

THE WONDER OF SEAWEED CURTAINS



And it's potential pioneering development in Japan

SARAYA



RACE FOR WATER

A FOUNDATION TO PRESERVE WATER



TODAY !

we have more plastics
than fishes in the
ocean if we include
MICROPLASTICS

We were told

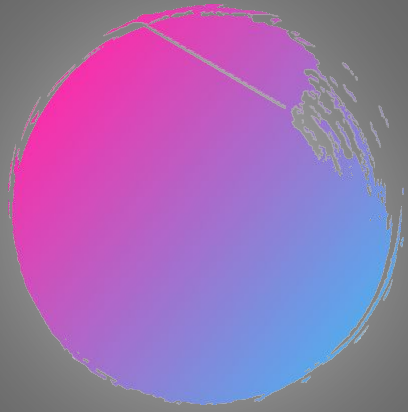
By 2050

there will be more visible
large plastics pieces than
fishes in the ocean



ZERI

Microplastics



2mm or less

Microplastics in drinking-

water



It took you approximately

1 WEEK

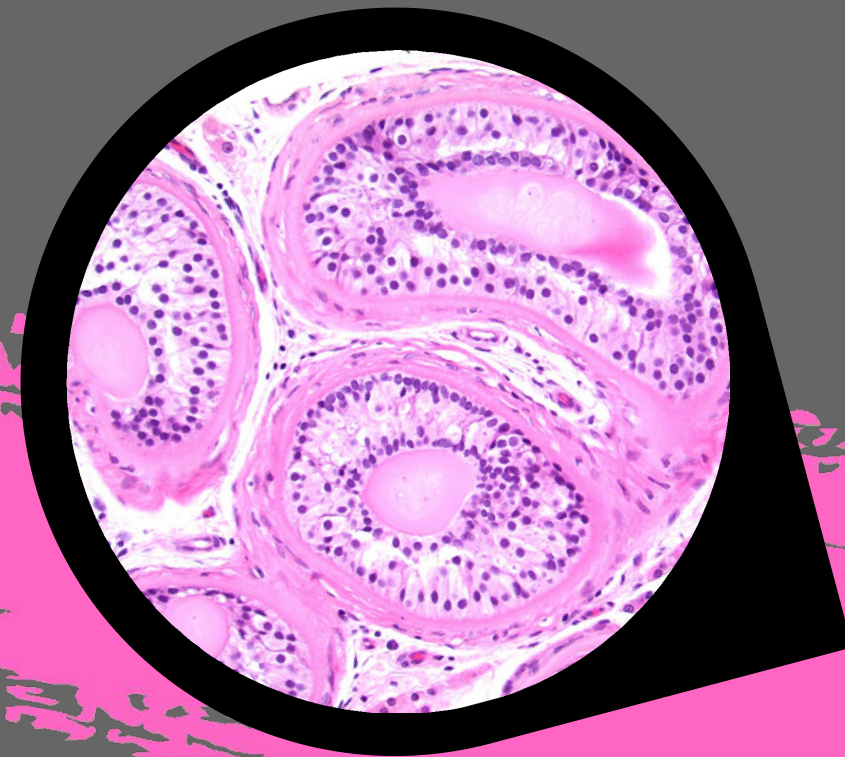
to eat this credit card



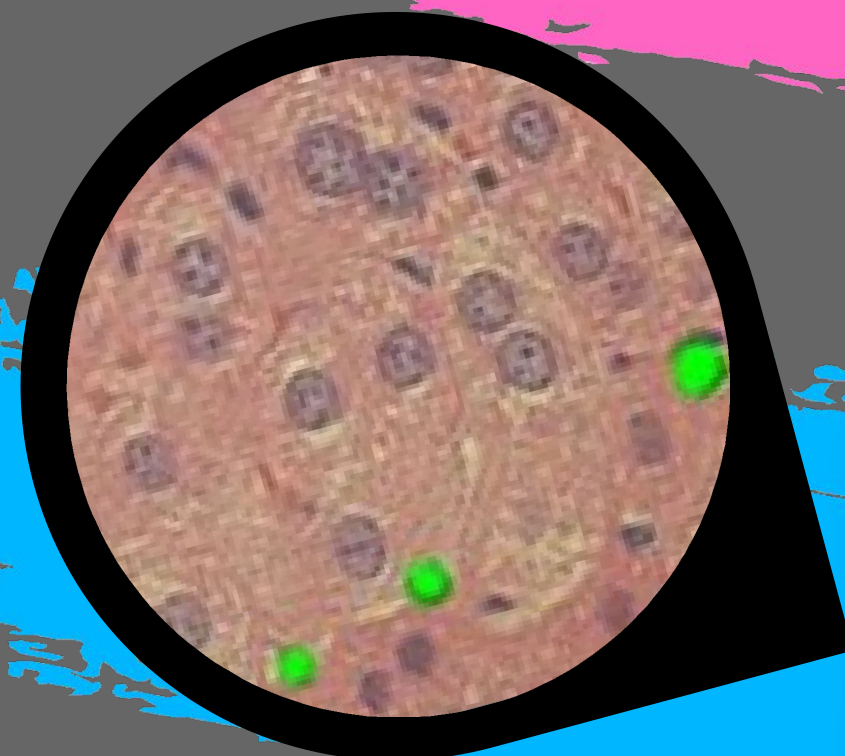
Plastics are composed of **POLYMERS**.

In addition **ADDITIVES** are mixed in, in order to give it special properties like : softness, flame resistance ...

Impact on Living species



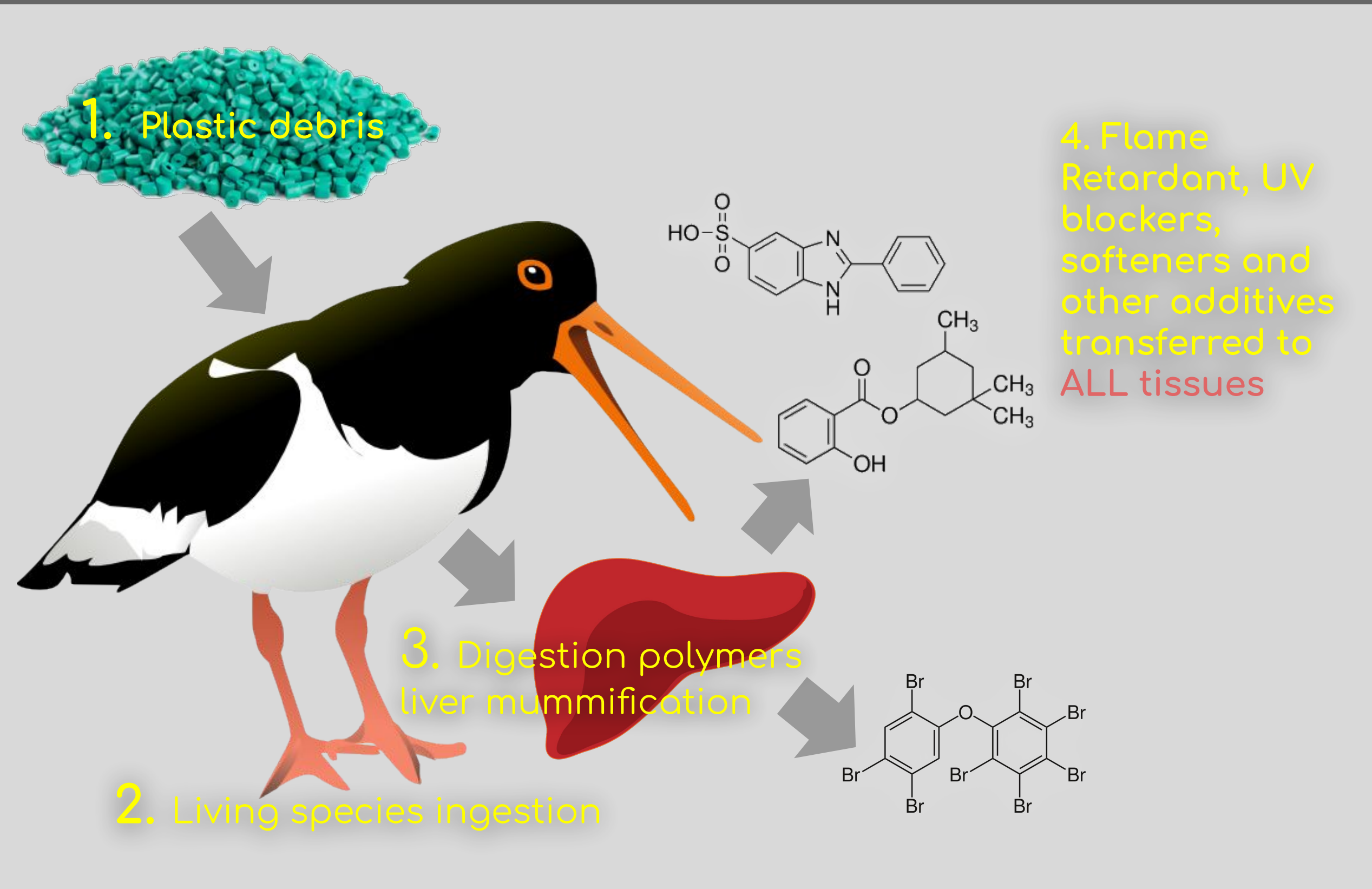
Plastics ADDITIVES are endocrine disruptors & cause Testicular Dysgenesis Syndrome



Mummification of the liver and bladder, while inhibiting normal metabolism



February 2020, HOKKAIDO University confirmed





An overwhelming 99% of seabirds have ingested plastic waste

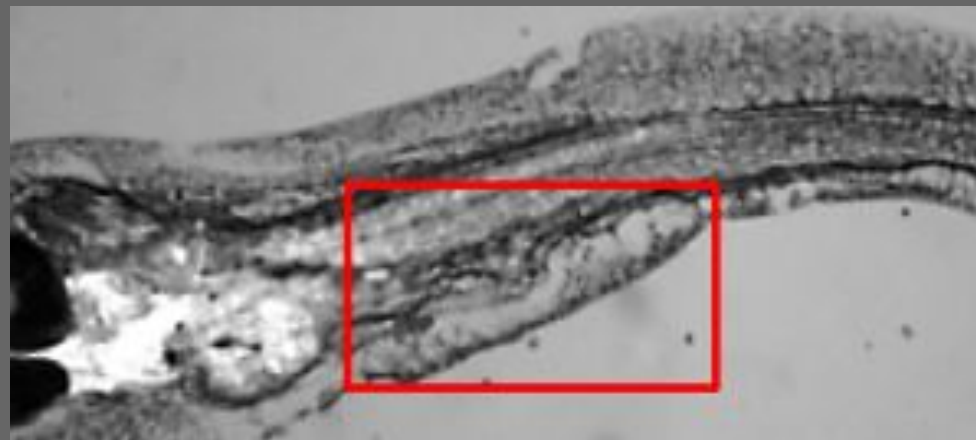
Toxic additives from microplastics gather in the tissue of seabirds and putting their survival at risk

Plastics additives accumulate in the birds livers and fatty tissues at extreme levels up to 1200 times normal level

In Vivo Accumulation of Plastic-Derived Chemicals into Seabird Tissues Tanaka et al., 2020

Race for Water scientific partners published :

January 2020 : Environmental samples of microplastics induce significant toxic effects in fish larvae

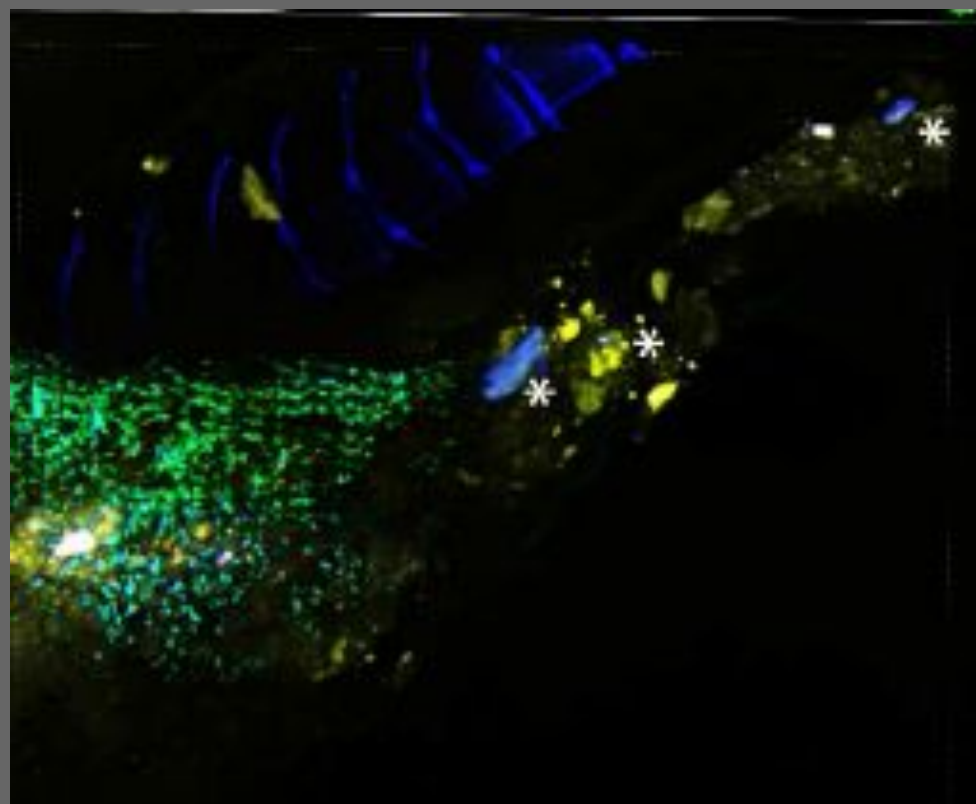


Thanks to the Race for Water Odyssey, scientists from Bordeaux University (France) demonstrated the tragic effect of the ingestion of microplastics:

Increasing mortality of larvae, as well as a significant loss of mobility.

reducing the fishes' ability to escape from predators, or to find sufficient food to sustain normal growth.

Scientists suspect that the expansion of such effect in fish would create an irreversible decline in its population..



Environmental samples of microplastics induce significant toxic effects in fish larvae

a Université de Bordeaux, UMR 5805 EPOC, 33400 Talence, France

b PAnTher, INRA, École Nationale Vétérinaire, Agro-alimentaire et de l'alimentation Nantes-Atlantique (Oniris), Université Bretagne Loire (UBL), Nantes 44307, France

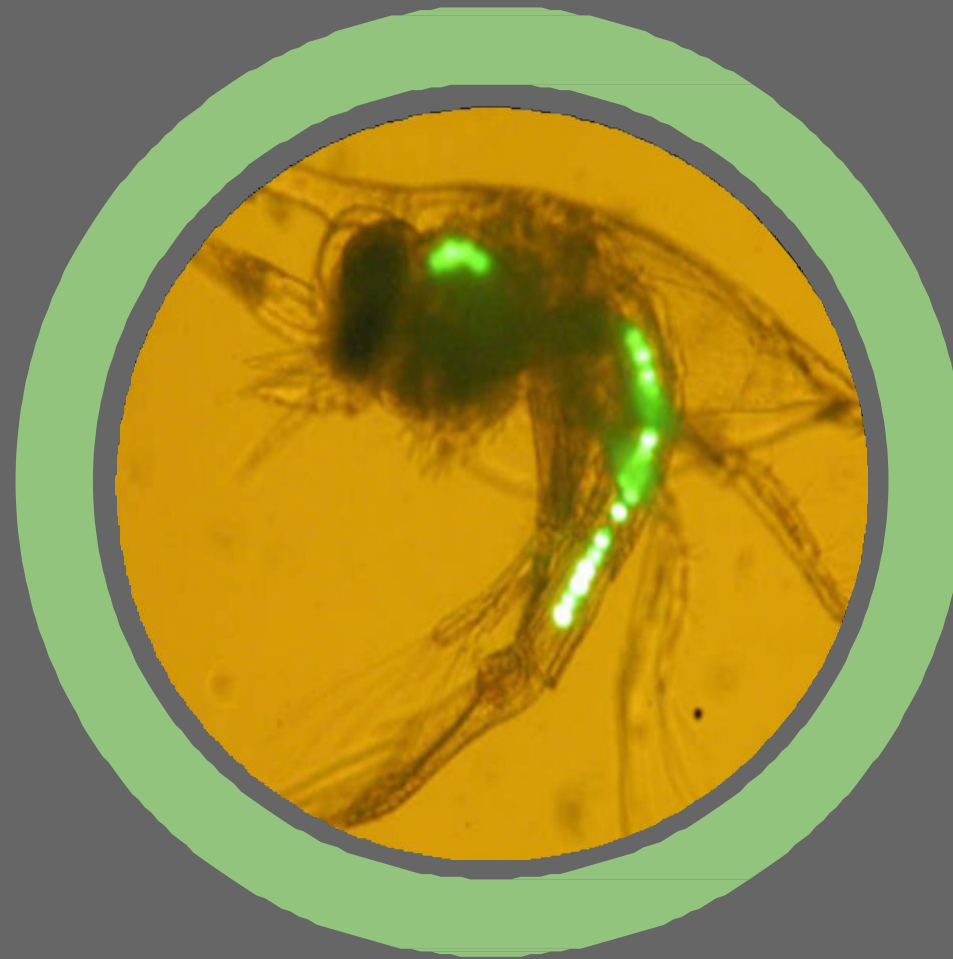
c Race For Water Foundation, Lausanne 1007, Switzerland

Biodiversity Loss



**OVER 100,000
MARINE MAMMALS**

die every year as a result
of marine plastic
pollution



**PLANKTON HAVE BEEN
HEAVILY CONTAMINATED**

This leads to contamination of all
organisms in the oceans food
chains from the bottom to ... us!



**OVER 1,000,000
SEA BIRDS**

die every year as a
result of marine plastic
pollution

We have produced **8.3 Billion tons** of plastic since the 1950's

We must act with the precautionary principle

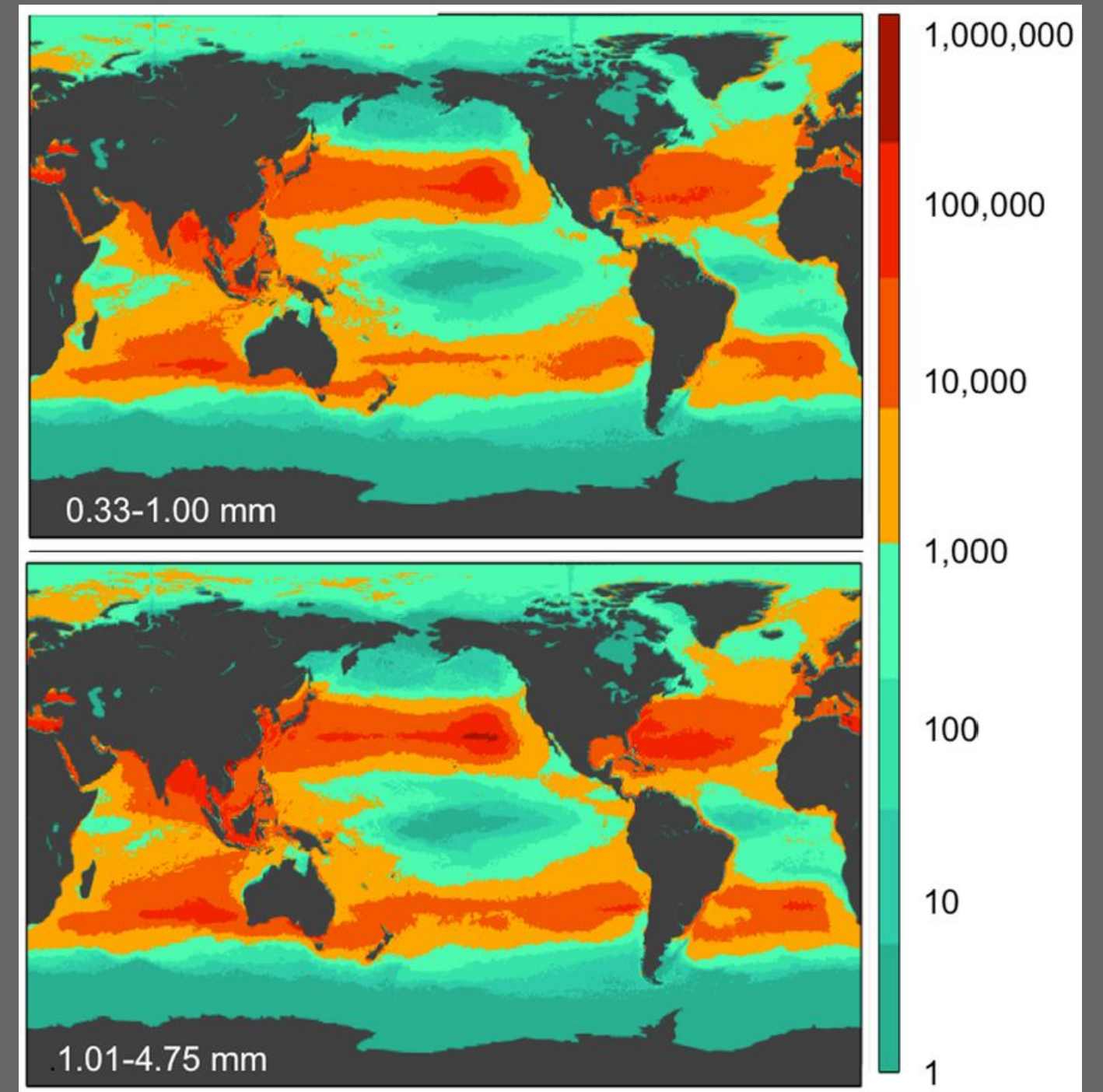


822,000
Eiffel
Towers

1950 | **2M**
METRIC
TONS

2017 | **8.3B**
METRIC
TONS

2050 | **34B**
PROJECTED
METRIC TONS



More than 5 Trillion plastic pieces
waiting to wither down into microplastics.

This is 250 000 tons floating at the sea

(Eriksen M. et al.,2014)



THE SEAWEED CURTAIN SOLUTION

Seaweed adsorb Microplastics

Seaweeds are a gift from Nature and offer a surprising opportunity to create a protective barrier.

This is the inspiration for the Seaweed Curtain. Depending on the species, and the conditions of the sea multiple curtains will create a microplastic free zone.

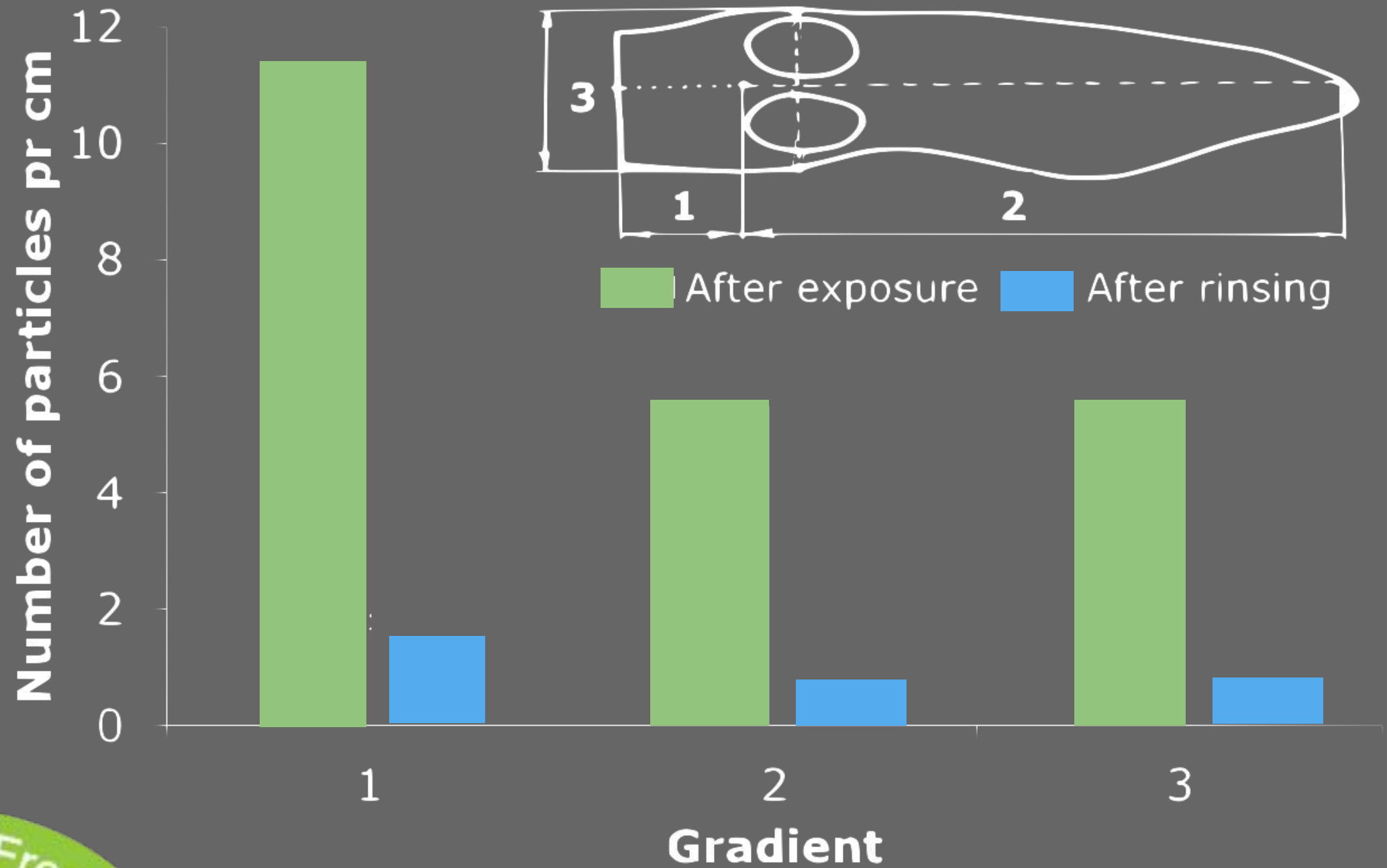
The inner area, well protected from the onslaught and without any significant number of microplastics can be used for high quality seafood farming and responsible tourism.

ZERI
ZERI JAPAN

Nature shows the way



source : DTU Environment,
Technical University of Denmark



Micro Plastic Free Zones

offer a natural barrier building on the wisdom of 1000's of years of seaweed farming while offering quality products.



*The
Seaweed Company*



The
Seaweed Company

Seaweed is the **fastest growing biomass** in the world, and has many valuable applications. Without using any land, fresh water, or fertiliser.

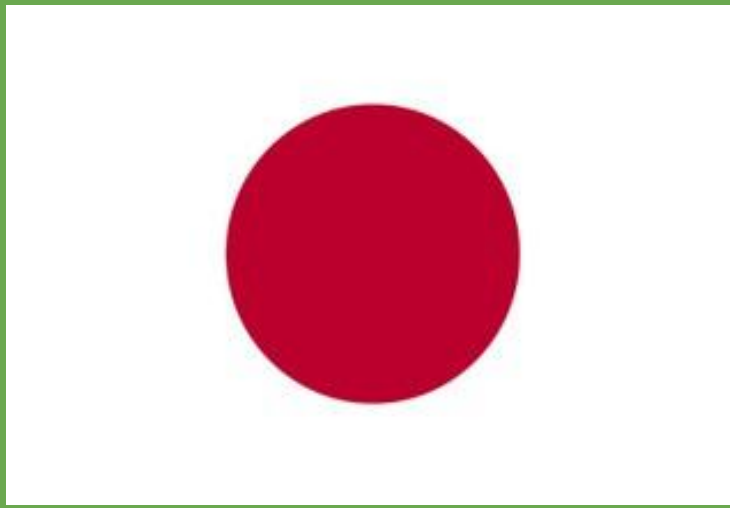
The Wonder of Seaweeds

Biodiversity	Carbon sequestration	Productions	Microplastic solution
<p>Seaweeds provide a place for many species juveniles to shelter, as well a being a valuable food resource for some others. There are thousands of species present in every sea!</p>	<p>Seaweed is one of the fastest growing organism on Earth. It beats bamboo. It does not have to grow against gravity.</p>	<p>Seaweeds have multiple industrial applications, including:</p> <ul style="list-style-type: none">● Fertilizer● Energy● Food supplement● Food additives● Textiles● and Polymers	<p>Seaweeds are Nature's solution to eliminate microplastics. The large scale farming of seaweed offers multiple revenues more than covering the cost of the clean-up.</p>


We created the problem so
it's our responsibility to fix it



Discovery

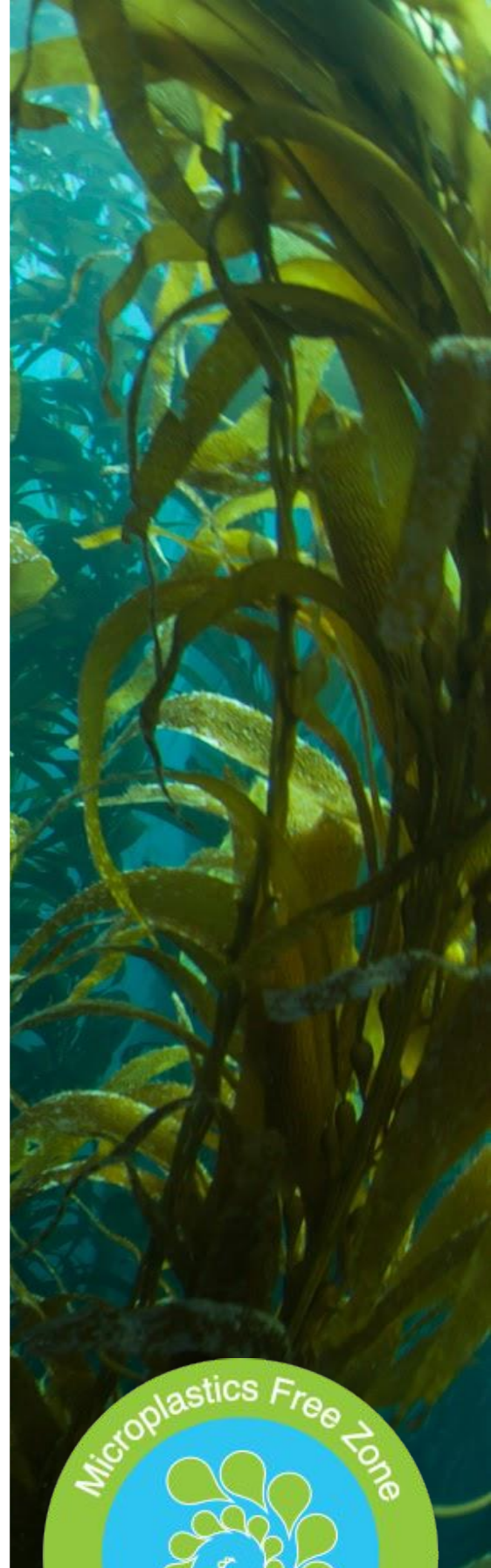
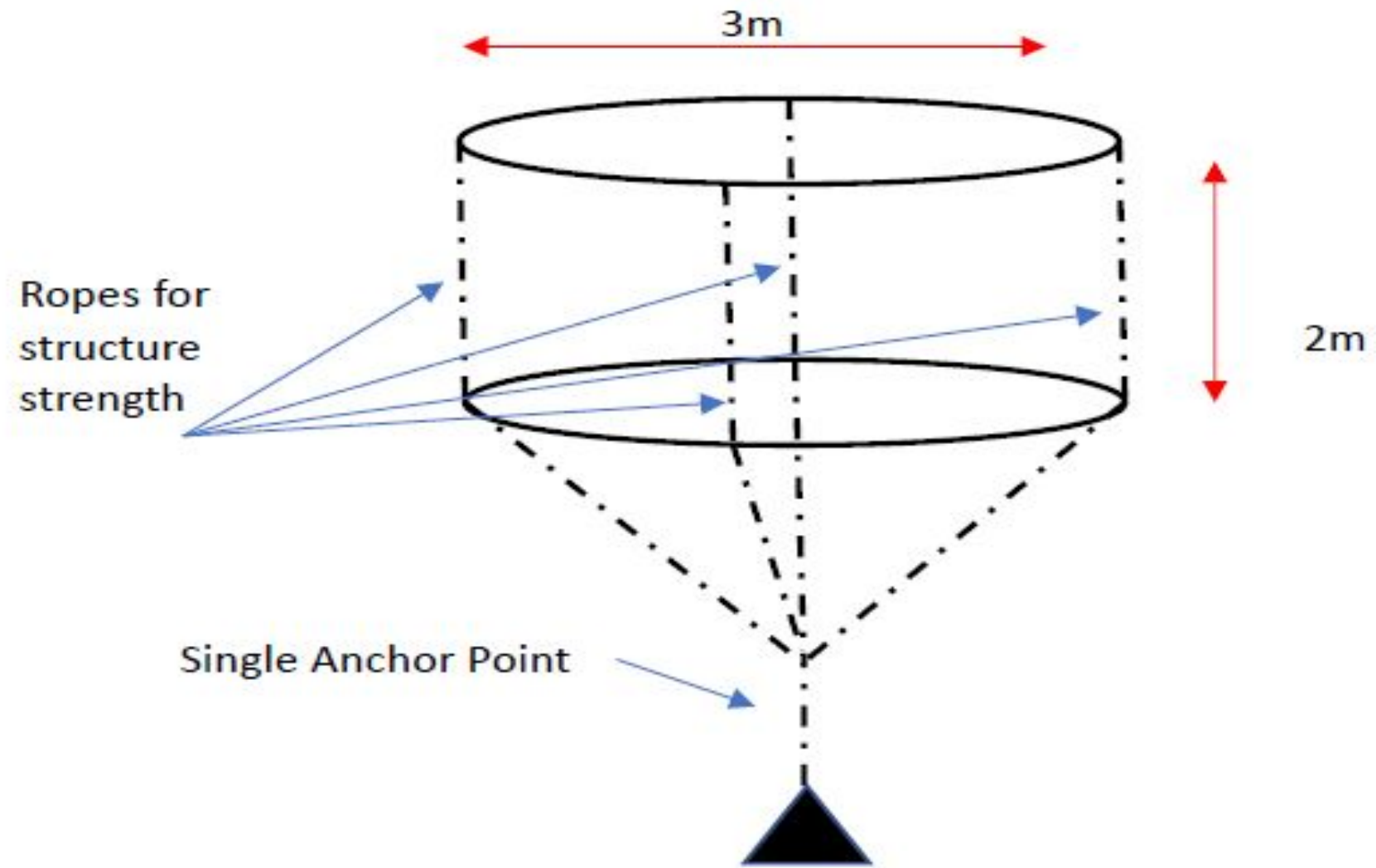


Proof of concept



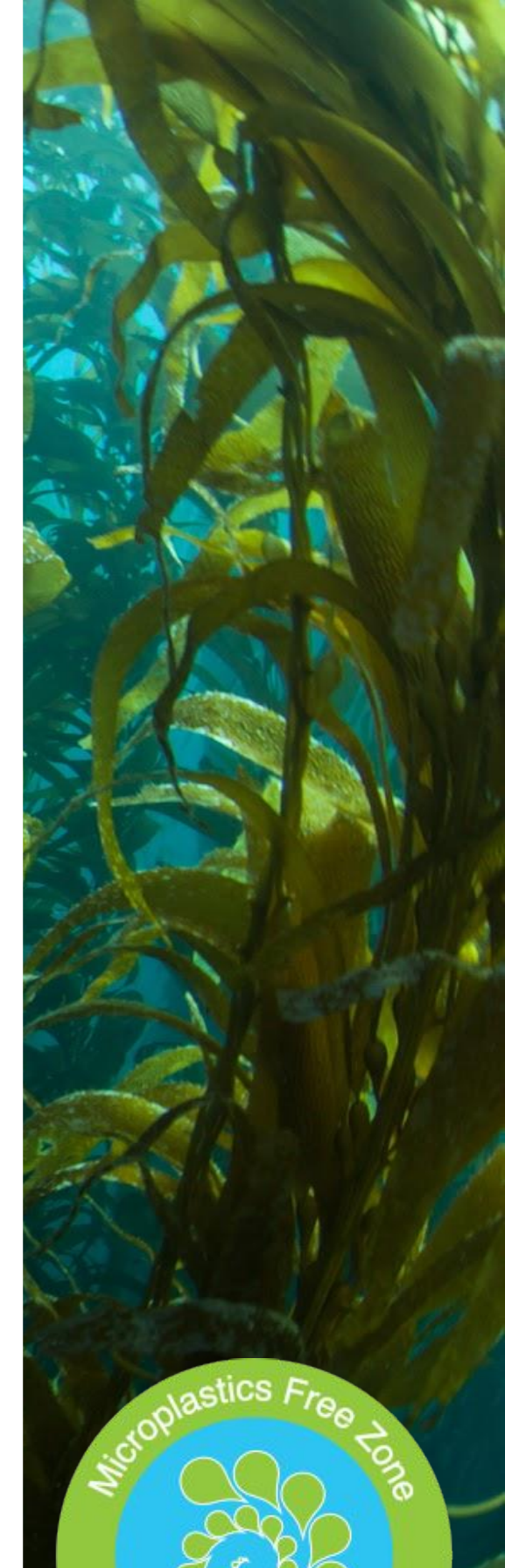
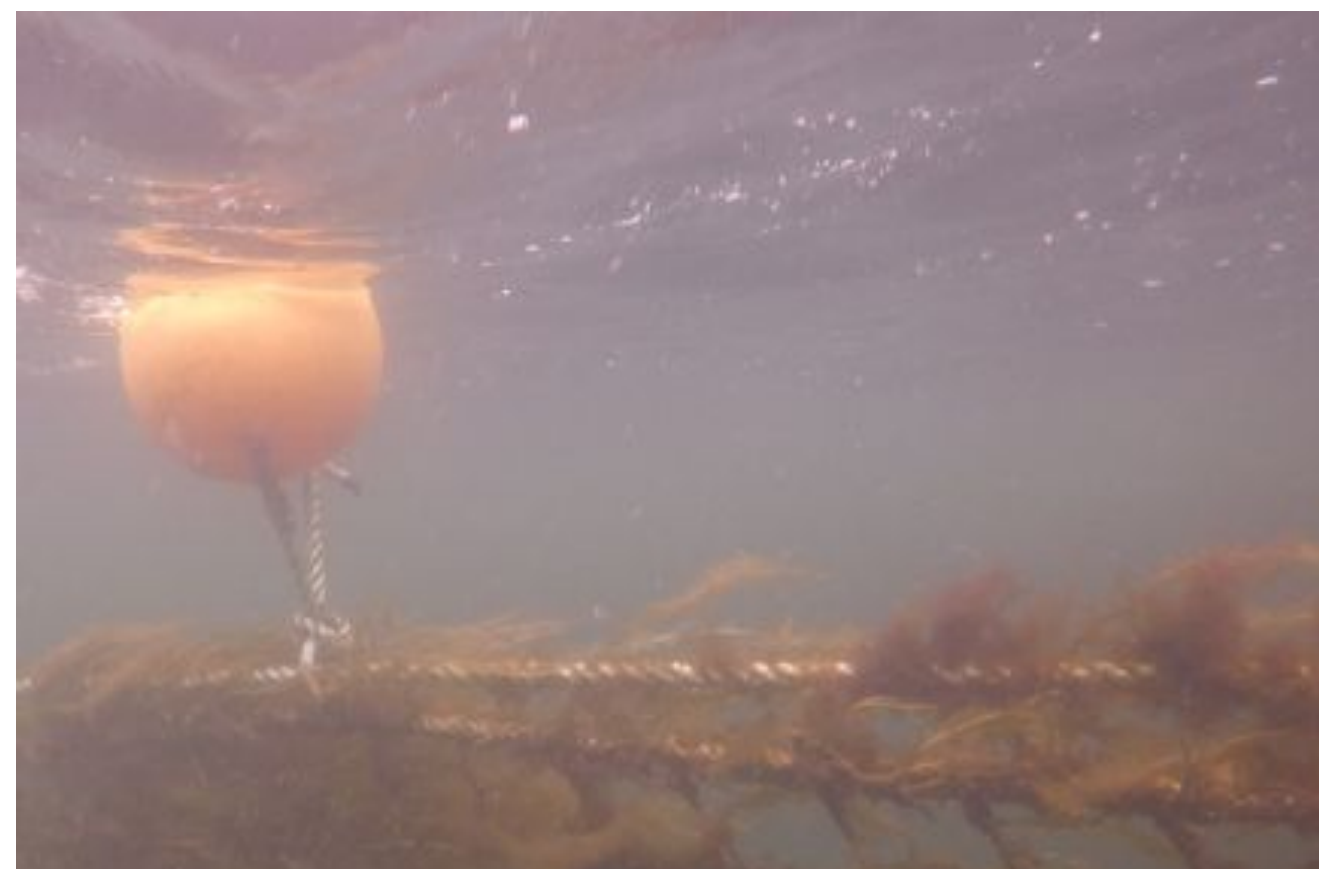
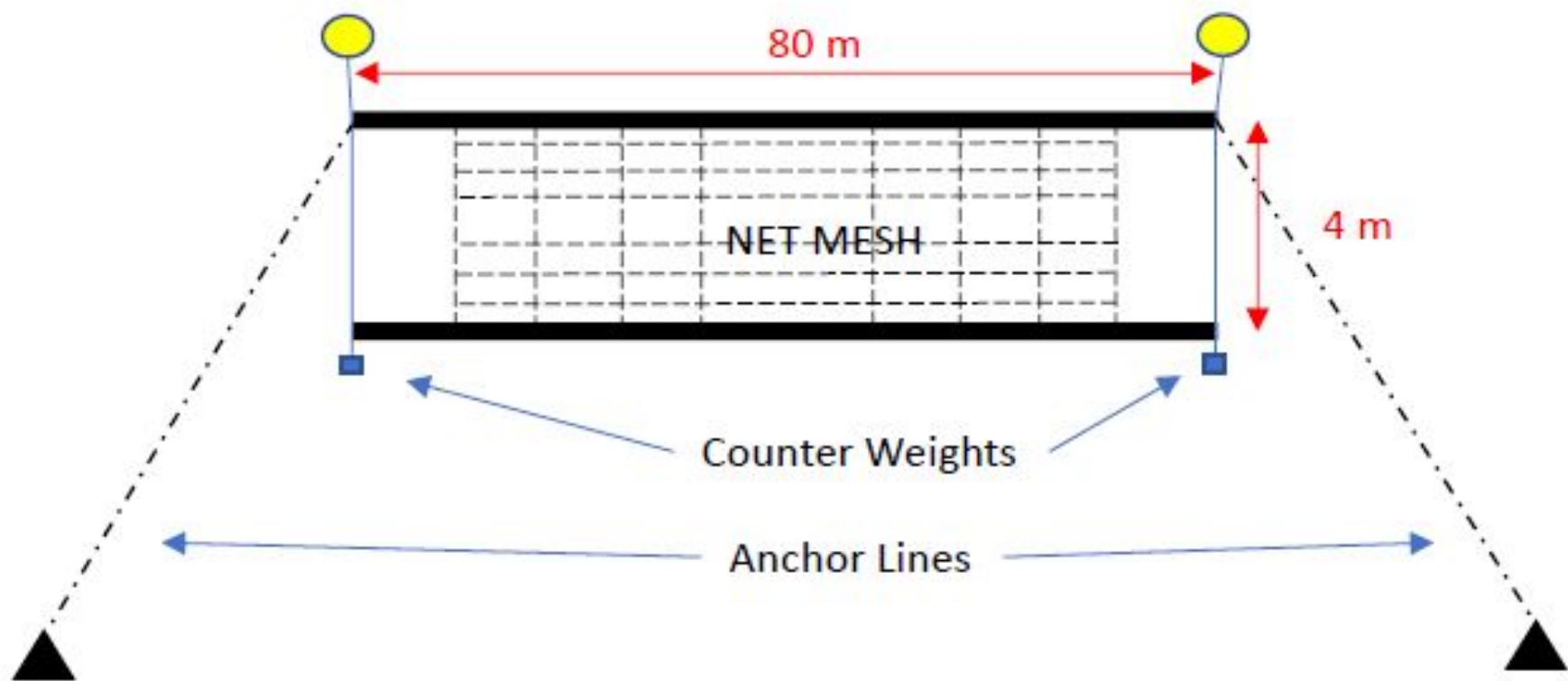
Scale

Types of Seaweed curtains



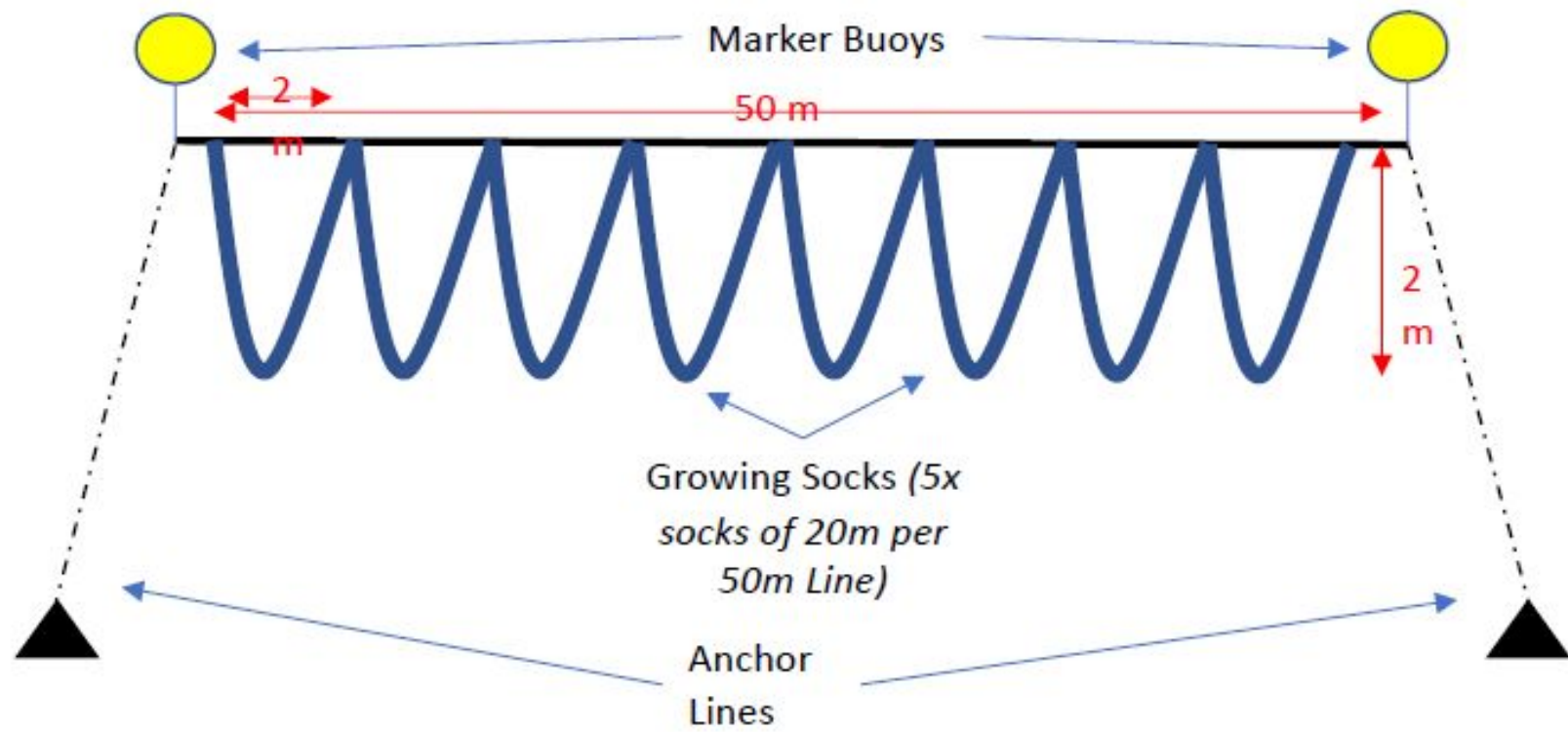
The Seaweed Company

Types of Seaweed curtains



The Seaweed Company

Types of Seaweed curtains



The Seaweed Company

An Opportunity Tailored to Japan



6th

Longest Coastal area
in the world



1 400

Seaweeds are
farmed in every
coastal prefecture



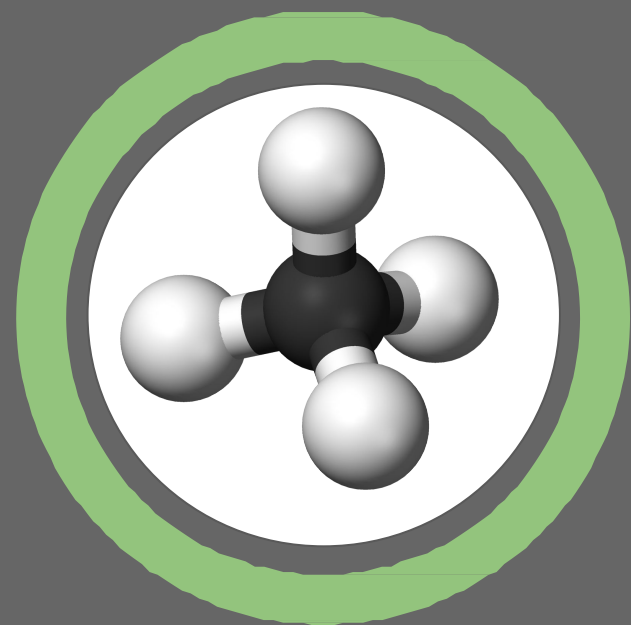
Unique

Seaweed is healthy
part of Japanese
Food culture

A two phase solution



Harvested seaweed from the curtain



Methanization
CH₄ / 90%

=



Plastics
Syngas

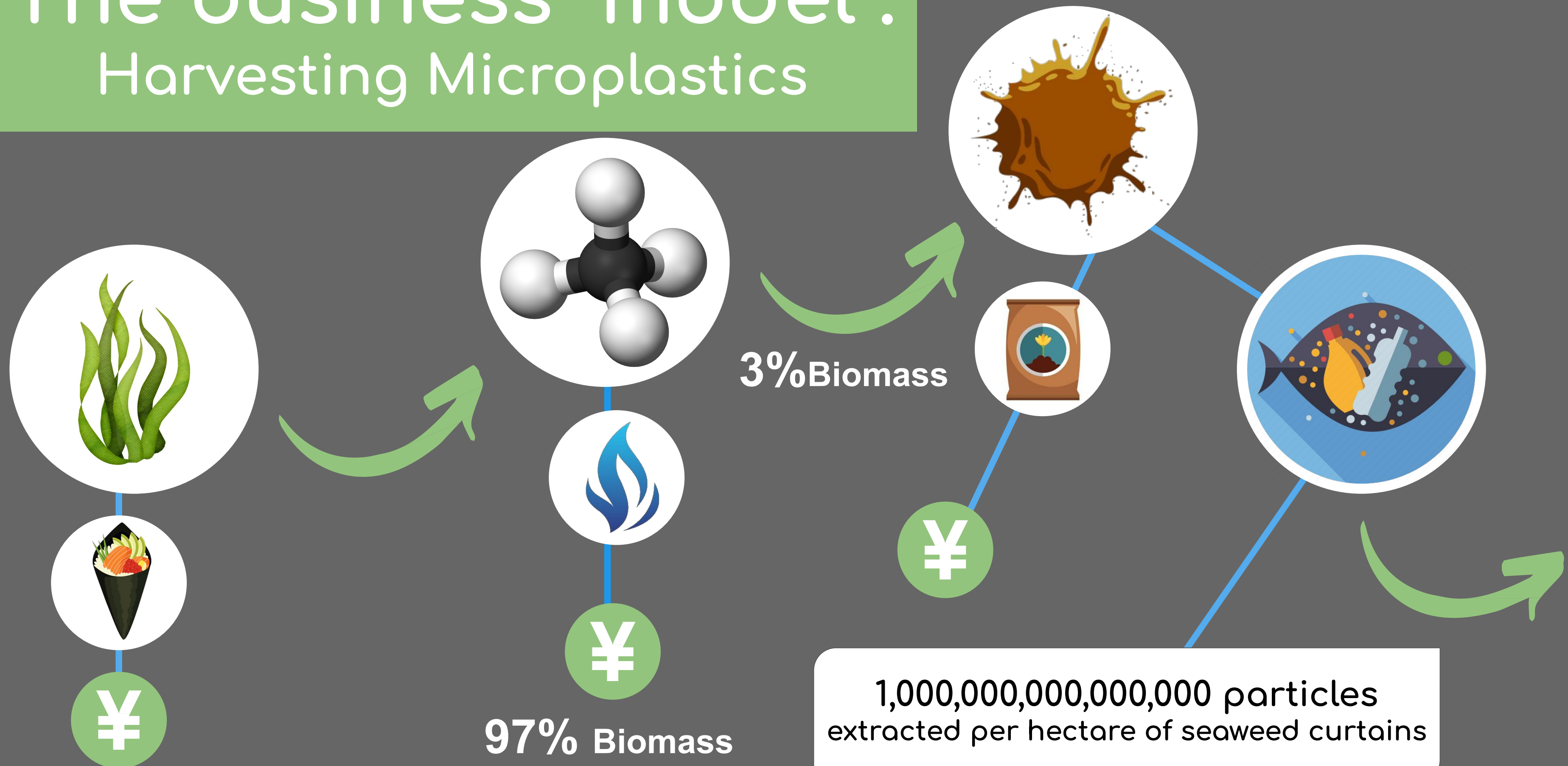
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Anaerobic
Digestion

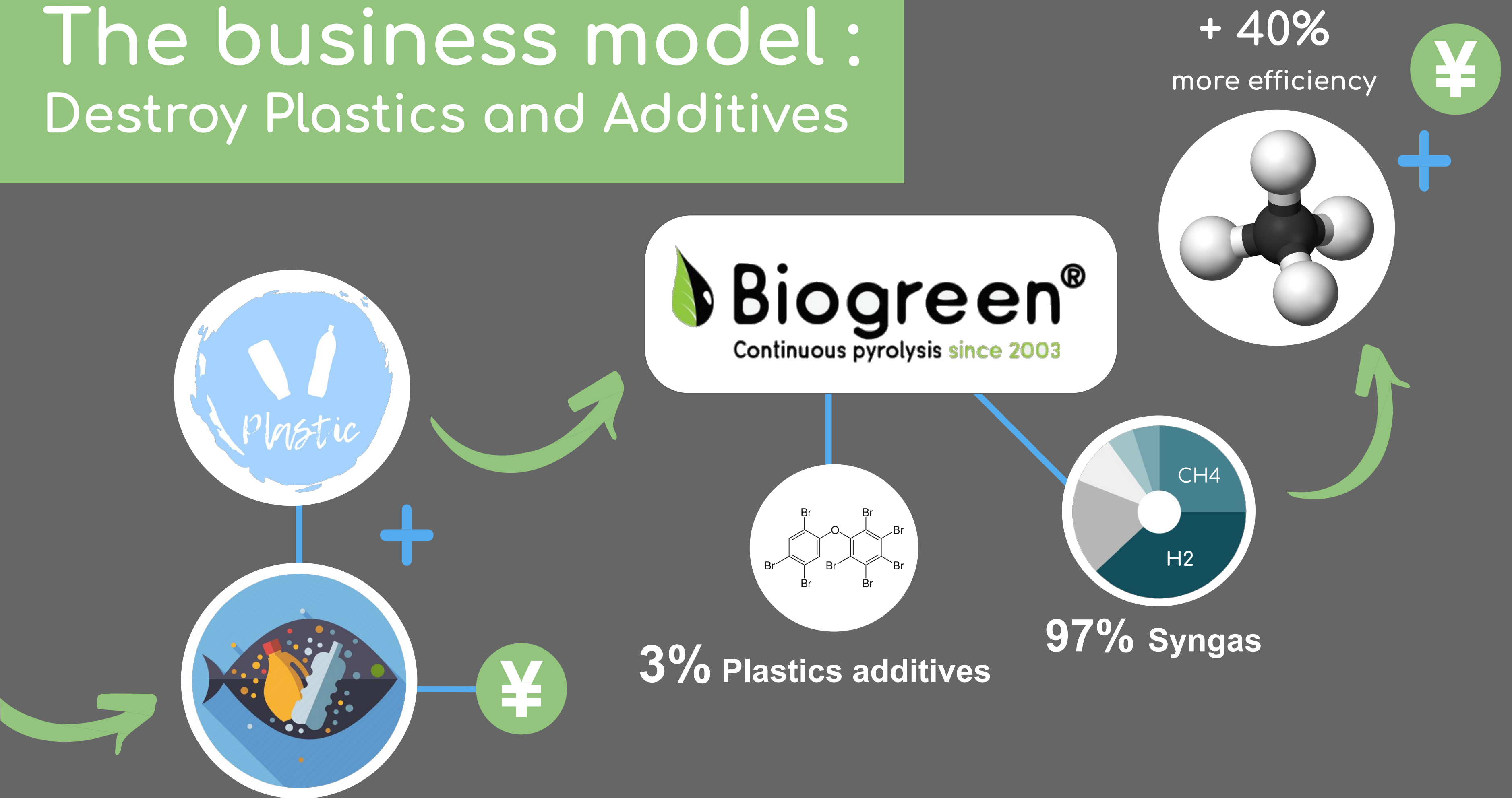


The business model: Harvesting Microplastics



as an estimation

The business model : Destroy Plastics and Additives





Eco Tourism, Biodiversity, Aquaculture.

The microplastic free zone regenerates the ecosystem going beyond covering costs. It adds value to the economy and builds resilience.



The Seaweed solution



Biodiversity
Quality Food for
Local Communities

x



Carbon negative
energy

=



Economically
Socially and Culturally
sustainable



60's

Organic Farming



2020

Microplastics Free Zone



Together we make it happen!



Biogreen®
Continuous pyrolysis since 2003

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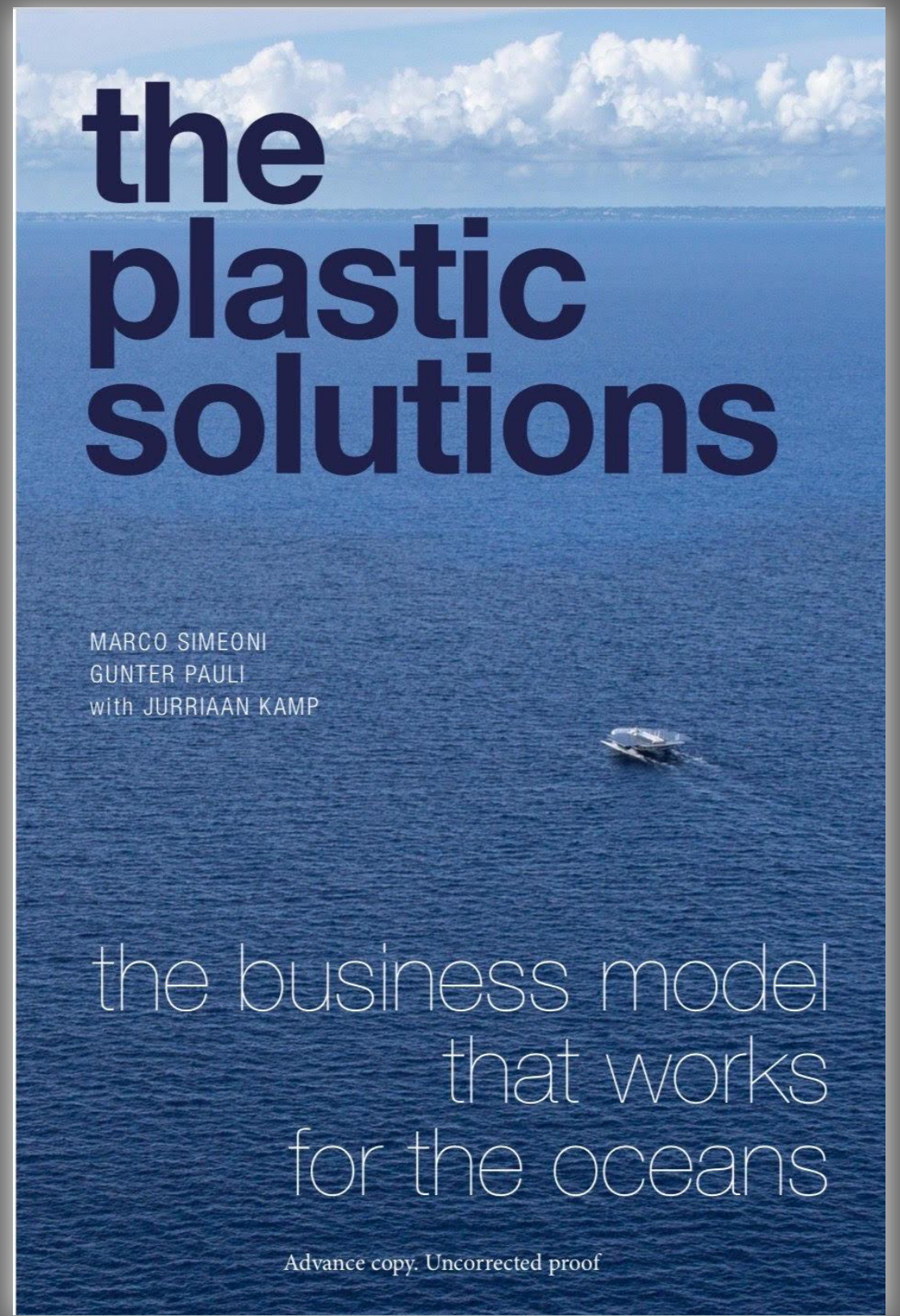


The Seaweed Company

EDGEof



ECOALF



the plastic solutions

MARCO SIMEONI
GUNTER PAULI
with JURRIAN KAMP

the business model
that works
for the oceans

Advance copy. Uncorrected proof



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Photo credit :

Race for Water fondation
The seaweed company
internet sourced
ZERI Network

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Thank you!



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