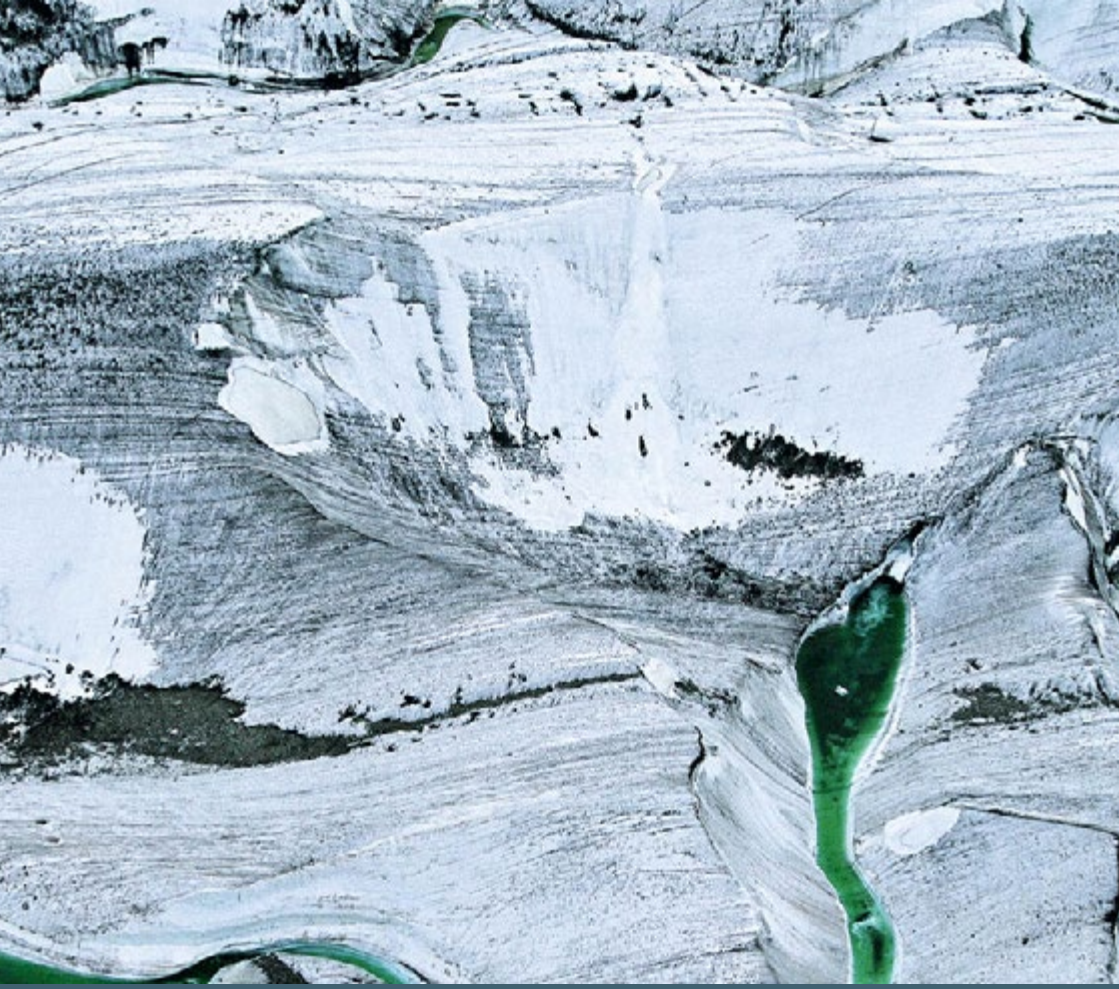

# ON WATER

*Yann Arthus-Bertrand*

BIG IDEAS

# ON WATER

*Yann Arthus-Bertrand*

European Investment Bank
The EU bank

**On water**



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# BIG IDEAS

When taking a drink is as easy as turning a tap, it is easy to forget that our water supply is fragile and that hundreds of millions of people do not have clean drinking water or proper sanitation.

The human impact on our land, the oceans and the climate is endangering our future.

In a world accustomed to instant gratification and immediate consumption, we need more than ever long-term thinking and action to safeguard our natural resources.

Award-winning French photographer and environmentalist Yann Arthus-Bertrand reminds us that water is precious and that we need a new approach to protect the planet's vital elements.

This is the first essay in the *Big Ideas* series created by the European Investment Bank.

The EIB has invited international thought leaders to write about the most important issues of the day. These essays are a reminder that we need new thinking to protect the environment, promote equality and improve people's lives around the globe.

# LIFE WITH WATER

# LIFE WITH WATER

Water has been connected to life since the dawn of time. It is one of our planet's vital elements.

The waters of the oceans – which cover 70% of the Earth's surface – play an important role as an ecosystem and food source. The oceans not only house fish stocks but also act as a balancing factor for the climate.

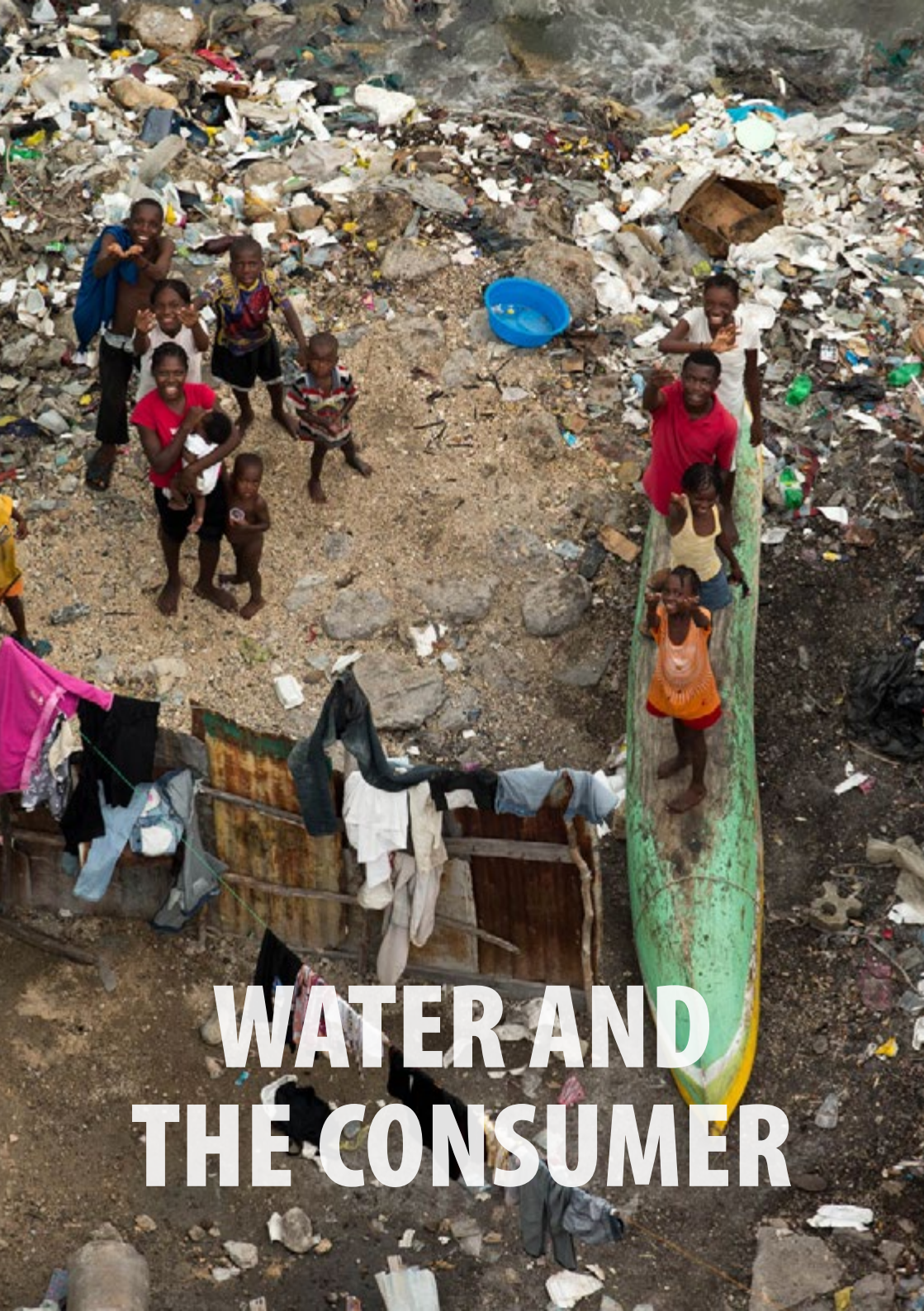
> **“ Water falls from the heavens, runs into streams, flows into groundwater, feeds lakes, then evaporates.**

Fresh water is abundant despite accounting for less than 3% of the planet's total supply. But water is very poorly distributed. Our rivers and streams represent a vast web that nourishes the planet's territories, yet too much of the land is forgotten. Today, more than 660 million people do not have safe drinking water and 2.4 billion live without access to proper sanitation.

Water falls from the heavens, runs into streams, flows into groundwater, feeds lakes, then evaporates. It fuels biodiversity, sustains our crops and animals, helps generate energy and supports our towns and villages. Its scarcity affects people's daily lives, even if we tend to forget this all too often in the developed world, as water treatment and distribution investment have brought us water on demand – though not always drinkable – through taps in our homes.

We now effectively use water to feed ourselves, as most water (around 69%) is used by agriculture. The irrigation of 20% of farming land makes it possible to produce 40% of our food. Household water use represents just 12% of total consumption.

FEEDLOT NEAR BAKERSFIELD, CALIFORNIA, UNITED STATES (35°19'N - 120°16'W)



# WATER AND THE CONSUMER

# WATER AND THE CONSUMER

The point of reference for individual water consumption is essentially the visible quantities of water we use in our daily lives: our morning showers, toilets, washing machines, cooking and washing-up, as well as the watering of our vegetable gardens and lawns. This translates into a cubic-metre figure and euros on a bill, and is tangible, concrete and measurable. Numerous awareness campaigns have led us to install dual-flush toilets and water-saving devices for taps, to avoid leaving the water running unnecessarily, etc. So we know that we have a certain level of control over our water use, yet we can influence just 12% of the total.

What can we do about the remaining 88%? This unseen water used by agriculture and industry is known as "virtual" water. It is needed to produce the goods we consume: from the provisioning of raw materials and processing, through to packaging and distribution and potentially to recycling. Each of these stages in a product's lifecycle requires water. A cup of coffee provides perhaps the best example. For a kilogram of roasted coffee, 26 400 litres of water are needed to grow the bushes producing the coffee grains in Africa, South America or Asia, and then to transport and roast them. This means that the few dozen millilitres of dark liquid in our cup of coffee leave a virtual footprint of 150 litres of water! This same exercise can be done for a pair of jeans or a steak. Beef wins the virtual water consumption prize, with 15 000 litres per kilogram of meat. A plastic water bottle uses the same amount of water to produce as it can hold (1.5 litres).

**"For a kilogram of roasted coffee, 26 400 litres of water are needed to grow the bushes producing the coffee grains in Africa, South America or Asia, and then to transport and roast them.**

SLUM CITÉ SOLEIL, DEPARTEMENT OUEST, PORT-AU-PRINCE, HAITI (18°34'50" N – 72°20'22" W)

John Anthony Allan of King's College coined the term "virtual" in the early 1990s to refer to the water used in production, but this water could not be more real. International trade circulates 2.32 trillion cubic metres of virtual water a year, or 74 million litres exported or imported every second.

Consequently, just as you can calculate the carbon footprint of an individual, company or country, there is an indicator for the water use of these categories – the water footprint – expressed in cubic metres per person, per day or per year. Globally, the average individual has a water footprint of 1 400 cubic metres per year, or 3 800 litres per day. The disparities are huge. For example, a North American uses 7 800 litres a day, mainly due to high beef consumption of 43 kilograms a year per person.

NORTHWEST NEW ORLEANS NEAR PONTCHARTRAIN LAKE, AFTER HURRICANE KATRINA, LOUISIANA, UNITED STATES (30°00' N- 90°05' W)

# WATER: NOT ALL IS FRESH

# WATER: NOT ALL IS FRESH

As an environmentalist who always tries to look at the big picture, I cannot bring myself to break our world down into its constituent parts. Everything on our planet is connected: biodiversity, air and water quality, the climate, human impact and impact on humans. Water is part of a massive cycle, and I cannot exclude the oceans from this discussion.

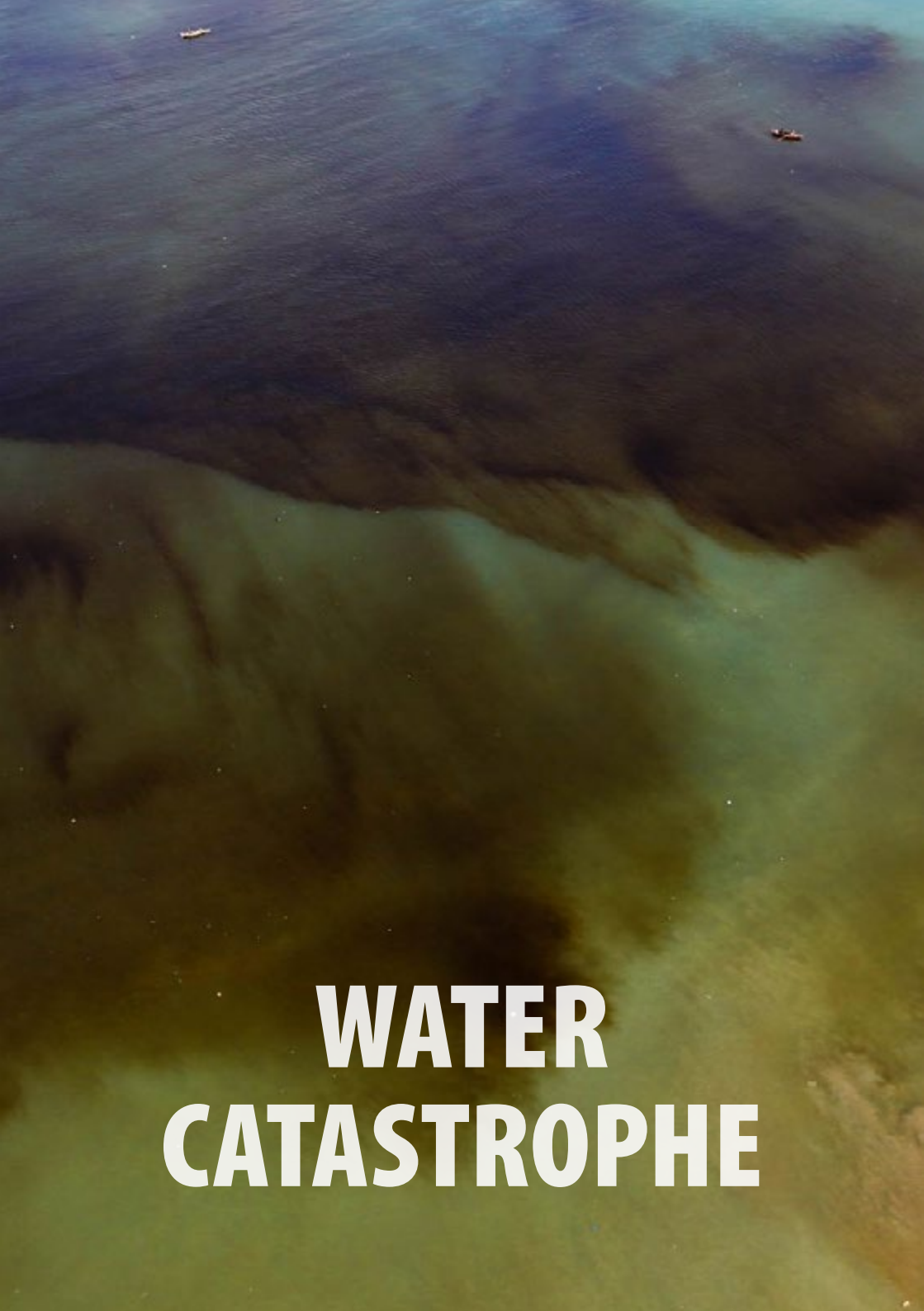
The oceans, or should I say the ocean, are bodies of water connected between the latitudes of 40 and 50 degrees south, along the Antarctic continent. Atlantic, Indian and Pacific are actually just names given to the oceans by maritime explorers and geographers. The oceans are crossed by a gigantic current that circulates massive quantities of water, with cold water below and warm water at the surface. These surface currents churn around 10% of the total mass of water in the oceans, and this layer of approximately 300 metres interacts with the atmosphere: evaporation, the effects of wind, the formation of clouds leading to precipitation, oceanic gyres that concentrate waste, etc.

The oceans are suffering as a result of human activities, with clearly identifiable consequences for the future of many populations. Global warming is causing the migration of certain species to cooler waters. The acidification of the oceans due to the excessive absorption of carbon dioxide released into the atmosphere is causing coral bleaching. There is also the loss of biodiversity, the exhaustion of fish stocks, etc.

> **“Everything on our planet is connected: biodiversity, air and water quality, the climate, human impact and impact on humans.**

Waste is another major issue. The oceans are huge and far away. They are out of sight and out of mind for most of us. Yet they are increasingly polluted by our activities on land. We produce 80% of the waste found within the oceans. A cigarette butt carelessly thrown into the gutter may be at the start of a journey taking it to the coast. A plastic bag used for a few minutes to bring some vegetables home from the market will one day find itself in the huge gyre in the middle of the Pacific Ocean, as part of the so-called “seventh continent of plastic,” a mass of semi-decomposed plastic six times larger than France. And let us not forget its smaller plastic relatives in other oceans! As a visual cue, imagine jettisoning a dump truck full of plastic into the sea every second!

But how, you may ask, is this connected to the topic at hand – water? In fact, it is quite simple. There is no direct cause-and-effect link. Rather, it is a behavioural link that passes through each one of us. It involves our relationship with our environment and with ourselves. If we are unable to protect our environment on a daily basis, we will not be able to understand the water problem in its entirety and fix it.


WATER
CATASTROPHE

# WATER CATASTROPHE

Water's negative impact on ecosystems and the consequences for populations are well-known.

Indeed, the vast majority of natural disasters are connected to water, and floods lead to 70% of the resulting deaths. Climate change is causing more extreme weather events, from heavy rains to persistent droughts depending on the region and season. The warming of ocean surface water often fuels intense cyclones, hurricanes and typhoons.

> **“ We destroy around 15 to 18 million hectares of forest – an area approximately the size of Belgium – every year, with 2 400 trees cut down each minute.**

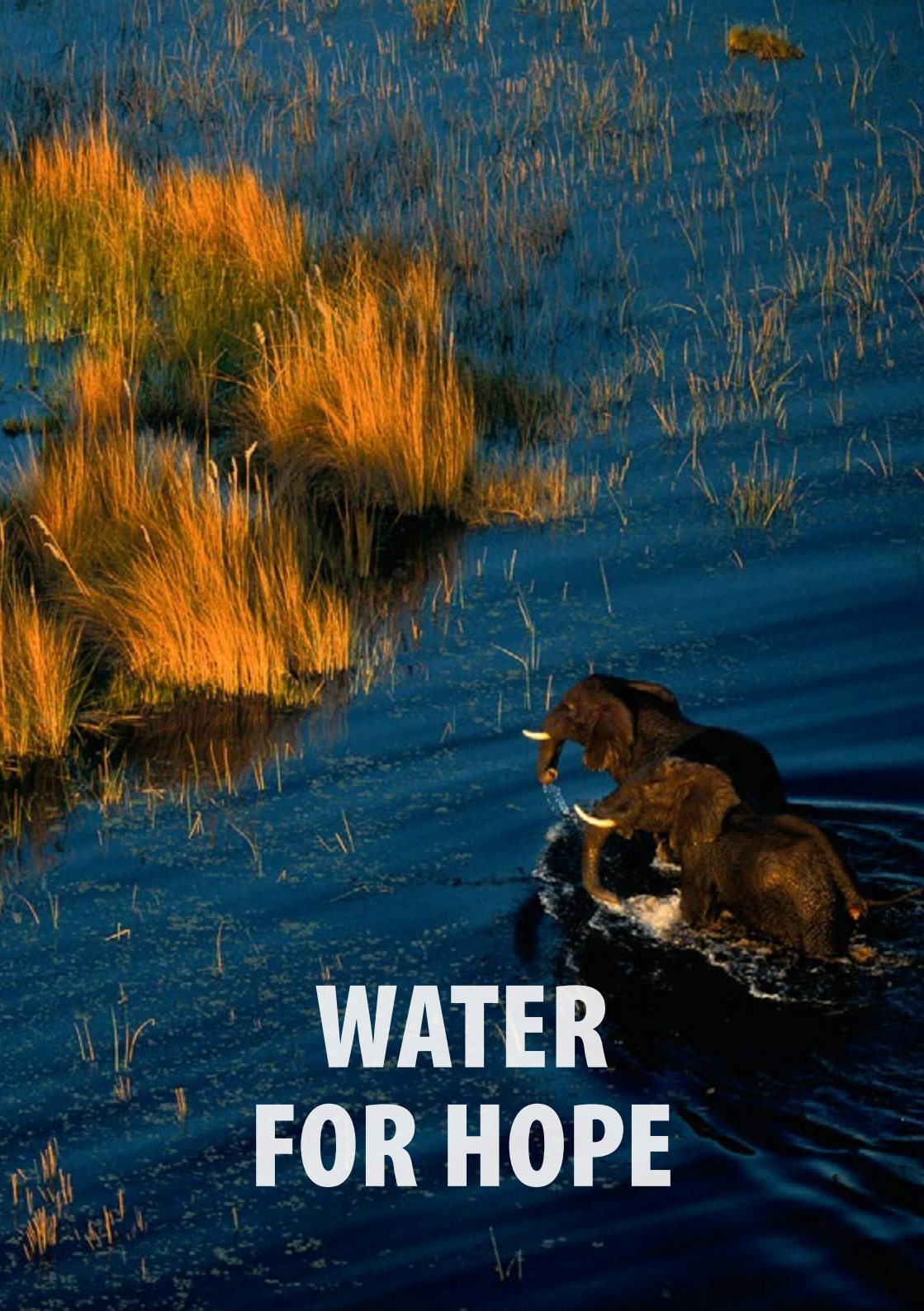
Urbanisation and intensive agriculture, soil sealing and deforestation are forcing a change in soil use, and therefore an increase in run-off and depletion of groundwater. We destroy around 15 to 18 million hectares of forest (an area approximately the size of Belgium) every year, with 2 400 trees cut down each minute. The use of synthetic fertilisers and poorly managed irrigation has a destructive impact on ecosystems and biodiversity. For the last 20 years, we have been losing 2 000 hectares a day to soil salinisation, affecting more than 62 million hectares, or 20% of irrigated land. Water artificially contaminated with excess nitrogen causes eutrophication and hypoxia in oceans and rivers. More than 500 dead zones covering 250 000 square kilometres have already been identified – and this figure has been doubling every ten years since the 1960s.

As far as public health is concerned, diarrhoea originating from contaminated water is estimated to cause 842 000 deaths a year.

I could go on. I have witnessed these phenomena first-hand during my photographic expeditions. I have seen the drying-up of the Aral Sea, the floods caused by Hurricane Katrina, and green algae in Brittany.

A change to our development model is therefore long overdue.

FISHERMEN IN PORT-AU-PRINCE BAY, PORT-AU-PRINCE, HAITI (18° 33'10.38"N – 72° 21'45.62"W)



# WATER FOR HOPE

# WATER FOR HOPE

The United Nations has set 17 Sustainable Development Goals. No. 6 on the list is the goal of ensuring the availability of water and sanitation for all by 2030. This goal is intimately connected to the other 16 Sustainable Development Goals, as it is a key part of development, health and food security.

Water is a common good that we must manage sustainably at all levels: from private individuals to industry, local authorities and countries.

In their strategic analyses, many companies have already established that profitability is linked to water management, climate change and environmental impact. In 2017, CDP, an international non-profit organisation, published its Global Water Report, which studied how more than 2 000 companies worldwide manage water. The most advanced companies set an internal price to factor in the environmental and social costs and benefits related to water use. In 2017, these companies committed $ 23.4 billion for more than 1 000 water-related projects in 91 countries. This is a significant investment, but the G20 estimates that water sector investment requirements from businesses, cities and countries will be $ 7.3 trillion by 2030. Under current projections, there will be an investment shortfall of $ 1.5 trillion in the water sector.

At the country level, catchment agencies have the core purpose of managing resources to guarantee water provision and quality in their areas. To ensure the proper management of water quality, there is a need to work closely with agriculture in the catchment areas. To this end, some farmers have committed to stop using synthetic fertilisers on their lands, making the switch to organic cultivation. This is a positive example of the interconnected nature of environmental issues, because as outlined above, ecosystems are interdependent.

> **“ The wisdom of long-term thinking is required if water can regain its main role: as a resource for the future, a source of life.**

ELEPHANTS IN THE OKAVANGO DELTA, BOTSWANA (19°26'S - 23°03'E)

Large-scale water adduction and treatment projects mobilise colossal energy and financing, coordinated by international development and financing organisations or global companies. They are necessary but not enough, as they are mostly connected to urban areas with high populations. In desert countries located next to large bodies of salt water, the use of desalination to make fresh water requires a lot of energy and expense, making this technique difficult to apply to other regions. However, technological progress has made it possible to expect a significant fall in energy needs and, therefore, the associated costs.

At the other end of the spectrum, I would like to pay particular tribute to the non-governmental organisations that work to provide low-cost drinking water where it is needed in rural areas, and to make this supply sustainable by creating local micro-enterprises, a successful form of the social and solidarity economy.

The large-scale works and multitude of local initiatives share the same goal, with different and usually complementary approaches. Often, certain industry players engage in parallel small-scale actions in communities via foundations or local civil society partners. Technology and financing are vital for both water and the climate, but will not be enough to resolve the monumental challenge facing us. The problem is above all related to individual and collective behaviours, conventional wisdom that has to be challenged, together with a development model that is far from sustainable.

We have had all the observation, analysis and dissemination tools for many years, and cannot feign ignorance. In 1972, the Meadows report for the Club of Rome, titled "The Limits to Growth", warned that we were doomed if current growth and consumption trends continued. After the 1992 Earth Summit in Rio, a Nobel laureate in Physics, Henry Kendall, launched an appeal signed by 1 700 scientists to mobilise policy-makers. Now there are 15 000 scientists of all specialisations from 184 countries who are, once again, warning us that we are heading towards the accelerated destruction of the natural world. For myself, I can point out my own 2012 documentary, *A Thirsty World*, which remains entirely relevant.

YOUNG GIRLS CARRYING BUCKETS IN THE DOGON REGION. NEAR BANDIANGARA, MALI (14°20' N - 3°37' W)

# RETURN TO THE WATER OF LIFE

## RETURN TO THE WATER OF LIFE

On a fundamental level, we must all be aware that water is part of a global cycle that involves a period of replenishment. It is a closed loop that has its own rhythm, which is not in line with that of our society, where everything is packaged and where immediacy rules. The wisdom of long-term thinking is required if water can regain its main role: as a resource for the future, a source of life.

SHARK BAY, HENRI FREYCINET HARBOUR, WESTERN AUSTRALIA, AUSTRALIA (26°32'S – 113°37'E)

# BIOGRAPHY

**Yann Arthus-Bertrand, born in 1946, has always had a passion for the animal world and nature.**

To mark the first Earth Summit in Rio de Janeiro in 1992, Yann decided to launch a vast photographic project about the world and its people: *Earth from the Air*. The book has sold more than 3 million copies. The accompanying open-air photo exhibition, presented in around 100 countries, has been viewed by some 200 million people.

Continuing his commitment to the environment, Yann established the GoodPlanet Foundation. Since 2005, this non-governmental organisation has sought to educate people about the environment and climate change.

In recognition of his dedication, Yann Arthus-Bertrand was designated Goodwill Ambassador for the United Nations Environment Programme in 2009. That year he made his first full-length feature film, *HOME*, which deals with the state of our planet and has been watched by some 600 million people.

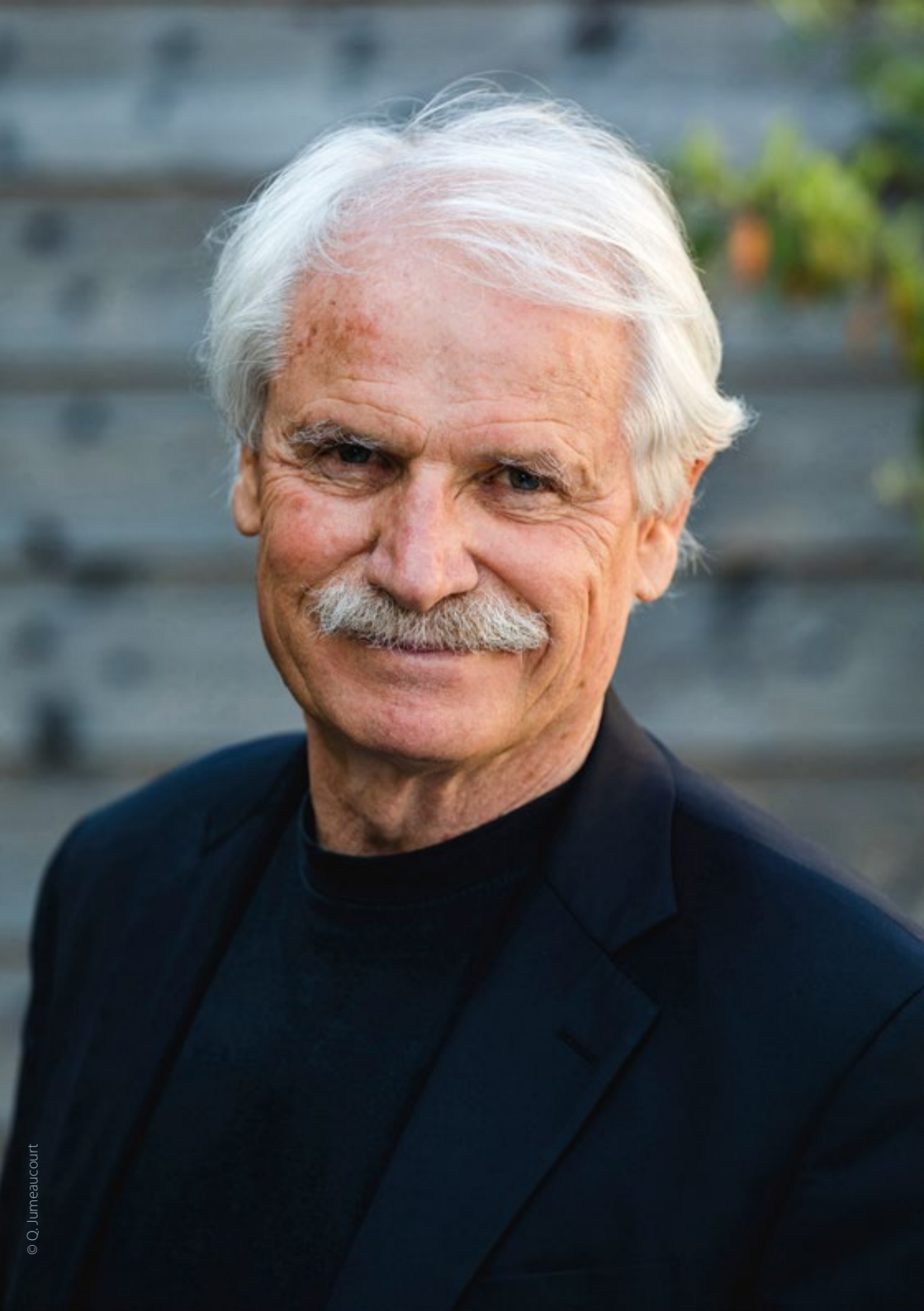
In 2011, with Michael Pitiot, he co-directed the film *PLANET OCEAN*, which was previewed in June 2012 at the United Nations Conference on Sustainable Development.

In 2015, his film *HUMAN* was previewed simultaneously at the Venice Film Festival and at the United Nations General Assembly in the presence of Ban Ki-moon. Through his many stories recounting love and happiness, but also hatred and violence, *HUMAN* challenges us and makes us think about how we live.

That same year, at Cop21, Yann presented another film, *TERRA*, illustrating the magnificence of life.

Yann Arthus-Bertrand has currently (2018) embarked on a new adventure, a film called *WOMAN*.

**www.yannarthusbertrand.org**



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