

# taking action to protect the oceans

solutions from the earth to the sea



ready for the resource revolution



**suez**





**40%**

of the world's population  
lives **less than 100 km**  
from the coast

**>50%**

of the world's oxygen  
comes from the sea,  
which absorbs 30% of CO<sub>2</sub>,  
thus making it the planet's  
main climate regulator

**>80%**

of waste found in the ocean  
is **plastic**, a material that  
won't disappear for several  
hundred years

**8 million**

metric tons of waste end up  
in the sea every day

**269,000**

metric tons of plastic  
are floating in the oceans

# seas and oceans the Earth's future

Covering nearly 71% of the earth's surface, **oceans play an important role in our planet's functioning.** They regulate the climate, store CO<sub>2</sub> and are home to a rich biodiversity. In addition to their economic and touristic appeal, oceans also serve to enliven the territories on which they border.

Although essential to people, **oceans pay the price for human activities through global warming and pollution,** which upset their balance and represent a long-term threat to our lifestyle.

**Faced with this situation, we must respond and innovate to protect, preserve and regenerate this vital resource.**

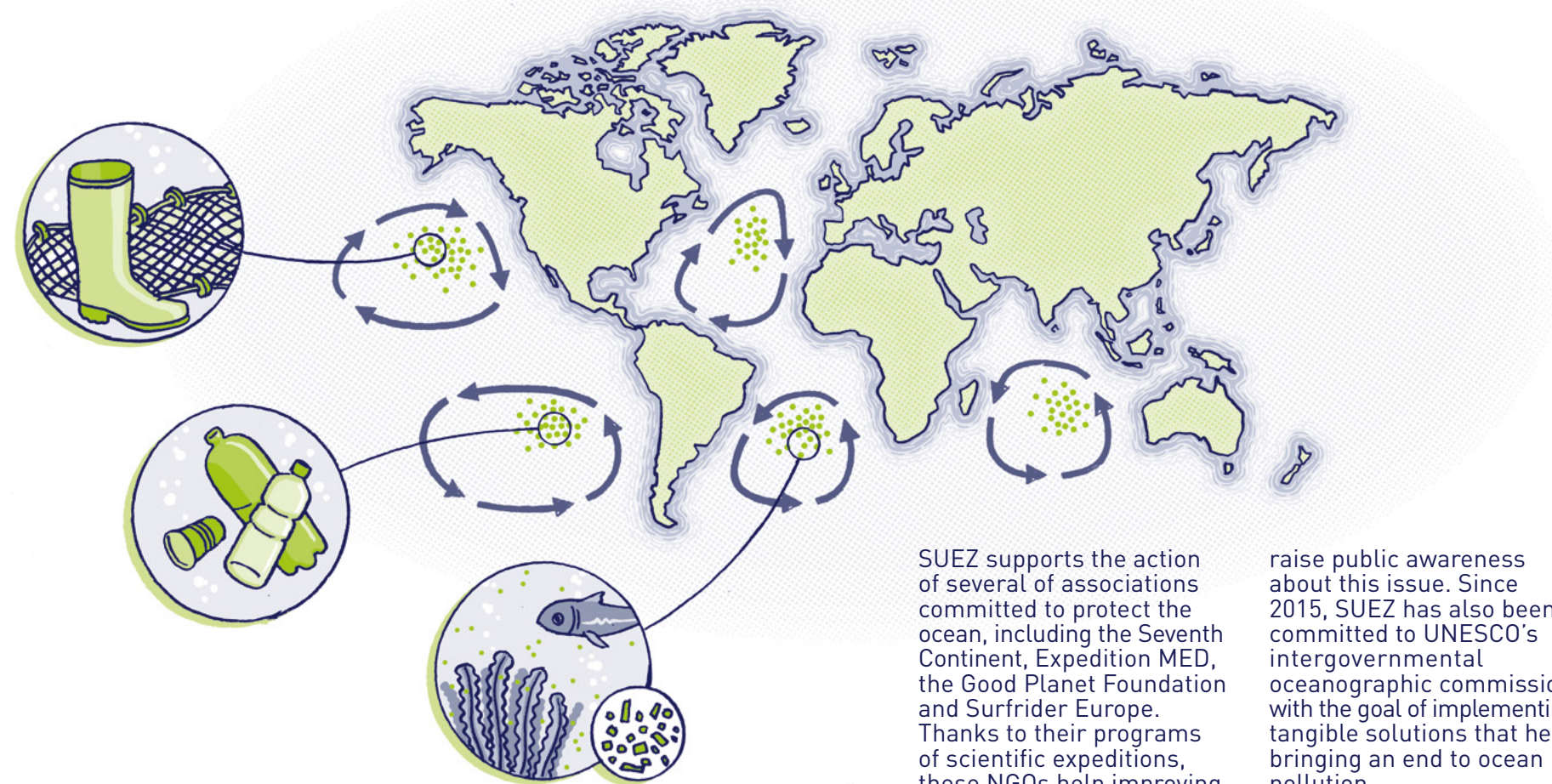




Among all the sources of ocean pollution, **plastic pollution is especially worrisome**. Gathered on land by streams and sanitation networks overloaded with rainwater, **plastic waste flows to the sea where it is concentrated in the main ocean currents**.

Its impact on biodiversity and the marine food chain has become alarming. Faced with this problem, which is international in scope, **all stakeholders** – whether they are active in politics, science, non-profit organizations or business – **must get involved**.

# plastic pollution in question



SUEZ supports the action of several of associations committed to protect the ocean, including the Seventh Continent, Expedition MED, the Good Planet Foundation and Surfrider Europe. Thanks to their programs of scientific expeditions, these NGOs help improving our understanding of ocean plastic pollution and

raise public awareness about this issue. Since 2015, SUEZ has also been committed to UNESCO's intergovernmental oceanographic commission with the goal of implementing tangible solutions that help bringing an end to ocean pollution.

## SUEZ's expertise serving the oceans

For more than 150 years, SUEZ has helped cities and companies in managing the water cycle and in collecting and reusing waste. Located at the crossroads of water and waste challenges, SUEZ today uses its expertise to serve local public policies that limit pollution of the marine environment by human activity.

Thanks to its overall vision, SUEZ can supply its customers with tangible solutions that limit terrestrial sources of pollution by changing our conception of the waste life cycle to a more circular model and by making the cities' water networks intelligent.

**Together, let's build water and waste resource management methods that are more respectful of the marine environment.**



**proven  
expertise**

in confronting pollution problems thanks to our advanced water and waste treatment skills



**innovative  
technologies**

that are constantly evolving thanks to our ability to innovate and our research network

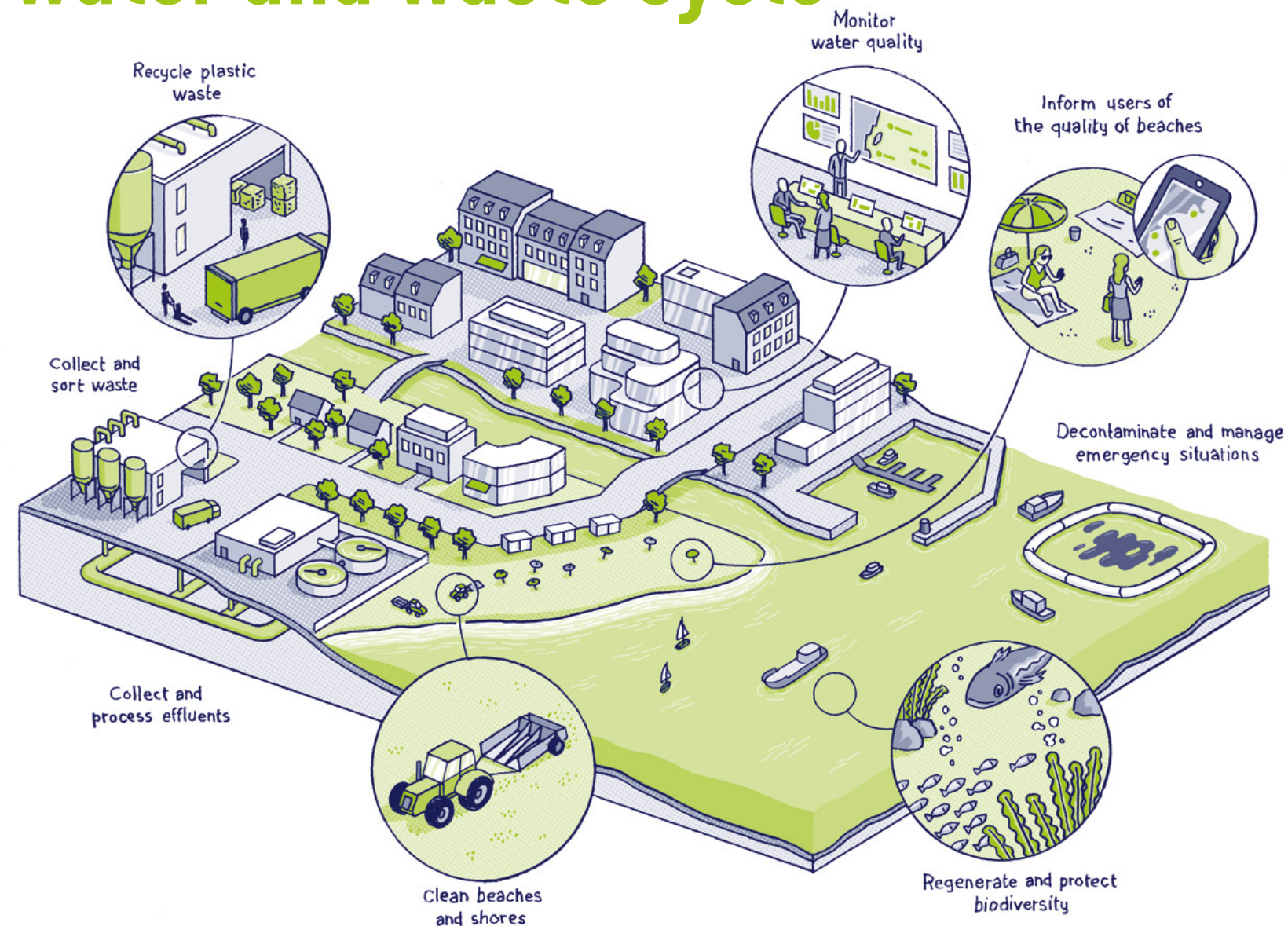


**a global  
presence**

thanks to our operations in more than 70 countries around the world to adapt each project to local needs



# taking action at every step in the water and waste cycle



# solutions developed by SUEZ to protect the oceans



## controlling water quality

- Control water quality in real time - **SIRENE**
- Anticipate the quality of bathing water - **COWAMA**
- Share information with the public - **iBeach application**



## limiting pollution sources

### Water cycle

- Filter microfibers in treatment facilities - **ECOSEASTEM mini**
- Separate macro-waste in moving water - **ECOSEASTEM Cyclonesep**
- Filter particle pollution - **Primegreen™**
- Conduct predictive management of rainwater - **INFLUX**

### Waste cycle

- Maintain marinas - **Marinov**
- Clean beaches
- Clean and maintain urban areas
- Collect waste and sort it selectively
- Recycle and recover waste
- Raise awareness of waste sorting initiatives and shore cleanup campaigns



## protecting and regenerating the coastline

- Evaluate marine health and biodiversity - **Seacoustic**
- Conduct emergency decontamination programs (for hydrocarbons)
- Anticipate the drift of pollutants - **Cudrift Actimer**
- Promote the ecological recovery of maritime structures - **Cystore**
- Collect and recover algae

discover a host of other solutions on the **SUEZ** website





controlling water quality

## BARCELONA controlling bathing water with COWAMA and iBeach

In Barcelona, the city has equipped its beaches with the COWAMA water quality surveillance system. Using sensors and a model of sanitation networks, this control tool enables the identification of the main sources of pollution in real time and thereby to anticipate the water quality of the beaches.

Combined with the Ibeach application, this information on bathing water can be sent to citizens. The application also allows swimmers to know the water temperature, the color of the safety flag, the level of UV rays and even whether or not there are jellyfish in the water. Welcome to the beach of the future, which is both clean and connected.



protect and regenerate the coastline

## CASABLANCA an antipollution barrier to refurbish the coastline

Casablanca is one of the most industrialized coastline of the country, leading to pollution mainly caused by the disposal of unprocessed wastewater in the sea. SUEZ has helped the city to build a new antipollution system.

Inaugurated in 2015 by His Majesty Mohammed VI, the installation enables the treatment of all of the city's wastewater, along with the system set up in the western part of the city.

By preserving the coastline, the project is contributing to the urban rehabilitation of the eastern part of the city. As a result, 24 kilometers of shoreline have been preserved and the beaches have been returned to the inhabitants.



limiting the sources of pollution

## BORDEAUX intelligent water networks with INFLUX

In the city, the ground absorbs only 15% of rainwater. In the event of a storm, the rush of water into the sanitation networks can lead to overflowing. Faced with this risk, the city of Bordeaux has installed the INFLUX network management system.

Based on a system of sensors and regional weather forecasts, the remote control installation enables sanitation systems to be managed dynamically. Flows are monitored in real time and can be redirected as necessary to retention basins. In this way, the city benefits from an innovative solution for avoiding network saturation.



limiting the sources of pollution

## ARGELES-SUR-MER collecting plastic bottles with Reco

80 to 90% of plastic in the ocean is composed of polyethylene, which is often used in packaging. To avoid having this waste end up in the sea, supermarkets in Argelès-sur-Mer, working with Reco, serve as plastic bottle collection points. In the parking lot of their local sales outlets, people are invited to exchange their plastic bottles and jugs for discount coupons.

Once gathered, the packaging is sorted and recycled. More than 50 sales outlets throughout France have already adopted this attractive circular economy initiative.





PLAST'lab®



Ecoseastem

# inventing the solutions of tomorrow

## PLAST'lab® : a dedicated plastic recycling laboratory

The use of plastics has increased by a factor of 20 in 50 years and some consumer products contain more than 20 different plastic resins. Their recycling thus represents an important technical and environmental challenge. That's why SUEZ created an innovative **laboratory dedicated to the characterization and recovery of plastics.**

In this way, Plast'lab® makes it possible to provide tangible solutions that meet with industry expectations while promoting the introduction of a more circular business model.

## Ecoseastem: combatting water pollution involving micro-plastics

While treatment plants represent a barrier to water pollution, certain types of pollutants are able to get through traditional filtration system. This is the case with the microfibers used in our clothes.

To combat this type of pollution, SUEZ, which operates the Nice Haliotis treatment plant, joined with the Nice Côte d'Azur metropolitan council, the MED Expedition NGO and the Villefranche Oceanographic Laboratory to launch Ecoseastem, the first research program dedicated to microfibers and solutions for filtering them.

# the SUEZ Group

## We are at the dawn of the resource revolution.

Faced with the increase in the world's population, the growth in urban areas and the scarcity of natural resources, it's crucial to maintain, optimise and secure the resources essential for our future. SUEZ supplies 92 million people with drinking water, 65 million with sanitation services, ensures waste collection for nearly 34 million, recovers 16.3 million metric tons of waste a year and produces 5,360 GWh of local, renewable energy.

## With 82,536 employees in 70 countries, SUEZ is a key player in smart and sustainable resource management.



**4.3** million  
cu.m

of wastewater treated biologically

**40** millions  
metric tons

of waste processed

**5,855** GWh

of electric and thermal energy produced

**15.1** billion  
euros

in revenue



To improve **research**  
and **increase our**  
**understanding**, SUEZ has  
committed to working  
closely with

EXPÉDITION  
7<sup>e</sup> CONTINENT

FONDATION  
GOODPLANET

MED  
STOP PLASTIC IN THE SEA

Sous le patronage de



Organisation  
des Nations Unies  
pour l'éducation,  
la science et la culture



Commission  
océanographique  
intergouvernementale

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