

2019

Activity report

Fondation
tara océan
explore and share



brief summary



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Introduction

The Tara Ocean Foundation, exceptional results

Since 2003, the schooner *Tara* has crossed all the oceans of the globe to study and understand the Ocean and the impact of climate change on this ecosystem.

On land, the Tara Ocean Foundation, the first recognized French Public Interest Group devoted to the Ocean, is leading a scientific revolution. We are developing an open, innovative and unprecedented ocean science in order to predict, anticipate and better manage future climate risks.

Our high-level scientific expertise is used to raise awareness and educate the younger generations, mobilize political decision-makers, and help all countries, especially in the southern hemisphere, to benefit from this new knowledge about the Ocean.

A veritable floating scientific laboratory, the schooner *Tara* has already logged more than 450,000 kilometers, stopping over in more than 60 countries during 5 major expeditions, carried out in collaboration with internationally renowned research institutes (CNRS, CEA, PSL, EMBL, MIT, NASA, etc).

More than 300 publications in excellent international scientific journals disseminate knowledge generated from Tara's data.



Our major expeditions



- **TARA ARCTIC (2006-2008) :**
First Arctic drift
since Nansen (1893)



- **TARA OCEANS (2009-2013) :**
First global study of the planktonic
ecosystem



- **TARA MEDITERRANEAN (2014) :**
Study of the impact of plastic on the
marine ecosystem in the Mediterranean



- **TARA PACIFIC (2016-2018) :**
Study of the adaptive capacity of coral
reefs to climate change



- **MICROPLASTICS (2019) :**
First study of river sources of
microplastics on a European scale





Key data

- **11** missions including **5** major expeditions
- **100,000** microscopic marine species discovered
- Over **150 million** genes discovered from the marine world
- Almost **200,000** viruses characterized
- **450,000 km** traveled in all Oceans
- Permanently on board: **7** scientists, **6** sailors, an artist and a correspondent
- Over **150,000** samples collected
- Over **250** scientific publications, including **8** in the journal Nature, Science and Cell
- **60,000** children visited *Tara* in France and around the world
- **130,000** children informed in schools
- **2 million** visitors to Tara exhibitions since 2004
- An annual budget of **3,5 million** euros

Summary





Page 3 // Tara Ocean Foundation (brief summary)

Page 9 // Editorial

Page 10 // The Tara Ocean Foundation: Activities

- A new identity for the Tara Foundation
- Work on board the schooner

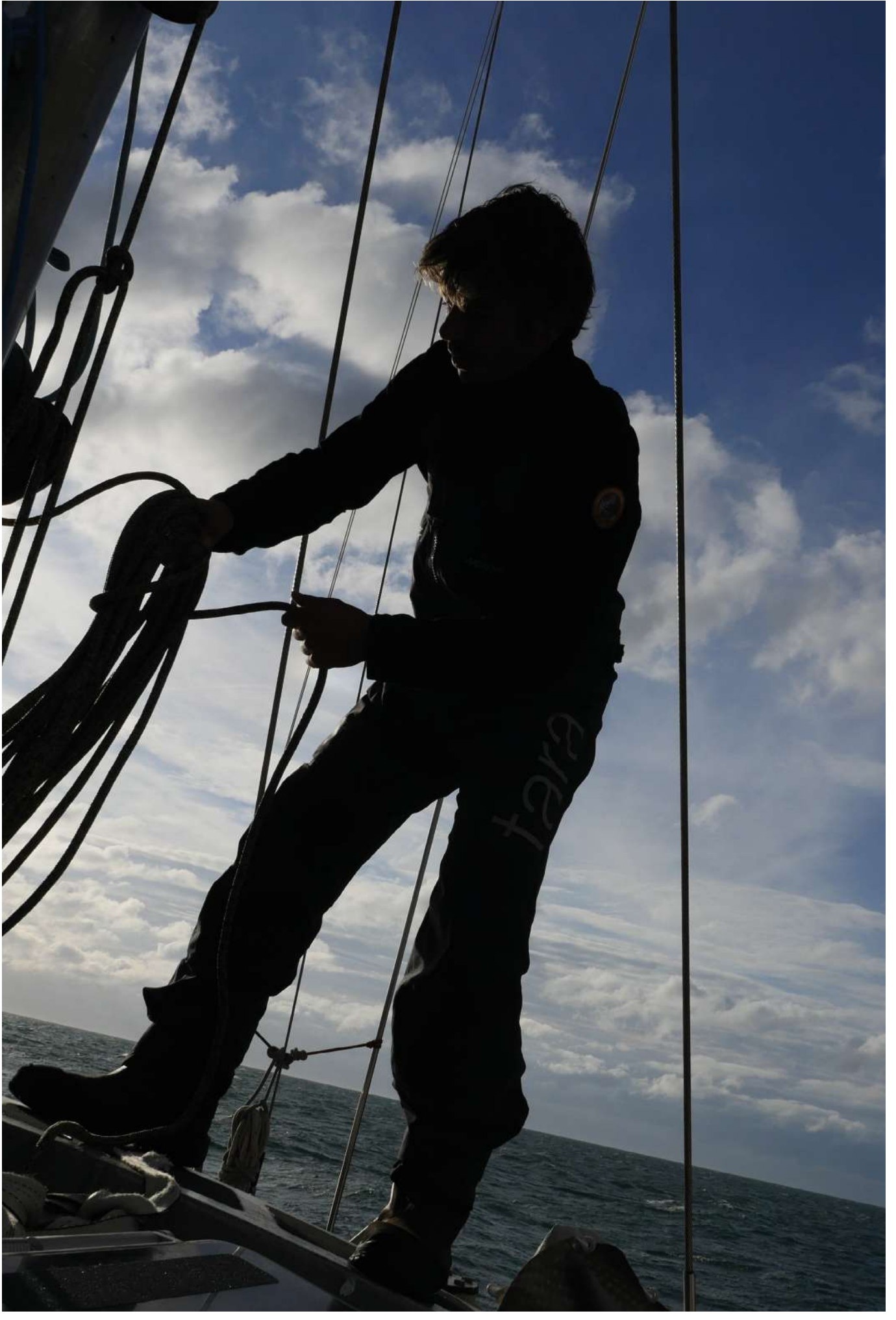
Page 14 // Highlights 2019

- Preservation of the Ocean in 2019: Where are we?
- 2019 Microplastics Mission: At the source of plastic pollution
- Highlights of the Foundation's various research programs
- Sharing the culture of the Ocean
- Putting the Ocean on the school program
- Advocacy: the Foundation is involved in national debates and international negotiations
- The Tara Ocean Foundation's communication in 2019

Page 44 // Thanks to you!

Page 46 // Our governance

Page 50 // Financial report



Editorial

Étienne Bourgois, president and co-founder
Romain Troublé, executive director



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The Tara Ocean Foundation, recognized as a Public Interest Group, celebrated its 3 years of existence in 2019, continuing *Tara's* 15-year history. This first 3-year cycle ended with a vast reflection on a new graphic identity, the new Tara Ocean Foundation brand, and a new logo for the future. This was accompanied by an overhaul of our overall strategy in order to reinforce the impact of the Foundation's social missions around 2 strong axes: Explore and Share. 3-year objectives were redefined for each of the orientations, and new guidelines were developed with the teams, just as the schooner *Tara* embarked on a 7-month mission around Europe: the Microplastics Mission 2019.

The schooner and the Foundation have been exploring the issue of marine pollution by plastics and microplastics since 2010, during the previous expeditions totaling 300,000 km. After 10 years of observation, from the poles to the equator, the magnitude of the plastic pollution is clear: each of the surface samples collected by the scientific teams aboard *Tara* contains microplastics! 2 particularly polluted areas have been observed, namely the Mediterranean and the famous North Pacific gyre. Since cleaning up the sea is impossible, we decided to investigate the terrestrial sources of this pollution, or more precisely, its dispersion. In collaboration with the CNRS, we sampled and documented the pollution of 9 of the most important European rivers, from May to the end of November 2019.

This same year, in May and November, researchers from the Tara Oceans expedition (2009-2013) dedicated to plankton, published the first analytical results of data (collected in 2013) around the Arctic Ocean. These reports garnered 2 cover titles of the excellent scientific journal *Cell*, in May and November. Thus, open-access Tara data on planktonic ecosystems

continue to feed mainstream science, with 240 articles already published, half of them by scientific teams other than the Tara Oceans team. This treasure trove of knowledge keeps expanding, to everyone's great pride.

Throughout the school year we shared this exploration and *Tara's* values in classrooms in an ever-increasing number of academies thanks to the commitment of the teaching staff. More and more teachers have benefited from specific training to engage with their students and the Foundation using tools especially developed to fit into school programs. During *Tara's* many stopovers in Europe, the educational outreach pole -- renamed Culture Ocean -- developed a traveling exhibition aimed at the general public. This included teaching material about how the Ocean is polluted by plastic from our daily lives via our rivers. Solutions to remedy plastic pollution are found on land, including the deployment of a circular economy.

Finally, the year 2019 saw the Foundation fully engaged in the national political debate on the Anti-waste and Circular Economy Law, with a strong media voice for the deposit system of recycling. The Foundation strengthened its advocacy pole and participation in the development of online amendments, based on the findings made at sea from researchers aboard *Tara*.

In short, a year so dense that we had some difficulty in completing this report! We want to congratulate the entire team of the Foundation and thank our donors and patrons for their confidence, loyalty and unwavering commitment to our cause.



A new identity for the Tara Foundation



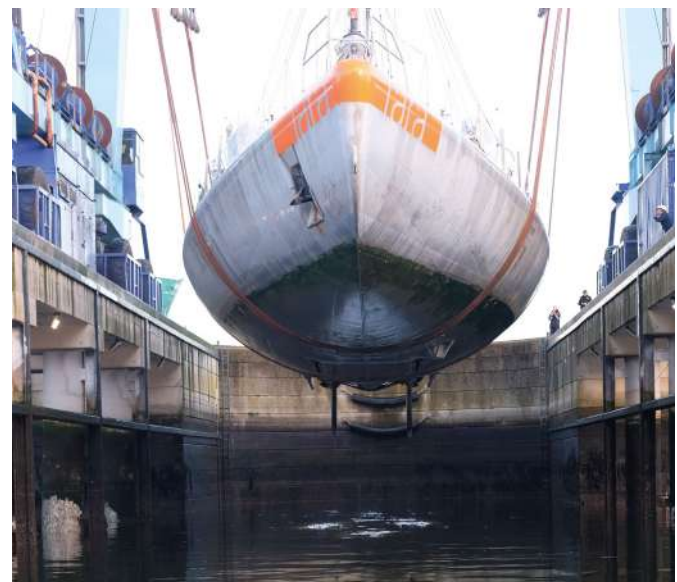
A new name, two fundamental missions: explore and share

In May 2019, the Tara Expeditions Foundation became the Tara Ocean Foundation. By changing the name, we wanted to recenter the Foundation around its 2 missions: Explore and Share. The word Ocean has become as fundamental as it is natural to transmit the expertise and notoriety gained over the years amidst discoveries about the marine environment. It is an important change, both for our journey and our ambitions. We wish the Foundation to become a reference on this ecosystem, in France and in the world.

Putting the Ocean at the heart of our identity is an important first step in this regard. Since 2016, the Foundation has been recognized as a Public Interest Group by the French government. We have accomplished a lot in 15 years but rest assured, the adventure has only just begun!

Work on board the schooner

After a 2-and-a-half year mission around the Pacific coral reefs, *Tara* returned to Lorient at the end of 2018 for a major renovation. Once the schooner came out of the water, work began in dry dock and was completed in spring 2019. Both inside and out, the “gray whale” was re-juvenated by master technicians/sailors. Much of the equipment was refurbished or revised, allowing the schooner to set sail for a new mission on European rivers on May 28, 2019.



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An aerial photograph of the ocean's surface, showing dark blue water with small, rhythmic waves. A white rectangular box is positioned in the upper right quadrant, containing the text "EXPLORE TO UNDERSTAND" in orange, uppercase letters.

EXPLORE TO UNDERSTAND



Highlights of 2019

Preserving the Ocean in 2019. Where do we stand?

With the release of the IPCC Special Report on the Ocean and the Cryosphere and increasing national awareness about plastic pollution, we prepared a resumé of the advances (and setbacks) in 2019 for Ocean preservation. The Foundation's teams -- mobilized for years to protect the Ocean --have again seen encouraging progress, sometimes even victories, but also some setbacks and lack of ambition. Faced with this mixed assessment, it's more essential than ever to share our scientific expertise with political decision-makers at international, european and french levels. Here's our overview of Ocean News in 2019.

is protected. At the end of a new conference held in New York in August 2019 to define a robust and binding international treaty to protect the biodiversity of this area, the negotiations will have to be extended. Obstacles remain on essential questions, in particular on the status of the collected marine genetic resources, the level of funding to strengthen the capacities of developing countries, and even on the means of management of future Marine Protected Areas in the high seas.

The challenge "Ocean" put forward at the G7 summit

In August 2019, in Biarritz, during the summit bringing together G7 leaders (United States, Japan, Germany, United Kingdom, France, Italy, Canada), an appeal for the Ocean was launched by civil society. Its objective: to alert the G7 countries, among the most responsible for greenhouse gas emissions, on the urgency for concrete actions to consider the Ocean and protect it at all cost. The leaders, including french president Emmanuel Macron, responded positively to this call, but without making commitments in 2019.

The IPCC Special Report on the Ocean and the Cryosphere definitively identifies the link between Ocean and climate

In September 2019, in Monaco, the Intergovernmental Panel on Climate Change (IPCC) unveiled its specific report for the Ocean. For the first time ever, an international scientific report was dedicated to the fundamental role played by marine biodiversity - from microorganisms to fish - in the planet's climate balance. Since 2014, the Foundation has brought the necessity and urgency of this scientific report to the highest decision-making level, especially at the Paris COP21 in 2015. Its publication in 2019 is therefore a real victory for the Foundation!



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Governance of the High Seas

The high seas, located outside the territorial waters of the states, make up two thirds of the Ocean. Yet today only 1% of this space



COP25 integrates the Ocean at the highest level

After 21 years of international climate negotiations, the Ocean was finally included in 2015 in the preamble to the Paris Agreement signed by the states after the COP21. Since then, the attention and necessary commitments of the leaders have not lived up to the challenges. However, this year 2019, marked by the publication of the IPCC report, has finally placed the Ocean at the center of political attention. The COP25, the 25th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), wanted to be "blue". Thus, in December, in Madrid, a hundred events dedicated to the Ocean were organized for two weeks. States were strongly encouraged to integrate ocean-related measures into their Nationally Determined Contributions (CDN) and to put in place concrete measures on their territories. However, the prospect of an ambitious and collective dynamic against climate change still seems difficult and negotiations are problematic, in particular on the very stormy and complex issue of the establishment of the carbon market.

Plastic pollution at sea: the fight is organized but remains difficult

In 2019, in France and abroad, plastic pollution became a major theme for Ocean preservation, reinforcing a sense of urgency and calling for concrete solutions.

Internationally, ambitions were based on the goodwill of States

G20 environment ministers pledged in Japan in June to reduce plastic pollution in the marine environment. The International Maritime Organization (IMO) and the Food and Agriculture Organization of the United Nations (FAO) launched a new global

project in December to prevent and reduce plastic waste at sea. These initiatives have the merit of posing the problem on a global scale, but for the moment they are voluntary and not compulsory actions. It remains to be seen what concrete applications the different countries will actually implement.

In Europe, the objectives of the directive on single-use plastics have been reduced

We note a clear decline in the European directive when it was published in June with extensions on certain deadlines until 2030. A directive was, however, adopted by the European Parliament in March to bring the waste produced on boats or recovered from nets back to land so it can be treated and recycled in the ports. This directive will come into force in 2021.

And in France, how do we stand?

Media campaigns, the signing of petitions and other actions by civil society have multiplied. The debates around the bill on the fight against waste and the circular economy had the objectives of implementing concrete actions in favor of the reduction of disposable plastics, providing better information to consumers but also improving collection performance and plastic recycling. As part of this bill, a ban on all single-use plastics was voted in December 2019, along with a calendar indicating the various deadlines when plastic objects will be banned (gradually from 2020 to 2040)..

In February 2019, the Ministry of Ecological and Solidarity Transition launched the National Pact on Plastic Packaging, alongside participants from the private sector of mass distribution/production, and several NGOs (the Tara Ocean Foundation, WWF France, and Ellen MacArthur Foundation) in order to agree on common reduction targets.

See below in this report our advocacy actions p.34



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Microplastics Mission 2019: the sources of plastic pollution

With the 2019 Microplastics Mission, Tara Ocean Foundation scientists began a new and very innovative chapter in research. Over a period of 6 months, from May to November 2019, the schooner *Tara* traversed the 4 european maritime façades and sampled 9 of the main rivers in Europe. This study of the impacts on marine biodiversity from land to sea, coordinated by the CNRS, is a field of research still little explored.

With this scientific project, for the first time a large number of rivers are being studied simultaneously with the same teams and the same protocols. Marine biologists, ecotoxicologists, oceanographers, modelers, chemists and physicists make up an interdisciplinary team collectively engaged in this vast european investigation.

[THE GOALS]

1. Identify sources of pollution,
2. Understand the fragmentation of microplastics in rivers, their impacts on marine biodiversity and their effects on human health.

For the Tara Ocean Foundation, these samples of microplastics in rivers are all "evidence" in an attempt to characterize and identify the origin of plastic. Knowledge of the sources of pollution is a priority if we want to fight against this scourge and take ambitious measures on a european scale.

The origins of plastic pollution

Each year, it is estimated that 8 million tonnes of plastic waste are dumped into the ocean, the equivalent of a dump truck every minute. 80% of this waste comes from land, that is to say from rivers, landfills or sewers. If the impacts of macroplastics on marine fauna are the most visible, they are only the tip of the iceberg.

In fact, plastic in the ocean is mainly found in the form of micro-waste - fragmented by the action of UV rays in particular. This micro-waste especially impacts plankton, often invisible but which represents almost 80% of the ocean's biomass and forms the basis of the food chain. These microplastics are very numerous. Eriksen et al. estimated in 2014, in the journal PlosOne, that of the 5 trillion pieces of plastic floating on the surface of our oceans, more than 90% are in the form of microplastics. Studies on the chemical and biological threats from the accumulation of micro and nanoplastics are still in their infancy.

These characteristics involve both chemical and biological risks for marine biodiversity, and ultimately for human health even if these impacts are not yet sufficiently documented.

10 european rivers
18 ports of call
40 scientists

A unique mission within a research program initiated in 2010

Since 2010, the schooner *Tara's* nets have been collecting abundant life, invariably mixed with plastic debris. The facts are clear: microplastics are ubiquitous in the Ocean. New "plasticobiological" living zones, known as the "plastisphere", are being created. This research project started in the Arctic in 2010 during the Tara Oceans expedition (2009-2013) dedicated to the study of plankton. It uncovered a new zone of plastic debris accumulation, proving that plastic pollution generated near human homes can impact faraway, isolated regions. With Tara Mediterranean (2014), in one of the most polluted seas in the

world, a unique quantitative and ecological study of the impact of microplastics on the Mediterranean ecosystem was carried out. The resulting database, freely available to the scientific community, comprises 75,000 plastic particles: it is the largest collection made in the Mediterranean to date. In 2018, research focused on the "Great Pacific Garbage Patch", one of the densest "plastic continents" on the planet, to understand the development of marine life and its interactions within the plastisphere.

THE MICROPLASTICS MISSION 2019 IN NUMBERS:

- **6 months** between land and sea,
- **19 laboratories** involved,
- **9 european rivers**,
- **40 scientists**,
- **18 sailors** total,
- **18 stopovers**, including 12 in France,
- **17,000 km** traveled,
- **9 countries** on the european coast,
- A total of **2,700 samples**,
- **45 sampling stations**,
- **300 samples** per river,
- **500 samples** sent to the Genoscope - CEA,
- More than **6 billion** DNA sequences expected.



Sampling in the Ocean and rivers

9 of the main european rivers studied

Thames (*London*) - England
Elbe (*Hambourg*) - Germany
Rhine (*Rotterdam*) - Holland
Seine (*Le Havre*) - France
Tiber (*Rome*) - Italy

Ebro (*Tortosa*) - Spain
Rhône (*Arles*) - France
Loire (*Saint Nazaire*) - France
Garonne (*Bordeaux*) - France



Observations and first lessons

On November 23, 2019, upon returning to her home port of Lorient, Tara and her crew brought back 2,700 samples which will establish a unique “river” database on a european scale.

The non-exhaustive observations which follow - formulated in November 2019, on return from the mission - offer a first “glimpse” of the rivers during the passage of the schooner.

They confirm:

1. The extent of plastic pollution with the presence of microplastics in all samples taken.

After the 2014 Tara Mediterranean expedition, which showed that 100% of the 280 samples from the Mediterranean Sea were polluted by microplastics, the 2019 mission indicates that 100% of the samples taken from the 9 european rivers contain microplastics. This pollution impacts all the rivers studied.

The collected plastic microparticles are:

- either primary microplastics, that is, particles whose initial size is less than 5 mm. Due to their very small size, they evade wastewater treatment and transit through rivers to the sea.
- or secondary microplastics, that is to say particles resulting from the degradation of macro-waste. Smaller than a grain of rice (less than 5 mm), they result from the fragmentation of macro-waste under the effect of the sun's rays (UV), the action of erosion and temperature.

2. The observation of plastic fragmentation much further upstream than we expected.

So far, one of the major observations of this mission concerns the state of deterioration of the plastics present in rivers. Most studies in rivers have focused on macro-waste. It has long been thought that rivers carry only macro-waste (commonly inventoried) and that their fragmentation into microplastics takes place once the waste has reached the sea. Contrary to popular belief, the majority of plastics collected in rivers are already in the form of microplastics! Original plastic waste or "macro-waste" (bottles, cans, plastic bags, etc. or other fragments larger than 5 mm) constitute only a small proportion of the waste found during sampling.

The hyper-presence of microplastics corroborates the first and rare work carried out in industrialized countries (see for example the scientific article by Browne et al., in 2017 - Environ Sci Technol. 44 (9): 3404-9 which only concerned the Thames). The 2019 mission widens the observation to 9 of the largest rivers in Europe. These observations show that uncollected plastic waste has ample time to fragment into smaller pieces, on land or in rivers, before reaching the sea. The first electron microscopy images of the 2019 mission actually show fragmented microplastics with many cracks. They indicate that their degradation is “old”.

3. Microplastics behave like sponges, absorbing toxic contaminants present in rivers.

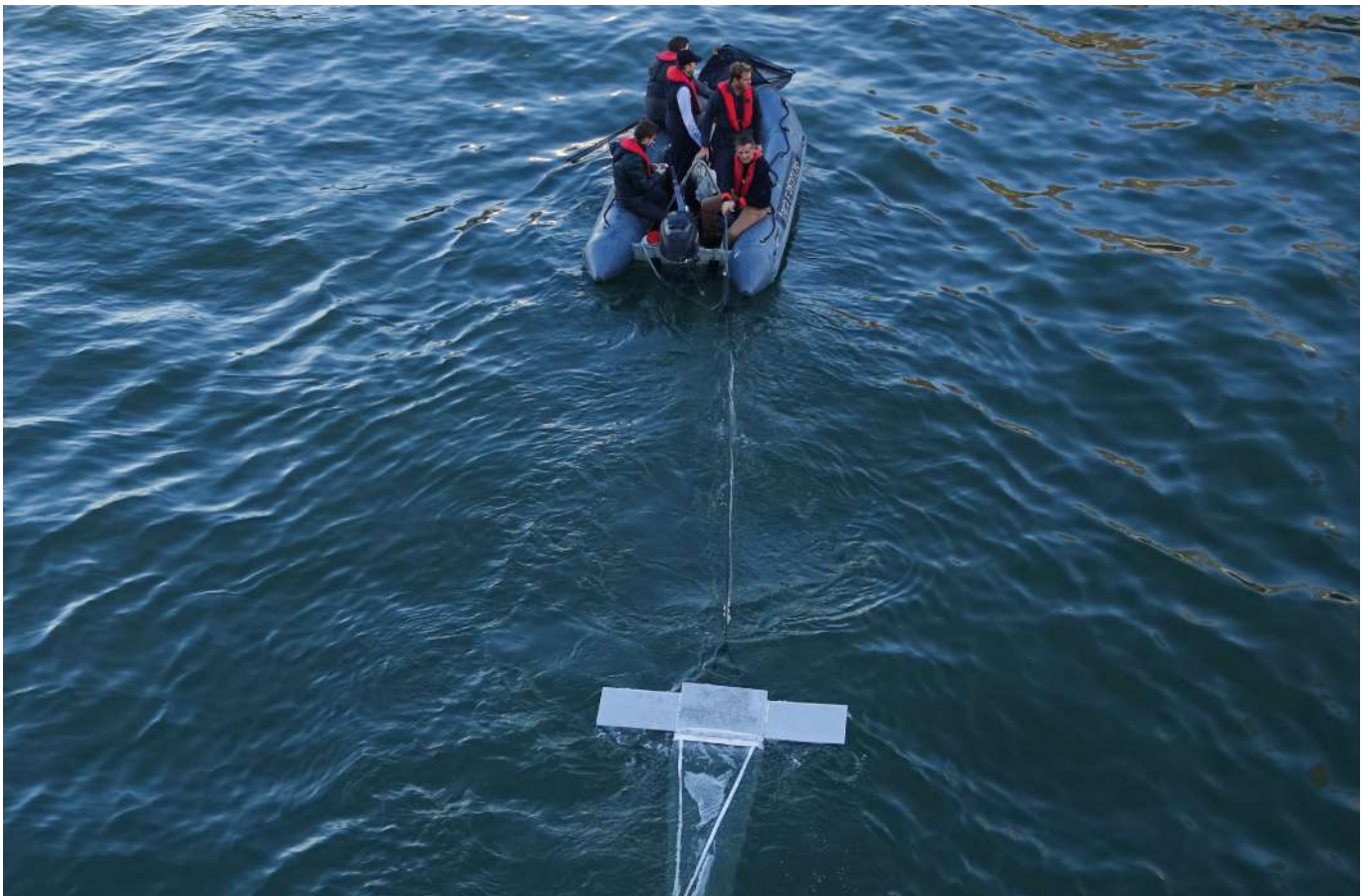
Depending on their characteristics, plastic materials behave differently as they deteriorate into increasingly smaller pieces:

- First, they gradually release their additives in the water or within living organisms when ingested. These additives give plastics their properties: stabilizers, flame retardants, lubricants, coloring, etc. Some of them are endocrine disruptors, such as bisphenol A and phthalates.
- The first analyses performed following the 2019 Microplastics Mission confirm that plastic debris can act as “sponges” with regard to contaminants. During their lifespan, various pollutants (pesticides, hydrocarbons, heavy metals, etc.) stick to the plastic surfaces and accumulate. Therefore, microplastics are pollution vectors with harmful effects on animals, slowing down

their growth and reproductive capacity, disrupting their metabolism and hormonal system (homeostasis), etc.

- The collected samples will allow Tara scientists to test the following assumptions: 1) microplastics carry pathogenic bacteria, and thus diseases, from land to the sea, and 2) they act as rafts, transporting invasive species over long distances.

Numerous analyses are underway or forthcoming and the mission's final results are expected to be available in 12-18 months.



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Jean-François Ghiglione:

« This first observation sheds new light on our vision of plastic pollution at sea. We have long thought that the transformation of plastics into microplastics occurs at sea, under the effect of the sun and the waves. However, the process seems to be happening also in rivers and their catchment areas, » says Jean-François Ghiglione, CNRS, scientific director of the mission.



Highlights of the Foundation's various research programs

Advances in scientific research in partner laboratories

Climate change, erosion of biodiversity, plastic pollution, Tara's missions try to provide components of answers to planetary challenges. These global approaches and unique data, collected on an unprecedented scale, constitute the real hallmark of the various expeditions and associated programs. They allow, year after year, to better understand the planetary, human and environmental challenges related to the Ocean ecosystem.

Biodiversity and coral

At the Genoscope, under the direction of CEA, the coral biodiversity samples from the 2016-2018 Tara Pacific mission are being processed. The 36,000 samples have been meticulously inventoried and half of them have already been sequenced. Genoscope's precious know-how underlies the quality of the data and their future exploitation by the international scientific community. A veritable genetic treasure, this DNA sequencing should lead to the revelation of the coral heritage whose biodiversity still conceals many mysteries. It will facilitate better understanding of how these organisms function in the face of global warming and pollution. Conclusions can be drawn on what most affects corals and the areas in which reefs will be able to survive or likely to disappear. These advances will enable the Tara Ocean Foundation to support future political and environmental measures: protection of coastlines, limitation of direct and local pollution, and even limitation of overfishing.

Biodiversity and plankton

The Arctic Ocean, cradle of viral biodiversity

On May 16, 2019, new results based mainly on Tara Oceans data (2009-2013) were published in the prestigious journal Cell and featured on the cover. Led by Ohio State University in the United States, this study involved teams from CEA, CNRS, EMBL and ENS-PSL associated within the new Tara Oceans GO-SEE research federation which includes the Tara Ocean Foundation. **It brings the number of known oceanic viral populations from 16,000 to almost 200,000 and reveals the importance of the Arctic Ocean as a reservoir for marine viruses.** These play a particular role in the transport of carbon from the surface to the seabed (biological pump). It is therefore essential to identify them and understand their functioning, their dynamics and their ecosystem role. **This is the first systematic study of viral biodiversity in the Arctic Ocean. This will be a repository for understanding the role of marine viruses under the pressure of climate change.**





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The Tara Oceans expedition (2009-2013) reveals the variations in plankton biodiversity and activity, from the equator to the poles.

In November 2019, major new scientific results from the Tara Oceans database, in collaboration with CNRS, EMBL, CEA, Paris-Sorbonne University and Paris Science Lettres University (PSL) showed that the diversity and functions of planktonic species in the world Ocean change radically, according to latitude. Published in the journal *Cell*, these two new scientific studies take an additional step, showing that planktonic species are distributed unevenly and are likely to adapt differently to environmental conditions between the equator and the poles. These results could have important ecological, environmental and economic implications if the temperature of the oceans, linked to global warming, were to exceed a certain threshold.

Plastic

A new method of chemical analysis of microplastics based on artificial intelligence

Using more than 80,000 samples taken during the Tara Mediterranean mission in 2014, a new method based on artificial intelligence was developed. Its function: to analyze at high speed the chemical nature of microplastics. This innovation - attributed to the CNRS, IRDL and IFREMER - considerably speeds up the search, previously subject to long and tedious manual sorting. Published in "*Chemosphere*" in 2019, this method is based on spectrometry, in other words, the measurement of the light absorbed by the material.

This method constitutes a major advance in terms of reliability and reproducibility. Hopes are high since this innovation will help us understand more quickly the toxicity of plastics on marine biodiversity and human health.



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Other scientific publications in 2019: major discoveries on the marine ecosystem

Throughout the Tara Oceans expedition (2009-2013), plankton - the largest planetary ecosystem - was the subject of an unprecedented collection of samples and was studied in its globality for the first time: from viruses to bacteria, genes to the entire plankton community. Studying this ecosystem from the perspective of climate change, ecology, molecular biology, bioinformatics, etc. offers a constantly expanding research horizon. The 40,000 plankton samples, their DNA sequences, the associated imagery and physico-chemical data collected during the Tara Oceans expedition are now freely available to the worldwide scientific community. The "Tara Data", as they are called internationally - reveal treasures of discoveries. The scientific results obtained transform our understanding of the marine ecosystem and have led to numerous publications in world-renowned journals.

Publications in 2019

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SHARE TO CHANGE



Sharing the culture of the Ocean

The primary vocation of the Tara Ocean Foundation is to contribute to preserving the Ocean and the environment through high-level research. Our other priority is sharing knowledge to educate the public and change behavior.

The Microplastics Mission's stopovers and tools for raising awareness

Beyond the scientific aspects of the 2019 Microplastics Mission, our challenge is to educate the citizens of today and tomorrow and encourage them to take action. During the 18 stopovers, including 12 in France, more than 10,000 people boarded the schooner. Visits and multiple events were organized for all to share Ocean issues and the passion of the scientists and Tara team. This mission met with nearly 20,000 citizens on the subject of plastic pollution and engaged them in discussions on possible solutions.

Mission stopovers

Awareness-raising tools on the topic of microplastics

It is essential to arouse interest, promote understanding, and above all awaken a critical attitude towards the constant flow of information we receive every day on subjects like plastic pollution. Understanding is a prerequisite for action. In this perspective, the Foundation has chosen to create two tools, offering different levels of reading, to offer the public a moment of complete awareness. Exhibition and educational kit traveled aboard *Tara* throughout the mission to be deployed at each port of call. The exhibition, "*Plastic at sea, the solutions are on land*" helped enlighten the public on plastic pollution and ways to reduce it. The collective imagination and media images make us believe we can clean up the stock of plastic contained in the

Ocean. We needed strong elements to change these representations: playful infographics and striking statistics help explain the complexity of issues related to plastic pollution. Thanks to the mediators on board, visitors were fascinated to learn about microplastics by observing real samples in different forms and by enjoying the card and board games and other activities proposed in the educational kit.



During the 2019 Microplastics Mission stopovers

- 10,000 people visited the schooner,
- 6,000 people discovered the educational tools developed by the Foundation,
- A total of 20,000 citizens learned about microplastics during this mission.

The Foundation continued its awareness-raising work by disseminating these new tools to our scientific partners, museums and mediation institutions, and also through interventions, projections and exhibitions.

Stopovers offer everyone the opportunity to be immersed in Ocean culture. Bringing together the scientific world and the general public allows people of all ages to discover and better understand the Ocean. Special events and interactions with major players on the scientific scene, synergy with partners, the 6 months of expedition punctuated by stopovers helped to strengthen the Foundation's work in raising awareness about the Ocean.

Share, lead to engagement

The 2019 Microplastics Mission included a strong societal challenge that could not have been carried out without the events organized by our partners.

Create bridges with decision-makers through meetings aboard the schooner; mobilize and federate employees of partner companies by creating privileged moments of exchange; develop our relationship with resources and their preservation by involving local actors and the private sector -- these were the efforts made by our partners during the stopovers. From London to Oslo via Marseille, St Malo, Boulogne or Toulon, many events were organized by our partners. agnès b, Biotherm, the Veolia Foundation, la Région Sud and Altran, the Léa Nature Foundation and Bic were able to take advantage of this time on board to raise awareness among their various stakeholders.

Discover

Thanks to the collaboration with one of our essential scientific partners, the European Molecular Biology Laboratory (EMBL), the stopovers were also an opportunity to discover high-level science. The EMBL is developing visionary fundamental research and new technologies in the life sciences at 6 european sites.

Present at 7 stopovers (London - Hamburg - Oslo - Marseille - Visby - Barcelona - Ostia) alongside Tara's actions, the EMBL highlighted the inseparable link between the health of the environment and the health of humanity.

Federate

The 2019 mission, like all Tara expeditions, ended with a return to Lorient and a festive event co-organized with Lorient Agglomération. More than 3,000 people were present on the Quai de la Cité de la Voile to welcome the schooner and take part in numerous activities organized in collaboration with local associations.

At the same time, the media and Tara's partners were there to experience the schooner's return and share Ocean Culture with as many people as possible.



© Patrick Gentier / Tara Ocean Foundation

To interest and explain

Tara was at the heart of major events during the stopovers: Festival, Fête de la Mer, exhibit inauguration, Fête de la Science. The organization of screenings, conferences, tours of the schooner, meetings with mission scientists created time for real sharing with the public..

St Malo – Festival des Etonnants Voyageurs / Ocean Day

Boulogne sur Mer - Sea Festivals

Banyuls sur Mer - Science Fair

La Rochelle - Inauguration of the new Ocean & Climate exhibition at the Maritime Museum, of which the Foundation is one of the editorial partners.

Promote, interact

The 2019 stopovers also helped strengthen ties with stakeholders in the local scientific culture and pool our resources to broaden everyone's fields of action.

Thanks to the implementation of beach cleanups, educational workshops, participatory science operations, we have created moments of direct interaction with children and adults.

Aquariums of St Malo and la Rochelle

Nausicaa - Europe's largest aquarium

Océanopolis - Brest

Biodiversarium - Banyuls sur Mer

Cap Sciences - Bordeaux

Musée Maritime of La Rochelle



© Fanch Gallvel / Tara Ocean Foundation



Tara exhibitions in 2019

Collaborations with museums & exhibit centers

La Cité de la Mer in Cherbourg

"*Discovering a New World: the Ocean*" was presented temporarily (until June 2019) at the Cité de la Mer in Cherbourg. This introduction was followed by a larger, permanent exhibition retracing the Tara Oceans expedition (2009-2013) via video interviews with its initiators Etienne Bourgois, Eric Karsenti and Romain Troublé. The exhibition provides an immersion into the mysterious world of plankton thanks to spectacular images by Christian Sardet. **Open since June 8, 2019 at the Cité de la Mer in Cherbourg.**

National Museum of Natural History

A major new exhibition at the National Museum of Natural History (MNHN), "*Ocean: Diving into the Unknown*" took us into the depths of the Ocean. Included were a space dedicated to the Tara adventure, a scale model of the scientific schooner, life-size sampling nets, as well as incredible images of the underwater world. The public marveled at fascinating photographs and videos of planktonic organisms taken by scientists aboard. **At the MNHN from April 3, 2019 to January 5, 2020.**

Maritime Museum of La Rochelle

"*Ocean and Climate*" is the first major exhibition in France devoted to the Ocean and its predominant role in producing the climate. Immersive, aesthetic and participative, it draws the public into a fascinating yet little-known world and provides keys to understanding the mechanisms of climate regulation.

The exhibition was built on a solid scientific base established by a committee of renowned experts in partnership with the Tara Ocean Foundation. On the occasion of the exhibition's inauguration, the schooner *Tara* made a stopover in La Rochelle. **The exhibition was presented at the Maritime Museum in La Rochelle from Saturday November 9, 2019 until November 14, 2020.**

Collaborations on exhibitions and events

Good Planet Foundation

Well-known directors and artists joined the GoodPlanet Foundation this year for an exhibition that transported visitors to the heart of marine biodiversity. The Tara Ocean Foundation offered an immersive experience in virtual reality: "*Tara in the Heart of Coral*". Spectators donned a VR headset to dive alongside scientists on the Tara Pacific expedition (2016-2018) and learn about the evolution of coral biodiversity in the face of climate change and anthropogenic pressures.

The virtual reality experience was presented at the GoodPlanet Foundation (Domaine de Longchamp, Bois de Boulogne) from April 13 to December 15, 2019.

La Mer XXL

In Nantes, the first edition of *La Mer XXL* was held from June 29 to July 10 a major event with an international dimension on themes related to the sea. The Tara Ocean Foundation participated with the exhibition "*Tara, Discovering a New World: the Ocean*" displayed in 6 shipping containers. Over 10,000 people visited the exhibit in 10 days.

During the event, the Tara Ocean Foundation presented scientific conferences with Damien Eveillard researcher at the University of Nantes and member of the Tara Oceans consortium. The theme: the importance of scientific expeditions in understanding marine ecosystems and the impact of climate change.

A second conference was given by Samuel Chaffron researcher at the CNRS Laboratory of Digital Sciences in Nantes (LS2N), EMN at the University of Nantes, who voyaged aboard the schooner during the Tara Oceans mission (2009-2013). He presented a detailed overview of the Tara Oceans research program.

24 Hours for the Ocean

For 2 years, the association Time for the Ocean with its flagship event "*24 Hours for the Ocean*" presented talks in Deauville on the theme "Art & Environment". During this event, organized in partnership with the Tara Ocean Foundation, Romain Troublé gave a conference on "*Plastic pollution, the challenges and solutions*" at the Cinéma du Casino Barrière. The conference was followed by the screening of the documentary "*Oceans, the plastic mystery*".

International exhibitions

Shanghai - Dumonteil Gallery

Due to their fresh perspective, artists have a special way of raising awareness about the fragility of the Ocean and its immense treasures. The Dumonteil Gallery in Shanghai brought together 4 artists who had embarked during the Tara Oceans mission (2009-2013) for an exhibition entitled "*Deep Blue: A Tribute to Tara*". Works by Nicolas Floc'h, Maki Ohkojima, Aurore de la Morinerie and François Aurat were a spectacular homage to their shared passion for the Ocean and the Foundation's profound engagement. **September 21 to October 27, 2019.**

Shanghai - Sichuan

Romain Troublé, Executive Director of the Foundation, spoke at 2 conferences organized by the Shanghai Science and Technology Museum, and the Sichuan Science and Technology Museum, in view of a future collaboration.

These conferences provided the Chinese public with information about the main issues related to the Ocean at the start of the 21st century, as well as the challenges taken up by the Foundation through its expeditions.

Hong Kong

In collaboration with the local Hong Kong association "Hyphen" and a professor of Earth and Life Sciences, we have collaborated for 2 years on Operation Ocean 3C by sharing educational material created by the Foundation. In 2019, the operation involved 200 young people from disadvantaged neighborhoods who worked with the tools we had given them.

This first experience made it possible to highlight the differences in transmission of knowledge. The Ocean is absent from academic programs and is generally unfamiliar to Chinese school children. Faced with this observation, we are continuing our collaboration through 2020, supporting teachers in using our educational materials.

Japan

Continuing the Foundation's work in Japan, the year 2019 was marked by the presence of 3 Tara artists at the Setouchi International Festival of Contemporary Art, on the island of Awashima. Nicolas Floc'h, Maki Ohkojima and Hibinosan displayed works from their residencies during the Tara Pacific expedition. To immerse visitors in the heart of the coral mission, 5 virtual reality masks were placed at the center of the exhibition. **September 2019.**

Interactive tools for raising awareness

Once Upon a Try, a Tara digital exhibition on the Google Arts and Culture platform

Technological innovations, scientific discoveries, behind-the-scenes of research are now available to everyone via the interactive digital platform, Google Arts and Culture. Through the project "*Once Upon a Try*" inaugurated on March 6, 2019 at the Academy of Sciences in Paris, the Tara Ocean Foundation offers a selection of digital content videos, photos, 360° virtual reality, and scientific testimonies retracing 3 extraordinary Tara expeditions. A digital voyage to understand the major discoveries made by scientists concerning the crucial role of the Ocean in the future of our planet.

artsandculture.google.com/partner/fondation-tara-expeditions

Planktós, a new digital comic book. Dive into the world of the infinitely small

Our very first digital comic book, created by scientific illustrator Timon Ducos, offers an immersive experience recounted by Eric Karsenti, molecular biologist (CNRS / EMBL) and father of the scientific mission Tara Oceans (2009-2013). *Planktós* describes the round-the-world expedition chasing plankton and deciphers the astonishing results, as well as the dizzying prospects for further research envisaged by international institutes (CNRS, CEA, PSL, EMBL, MIT, etc.).

fondationtaraocean.org/planktos



Highlights of 2019



© Nicolas Floch / Artificial reef in Japan



Artists aboard!

François Aurat
Photographer - France

Sailor aboard *Tara* on many expeditions, François is also a photographer and artist. His exhibition "*Impressions*" includes photos of the sea, storms, and also a series of *gyotaku*, ancient Japanese printmaking technique that François learned during his stay in Japan in 2017. His photos and prints take us on a voyage across the Pacific and North Atlantic. **Presented at Ainay-le-Château, February 23 to March 30, 2019.**

Samuel Bollendorff
Photojournalist - France

Known for his rigorous social and environmental investigations, Samuel Bollendorff often works in difficult conditions and crises. He embarked aboard the schooner in 2018 during the *Tara Pacific* expedition, then in 2019 during the *Microplastics Mission*. His photo exhibit "*Contaminations, or After Me the Deluge*" takes us around the world focusing on pollution. **Presented at the FAIT & CAUSE Gallery in Paris, January 16 to March 2, 2019.**

© François Aurat



Maarten Stok

Musician, composer and performer - Netherlands

First musician-in-residence aboard *Tara* in 2016. During his second residency (summer 2019) Maarten Stok composed "*Tara by Sound*", an audio-meditative visit of the schooner. A boat is an orchestra of sounds. "*The concept of recording every inch of the ship was born when I first visited Tara in Papua New Guinea in 2016. The many sounds, noises and rhythms dazzled me. It's more about sharing the feeling of living on board Tara than about presenting accurate documentation. Tara by Sound ends with a poem written on board somewhere near the Strait of Gibraltar.*"

Maarten Stok's immersive sound experience which was presented in Lorient on November 23, 2019 when the Microplastic Mission returned to homeport.

facebook.com/public/Maarten-Stok

Nicolas Floc'h

Photographer/ artist - France

Artist-in-residence during the Tara Pacific expedition (2016-2018) between Tokyo, Japan and Keelung, Taiwan, Nicolas Floc'h is an artist, photographer and also a professional diver. His work from the past 10 years was presented for the first time in a Parisian gallery underwater photos and sculptures focusing on the question of habitat, from artificial reefs to the water column. His exhibition « *Récifs* » is an observation of a world in perpetual transformation, full of promises and despair.

Presented at the Maubert Gallery, Paris. February 14 to March 30, 2019.



Putting the Ocean in school programs

When the Tara Ocean Foundation and teachers sail side by side!

Raising young people's awareness about the future of the Ocean is at the heart of our mission. Tara and the Education Nationale have been working together for 13 years. The Foundation develops and runs an educational platform for French-speaking teachers with 3 main objectives: education for sustainable development (ESD), scientific education, and media education.

Unprecedented appropriation of educational resources by teachers in 2019

In 2019, the use of resources and programs offered (in open access and free of charge) by our educational platform definitely gained momentum. Developed in partnership with the Education Nationale and deployed in classrooms everywhere in France and in French high schools abroad, our innovative resources include documentaries on Tara's major themes (biodiversity, climate, plastic pollution), experiments to be carried out in the classroom, educational files, live videoconferences with researchers, and ongoing activities to be followed throughout the year.

An educational platform with increasing attendance

The appropriation of our educational platform and its resources is clearly increasing:

- 55,600 students in their classrooms watched documentaries on the missions of the Tara Ocean Foundation 3 times more than in 2018.

- A cycle of 10 videoconferences followed by questions answers with 10 researchers on 10 Ocean and Climate themes was initiated again in the fall (for 2 age-groups: 7-12 and 13-18 years) and met with growing success: 9,430 students in 2019 compared to 6,730 in 2018.
- 703 downloads of scientific data kits from missions.
- 462 exhibition downloads.

"Graines de Reporter scientifiques" and "Carnets de Labos"

These activities invite young people to put themselves in the shoes of a scientific journalist by investigating the challenges of the Ocean and the climate in short videos. "Du bateau au labo" with its kits of scientific data collected during the missions, as well as "Carnets de labos" encourage a better understanding of scientific instruments, their history and functioning.

Stopovers, a fascinating world tour of sustainable development

This flagship operation takes students on a virtual world tour of sustainable development issues encountered by the crew. It has met with increasing success: 12,600 students in 2019 compared to 6,700 in 2018. This very positive development is due to a new support system for intermediary mediators who themselves lead communities of teachers.

In France and around the world, all of our resources have benefited more than 37,000 students, twice as many as in 2018. This boom is due to the deployment of the operation "Graines de reporters scientifiques - Océan et climat" at the national level, with 115 classes mobilized, including 30 French high schools abroad (compared to 68 in 2018).

Accompanying and training teachers

Throughout the year, our education team trained 658 teachers to use the Tara Ocean Foundation's resources during institutional days in mainland France, and during distance workshops or online interventions in training courses.

“Plastique à la loupe”: students and researchers become real partners

In December 2019 began a pilot phase for a new participatory science project: «Plastique à la loupe». After a successful but modest introduction during the test phase, this participatory field research project will eventually involve 68 classes, nearly 2,000 students.

Middle and high school students are encouraged to participate in the collection of microplastics found on beaches and river banks. Following a specific protocol provided by the researchers (and inspired by the OSPAR protocol), the students then analyze their collection of microplastics in class and transmit the data to the researchers. This approach allows young people to take part very concretely in research and participate in creating a corpus of data which will be transmitted to European representatives and ultimately help them in decision-making. Involved in a real collaboration, students and researchers communicate by videoconference throughout the project.



© Elodie Bernolin / Tara Ocean Foundation

From school to schooner: inspiring dreams and raising awareness

During the stopovers in 2019, 2,200 students were invited aboard to visit the boat and meet sailors and scientists. *"Visiting Tara is a unique sensory experience that leaves children with strong memories. While on board, young people hear about interesting jobs and life stories which can motivate and inspire them to project themselves into the future"*, explains Xavier Bougeard, in charge of educational outreach for the Foundation.

Juniors aboard! Max and Lea embark on Tara

The 2019 Microplastics Mission was the occasion to welcome aboard 10-year-old Max, winner of a raffle celebrating the Tara Pacific expedition's return to Lorient. He was introduced to life aboard the schooner on a voyage between Marseille and Barcelona

in September. Despite a very hectic crossing, Max learned how to sort microplastics using tweezers (thanks to Mélanie), helped Carole in the kitchen, and visited the engine room with Loïc. The young Léa also came aboard the schooner during the stopover in Marseille. She was the winner of the Mickey's Journal design contest "Draw a flag for Tara and write a slogan to fight against plastic pollution". Léa proudly hoisted her flag atop Tara's mast, met sailors and scientists who gave her a tour of the boat and explained about microplastics. Raising awareness about the fragility of the Ocean while bringing a human and scientific adventure to life is a major goal of the Tara Ocean Foundation.

Highlights of 2019



© Arnaud Bouissou / Tara Ocean Foundation

Advocacy: the Foundation is involved in national debates and international negotiations

Our advocacy work is essential so that scientists can be heard and understood by high-level policy makers, in order for them to take concrete action. The Foundation is constantly building this bridge between research and policy around 3 main themes: plastic pollution, climate and the high seas.

Plastics at sea: the solutions are on land!

Scientists' observations on plastic pollution are indisputable today. Even if the precise consequences on biodiversity and human health remain to be defined, the urgency to act is well established. Reducing single-use plastics, improving collection and recycling, developing eco-design for packaging, replacing problematic materials many solutions are to be found on land!

They must complement each other and involve everybody public and private sectors, and citizens.

This is why the Foundation in 2019 was involved with the french government in 2 major decision-making processes: drafting an Anti-waste Law, and the National Pact on Plastic Packaging. The Foundation made recommendations around 3 main objectives:

- better inform the consumer,
- reduce single-use and unnecessary plastics,
- improve systems of collection and recycling.

Draft law against food waste and promoting a circular economy

Within the framework of the debates, the Tara Ocean Foundation acted on several levels by bringing together scientists, making strong legislative proposals, and associating with other NGOs. Specific actions:

- We drafted a position paper, co-signed by 40 scientific partners (notably the CNRS, Ifremer and Sorbonne University) supporting implementation of a deposit for recycled plastic bottles.
- We co-wrote and submitted a book of amendments along with several NGOs (WWF France, Zero waste France, Surfrider Foundation Europe) calling for the reduction of single-use plastics, development of reuse and reparability.



© Tara Ocean Foundation

• Drafting and submitting to the National Assembly 2 amendments that aim to:

1. Regulate the use of the terms “recyclable”, “recycled”, “compostable” and “biodegradable”,
2. Prohibit environmental claims that mislead the consumer such as “respect the environment”.

New types of plastic put on the market have multiplied in recent years. Consumers today have reason to feel lost, not knowing whether or not these plastics will actually be collected and recycled. In order that sorting be carried out more efficiently, and that processing channels for these materials be better developed, it is essential to inform and guide the consumer.



© Samuel Bollendorff

The National Pact on Plastic Packaging

In February 2019, the Tara Ocean Foundation joined the National Pact on Plastic Packaging along with the Ministry of Ecological Transition, various participants from the private sector, WWF France and the Ellen MacArthur Foundation.

Tara is contributing strong ambitions:

- in priority, reduction and elimination of unnecessary and problematic packaging,
- reduction of the number of resins used, and elimination of toxic additives and sorting disruptors for better recyclability of packaging,
- use of alternative materials and development of eco-designed packaging when packaging cannot be avoided.

Throughout the year, in working groups with various companies, the Foundation provided scientific expertise on the impacts of plastics on the marine ecosystem, linking this with the challenges of a circular economy for businesses.



© Romy Heringer / Tara Ocean Foundation

Tara in Tunis: building joint advocacy with countries in the Mediterranean basin

Five years after its passage in Bizerte during the Tara Mediterranean expedition in 2014, the schooner again made a stopover in Tunisia during the 2019 Microplastics Mission. This was the opportunity for the Foundation to discuss with environmental associations, municipalities, scientific institutes and national agencies the obstacles to stopping plastic pollution in the local context.

This stopover was co-organized with the association Beyond Plastic Med (BeMed), founded by the Prince Albert II of Monaco Foundation, the Tara Ocean Foundation, Surfrider Foundation Europe, the MAVA Foundation and the International Union for the Conservation of Nature (IUCN). BeMed has set the objective

of developing and coordinating a network of local actors in the Mediterranean basin committed to fighting plastic pollution and promoting the sharing of experience and knowledge. The BeMed network now extends to 15 different countries around the Mediterranean and supports 54 projects organized by civil society. The Tara Ocean Foundation favours a strict geographical approach, with the emergence of solutions to problems specific to the Mediterranean, and a fair vision of North-South relations.

For further information: www.beyondplasticmed.org

Climate change: putting the Ocean at the center of negotiations

More than ever the Foundation has been involved in raising awareness and challenging decision-makers about the impact of climate change on almost all forms of life in the Ocean. The publication of the first IPCC report devoted to the Ocean in September 2019 and the COP25 in Madrid in December were 2 key moments during which the Tara Ocean Foundation was strongly mobilized, organizing side events, presenting documents of recommendations for decision-makers, and participating in coalitions of political groups and associations.

Our 2 main objectives:

- promote understanding and recognition of the importance of the ocean-climate-biodiversity link,
- encourage nations to take more coordinated, rapid and ambitious climate actions.

Along with HSH Prince Albert II of Monaco, NGOs and scientists, the Foundation contributed to the dissemination of the IPCC report. For this occasion, *Tara* was in Monaco and high-level meetings organized aboard the schooner demonstrated the importance of international scientific cooperation.

During the COP25 in December, the Foundation wrote and disseminated 2 popular scientific documents during the events bringing together scientific experts and international policy makers, in particular:

- a series of recommendations describing and analyzing the impact of climate change on plankton, the "unknown majority" of the Ocean. This document is all the more important since marine microorganisms are very poorly known, and almost totally ignored by climate negotiators. This document is based on the robust expertise of Tara Ocean scientists and the recent publication of new results in the scientific journal, *Cell*.
- a joint report written by the members of the Because the Ocean initiative, launched by the Tara Ocean Foundation, the Prince Albert II of Monaco Foundation and IDDRI in 2015. This initiative, which today brings together 39 signatory nations, aims to convince heads of state, ministers and delegations to include more ambitious measures on the Ocean in their climate commitments and in particular in 2020 at COP26. For example: favoring carbon sequestration in coastal areas; developing marine renewable energies; reinforcing adaptation solutions based on nature.

For further information: becausetheocean.org



© Tara Ocean Foundation

Governance of the high seas: for knowledge and preservation of biodiversity

The future international treaty for conservation and sustainable use of biodiversity on the high seas

Thanks to our status as a special observer at the United Nations, the Foundation is at the heart of negotiations in New York to create the very first treaty that would protect and manage biological resources in the high seas, that is, two-thirds of the Ocean! This treaty represents colossal scientific, economic and environmental preservation issues for the international community.

The Tara Ocean Foundation's major positions:

- support basic research to better understand marine ecosystems, very little known in the high seas
- establish international regulations for the commercial use of marine genetic resources
- create a system for funding research and technology transfer in developing countries in order to ensure equitable access and joint governance of resources in the high seas.

In January, a high-level workshop was organized in Boston with partners such as Harvard University, the International Union for Conservation of Nature (IUCN), Tara Oceans researchers, and negotiators from several countries. Held at Harvard University, this workshop aimed to improve cooperation between the scientific community and decision-makers.

The "Plankton, Climate and Development" project in partnership with the FFEM

This project, organized by the Foundation and supported by the French Facility for Global Environment (FFEM) contributes to strengthening scientific expertise in developing countries by training young researchers oceanographers, geneticists, mathematicians from Brazil, Argentina, Togo, Chile and Senegal within the Tara Oceans research program.

Their work contributes to the development of more precise scientific models to better observe marine biodiversity and predict its evolution which will have an impact on the management of natural resources in many countries.

Since the start of the project, the young researchers have published individually and collectively a dozen scientific articles in recognized journals: a real success for them and their coordinators!

This research work also provides innovative scientific insights during negotiations about the high seas, and produces recommendation documents like the one presented in August 2019 in New York.

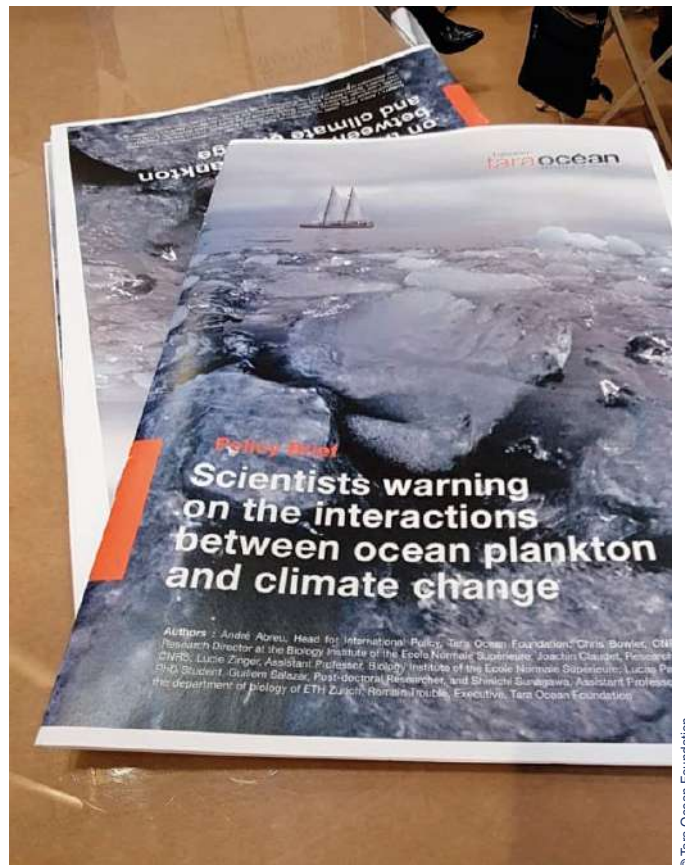
In 2019, researcher Baye Cheikh Mbaye, a modeler originally from Senegal, joined the cooperation project. His mission in the project: to put his expertise at the service of the Tara Oceans data in order to understand and predict the distribution of fish stocks on a global scale. Understanding the variability of plankton and its impact on fish stocks will be of particular interest to policy makers.

March 9 - 17: first trip to West Africa for the Tara Ocean Foundation and organization of a scientific seminar in Dakar at the École supérieure polytechnique.

December 7: alongside the FFEM, organization of the conference "Ocean-based solutions for climate action" at the COP25 in Madrid.



Baye Cheikh Mbaye © Tara Ocean Foundation



© Tara Ocean Foundation



© Patrick Gentier / Tara Ocean Foundation

Highlights of 2019

Tara Ocean Foundation's Communication in 2019

2019 was marked by many communication highlights, starting with the establishment of a new graphic identity and a new name for the Foundation. The 2019 Microplastics Mission, which lasted more than 6 months, benefited from very wide media coverage. Based on Tara Oceans data, important scientific results on plankton biodiversity were published as cover articles in the prestigious scientific journal Cell, in April and November.



Positioning and new identity: a more statutory image for the Foundation

After a period of reflection (begun in 2018) concerning the Foundation's status, in collaboration with our partner the SoixanteSeize agency, the Tara Expeditions Foundation became the Tara Ocean Foundation in May 2019. Our main objective: to gain clarity and update our image in order to strengthen the reputation of the Foundation and enhance our global project. The new name and redesign of our logo introduced the word «Ocean» fundamental to convey the discoveries and expertise gained over the years in the marine environment. Notions of credibility, legitimacy and expertise guided our reflections. The design of this new identity also highlights our 2 fundamental missions: **exploring and sharing**.

Makeover: the website and Tara's entire digital landscape

With a new logo, simpler and more streamlined graphics (fonts, colors, etc.) and a new URL fondationtaraocéan.org, all our platforms (online store, donations) and social networks (Facebook, Twitter, Instagram, LinkedIn and YouTube) convey a coherent image in line with the evolution of the Foundation.

Erik Orsenna, a new voice for the Tara Ocean Foundation



© Elodie Bernolin / Tara Ocean Foundation

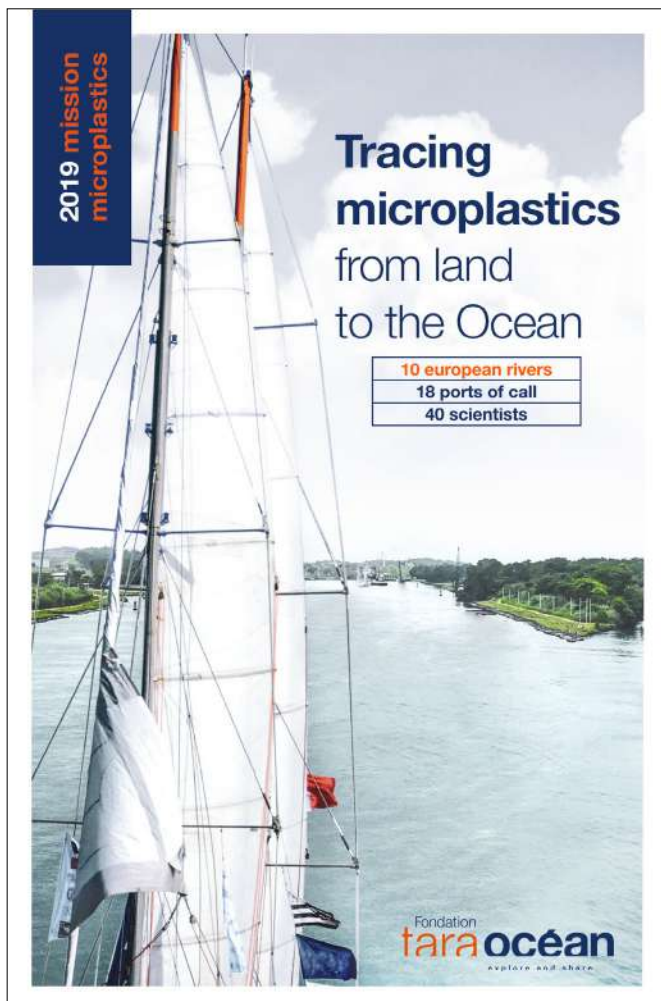
Erik Orsenna, nouvel ambassadeur de la Fondation à Saint Malo - juin 2019

In 2019, this land/sea link enthusiast joined the Tara adventure just as the Microplastics Mission was setting sail. Erik Orsenna writer, member of the French Academy and president of the Initiative for the Future of the Great Rivers became one of the

Foundation's sponsors, offering his contribution and especially his voice to carry the Foundation's messages. He recounts his meeting with Tara:

"My link with Tara is the link with the planet. I started following Tara with passion, first of all because she's a legendary boat. I like legends. And one day, I learned that the boat was leaving for the Arctic to follow the line of the great explorations of the past...to continue exploring. I said to myself: Tara is a living encyclopedia, an encyclopedia in motion. I only like to learn while moving, alongside sailors. My passion has always been salt water, but also fresh water and rivers. As a specialist in rivers, I have the strong conviction that the Ocean's health depends on the health of rivers. And the health of rivers depends on the care taken by the people who live close by, in the heart of the watersheds, and what they throw into the rivers. In other words, the respect people have, which we all have, for rivers. Tara tries to understand the mechanisms of the planet. Pasteur had the same ambitions 150 years ago, to understand the mechanisms of life. You have to understand to heal. To better heal, you have to transmit knowledge. The Tara Ocean Foundation does the same thing, from the infinitely large to the infinitely small".

The 2019 Microplastics Mission campaign



From the launch of the mission to its return 6 months later, via each stopover and each European river, the Foundation mobilized all the media to question the riverine origins of plastic pollution, describe research issues, and promote the solutions recommended by the Foundation: plastics at sea, the solutions are on land.

Media strategy

Speak out in favour of the fight against plastic pollution

In 2019, for the first time the Tara Ocean Foundation took position in the legislative debate. During the Microplastics Mission, on the occasion of World Ocean Day (June 8, 2019), the Foundation launched a first call to support research against plastic pollution under the slogan « Plastic at sea: solutions are on land! » co-signed by Jean-François Ghiglione, CNRS, ecotoxicologist (Banyuls Oceanography Laboratory), and Romain Troublé, executive director of the Tara Ocean Foundation.

In September, a second statement, signed by 40 scientists, called for implementing a deposit system for plastic bottles. At the heart of the debate animating the draft law against food waste and for the circular economy, this position was very well received by the press. It has enabled the Foundation to take a real step forward in promoting, via the media, a dialogue between scientists and the public.

Focusing on the national and regional press

During the 2019 Microplastics Mission, the interest of European media was certainly felt, but specific campaigns were carried out with the national and regional press. At each stopover, press meetings took place; special voyages for the media were organized at the launch and on the return from the mission, bringing together about 30 national media generalist and specialized. During each stopover, our message was transmitted in accordance with regional issues, often echoing actions with our partners. 21 press releases and 2 press kits gave rise to more than 15 press conferences on board.

Media coverage of the missions: some key numbers

- **TV:** participation in Prime on France 2 for L'Émission pour la Terre, live on October 15 (6.5 million viewers).
- **16 TV reports**, including 2 large format reports on L'Info du Vrai, presented by Yves Calvi on Canal + and CNews rebroadcast on November 23, TF1, France 2 (JT, Télématin), France 3, Arte, RTBF...
- **Print: 129 articles** including Le Figaro, AFP, Les Echos, Ouest France, Elle, etc. but also articles and covers in the youth press like Le Journal de Mickey, Mon Quotidien, 1 jour 1 actu, and Sciences et Vie Junior.
- **Radio:** (audience statistics not available) Radio France newspapers (France Inter, France Bleu, etc.), France Inter with the large format program Interception on September 22, produced by Sophie Bécherel (3.22 million listeners) and Du vent dans les synapses on September 9, Europe 1, RTL, RCF...
- **Digital press: 924 articles** including Le Figaro, Le Monde, FranceTV Info, Ouest France, Le Parisien and El País, La Vanguardia, and a video report on Brut Nature (65 K views) and BFM TV.

Long formats in 2019



[TV] France 2 - 1:15 pm on Saturday “Docteur Plastics”,

30-minute documentary, presented by Laurent Delahousse, broadcast on December 7, 2019, directed by Emmanuelle Chartoire, Matthieu Mondoulet, David Geoffrion and Fanny Martino.

Emmanuelle Chartoire followed *Tara* in the Rhône estuary. Aboard the schooner, sailors and research teams coordinated by the CNRS collect microplastics, trying to understanding the behavior of these pollutants and their impacts on biodiversity. These plastic microparticles are real evidence that can help scientists understand their origins and where to take action. Back on land, the investigation continues at the Banyuls-sur-Mer Oceanological Observatory with Jean-François Ghiglione, CNRS, scientific director of the 2019 Microplastics Mission.

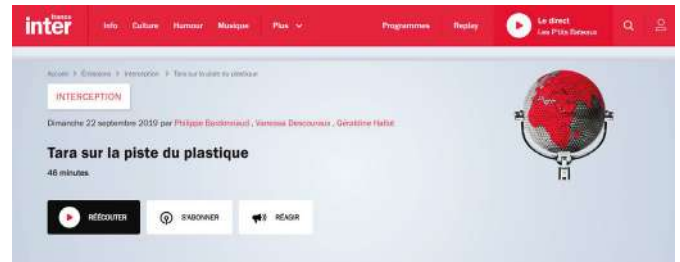


[TV] Canal + L'info du Vrai - “The Plastic Sea”,

26 min report, presented by Yves Calvi, broadcast in November 2019, produced by François-Xavier Rigot.

Aboard *Tara* in the Mediterranean Sea, the Microplastics Mission continues and focuses on the pollution carried by the Tiber, the Italian river which flows into the sea, south of Rome. Aboard the schooner, Jean François Ghiglione, CNRS, and the entire team take samples and associated data to discover the origin of the plastics that pollute this closed sea, the most polluted on the planet.

youtu.be/6mshvC3AxA4



[Radio] France Inter - “Tara Tracking Plastics”, Emission Interceptions,

46-minute report, directed by Sophie Bécherel and presented by Philippe Bardonnaud, Vanessa Descouraux and Géraldine Hallot, broadcast on September 22, 2019.

80% of the plastic waste found at sea comes from the land, and much of it passes through rivers. If we want to clean up the Ocean, we have to stop this source of pollution! Where exactly do these plastics come from? In what form do they arrive in the sea? What is their impact on aquatic flora and fauna? Is the entire food chain contaminated? These are the questions scientists are asking aboard the schooner *Tara*. Sophie Becherel and Fabien Gosset were able to come on board and witness this scientific investigation.



[TV] France 2 - Prime Time - The Earth Show

presented by Nagui and Anne-Elisabeth Lemoine, broadcast October 15, 2019.

This program attracted a very wide audience in the early evening. FranceTV presented an exceptional show describing 10 actions "good for the planet". The Tara Ocean Foundation was represented by marine biologist Leila Meistertzheim on the question of plastics at sea. Action N° 3, Replacing disposable plastic bottles and cups with re-usable water bottles was illustrated with expertise about plastic dispersion, the flow of plastic from rivers to sea, and the fragmentation of plastic observed during the 2019 Microplastics Mission. “To stop plastic pollution at sea, the solutions are on land” was the key message. The show counted an average of 2.3 million viewers during the evening, or 12.3% of the share of audience. The total number of viewers was 6.5 million throughout the evening, with higher attendance in the early evening (starting at 9:05 pm), benefiting the visibility of the Foundation during Leila’s presentation at 9:30 pm.



Media exposure twice as high as in 2018

In 2019, the Foundation obtained excellent media coverage, recording 3,487 spin-offs over a 12-month period—more than double the number compared to 2018. Major articles represent 83% of these. The Foundation and its projects were in-the-news considerably more than in 2018.

Tara news was well distributed over the whole year, but certain peaks were observed, in particular when the schooner returned to Lorient at the end of 2019; when the scientific paper «The Arctic Ocean, cradle of viral biodiversity» was published; and throughout the 2019 Microplastics Mission. The regional press dominated Tara's visibility with 41% of the total impact, thus contributing to our goal of strengthening the Foundation's reputation on the national territory.

In line with the evolution of press trends in general, the web dominates, with 89% of the overall corpus. This brings to the Foundation a considerable web audience—almost 7 billion potential contacts. The spin-off in the written press has decreased slightly, but still remains significant with about 252 million potential contacts. Finally, we achieved a higher approval rating, with a 20-point increase that widely reflects agreement with the Foundation's mission and its increasingly educational way of addressing the general public.

Our press releases in 2019

[SCIENCE]

- This half-animal/half-plant plankton: new champion of photosynthesis, 11/02/2019
- The Arctic Ocean, cradle of viral biodiversity, 25/04/2019
- The IPCC adopts the Special Report on the Ocean, the Cryosphere and the Climate, 25/09/2019
- Variations in plankton biodiversity and its activity from the equator to the poles, 14/11/2019

[MISSION 2019]

#Launch

- 2019 Microplastics Mission: the Origins of Plastic Pollution, 16/05/2019, Each stopover in France and Europe gave rise to a press release, adapted to the regional context and/or our partner during the stopover. Some examples:
- The research schooner *Tara* arrives in Hamburg on June 17th, 12/06/2019
- From 25 to 30 August 2019, the schooner *Tara* will stopover in Toulon, 20/08/2019
- *Tara*, the research schooner stops over in Marseille from September 27 to October 2, 16/09/2019
- Descubre el velero científico *Tara* y su nueva misión en microplásticos el próximo 4 de octubre en el Puerto de Barcelona, 01/10/2019

#Return

- Omnipresence of microplastics in European rivers: the challenges updated, 23/11/2019

[FORUMS & INFLUENCE]

- Forum: Plastics at sea, the solutions are on land! 06/07/2019
- Forum: Scientists sign in favor of the deposit system for plastic bottles, 09/19/2019
- 84% of millennials favor the implementation of a deposit system, 12/09/2019

[OCEAN CULTURE]

- "Once upon a Try": discover the Tara Foundation's new digital exhibitions, 06/03/2019
- Planktos, a digital comic strip. Dive into the world of the infinitely small!

Digital communication

This year's front-page topic was the 2019 Microplastics Mission that mobilized our community on both the fondationtaraocean.org website and our social networks. From May to the end of November, we focused on two major axes that illustrate the Foundation's dual mission: 1) **sharing scientific observations and methods** to trace back the origins of plastic pollution, and 2) raising public awareness through science popularization, pointing out the complexity of this pollution and highlighting solutions present on land. As *Tara* was sailing up Europe's main rivers, we produced **digital campaigns** based on videos, articles, interviews and photo reports that enabled us to disseminate the first results acquired during this mission, while promoting the Foundation's actions. Social media continued to be very good vectors for our mobilization messages designed to encourage the general public to reduce plastic pollution.

Social networks also helped enhance event dimension: booking of visits aboard the schooner, exhibition on the 2019 Microplastics Mission and meeting with *Tara's* sailors and scientists during 18 stopovers. Meeting with the general public enabled us to **increase our community** on social networks. The publication of 3 newsletters dedicated to teachers led to a 20% growth in subscribers. Subscriptions to our general newsletter also increased by 12%.

In order to expand our visibility in France, we adopted a **strategy promoting French content** on our website. As a result, French-speaking audience represented 57% in 2019.

The Foundation's website recorded a growth of more than 80% in page views compared with 2018, despite a decrease in the number of visitors this year, with peaks when TV formats were broadcast (13h15, le dimanche on France 2 in October) and upon *Tara's* return from the 2019 Microplastics Mission on November 23. This event was widely covered by the press and digital media (in particular Brut Nature, that addresses a wide audience).

In 2019, **LinkedIn** remained the Tara Ocean Foundation's main social network in terms of growth (+79%), thus further asserting our credibility with many partners. **Facebook**, however, remained our largest community with more than 88,000 fans, followed


by Twitter, Instagram and YouTube - two social networks that allow us to educate young people through popularized content using photos and videos that open up dialog (Instagram stories, quizzes and surveys).

The Foundation thus maintained its position as a key player in oceanography, developing content based on Tara's scientific expeditions and raising awareness about Ocean issues, including climate, biodiversity and plastic pollution.

Audience newsletter

	2016	2017	2018	2019
Newsletter FR:	20 600	21 013	22 633	25 371 (+ 12 %)
Newsletter EN:	1900	2062	3 306	3 525 (+ 7 %)
Newsletter Educ:	3383	4580	5 993	7 204 (+ 20 %)

Social media

	2016	2017	2018	2019	Growth
	80 044	83 794	86 684	88 592	+ 2 %
	7 489	9193	10 947	12 887	+ 18 %
	4200	6002	9 970	13 553	+ 36 %
	N/A	1545	3 194	5 716	+ 79 %
	1108	1601	2 185	2 990	+ 36 %

Tara Ocean Foundation's newsletter

2019 **Microplastics mission**

Tara is back in the Mediterranean Sea
to track pollution from rivers

Policy

The G20 urges major Asian countries
to take action against plastic at sea

High Seas

Nations are still far from
an agreement at the UN





The Tara Ocean Foundation is an independent organization, operating thanks to the support of its partners and donors. In 2019, the Tara Ocean Foundation received the support of loyal partners and donors, such as the agnès b endowment fund, the Prince Albert II of Monaco Foundation, the Veolia Foundation and Léa Nature.

New partners also joined the Foundation this year, including:



BIC: Aware of the urgent need to reduce plastic pollution in the Ocean, BIC wants to help scientists understand better this type of pollution to fight and limit it. BIC's lighter division supports the Tara Ocean Foundation whose research schooner sails across the oceans, with renowned scientists from around the world on board. Their purpose is to understand and address environmental issues, such as the degradation dynamics of plastic waste at sea. Société BIC S.A. also supported the Tara Ocean Foundation's environmental education programs for young people.



CNR: 1st French producer of electricity from renewable sources of energy (water, wind, sun) and multipurpose dealer, the Compagnie Nationale du Rhône equips the Rhone River with hydroelectric facilities and dams. It also has wind and solar power farms and is in charge of managing all uses of the renewable-sourced electricity produced. Although water quality is not directly part of its missions, CNR is aware of the importance of this topic for the departments crossed by or bordering the Rhone River, as well as at global level. As a consequence, the company decided to support the Foundation, thus contributing to the fight against microplastic pollution.



Vitamont: A French organic fruit and vegetable juice specialist since 1985, Vitامت has a long-standing commitment to preserving the planet. The Tara Ocean Foundation's research mission on microplastics echoed the company's desire to better understand how to reduce human impact on ecosystems.

Fondation taraocéan
explore and share

MAJOR PARTNER
agnès b.

GREAT PARTNERS
Fondation **VEOLIA** PRINCE ALBERT II OF MONACO FOUNDATION
BIC

MISSION PARTNERS
CNR L'OREAL
BIOHERM **ALTRAN**

SOLIDARITY PARTNER
BILLERUDKORSNÄS

CLUB PARTNERS	MEDIAS PARTNERS	MAJOR SCIENTIFIC PARTNERS
INSTITUTIONAL SUPPORTS	EDUCATION PARTNERS	OFFICIAL SUPPLIERS
LICENSED SUPPLIERS		
<p>DATA OBSERVER - INTERNATIONAL PERIFUTE - GROUPE DYSALTER - OSLU - HELLA - COUSIN PRESTEC - BERTIN TECHNOLOGIES - LES IPIVRES DE SANAGIERE</p>		
ASSOCIATIONS		
<p>MEMO - OREA - VISION BLEUE - AMATEURS DE FRANCE</p>		

Fondationtaraocean.org



Our donors and partners express their support

« It is a great privilege to be a partner of the Tara Ocean Foundation. For a brand like Biotherm, where water is truly at the heart of our products, Tara's mission to study the impact of climate change on the Ocean closely echoes our commitments. Since the beginning of our relationship in 2017, Tara has been an incredible partner and resource for us. The Foundation's research helps us improve the biodegradability of our products and reduce our impact on the Ocean, while encouraging our international Water Lovers community to raise public awareness of environmental issues. Tara pushes us to go further. Beyond the scientific expertise of the Tara team, our collaboration is a daily pleasure. We share our passion and commitment to the Ocean with the Foundation's entire team and are happy to continue this collaboration. Thank you, Tara... and see you soon! ».

Giulio Bergamaschi, Global President of Biotherm

« At first, my discovery of the Tara Ocean Foundation was emotional. It happened a few years ago, while I was looking at pictures on the Foundation's website. I was touched by the incredible enchantment that emerged from the timeless look of the schooner drifting among sea ice; fascinated by the breathtaking beauty revealed by plankton and coral; light-headed in front of the endless variety of tiny marine creatures and life forms, all essential to life on Earth; and, of course, distressed by the double tragedy of the ravages caused by human activities on these marine environments. Despite life-threatening emergency, there is too much inertia. Yet, we need to act quickly, educate and alert at all levels. The

Tara Foundation addresses this major challenge. It explores, informs and shares scientific results, creating a true symbiosis between research, action and solidarity. The Foundation also seems to be driven by an extraordinary impetus, maybe thanks to the cultural mixing of all the people involved. I am therefore very proud to support its wonderful projects. Now, I am won over by the creativity and excellence of the scientific research carried out and educational missions to children. There is nothing like Tara's expeditions to engage kids in protecting the seas. For I believe that children enjoy not only the thrill of adventure but also the beauty of the marine world. ».

Madame Amélie Lambert,
a donor of the Tara Ocean Foundation

Appeal to public generosity

Each donation matters and all financial contributions received from our donors, large and small, help finance the Tara Ocean Foundation's missions. In 2019, we continued our appeals. In particular, at the end of the year we carried out a digital fundraising campaign to fight plastic pollution.

We would like to express our warmest thanks to all our donors and partners who supported us in 2019.

To support the Tara Ocean Foundation

www.dons.fondationtaraocean.org



The Foundation's goals

The purpose of the Tara Ocean Foundation is to fund, alone or in partnership, French scientific research on the impact of global warming and worldwide changes (pollution, demography, human activities in general, etc.) on ecosystems; raise public awareness of environmental issues, and disseminate the related scientific data and results for educational purposes.

The Tara Ocean Foundation's means of action:

- Organizing scientific expeditions, particularly with the schooner *Tara*
- Co-producing documentary films and organizing cultural and educational events dedicated to the expeditions organized by the Foundation, related results and/or the issues raised by these expeditions
- Organizing exhibitions, conferences, events, TV and network broadcasts, as well as the publication, reproduction and edition in any form and by any processes, known or unknown, on the expeditions organized by the Foundation, related results and/or issues raised by these expeditions
- Organizing educational programs
- Providing scholarships and financial aid to researchers or research teams working on the impact of global warming and global-scale changes on ecosystems and more generally, supporting any action contributing to the development of the Foundation's goals

Administration and operation

The Tara Ocean Foundation is administered by a board of directors of **9 members**, consisting of **3 colleges**:

- 3 members of the College of Founders, 2 life members: Agnès Troublé, known as agnès b., and Etienne Bourgois, the "Agnès TROUBLÉ known as agnès b." endowment fund represented by a person mandated by the legal entity
- 4 members of the College of Qualified Personalities, composed of persons chosen for their expertise in the Foundation's areas of activity. They are co-opted by other members of the board of directors.
- 2 members representing the College of the Foundation's Friends, designated by "Les Amis de Tara" association. The status of member of the association's board of directors is incompatible with that of the Foundation's board of directors, in any college other than that of "Les Amis de Tara".

A government commissioner, appointed by the Ministry of Interior, attends meetings in an advisory capacity and ensures compliance with the statutes and public utility status of the Tara Ocean Foundation's activities.



Composition of the board of directors

College of Founding Members

Etienne Bourgois, CEO of agnès b., president of the Tara Foundation Ocean.

Agnès Troublé known as agnès b., designer / business executive.

Nathalie Kistler, secretary general at agnès b, mandated by the “Agnès Troublé, dite agnès b.” endowment fund, treasurer of the Tara Ocean Foundation.

College of Qualified Personalities

Eric Karsenti, emeritus research director at the CNRS and associate research director at EMBL.

Gérard Bonhoure, honorary inspector general of the Ministry of National Education.

Françoise Gaill, CNRS research director.

Antoine Ricardou, certified government architect / designer.

College of the Foundation's Friends

Sylvie Duboué, sales director, president of “Les Amis de Tara” association and board member of the Tara Ocean Foundation.

Christian de Marliave, editor.

Government commissioner

Thierry Boisseaux representative of the Ministry for an Ecological and Solidary Transition.

Executive director of the Tara Ocean Foundation

Romain Troublé as executive director of the Tara Ocean Foundation, manages the Foundation and ensures its operation. Under delegation of the president, he has the powers required to carry out his mission. By right, he attends the board of directors and board meetings in an advisory capacity.

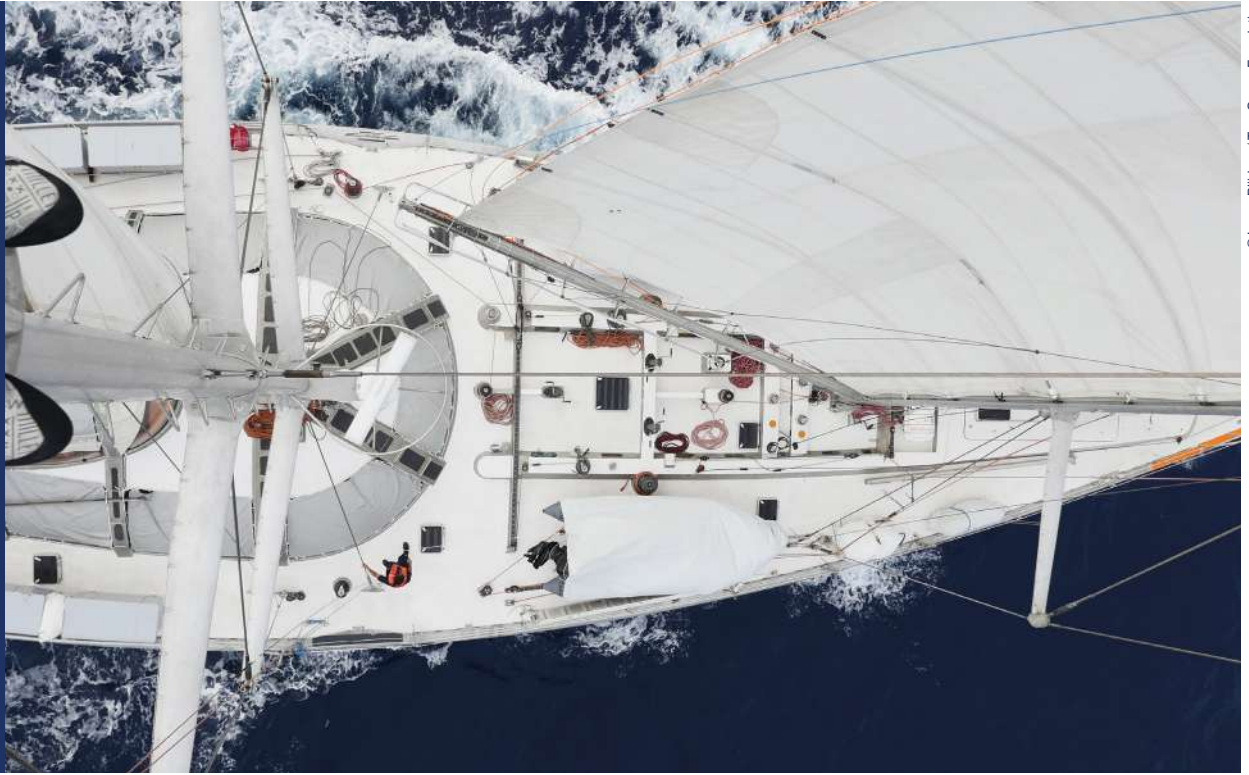
The board of directors settles matters concerning the Foundation through its deliberations.

In particular:

- It decides on the Foundation's agenda,
- It adopts the annual report, presented by the board, concerning the Foundation's moral and financial situation,
- It votes, upon the proposal of the board, the budget and its changes, as well as staffing projections,
- It discusses and approves the accounts for the year ended, presented by the treasurer with supporting documents,
- It adopts, upon the proposal of the board, the Foundation's rules of procedure,
- It accepts and assigns donations and legacies and allows, beside everyday management, acquisitions and disposals of real estate and movable assets, markets, leases and rental agreements, mortgages and loans, securities and guarantees granted on behalf of the Foundation,
- It appoints one or several auditors chosen in the list referred to in article L.822-1 of the French Commercial Code,
- It establishes the conditions of recruitment and staff remuneration,
- It is informed by the president of any draft convention engaging the Foundation and deliberates on agreements falling within the scope of article L.612-5 of the French Commercial Code; in this case, it issues a decision without the presence of the person concerned.

The Tara Ocean Foundation is supported by a scientific committee and an advisory committee entitled Pôle Education (Education division).

our governance



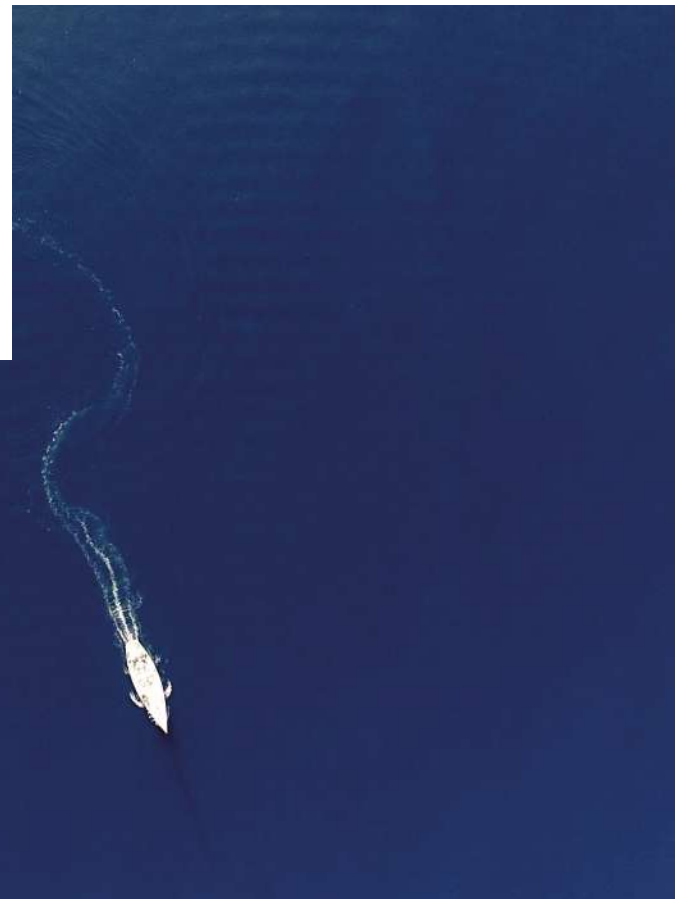
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Scientific committee

- Eric Karsenti**, emeritus research director at the CNRS and associate research director at EMBL
- Françoise Gaill**, CNRS research director
- Gaby Gorsky**, director of the Observatoire Océanologique de Villefrance-sur-Mer / UPMC-CNRS
- Patrick Wincker**, CEA research director and director of the Génoscope-National Sequencing Center
- Colomban de Vargas**, CNRS research director and EPEP team leader at the Roscoff Biological Station
- Chris Bowler**, CNRS research director and director of the “environmental and evolutionary genomics” division (biology institute, École normale supérieure - IBENS, CNRS / ENS) since 2010
- Serge Planes**, CNRS research director at the Centre de recherche insulaire et observatoire de l’environnement (CRIOBE - CNRS/EPHE/UPVD)

Advisory committee - Education division

- Gérard Bonhoure**, honorary inspector general of Ministry of National Education
- Florence Clément**, ADEME
- Sabine Lavorel**, French institute of education
- Françoise Ribola**, Academy of Versailles



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The Tara Ocean Foundation's annual accounts presented below were validated by the accounting firm KPMG S.A.

Accounting rules and methods

General accounting conventions have been applied, in conformity with the principle of prudence and in accordance with the following basic assumptions:

- business continuity,
- consistent accounting methods from one financial year to the next,
- independence of financial years, in accordance with general rules for the preparation and presentation of annual financial statements.

The Foundation closed its consolidated accounts in accordance with the ANC 2014-03 regulation and its adaptations to associations and foundations, as required by the regulations No. 99-01 and CRC 2009-01 on accounting rules applicable to foundations.

The basic method used for evaluating accounting items is the historical cost method.

Intangible and tangible assets

Tangible assets are valued at their acquisition or production cost, including all costs necessary to make these assets operational, after deducting trade and cash discounts and rebates.

Depreciation is calculated using the straight-line or declining balance basis, depending on the expected useful life of the assets:

- **Website:** 3 years on a straight-line basis
- **Audiovisual co-productions:** 3 years on a straight-line basis
- **Floating equipment:** 3-10 years on a straight-line basis
- **Scientific floating equipment:** 3-5 years on a straight-line basis
- **Installations and fittings:** 10 years on a straight-line basis
- **Transport equipment:** 3 years on a straight-line basis
- **Office equipment and hardware:** 3 years on a straight-line basis

- **Video & photo material:** 3 years on a straight-line basis

- **Furniture:** 3-7 years on a straight-line basis

For information, following an expert report, the schooner *Tara* was amortized over 100 years, and the rigging over 30 years.

Following the devolution of fixed assets of Tara's endowment fund to the Tara Ocean Foundation, intangible and tangible assets were depreciated over their remaining useful life.

Financial assets and investment securities

The gross value is composed of the assets' acquisition cost, excluding incidental expenses. When inventory value is lower than gross value, depreciation is recorded of the amount of the difference.

Inventories

Inventories are valued using the "first in, first out" method. Gross value of goods and supplies includes the purchase price and incidental expenses.

Manufactured products are valued at their production cost, including consumption, direct and indirect production expenses, and depreciation of assets contributing to the production.

Cost of the sub-activity is excluded from the stock value. Interest is always excluded from stock valuation. Where appropriate, inventories are depreciated to reflect their net realizable value at the reporting date.

Receivables and payables

Receivables and payables are measured at their nominal value. Depreciation is recorded when inventory value is lower than book value.

OTHER SIGNIFICANT FACTORS - COVID-19

The health crisis linked to Covid-19 and promulgation of the state of health emergency by Act No. 2020-290 of March 23, 2020 took place after December 31, 2019 and did not give rise to an adjustment of the annual accounts, closed on December 31, 2019. Therefore, the assets, liabilities, income and expenses referred to in the balance sheet and the profit and loss account, respectively, on December 31, 2019 are recognized and measured without regard to this event and its consequences.

In accordance with the provisions of PCG1 on the information to be included in Annex, the Foundation notes that this health crisis has had a significant impact on its activity since January 1, 2020, without, however, challenging continuance as a going concern.

Given the continually evolving situation, it is difficult to estimate the financial impacts yet. Based on the financial statements from July 1, 2020, the Foundation is not able to quantify, at this stage, the impact of the health crisis on its assets, financial position and results.

However, a business continuity plan was implemented using the following measures:

- introduction of a cost-reduction program to secure income and cash flow,
- transition to part-time work for part of the staff.

Given these measures and the current situation, the Foundation considers that continued operation is not in question.



assets	Period ended 31/12/2019 (12 months)			Period ended 31/12/2018 (12 months)	Variation
	Gross	Amort.prov.	Net	Net	
Intangible assets					
Set-up costs					
Research and development costs					
Concessions, patents, similar rights	204 822	162 587	42 235	69 556	- 27 321
Commercial funds					
Other intangible assets					
Intangible assets in progress					
Advance payment on intangible assets					
Tangible assets					
Lands					
Buildings					
Industrial facilities, machinery and equipment	2 780 210	443 673	2 336 537	2 128 561	207 976
Other tangible assets					
Encumbered assets	190 065	105 487	84 578	91 169	- 6 591
Tangible assets in progress					
Advance payment on tangible assets					
Financial assets					
Interests					
Receivables from equity interests					
Portfolio securities					
Other equity securities					
Loans					
Other financial assets	25 400		25 400		25 400
total (I)	3 200 497	711 747	2 488 750	2 289 287	199 463
Inventories in progress					
Raw materials, supplies	41 042		41 042	38 818	2 224
Production of goods and services in progress					
Semi-finished and finished products					
Goods	14 757	3 262	11 495	21 740	- 10 245
Advance payments on orders	34 815		34 815	193	34 815
Trade and other receivables	99 526		99 526	6 737	92 789
Other receivables					
• Due from suppliers	1 730		1 730		1 730
• Staff	1 251		1 251		1 251
• Social organizations	6 220		6 220		6 220
• State, corporate tax					
• State, turnover taxes	1 237		1 237	4 751	- 3 514
• Other	1 059 020		1 059 020	1 005 885	53 135
Investment securities	700 000		700 000		700 000
Treasury instruments					
Liquid assets	906 805		906 805	467 923	438 882
Prepaid expenses	81 355		81 355	254 778	- 173 423
total (II)	2 947 758	3 262	2 947 758	1 800 826	1 143 670
Deferred expenses over several financial years (III)					
Loan repayment premiums (IV)					
Conversion losses (V)					
total assets	6 148 255	715 009	5 433 246	4 090 113	1 343 133

liabilities

	Period ended 31/12/2019 (12 months)	Period ended 31/12/2018 (12 months)	Variation
Fonds associatifs et réserves			
Equity			
. Associative funds without right of repossession	1 991 246	1 991 246	
. Revaluation surplus			
. Reserves			
. Carry forward	170 317	175 532	-5 215
. Income of the financial year	313 392	-5 215	318 607
Other associative funds			
. Associative funds with repossession rights			
. Contributions			
. Legacies and donations			
. Income under control of third-party funders			
. Revaluation surplus			
. Investment grants on non-recurrent assets	237 040	167 423	69 617
. Regulated provisions			
. Rights of owners (commodate)			
total (I)	2 711 996	2 328 987	383 009
Provisions for risks and charges			
total (II)			
Dedicated funds			
. On operating grants			
. On other resources	311 624	790 439	- 478 815
total (III)	311 624	790 439	- 478 815
Debts			
Loans and similar debts	37 500	87 500	- 50 000
Advance payments received on pending orders	114 555	116 557	- 2 002
Suppliers and related accounts			
Other	229 072	305 339	- 76 267
Treasury instruments			
Deferred income	2 028 499	461 291	1 567 208
total (IV)	2 409 626	970 687	1 438 939
Conversion gains (V)			
total liabilities	5 433 246	4 090 113	1 343 133



Balance sheet analysis

Assets

The Foundation has total net assets of €5,433,246. Key lines are as follows:

- **Intangible assets**, €42,235 net, including the website, Tara Expeditions brand and 5 documentaries co-produced by the Foundation.
- **Tangible assets**, for a net amount of €2,421,115, consisting in particular of the schooner *Tara* for €1,665,644, its annual maintenance and repair work for €648,827, scientific material for €22,067 and exhibition containers for €53,575. Obsolete or ceded tangible assets were taken out of the assets and amounted to €12,271.
- **Other financial assets**, a security deposit of €24,500 was paid for the premises located rue de Prague, the balance of €900 is related to a house rented for the crew during the maintenance work at the beginning of 2020.
- **Inventory**, for an amount of €41,042, corresponds to the schooner's spare parts, fuel and stock of by-products.
- **Advance payments on orders**, consist mainly in a 50% deposit on the planned replacement of sails for €33,835.
- **Grants receivable** in the amount of €1,059,020 are the funds that are subject to a convention and will be paid out in the coming years by our partners (AFB for €35,000, BiC for €190,000, Nouvelle-Aquitaine region for €90,000, PACA region for €25,000, L'Oréal for €150,000, Veolia Foundation for €120,000, CNR 2020-2021 for €404,000, Vitamont 2020-2021 for €25,000 and other agreements for a total amount of €20,020).
- **Other investment securities**, as part of the Philgood donation for an amount of €1,000,000. The amount corresponding to the donation share to be charged for the years 2020 to 2022 was placed on a revolving account with a rate of 0,10%.
- **Available funds**, €906,805, including bank account balances at Neuflyze OBC and cash registers.
- **Prepaid expenses**, €81,355 including €66,667 corresponding to contracts concluded with laboratories to fund postdoctoral positions as part of the FFEM project.

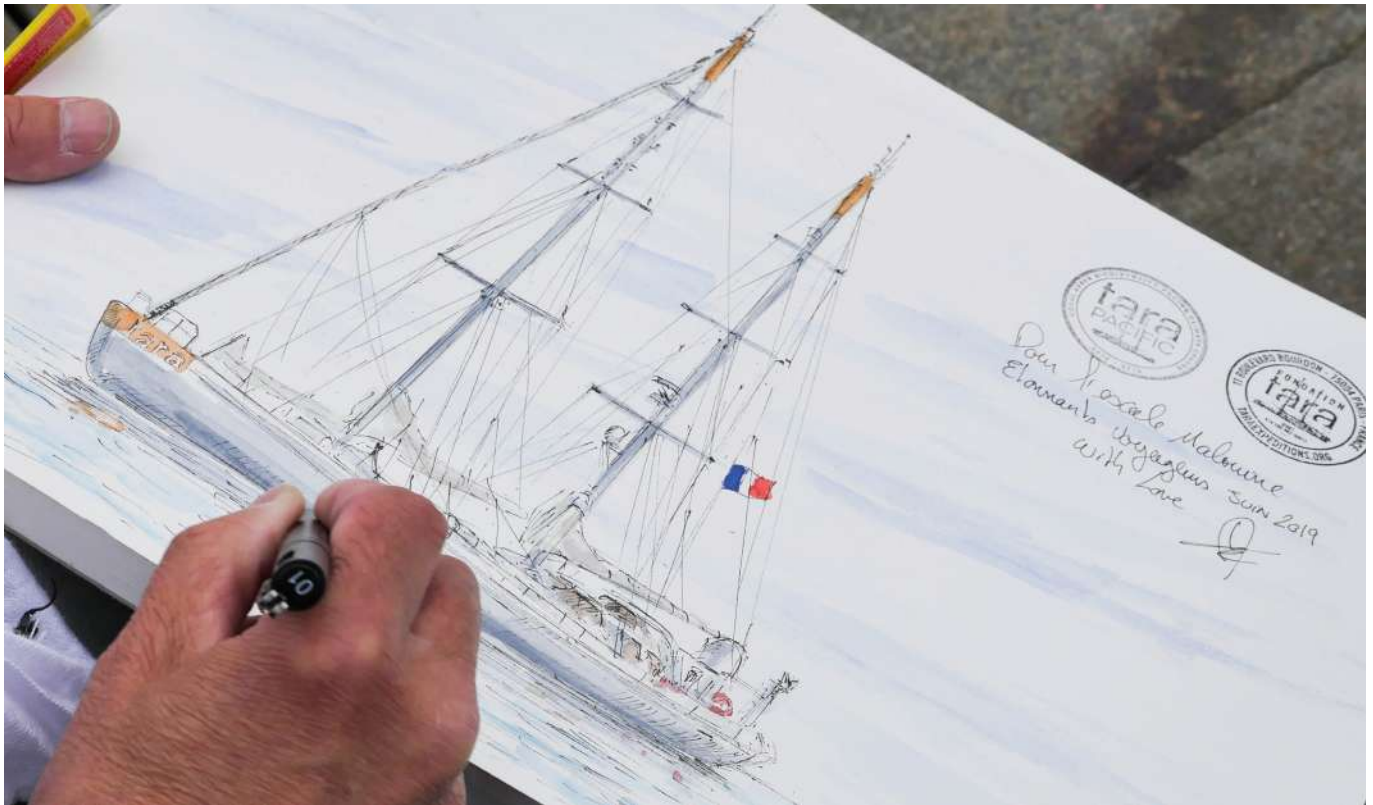
Liabilities

- **Associative funds without repossession rights**, €1,991,246, including the donation of the schooner *Tara* for €1,750,000 and devolution of the Tara Fund for an amount of €241,256.
- **Carry forward**, €170,317, including the 2018 income appropriation validated by the board of directors on June 3, 2019.
- **Annual income** is a profit of €313,392.
- **Investment grants**, €237,040, corresponding mainly to the share of assets purchased for scientists in the framework of the convention with the Brittany region: in 2016, €216,256; in 2018, €100,408, and in 2019, €150,000, with a delta deriving from a CRIDF grant, minus accumulated depreciation €231,024.
- **Dedicated funds** in the framework of the FFEM agreement amount to a total of €311,624.
- The amount remaining due of **the bank loan**, validated by the board of directors on September 19, 2016 to finance engine replacement is €37,500.
- **Trade payables and other debts** totaling €343,627 are decreasing and in line with the accounting balance on December 31, 2019.
- **Accruals**, €66,667, are the counterpart of contract commitments relating to postdoctoral fellows of the "prepaid expenses" account.
- **Deferred income**, €2,028,499, corresponds mainly to the grants receivable from multi-annual agreements signed for €2,021,624.



	Period ended 31/12/2019 (12 months)			Period ended 31/12/2018 (12 months)	Variation	%
	Gross	Exports	Total	Total		
Operating revenues						
Sales of goods	204 822		19 275	16 121	3 154	19,56
Production sold - goods						
Production sold - services	196 645	300	196 945	126 511	70 434	55,67
Net operating revenues	215 920	300	216 220	142 632	73 588	51,59
Other operating revenues						
Inventoried products						
Capitalized production				58 639	- 58 639	-100
Operating grants			345 049	207 343	137 706	66,41
Contributions						
(+) Carry over of unused resources from prior financial years			478 815	454 768	24 047	5,29
Other revenues			2 192 301	1 899 873	292 428	15,39
Reversal of provisions						
Transferred expenses			59 705	53 697	6 008	11,19
Subtotal of other operating revenues			3 075 869	2 674 319	401 550	15,02
Total operating revenues			3 292 089	2 816 951	475 138	16,87
Share in income from joint operations						
Transferred surplus (II)						
Financial products						
From equity interests			226 159		226 159	N/S
Other securities and asset receivables						
Other interest and assimilated income			8		8	N/S
Reversals of provisions, depreciation and cost transfers						
Positive foreign exchange differences						
Net income from sales of marketable securities				555	- 555	-100
Total financial income (III)			226 167	555	225 612	N/S
Extraordinary income						
On management operations						
On capital transactions			80 663	58 292	22 371	38,38
Reversals of provisions and cost transfers						
Total extraordinary income (IV)			80 663	58 292	22 371	38,38
Total income (I + II + III + IV)			3 598 920	2 875 798	723 122	25,15
(+) Carry over of unused resources from prior financial years						
Debit balance = deficit				-5 215	5 215	-100
Grand total			3 598 920	2 881 013	717 907	24,92

	Period ended 31/12/2019 (12 months)	Period ended 31/12/2018 (12 months)	Variation	%
Operating expenses	3 812	9 325	- 5 513	-59,12
Purchase of goods	6 983	3 214	3 769	117,27
Changes in goods stock	60 825	66 395	- 5 570	-8,39
Purchases of raw materials and other supplies	-2 224	15 249	- 17 473	114,58
Changes in stocks of raw materials and other supplies	127 380	80 697	46 683	57,85
Purchases of non-stocked items	682 170	571 952	110 218	19,27
External services	933 505	653 059	280 446	42,94
Other external services	70 180	81 602	- 11 422	-14,00
Taxes, duties, and other levies	885 231	889 462	- 4 231	-0,48
Salaries and wages	267 092	292 899	- 25 807	-8,81
Social costs				
Other personnel expenses	300	1 000	- 700	-70,00
Grants awarded by the organization				
Depreciation and impairment charges	201 273	204 294	- 3 021	-1,48
. On fixed assets: depreciation charges				
. On fixed assets: impairment charges	3 262		3 262	N/S
. On current assets: impairment charges				
. For liabilities and charges: provision				
(-) Commitments on allocated resources				
Other charges	332	1 368	- 1 036	-75,73
Total operating expenses	3 240 122	2 870 515	369 607	12,88
Share in income from joint operations transferred deficit (II)				
Financial expenses				
Depreciation, amortization and allocation provisions				
Interest payable and similar charges	982	2 045	- 1 063	-51,98
Foreign exchange losses	102	1 858	- 1 756	-94,51
Net charges on sales of marketable securities				
Total financial expenses	1 083	3 903	- 2 820	-72,25
Extraordinary expenses				
On management operations				
On capital transactions	17 359	508	16 851	N/S
Depreciation, impairment and provision charges				
Total extraordinary expenses	17 359	508	16 851	N/S
Employee profit sharing (V)				
Corporate taxes (VI)	26 963	6 086	20 877	343,03
Total expenses (I + II + III + IV + V + VI)	3 285 527	2 881 013	404 514	14,04
(-) commitments on allocated resources credit balance = cash surplus	313 392		313 392	N/S
Grand total	3 598 920	2 881 013	717 907	24,92
Assessment of in-kind voluntary contributions				
Revenues				
. Volunteering				
. Benefits in kind				
. In-kind donations				
Total				
Expenses				
. Assistance in kind				
. Free provision of goods and services				
Services				
. Volunteer staff				
Total				



Detailed analysis of profit and loss account

In 2019, the Foundation's income statement presents a profit of €313,392.

Revenues

- **Sales of goods**, €19,275 are linked to sales in pop-up stores and online sales.
- **Production sold**, €196,645, corresponds mainly to Biotherm sponsorship for €150,000, excluding tax, and rental of the "Tara, discovering a new world: the Ocean" exhibition to the cities of La Rochelle (€15,625, excluding tax) and Cherbourg (€15,000, excluding tax).
- **Operating grants**, €345,049, include:
 - the Lorient Agglomeration grant for €90,000,
 - the PACA grant for €50 000,
 - the Nouvelle-Aquitaine grant for €90,000,
 - the AFB grant of €70,000,
 - the balance of the AFD grant for Tara's Blue Book, €1,541,
 - Oceanomics for €6 366,
 - Saint-Mandé Town Hall for €10,000,
 - subsidies related to our educational program for €27,142.
- **Sponsorship** of the Founding Members and signatory partners to agreements amounting to €1,996,496.
- **Other sponsors** donated €193,500.
- **Recovery of FFEM dedicated funds**, €478,815, corresponds to expenses incurred in 2019 in the framework of this project.
- **Financial products**, €226,159, are mainly related to the amount of a temporary donation of usufruct. Dividends received in 2019 accounted for €225,704.
- **Extraordinary income**, €80,663, corresponds to the depreciation charge of material purchase financed by investment grants.

Expenses

Part of the operating expenses, such as supplies, fuel, port and harbor fees, trips and missions, Thalos phone, etc. are directly related to the expedition. They are assessed comprehensively and account for €336,423 in 2019.

The other main operating expenses are listed below.

- **Les frais liés à la coordination EMBL et à la rémunération des post doctorants** amount to €280,498 in the framework of the FFEM project.
- **Costs related to laboratories funding in the framework of the plastic program** amount to €87,250.
- **Fees** for €633,738 include a number of non-recurring charges, such as:
 - the FFEM project audit fees for €30 000,
 - GST fees, €169,106, dedicated to studies of the project under development,
 - the intermediary's fees for the new offices account for €19,346.
- **Tara exhibition**, €34,115 corresponds to the development expenses of an exhibition dedicated to plastics.
- **Staff costs, wages, social costs** and payroll tax amounted to €1,222,503.
- depreciation, amounting to €201,263 for the year 2019, was stable compared with the previous year.
- **Non-recurring charge** of €17,359 corresponds to the removal of assets linked to obsolete or ceded equipment from the fixed assets.

In 2019, the Foundation's taxed sector triggers a corporate tax of €26,963.





Statement of financial activities

Uses of funds

	Use of resources (balance sheet)	Allocation by use of resources raised from the general public, spent in N
1- Social missions	2 489 845	193 500
1.1.Carried out in France	2 489 845	193 500
Actions implemented directly	2 219 843	193 500
Payments to other organizations acting in France	270 002	
1.2.Carried out overseas	0	0
Actions implemented directly	0	
Payments to a central agency or other organizations	0	
2- Fundraising expenses	271 975	0
2.1.Expenses for appealing to public generosity	75 406	
2.2.Expenses for seeking other private funding	196 569	
2.3.Expenses related to seeking grants and other public support		
3- Operating expenses & other charges	520 445	0
		193 500
I - Total uses of funds reported in the profit and loss account	3 282 265	
II - Allocation provisions	3 262	
III - Projected use of allocated resources	0	
IV - Resource surplus over the financial year	313 392	
V - Overall total	3 598 920	
V - Proportion of gross fixed assets acquired during the financial year and funded by resources raised from the general public		0
VI - Neutralization of depreciation charges of fixed assets funded by resources raised from public generosity, as from the date of 1st enforcement of the regulation		0
VII - Total uses of resources funded by public generosity		193 500
Assessment of in-kind voluntary contributions		
Social missions	58 428	
Fundraising expenses		
Operating and other expenses	58 428	

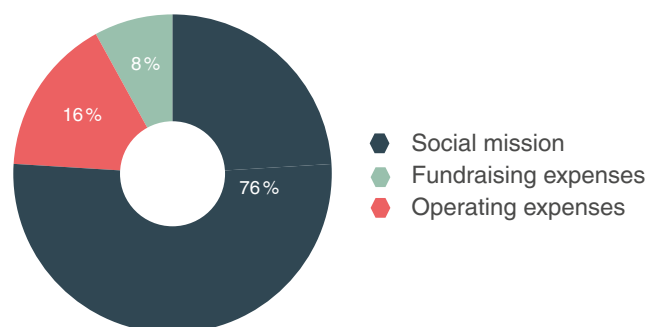


Resources	Raised resources (profit and loss account)	Monitoring of funds raised from the general public and used during year N
Carry over of unallocated and unused resources raised from public generosity		0
1- Income from public generosity	193 500	193 500
1.1. Collected donations and legacies	193 500	193 500
Unallocated manual donations	193 500	193 500
Allocated manual donations	0	0
Legacies and other unallocated donations	0	0
Legacies and other allocated donations	0	0
1.2. Other income raised from public generosity	0	0
2- Other private funds	1 996 496	
3- Grants and other public financial support	345 049	
4- Other income	585 059	
I - Total resources recorded on profit and loss account	3 120 104	
II - Reversals of provisions	0	
III - Carry over of unused resources from prior financial years	478 815	
IV - Variation in dedicated funds raised from the general public		0
V - inadequate resources for the financial year		
VI - Overall total	3 598 920	193 500
VI - Total uses of resources funded by public generosity		193 500
Balance at year-end of unallocated and unused resources raised from public generosity		0
Evaluation of voluntary in-kind contributions		
Volunteering	-	
Benefits in kind	22 825	
In-kind donations	35 603	
	58 428	



Analysis of the statement of financial activities

Uses of funds in 2019



Expenditure on the Foundation's social missions amounts to €2,489,845.

All resources raised from public generosity, representing €193,500, were allocated.

Total use of resources for the financial year amount to €3,282,265. 75,86% of these resources are allocated to our social mission, 8,29% to fundraising and 15,86% to operating costs.

Resources

Manual donations amount to €193,500.

Other private funds correspond to sponsorship from Founding Members and partners who are signatories to agreements and account for €1,996,496.

Grants and other support, €345,049, combine:

- the Lorient Agglomeration grant for €90,000,
- the PACA grant for €50 000,
- the Nouvelle-Aquitaine grant for €90,000,
- the AFB grant of €70,000,
- the balance of the AFD grant for Tara's Blue Book, €1,541,
- Oceanomics for €6 366,
- Saint-Mandé Town Hall for €10,000,
- subsidies related to our educational program for €27,142.

Other revenues (€585,059) include sponsorships, various sales, income from equity interests, cost transfers, fringe benefits, and depreciation charges of equipment funded by grants.

Development method and content

Reference legal framework

The statement for use of resources raised from public generosity is drawn up in accordance with provisions of the Law of August 7, 1991 and the Decree of July 30, 1993.

The statement of financial activities includes all the Tara Foundation's operations.

Social missions

According to the statutes, the Foundation's social missions are as follows:

- Funding of research teams
- Funding of the Tara expedition
- Film production
- Educational actions related to the ongoing expedition, events
- Raising public awareness
- Development of a polar station: study, design, operation and maintenance

Definitions of resources raised from public generosity

Resources raised through campaigns appealing to public generosity consist of all funds raised by the Foundation as part of a fundraising appeal, on any medium whatsoever, except for funds collected as part of sponsorship agreements and resources from foundations (taken into account in the "other private funds" section).

Other income related to public generosity is exclusively composed of financial products from investment of funds raised through fundraising appeal.

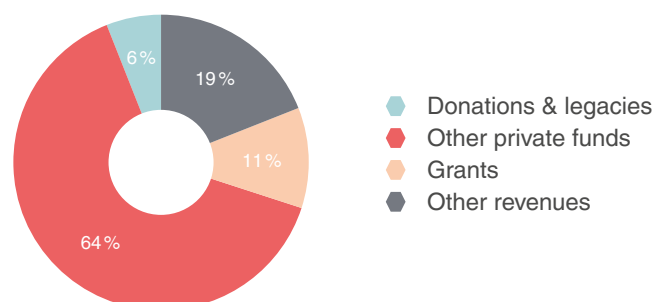
Principles of cost allocation under the statement of financial activities

Direct costs are charged according to their nature, drawing a distinction between social missions, fundraising and operating costs. Indirect costs are distributed according to cost accounting results, possibly adjusted for the following elements:

- The executive director's wages and social costs are allocated as follows:
 - 10% operating expenses
 - 40% fundraising expenses
 - 50% social missions

Principles for resource allocation to fund social missions.

Unallocated resources raised through appeals to public generosity are assigned as a priority to cover social missions. In the event that a remaining amount exists, it is allocated to fund assets allocated to social missions, then operating costs and lastly, fundraising expenses.





Fondation
tara océan
explorer et partager

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Direction Artistique Bureaux C&G