of a structured and functional civil society are the keys to success. Particular emphasis should be placed on sanitation and hygiene, a sector that, despite a serious lack of funding, must nonetheless respond to dire needs.

The strategy should primarily target the most vulnerable populations through efforts to eradicate inequalities in access to WASH services. Access to water and sanitation must also be safeguarded as quickly as possible for populations affected by humanitarian emergencies of any kind.

BETTER WATER GOVERNANCE, BOTH AT THE LOCAL AND GLOBAL LEVELS

The strategy must, moreover, recognize water as a common resource: water management should be equitable, sustainable, respectful of the environment, and rules should be collectively defined and then observed by the community. Support for the implementation of Integrated Water Resources Management (IWRM) plans and measures to adapt to climate change will also be necessary.

France must also play a role in improving water governance at the international level via stronger diplomatic engagement, support for transboundary cooperation and the establishment of an intergovernmental water committee within the United Nations.

FUNDING LEVELS NEED TO RISE TO THE CHALLENGE

To ensure that this strategy doesn't remain an abstraction, it must be backed by the adequate resources for its implementation. In the sector of Public Development Aid, France must increase its proportion of bilateral donations, which make up barely 10 % of aid commitments. Such donations are vital to ensuring access to essential services for the poorest populations in countries with low solvency and those wracked by crisis.

Coalition Eau also asks that 50 % of funding commitments be dedicated to the Least Developed Countries and that 50 % of funded actions involve sanitation. Additional resources must be allocated to humanitarian crisis prevention and response. Lastly, the non-governmental dimension of French cooperation remains largely underexploited. The government needs to promote partnerships with all stakeholders and it should, to that effect, increase the proportion of aid that passes through NGOs.

AN APPEAL TO FRENCH COMMUNITIES
FROM SOLIDARITÉS INTERNATIONALE

CITIZENS, ELECTED OFFICIALS: RALLY YOUR COMMUNITY AROUND THE CAUSE OF UNIVERSAL DRINKING WATER ACCESS!

Of France's 35,500 communities, only 82 are taking advantage of the Oudin-Santini Law which allows local authorities to allocate 1 % of water-related revenues to the funding of international projects aimed at providing clean drinking water: and this despite the initiative's demonstrable human impact –at a negligible cost to community residents– since its inception over 10 years ago.

The UN recognized clean drinking water and sanitation as a Human Right in 2010.

Yet 9 years later, 5 people still die every minute from illnesses caused by unsafe drinking water. This silent killer is one of the leading causes of mortality worldwide. Nearly half of victims are children under the age of 5, those most vulnerable to waterborne diseases like cholera and diarrhoea. Likewise, sanitation, an imperative condition for clean drinking water, continues to be a challenge for 2.4 billion people –40 % of the global population– lacking access to a latrine.

According to the most recent count (2017), these catastrophic statistics have prompted 82 French

communities to take action, using the Oudin-Santini Law's 1 % to fund international development projects aimed at providing sustainable aid to the most vulnerable populations.

Established in 2005, though still underused and lacking in visibility, the initiative allows local authorities as well as trade unions and regional water agencies to devote up to 1 % of their water and sanitation budgets to funding for international humanitarian projects in these sectors. Despite its negligible cost to residents of participating communities, this aid has a considerable, virtuous human impact not only on the beneficiaries of funded projects (rehabilitation of water networks, support for local governance, creation of water point

management committees), but also on the funding communities themselves (community-wide mobilization, enhanced awareness of local water resources, etc.).

SOLIDARITÉS INTERNATIONALE wishes to express its deepest gratitude to the local authorities and regional water agencies that have stood by its side since 1998.

The humanitarian NGO now calls on the rest of France's 35,500 communities to join in this spirit of solidarity and help achieve Sustainable Development Goal 6: a world in which all can enjoy the Human Right to clean drinking water by 2030!

**"THE FIRST RESPONSE TO HUMAN SUFFERING
MUST BE SOLIDARITY"**

"THE OUDIN-SANTINI 1 %: AN OPPORTUNITY FOR LOCAL COMMUNITIES"



3 QUESTIONS FOR NICOLAS ROCHAS

Head of International Relations Studies/Regional Expertise
AUD Saint-Omer

Why did your community decide to put the Oudin-Santini Law into practice?

The 1 % solidarity donation was put into effect in 2016. The Water Fund of greater Saint Omer is sustained by a contribution of €1 per resident. The main condition for success is the political will to do your part at the local level to help achieve the Sustainable Development Goals. It's not just a moral responsibility; it's also a considerable opportunity for our communities. Opening up to the world offers the chance to set up educational projects at schools and community centres, to organize awareness-raising sessions about civic pride and the environment, and to offer opportunities for partnerships, internships, travel and employment for young people and maybe even for our businesses. Partnerships forged at the global level have given our region positive visibility and, on a local level, the initiative has fostered the kind of social cohesion that comes from a common vision. These days, communities need the feeling of "giving back" that you get from international humanitarian action.

How do residents feel about the 1 %?

Sometimes there's doubt, even some justifiable reluctance, from people who might not initially understand why we're taking action abroad when there are problems here at home to be dealt with. But after talking about it and hearing different perspectives at a public event or, say, at a school, people are quite proud to know that one euro of their taxes will go towards international humanitarian projects providing sanitation and drinking water

access elsewhere in the world. It's a feeling of pride, of being useful, both for residents and elected officials; it's an awakening, a call to responsibility, and a reminder that the responses to today's challenges, and to inequalities around the world, must be collective in nature.

Why isn't every community putting the Oudin-Santini Law into practice?

Sometimes it's because people aren't aware that it's possible for each one of us to undertake projects like this at the local level, even with limited means. Other times, it's due to a lack of political will from officials who are afraid of coming across as demagogic and alienating constituents. But when you work towards educating people and fostering local synergy with as many different actors as possible, you see a united commitment to cooperation and international solidarity develop. Sometimes the lack of an international relations desk is cited as a limiting factor. The cross-community relations office of Saint-Omer doesn't have one, so it decided to entrust oversight of these projects to the community's Urbanism and Development Agency (AUD).

You often don't see the complete picture. International humanitarian aid shouldn't be viewed as an isolated policy, a way to feel good about yourself, but as an impetus for action that overlaps with the community's other areas of engagement: water, culture, youth, social cohesion, sports, etc. Yes, there are technical, cultural and political obstacles. But the financial obstacle is, above all, a question of will

FOR €10,000, YOU CAN SAVE THE LIVES OF 2,000 PEOPLE

The 1 % solidarity law is a technical instrument that provides sanitation and drinking water access to people who really need it: those for whom it is a matter not of comfort but of survival. A donation of €10,000 can provide drinking water to 2,000 people. Your relatively modest donation won't just provide water; it will save lives! A similar amount of money will equip a school with toilets, enabling young girls to stay in school rather than drop out when they begin menstruating.

Applying the Oudin-Santini Law calls for transparency about how taxpayer money is used. Residents get a sense of pride from knowing about the projects they are funding.

REMY MARQUES
Centre-Loire Delegation



THE HOPE
OF SAFE WATER
FOR ALL

Despite the fact that access to drinking water has been recognized as a Human Right since 2010, 2.6 million people die every year from water-related diseases.

Since 1980, SOLIDARITÉS INTERNATIONALE has been combatting this scourge during crisis situations, day in day out, by providing vital aid to the most vulnerable populations, in person, with respect for their dignity. We also fight to ensure that their voices are heard by national and international governing bodies.

Join our combat and sign our manifest on solidarites.org