POLICY BRIEF

APRIL 2023
Paris, France, May 29 - June 2, 2023

In the framework of the 2nd session of the Intergovernmental Negotiating Committee for the elaboration of an international legally binding instrument on plastic pollution, including in the marine environment

International Treaty on Plastic Pollution

For a systemic approach that meets the challenge

Fondation tara océan
explore and share

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From May 29 to June 2, 2023, the Intergovernmental Negotiating Committee for the International Treaty on Plastic Pollution will meet in Paris. This meeting (INC2) follows the first session held in Punta del Este last November where a summary of the state of knowledge* was presented.

As Special Observer to the UN, the Tara Ocean Foundation reports on this state of knowledge. While the Secretariat of the United Nations Environment Programme has been invited to summarize the positions expressed by the stakeholders on the different options for the negociation of the treaty, the Tara Ocean Foundation also reports on the expectations that can legitimately be stated regarding the objectives of the future treaty.

* All figures are taken from the document “Intergovernmental negotiating committee to develop an international legally binding instrument on plastic pollution, including in the marine environment, First session, Punta del Este, Uruguay, 28 November - 2 December 2022, Item 4 of the provisional agenda, UNEP/PP/INC.1/7, Distr.: General, 13 September”.

The commitment of the Tara Ocean Foundation to reduce plastic pollutions

The Tara Ocean Foundation is the first foundation dedicated to the Ocean acknowledged to be of public utility in France. It has two main missions: to explore the Ocean in order to better understand it and to share scientific knowledge in order to raise public and collective awareness.

For 20 years, it has supported high-level ocean science, in collaboration with the CNRS and top international research laboratories, to understand and anticipate the upheavals in biodiversity linked to climate and environmental risks. In order to make the Ocean a common responsibility and to preserve it, the Tara Ocean Foundation raise awareness on Ocean science, educating the younger generations and mobilizing decision-makers.

Tara research in plastics since 2010

Since 2010, from the Arctic to the Pacific, passing through the Mediterranean, the nets of the schooner *Tara* have been collecting an abundance of life, invariably mixed with plastic debris. The observation is clear: microplastics are omnipresent in the Ocean. New "plastico-biological" life zones are being created, forming the "plastisphere". The Tara Ocean Foundation's research has therefore naturally been interested in these new, almost invisible pollutants, which are still little studied. It has played a pioneering role in research on these issues.

First with a project to research plastics in the Arctic Ocean in 2010 during the Tara Oceans expedition (2009-2013) dedicated to the study of plankton. This expedition allowed the discovery of a new plastic debris accumulation zone, proving that plastic pollution generated close to human homes can impact the most isolated regions and consequently have an effect on virgin ecosystems.

During the Tara Mediterranean expedition in 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 interdisciplinary team on board developed exclusive protocols and used state-of-the-art technologies during this expedition. It has allowed the creation of a database that will be freely available to the scientific community, representing 75,000 plastic particles: this is the largest collection of microplastics collected in the Mediterranean to date.

The work reveals that in some places the concentrations of surface microplastics are sometimes identical to those of zooplankton, on which fish feed. In these areas, a fish can therefore see half of its food bowl composed of microplastics that it confuses with its food. Among them, there is a strong preponderance of polymers used for single-use packaging, as well as significant concentrations of synthetic fibers and polystyrene.

In 2018, during the Tara Pacific expedition dedicated to coral reefs, scientific teams went to the heart of the North Pacific "plastic continent" to continue to identify the presence of microplastics and the associated biodiversity. From the schooner's deck, the continent turned out to be a "soup" of microplastics that represent more than 90% of the surface of this oceanic gyre.

Mission Microplastics 2019 : Plastic at sea, the solutions are on land

Back in Europe after its Tara Pacific mission, the scientific schooner *Tara* traveled the four European maritime seafronts and collected samples in nine of Europe's main rivers over a six-month period, from May to November 2019. This was the first mission dedicated to plastic pollution in rivers carried out on a European scale. It was initiated by the Tara Ocean Foundation, in partnership with 19 research laboratories and scientifically coordinated by the CNRS. Marine biologists, ecotoxicologists, oceanographers, modelers, chemists and physicists formed this interdisciplinary team collectively engaged in this vast European survey.

Its objectives : to identify the sources of pollution, to understand the fragmentation of microplastics in rivers, to predict their dispersion towards the Ocean, to understand their impacts on marine biodiversity and their effects on the food chain.

Sailors and scientists on board *Tara* have brought back 2,700 samples located between land and sea. Thames, Elba, Rhine, Seine, Ebro, Rhone, Tiber, Garonne, Loire, the samples and data were collected off the estuaries, at their mouths, downstream and upstream of the first major city with a large population located on the rivers.

The first observations during the Mission Microplastics 2019 confirmed the extent of plastic pollution with the presence of microplastics in all samples, but also the observation of a fragmentation of plastic much further upstream from the rivers than previously thought. Numerous analyses are underway and the first results will be published soon. The science on plastic in rivers and marine environments is young. Faced with the magnitude of the phenomenon, scientists are mobilizing and knowledge is progressing rapidly, enlighting more and more the complexity of the impacts on ecosystems and consequently on human health.

Because this pollution, once in the environment, is at the same time invisible, uncontrollable and inseparable from the fauna in the rivers and the Ocean, it is urgent and crucial to act upstream of the production chain and of their leakage, on land, into the environment. The terrestrial origin of marine pollution, estimated at 80%, definitively acknowledges the fact that the solutions are on land.

Trends in production and consumption of plastics, the UNEP Report

Global plastic production has grown exponentially since the 1950s. It doubled between 2000 and 2019, from 234 million tons to 460 million in 2019. It is expected to at least triple again by 2060, if no changes are made. These projected increases show significant variability between member states of the Organisation for economic co-operation and development (OECD) and developing countries. However, it should be noted that OECD countries are expected to remain by far the largest contributors to global plastic pollution. Each inhabitant of OECD countries will consume 238 kg of plastics in 2060, compared to 77 kg for inhabitants of non-OECD countries.

Furthermore, plastics are widely additivated with chemical components (plasticizers, anti-static agents, colorants, flame retardants, etc.) that improve the characteristics of the polymers. **More than 10,000 chemical molecules are currently used and 99% of polymer production is based on fossil resources.**

The plastics market is mainly (86%) occupied by thermoplastics, plastics that soften under the action of heat and harden on cooling in a reversible manner, mainly in the packaging sector (66%), followed by construction, transport and the textile industry.

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The collection, treatment and valorization of end-of-life plastics

The UNEP Secretariat notes that the plastics economy is largely linear, leading to massive production of non-treated or poorly treated wastes.

Currently, between 60 and 99 million tons of plastic waste are produced per year, a figure that is expected to increase 2.5 times by 2040. 46% of plastic wastes are landfilled, 17% incinerated, 22% abandoned in the natural environment. 15% are collected for recycling, but only 9% are actually recycled. Waste mismanagement is the main source of environmental contamination by plastics.

“Projections do not allow us to imagine an increase in the recycling rate beyond 12% in 2060.”

The UNEP Secretariat specifies that although many plastics are theoretically recyclable, only a few are actually recyclable, and only in certain territories. Unfortunately, these results are unlikely to change since projections do not allow us to imagine an increase in the recycling rate beyond 12% in 2060. Finally, regarding chemical recycling, UNEP indicates that this is a field of research that could be interesting given the technical limitations of mechanical recycling. However, it still must demonstrate its environmental added value in terms of energy costs, use of toxic materials and by-products potentially generated. **Chemical recycling cannot be retained as a mobilizable solution because of its lack of industrial maturity and the impossibility to deduce an economic viability.**

The impact on the environment and human health

It is estimated that 31 million tons of plastic wastes contaminate land ecosystems each year, 20 million tons contaminate aquatic ecosystems and 11 million tons contaminate the Ocean. Finally, open-air incineration of plastic wastes concerns 49 million tons. These figures are still estimates, but given the projections of plastic production, they should be multiplied by at least 2.5 in the next 20 years. In 2040, the amount of plastic waste that will reach the Ocean is estimated to be around 30 million tons per year.

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88% of these wastes are in macro waste form, that means particles bigger than 5 millimeters. The source is overwhelmingly related to the malfunctioning of waste treatment. UNEP indicates that plastics used by the fishing and agricultural sectors should be subject to special monitoring, due to a greater risk of leakage into nature. Finally, the issue of micro-plastics (smaller than 5 millimeters) is highlighted as a major monitoring issue.

The UNEP Secretariat points out the complexity of the impacts on the environment. Nowadays, the entire planet is concerned, from the atmosphere to the deepest ocean floors. We are talking about the direct alteration of ecosystems functions and the consequences on biomass production and alteration of major natural cycles, but also about more rarely mentioned consequences such as the major contribution of plastic production to global warming. They are estimated, at the present time, at 3.4% of global emissions and should quadruple, reaching 15% in 2050. We can also mention the consequences of the use of hydrofluorocarbons (HFCs), some deleterious additives for the ozone layer. In conclusion, plastics are at the heart of all environmental issues (biodiversity, climate, toxicity, etc.), their presence in the environment, by altering the resilience of ecosystems, could greatly accelerate the most worrying changes.

As a result, plastics are a threat to humanity. They alter its food resources and degrade its living environment. They are also serious threats to human health at every stage of their life cycle. This concerns the actors of production, exposed to polymers and their additives during industrial phases, those of the formal or informal sectors of waste treatment, up to the whole population concerned by a permanent exposure to micro and nano particles present into the air, water and food. For the record, plastic production involves more than 10,000 chemical additives, a quarter of which are a threat to human health. Finally, studies point to the role of plastic micro-particles in the circulation of pathogens.

The solutions mentioned by UNEP

Unsurprisingly, UNEP mentions circular economy as a major way to improve the situation. An approach that must be based on a life cycle analysis of plastics. This analysis must be exhaustive, from environmental costs of oil extraction to those of waste disposal, including a realistic assessment of the risks of leakages into the environment, at each stage. The circular economy implies the reduction and therefore the elimination and substitution of non-essential plastic objects, as well as the elimination or substitution of the most problematic additives. It also implies the improvement of re-use and recycling, based on technological solutions that are operational today. **UNEP insists on two key points: the imperative need to improve collection, in order to avoid leakage into the environment, and the complementarity between regulatory and voluntary approaches by companies, with governments being responsible for ensuring that pollution reduction targets are met, including through coercion, when the market fails to do so.**

What expectations does the Tara Ocean Foundation have of the Paris negotiations?

The Tara Ocean Foundation has the following recommendations for the upcoming negotiations on the implementation of the future Treaty

1. Establish official definitions of key terms such as "plastics", "recyclable", "recycled", ...

UNEP has, in its position paper, pointed out the issues related to terminology and reporting. While some definitions have been outlined, they remain highly inadequate at the dawn of the Paris negotiations. Fundamental terms such as "plastics", "recyclable", "recycled", etc. remain without official definition, which could largely alter the scope of the final text.

2. Ask States to establish monitoring reports on the marketing of plastics

The Tara Ocean Foundation hopes that the future Treaty will require States to draw up a monitoring report, not only on waste treatment, but also on marketing, for example in the form of a mandatory register of declarations. This tool would allow a better knowledge of the volumes and types of plastics but also of the sectors and uses most concerned. It would make it possible to identify, for example, the critical uses of the most problematic polymers and additives or, by comparison with recycling figures, to evaluate the relevance and efficiency of the channels.

3. REDUCTION : Establish a common quantified target and an operational timetable to reach it

The Tara Ocean Foundation welcomes the "Circular Economy" approach promoted by UNEP and is pleased to see that it does indeed involve Reduction, Re-use and Recycling. But this approach cannot be a simple rhetorical exercise and the effectiveness of this approach will be measured by the respect of the 3Rs hierarchy value. Faced with a production of plastic that could be multiplied by three in the next forty years, an international treaty that does not set precise objectives for limiting production would simply not be credible. The reduction target must therefore be clearly quantified, with an established operational timetable. It must concern both the upstream part of the value chain by targeting firstly stabilization, and then reduction for virgin monomer production. But it must also include a list of problematic polymers and additives to be eliminated. Finally, the downstream approach must be refined by a precise definition of the "non-essential" character and of the single use, which will allow the States and territorial actors to define lists of prohibited products according to the local realities.

4. RE-USE : promoting combined eco-design and regulatory approaches to increase the lifespan

On re-use, the Tara Ocean Foundation invites the negotiators to pay particular attention to increasing the lifespan of objects involving the most complex and problematic plastics by promoting combined eco-design and regulatory approaches to increase the guaranteed lifespan for the user.

5. RECYCLING : integrating an assessment of environmental benefits and risks

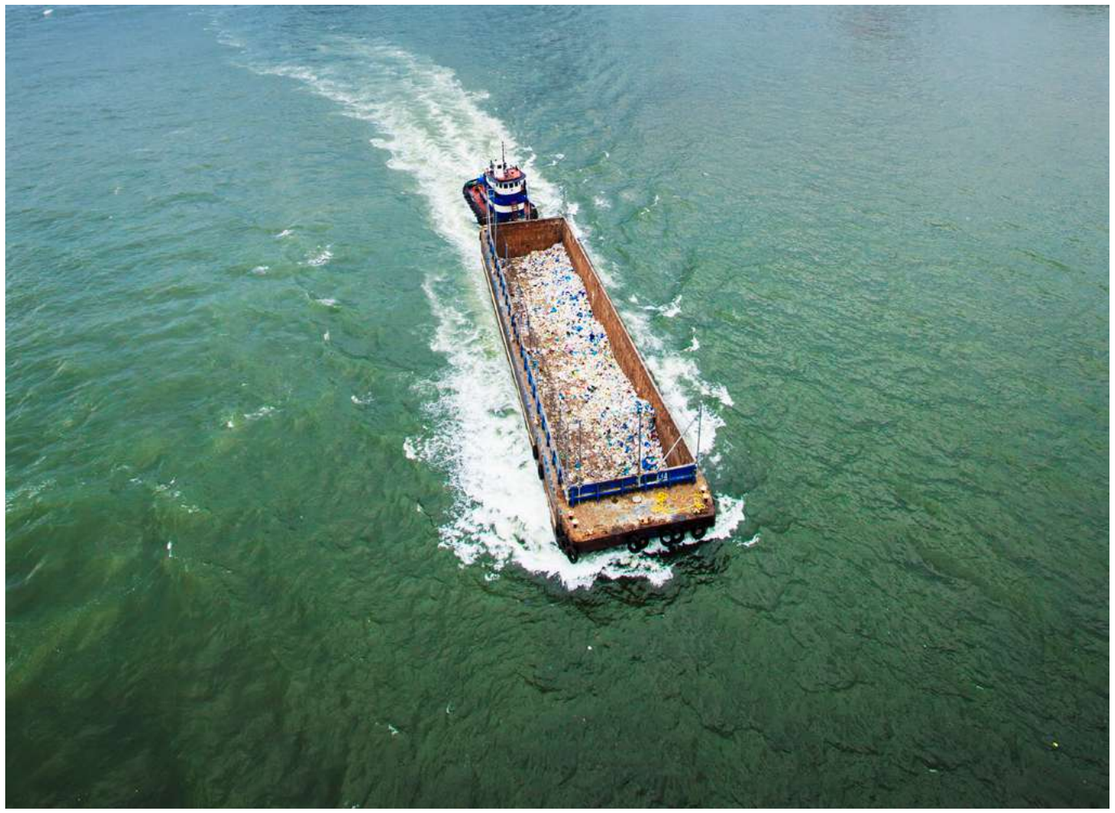
As far as recycling is concerned, the Tara Ocean Foundation stresses that the strategy to be adopted must include an independent scientific assessment of the environmental benefits and risks of recycling. Moreover, it can only involve operational industrial technologies and devices, on time and on scale, and take into account the difficulties inherent to the recycling of artificial polymers (degradation of the material's properties, economic competitiveness, etc.).

6. Explore the idea of a globalized model of extended producer responsibility

For the Tara Ocean Foundation, it is imperative to address the issue of financial responsibility for the costs of processing plastics at the end of their life. This point could quickly become a stumbling block for the future treaty and the questions of responsibility and solidarity could bog down the negotiations. To avoid this, the FTO invites the negotiators to explore the idea of a standardized and globalized model of extended producer responsibility. It could be inspired by Western EPRs, while seeking to go beyond their limits and taking into account the full costs of collection, sorting and treatment of all waste, including abandoned waste.

7. Linking the future treaty with existing international texts

Negotiations should not overlook the linkage of the Treaty with existing texts, in particular trade agreements and the Basel Convention, the latter bearing the seeds of some answers on the treatment of plastic waste.



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CONTACT

Henri Bourgeois Costa
Director of Public Affairs · Circular Economy Mission
henri@fondationtaraocean.org

Tara Ocean Foundation
8, rue de Prague - 75012 PARIS

www.fondationtaraocean.org