

HISTORIC CITIES AGAINST PLASTIC WASTE (HISCAP)

How European networks (as HISCAP) can help coastal cities to manage plastic waste?

Dr. Jelena Barbir
HAW Hamburg



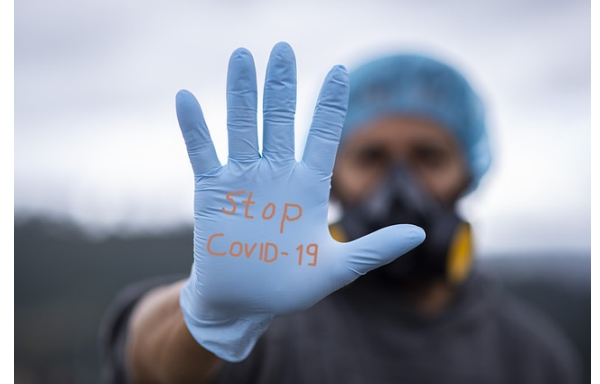
WHY historic? WHY plastic?

Europe has more than 500 million inhabitants and also attracts **tourists** from all over the world. Not all of them dispose of their waste properly: disposable plastic bottles and dishes end up in urban waters or are left by the roadside. **Plastic waste** in particular poses an enormous challenge.



COVID-19: worsening the problem

While COVID-19 has limited the stream of tourists in many cities, it has been reported that plastic waste has increased around the world. The challenge therefore remains for historic cities, given their aged infrastructure.



Vision

HISCAP seeks to support especially historic cities and municipalities in need of the latest knowledge and effective, real-life solutions to cope with the many problems caused by plastic waste.

HISCAP



Rationale

- ✚ Elimination of problematic or unnecessary plastic packaging through redesign, innovation and new delivery models
- ✚ Shift away from single-use plastics towards reusable packaging
- ✚ Design of recyclable, compostable and/or reusable packaging
- ✚ Improve the sorting of complex waste streams to improve quality of recycling output
- ✚ Provide necessary infrastructure to allow processing of compostable packaging

EU ban!



plastic straws



glass + silicone +
metal straws



plastic containers



mason jars



water bottles



stainless steel
water bottles



plastic ice cube trays



silicone ice cube trays

Mission of HISCAP

The HISCAP members together with the BIO-PLASTIC EUROPE project partners try to implement sustainable solutions on local levels:

- Knowledge transfer between their administrations
- Exchange of best practices
- Capacity building

How European networks can help?

As in HISCAP

Using projects to reach cities:

- Network within projects are free of charge (as HISCAP)
- Include municipalities in workshops - developing recommendations for EU policies!
- Participation in new projects!

Do it with HISCAP

Show your case study:

- Case studies
- Learning one from another
- Promote your actions
- Share your mistakes
- Adapt other solutions to your city

We collaborate with other networks ...

Association des villes pour la propreté urbaine (AVPU)

- 2010
- 120 French cities
- <http://avpu.fr/qui-sommes-nous/>

Association of Cities and Regions for sustainable Resource management (ACR+)

- Exists for 25 years
- 1100 cities (Europe)
- www.acrplus.org

+Network of Municipalities “MiPuebloSinBasureza” - SPAIN



Benefits for the cities

Free
membership

Free
participation in
virtual events
and workshops

**Knowledge
transfer and
sharing best
practices between
stakeholders**

Showcase own
best practices on
plastic waste
reduction action

Management of
plastics, bio-based
and biodegradable
plastics and bio
waste

Access to latest
European bio-
based plastics
research

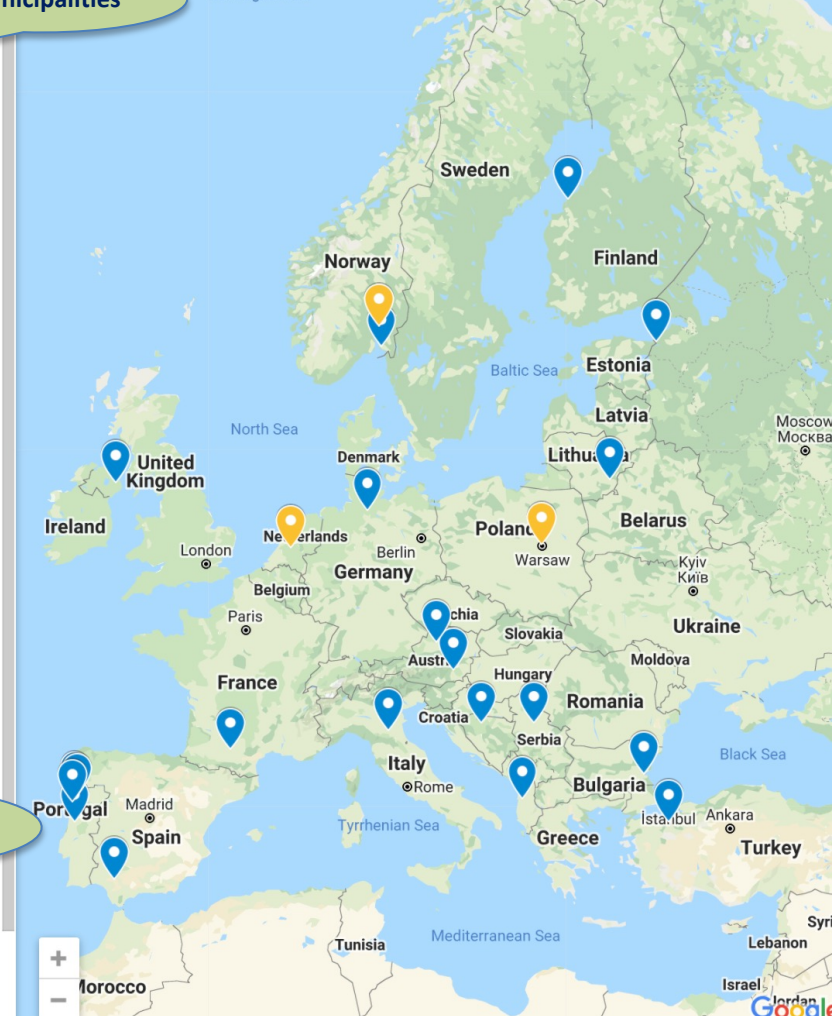
Municipalities

Membership

The network involves stakeholders who are involved in the planning, management or operations of waste on public grounds.

- 📍 Banja Luka, Bosnia and Herzegovina
- 📍 Belfast, UK
- 📍 Belgrade, Serbia
- 📍 Bologna, Italy
- 📍 Braga, Portugal
- 📍 Burgas, Bulgaria
- 📍 Coimbra, Portugal
- 📍 Fredrikstad, Norway
- 📍 Graz, Austria
- 📍 Guimarães, Portugal
- 📍 Hamburg, Germany
- 📍 Jakobstadregion, Finland
- 📍 Linz, Austria
- 📍 Narva, Estonia
- 📍 Osmangazi, Turkey
- 📍 Porto, Portugal
- 📍 Seville, Spain
- 📍 Tirana, Albania
- 📍 Toulouse, France
- 📍 Vilnius, Lithuania
- 📍 Agency for Urbant Environment, Oslo, No...
- 📍 HU University of Applied Sciences Utrecht
- 📍 Department of Air pollution and Climate ...

Agencies and Institutions

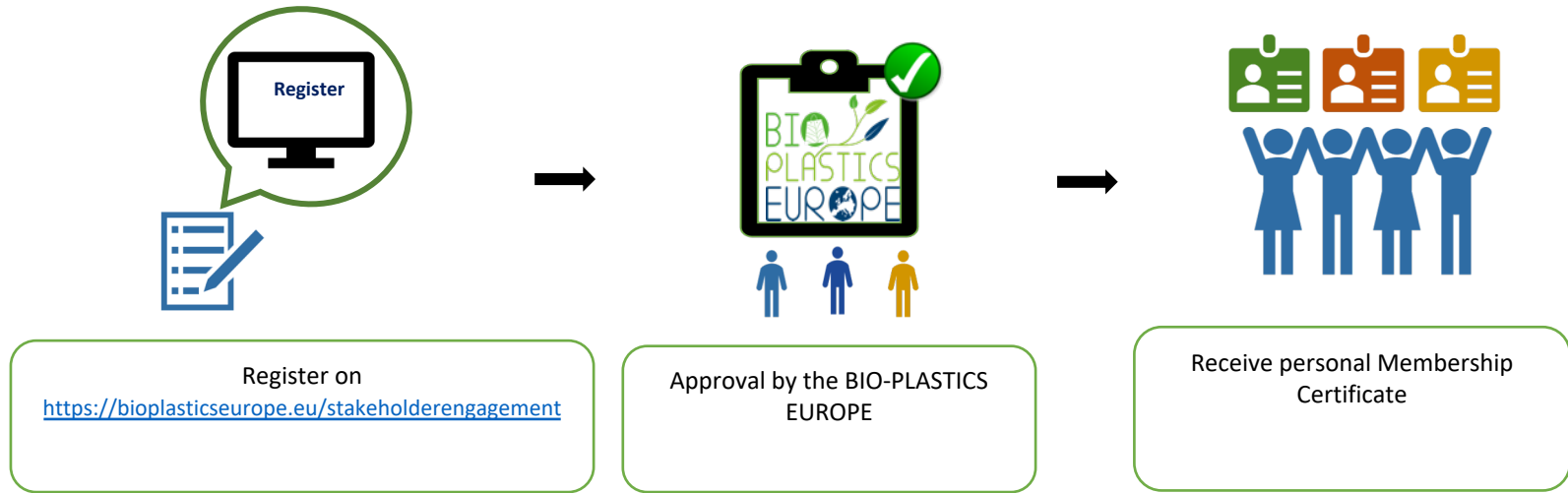


How to become a member?



Official Member – certificate

Follower – join LinkedIn HISCAP



Go to the chat!

HISCAP group

JOIN US!

<https://www.linkedin.com/groups/9044005/>

LINK IN THE CHAT!



HISTORIC CITIES AGAINST PLASTIC WASTE

Jelena Barbir · Owner
Created group: Mar 2021

0 pending posts

Search for posts in this group

Home My Network Jobs Messaging Notifications Me Work Try Premium Free for 1 Month

Manage group Edit group

Recent

- Historic Cities against Plastic W...
- HISCAP event - Plastic Waste ...
- European Bioplastics Research ...
- JEMES (CISu) Alumni Association

Groups

- Historic Cities against Plastic W...
- European Bioplastics Research ...
- JEMES (CISu) Alumni Association

See all

Events +

- HISCAP event - Plastic Waste ...
- Plastic Recycling Conference As...

See all

Followed Hashtags

Discover more

Listed group

Start a conversation in this group

Photo Video Poll

All Recommended

Bio-plastics Europe · 1st
Communications Manager at BIO-PLASTICS EUROPE
20h

We had the honor of hosting Mr. Virginijus Sinkevičius, EU Commissioner for Environment, Oceans and Fisheries during our first virtual meeting back in September 2020. ...see more

with European Commission

Like Comment

13 members
Including Cintia Nunes and 6 other connections

Invite connections

About this group

The "Network of Historic Cities against Plastic Waste" (HISCAP) was established by BIO-PLASTICS EUROPE to facilitate the uptake of our project results from civil society and public authorities. The network congregates historical cities from Europe, whose aged ...

See all

Admins

- Aprajita Minhas** · 2nd · Owner
Research Assistant at Research and Transfer Center "Sustainability & Climate Impact Management" (FTZ-NK)
- Jelena Barbir** · You · Owner
H2020 Project Manager at the Hamburg University of Applied Sciences
- Maren Fendt** · 1st · Manager
Junior Project Manager bei Sustainability and Climate Change Management Research and Transfer Centre (FTZ NK)

Show more

Follow up...

NEXT YEAR:

- WORKSHOP
- Date: March 2021
- TOPIC: “Assess readiness of the EU cities to use biodegradable bio-based plastics”
-and many activities and events to come in 2022!
- Stay tuned on our website:
<https://bioplasticseurope.eu/news-events>



www.alamy.com - PKDF49

Lets stay connected!



Do follow us on social media channels
(LinkedIn, Twitter, Instagram, Facebook)

HISCAP LinkedIn:

<https://www.linkedin.com/groups/9044005/>

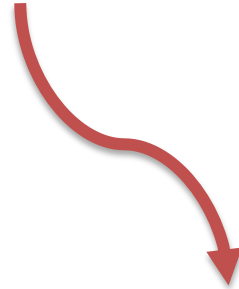


Subscribe to our newsletter

<https://bioplasticseurope.eu/newsletter>



Go to the chat!



THANK YOU FOR ENGAGING WITH US.....

HAMBURG UNIVERSITY OF APPLIED SCIENCES

Research + Transfer Centre „Sustainability & Climate Change
Management“ (FTZ-NK)

Ulmenliet 20 / 21033 Hamburg / Germany

T +49 40 428 75 6362 (Mon - Fri 8AM-3PM)

Email: bioplastics@ls.haw-hamburg.de

Website: <https://bioplasticseurope.eu/>

..... THANK YOU FOR YOUR ATTENTION!



HAW Hamburg



Horizon 2020

OCEAN
BOUND
PLASTIC

CERTIFICATION PROGRAM

BIO  
PLASTICS
EUROPE 



HISCAP – 12 OCTOBER 2021



ZERO
PLASTIC
OCEANS.



Play on the shore of Manila Bay in the Philippines, which is polluted by plastic waste. © NATHAN WALTON. NAT GEO IMAGE COLLECTION

The New York Times

Hidden Beneath the Ocean's Surface, Nearly 16 Million Tons of Microplastic

New research shows that the amount of fragments on the sea floor is far more than the plastic floating on the surface.



BBC | 英伦网

主页 视频内容

白色污染：解决塑料危机的5个新出路

露西·琼斯 (Lucy Jones)

2019年2月7日

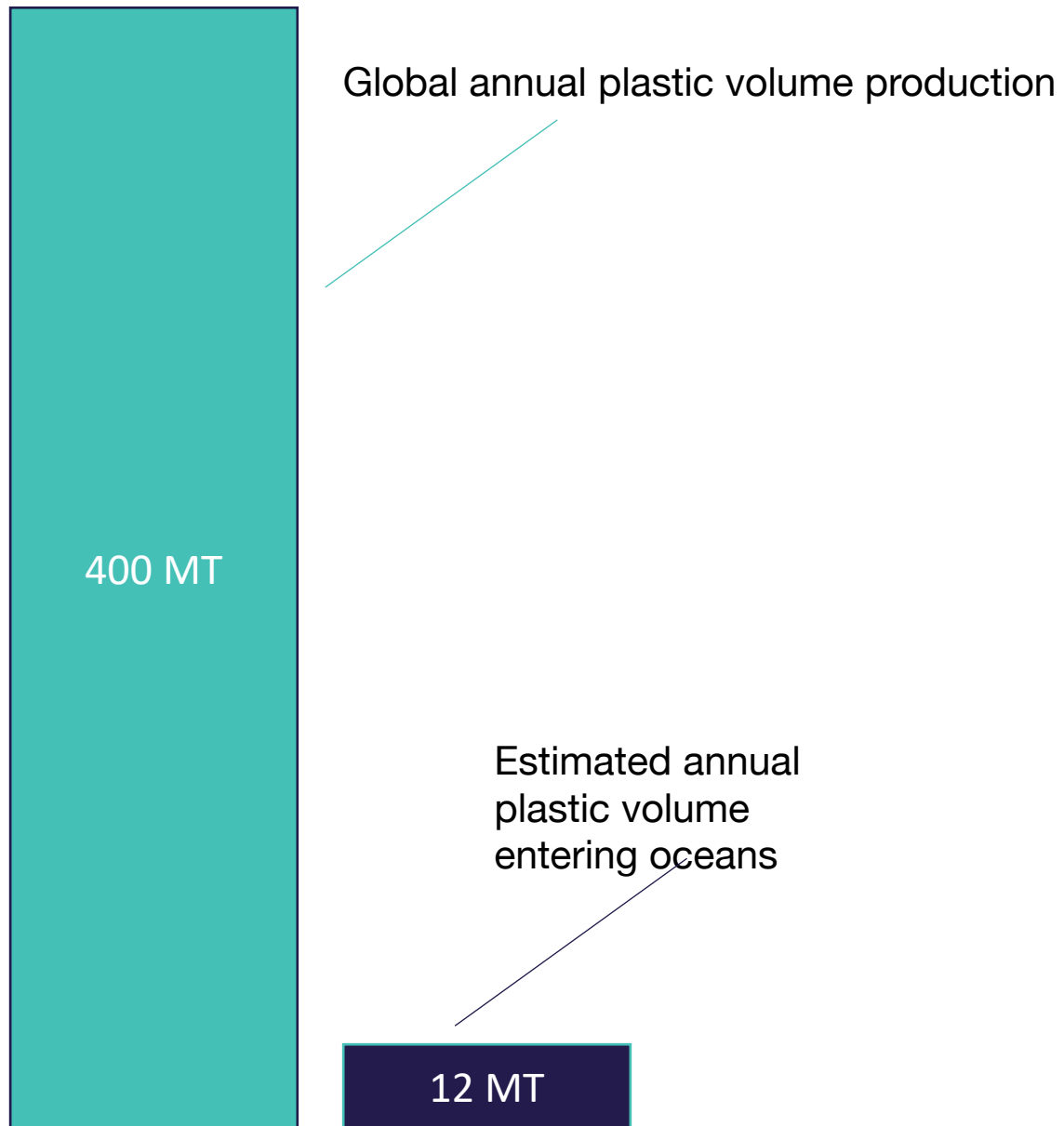
THE INDIAN WIRE

प्लास्टिक प्रदूषण पर निबंध

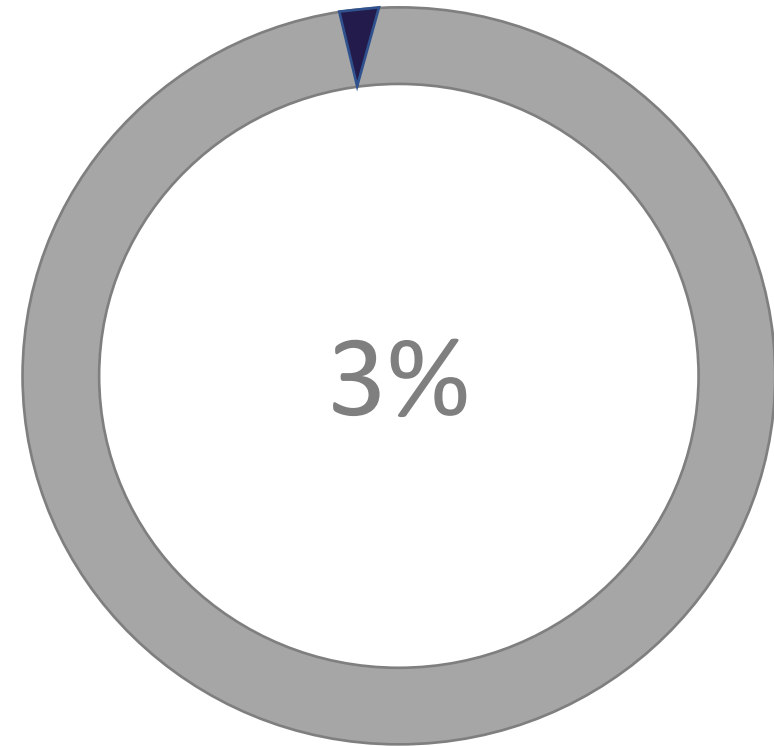
July 29, 2019 15:10



Sea birds, one with a piece of plastic fishing net stuck around its neck, 20 miles off the coast of Mauritania. © Pierre Gleizes / Greenpeace



THE “3%” PROBLEM



An issue that represents 3% of the global plastic production, should not be that complicated to solve, if we focus on the correct part of the issue!

OCEAN BOUND PLASTIC

“OCEAN BOUND PLASTIC is the source of plastic marine litter. Focusing on it is the most practical and cost-effective solution to the crisis”



Focusing On The Source Of Plastic Waste

January 12, 2020 • Quentin Bates

🕒 Dato: 12/01/2020 kl. 00:06

📁 Kategori: [Pollution](#)

🏷️ Tags: [Marine plastic](#), [NGOs](#), [Pollution](#)

🌐 Land: [International](#), [Netherlands](#)

FOCUS

**ZERO
PLASTIC
OCEANS.**

“In collaboration
with”



“developed the”

**OCEAN
BOUND
PLASTIC**
CERTIFICATION PROGRAM

“As a tool to be
used by the
industry to focus
it efforts on
collecting,
recycling and
treating **OCEAN
BOUND PLASTIC**”

OCEAN BOUND PLASTIC

CERTIFICATION PROGRAM



WHAT IS OCEAN BOUND PLASTIC?



OBP = PLASTIC AT RISK OF ENTERING OCEANS

THE 4 OBP CATEGORIES

SHORELINE



This category covers OBP 200m from the tide line, on the beach and the first 100m, in the sea.

POTENTIAL



This is the generic category of mismanaged plastic waste within 50km from the coast.

WATERWAYS



This category covers OBP 200m from riverbanks and OBP inside the river itself.

FISHING MATERIAL

NEW



This category covers fishing gear and plastic caught as bycatch.

OBP = PLASTIC AT RISK OF ENTERING OCEANS

OBP

NOT OBP



OBP = PLASTIC AT RISK OF ENTERING OCEANS

OBP



Beach Cleanup operations



River Cleanup operations, plastic barriers



Fishing material and plastic bycatch recovery schemes

NOT OBP



Ocean Plastic

Intentional collection of plastic already in the Ocean

OCEAN BOUND PLASTIC

CERTIFICATION PROGRAM



PROGRAM OVERVIEW



OBP PROGRAM SCOPE



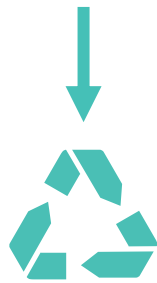
OBP PROGRAM SCOPE



Commercially
Recyclable OBP
Removed



Recycled
OBP Content
Claims



Recycling Value Chain

OBP PROGRAM SCOPE

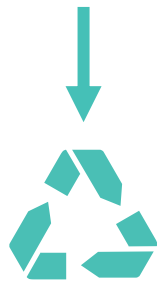


Commercially
Recyclable OBP
Removed

Commercially non
Recyclable OBP
Removed



Recycled
OBP Content
Claims



Recycling Value Chain



Ocean Bound Plastic
Neutrality Value Chain



OBP Neutral
Products
Claims

OBP RECYCLING SUBPROGRAM: COVERING THE CERTIFICATION OF RECYCLABLE OCEAN BOUND PLASTIC, FROM COLLECTION TO INCORPORATION INTO NEW PRODUCTS.



Operations certifiable to the **OBP Collection Organization Standard**



Collection



Storage/Sorting



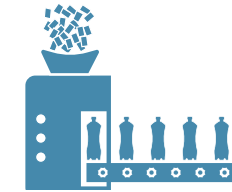
Baling



Transport



Sorting/Grinding/Washing



Extrusion/Molding



Recycled Product

NEW

All OBP changes of ownership are recorded via an electronic **Transaction Declaration**



Operations certifiable to the **OBP Recycling Organization Standard**

Trading at any step of the value chain and packaging/repacking/labelling are also certifiable to this standard.

OBP NEUTRALITY SUBPROGRAM: COVERING THE CERTIFICATION OF PLASTIC OFFSETTING AND OBP CREDIT EMISSION AGAINST OBP REMOVAL.



Operations certifiable to the **OBP Neutralization Services Provider Standard**



Collection



Storage/Sorting



Transport



Waste treatment



Neutralization Certificate
& OBP Credits

OBP credits purchase



Production



OBP Neutral Product



Operations certifiable to the **OBP Plastic Producers & Users Standard**

KEY TAKEAWAYS

Key Benefits

- Complete solution (option for recyclable and non commercially recyclable)
- Improved revenues for waste pickers or NGOs (Credits and efficiencies)
- 100% cleaned environment

Guarantees for Brands and Consumers

- Third party certification
- Information publicly available
- Proof of OBP origin, various categories to choose from
- Respect of social criteria all along the value chains

Opportunities for Plastic value chain actors

- Incorporating recycled OBP in their products
- Compensating a plastic footprint
- Minimizing their environmental footprint

Look back after 16 months

- 29 certifications issued
- Mostly Asia, first steps in Europe
- 1st OBP certified Plastic Credits transaction

An illustration of an underwater scene. The background is a light teal color with small white bubbles. In the foreground, there are several pieces of white plastic waste, including bottles and containers, scattered on the seabed. Several colorful fish (purple, blue, and green) are swimming around. There are also some green coral-like structures. The overall scene suggests environmental pollution in the ocean.

MORE DETAILS ONLINE
WWW.OBPCERT.ORG

CONTACT@OBPCERT.ORG



CORFU

HOW DO WE CHANGE OUR RELATIONSHIP WITH TRASH?











MYTHOLOGICAL MAP
OF GREECE
AND WESTERN ASIA MINOR

ISBN: 9789604251063 - COPYRIGHT © 2016 DIMITRIS M. STEFANIDIS, SIGMA PUBLICATIONS



111,975

CORFU POPULATION IN 2011



39,674

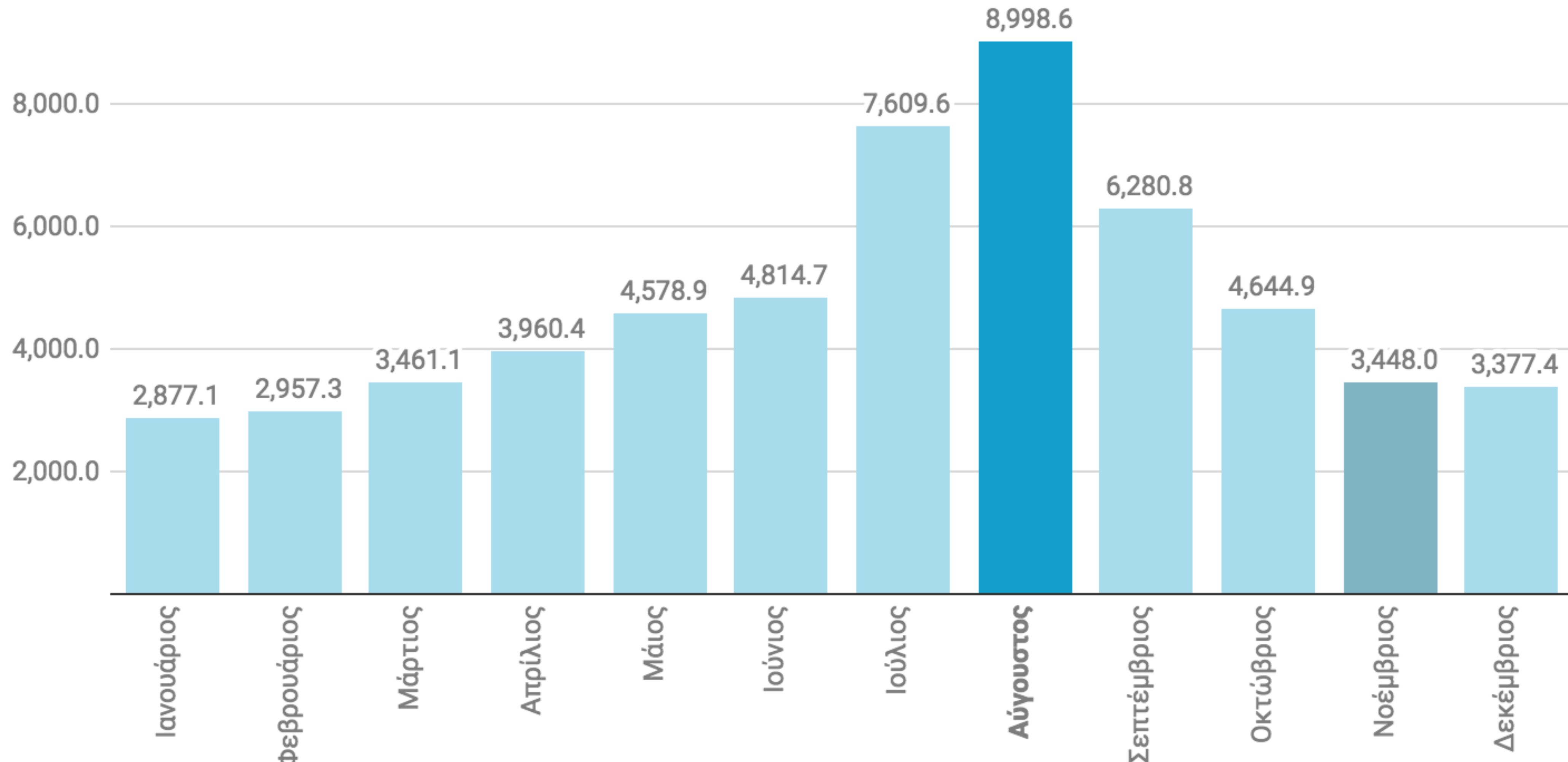
IN CORFU TOWN ALONE



3.275.964

ARRIVALS BY PLANE IN 2019

Τονάζ Μεταφερόμενων Απορριμμάτων Κέρκυρας 2017



SYSTEMS IN USE

2 TYPES OF BIN

© Green bins for waste



SYSTEMS IN USE

2 TYPES OF BIN

© Blue bins for mixed recycling









COR-POOH! 4,000 tonnes of stinking rubbish piles up in streets of Corfu as dump is FULL

MOUNTAINS of stinking garbage are piling up across the Greek city of Corfu because the official rubbish dump is simply full to over-flowing.

By **REBECCA PERRING**

PUBLISHED: 13:54, Mon, Jul 2, 2018 | UPDATED: 14:55, Mon, Jul 2, 2018



Greece new: The streets of Corfu are lined with stinking rubbish (Image: GETTY)

Around 4,000 tones of rotting household waste is lining the streets of the British favourite holiday destination as officials scramble to find a new landfill site.

And this month the Summer tourist season starts in earnest – with British tour operators including Thomas Cook and TUI warning Corfu's mayor to clear the streets in time for the tourist season rush.

Overflowing local landfill site Temploni has been closed, but locals are battling against plans to open a new site in Lefkimmi, funded by EU cash, which officials hoped would ease the pressure on the 40-year-old Temploni site.

Follow

By **Hugh Morris**, TRAVEL WRITER

3 JULY 2018 · 4:45PM

Holidaymakers heading to Corfu this summer are concerned that their trips could be ruined by the island's mounting rubbish crisis.

There have been rumours that tour operators were offering alternative resort arrangements after travellers to the Mediterranean island complained of mountains of uncollected waste littering the roadsides, unpleasant smells and swarms of flies.

Corfu has long had issues with waste management, with its main landfill site full and declared illegal by the EU and authorities struggling to find a replacement, but peak seasons appears to have exacerbated the situation.



Brian Bould

@pastsnapper



Corfu, roadside rubbish huge problem over the island. [#rubbish](#)

11:15 AM - Jun 27, 2018

[See Brian Bould's other Tweets](#)





missusgrasshopper • [Follow](#)

Greek Islands

missusgrasshopper And the reality behind the pretty pictures. In every town and village we have passed there are piles of stinking rubbish. The pit here is full (apparently due to illegal dumping of construction rubbish which should have gone to commercial pit on the mainland). From Corfu town throughout the island this is what you see. Very sad. #corfurubbish #corfuholiday #greekholiday



6 likes

JUNE 6

Add a comment...



A SYSTEM THAT ACTUALLY WORKS

COMMUNITY RECYCLING CENTRES



A SYSTEM THAT ACTUALLY WORKS

COMMUNITY RECYCLING CENTRES

“Liapades Recycling and Reuse Centre was set up just over 3 years ago in response to the Corfu waste management crisis.

The intention was to reduce the pressure on the general waste bins by encouraging people to recycle”

A SYSTEM THAT ACTUALLY WORKS

COMMUNITY RECYCLING CENTRES

“The Centre is run by volunteers in a community yard and receives no official funding or support.

**The Centre has expanded over this period:
we now accept 15 different types of materials for recycling.**

**Since we started, we have recycled over 160 tonnes
and kept numerous items out of landfill through our reuse section”**

A SYSTEM THAT ACTUALLY WORKS

COMMUNITY RECYCLING CENTRES

“The Centre had shown that, given a transparent system and a immediate feedback loop, people not only want to recycle but are willing to do a fine sortation of their materials and to travel sometimes significant distances.”

A SYSTEM THAT ACTUALLY WORKS

COMMUNITY RECYCLING CENTRES





ΑΠΑΘΕΙΚΤΑ
ΠΛΑΣΤΙΚΑ
MIXED PLASTIC





ΣΑΚΟΥΛΕΣ ΝΑΪΛΟΝ/
ΠΕΡΙΤΥΛΙΓΜΑΤΑ

4 LDPE 4 LDPE

PLASTIC BAGS &
WRAPPINGS







A SYSTEM THAT ACTUALLY WORKS

COMMUNITY RECYCLING CENTRES



Ian Smith

Admin

· 1 October at 17:52 · 🌐



On a damp Friday afternoon there is no better place than Harrods and the chance to do shopping

Reuse - Reuse - Reuse

Ένα υγρό απόγευμα Παρασκευής δεν υπάρχει καλύτερο μέρος από το Harrods και την ευκαιρία να κάνετε ψώνια

Επαναχρησιμοποίηση - Επαναχρησιμοποίηση - Επαναχρησιμοποίηση

[#reuseliapades](#)

[#recycleliapades](#)

A SYSTEM THAT ACTUALLY WORKS

COMMUNITY RECYCLING CENTRES



Ian Smith

Admin

· 1 October at 17:52 · 🌐



On a damp Friday afternoon there is no better place than Harrods and the chance to do shopping

Reuse - Reuse - Reuse

Ένα υγρό απόγευμα Παρασκευής δεν υπάρχει καλύτερο μέρος από το Harrods και την ευκαιρία να κάνετε ψώνια

Επαναχρησιμοποίηση - Επαναχρησιμοποίηση - Επαναχρησιμοποίηση

[#reuseliapades](#)

[#recycleliapades](#)

MED FREE SUP

Supported by:  **Climate-KIC**
Climate-KIC is supported by the EIT, a body of the European Union 

«Εφιάλτης» από πλαστικό σε Ελλάδα και Ε.Ε.

Σε τεμάχια

ΜΠΟΥΚΑΛΙΑ


666 εκατ. -1,28 δισ.


45-60 δισ.

ΠΟΤΗΡΙΑ ΚΑΙ ΚΑΠΑΚΙΑ

202-369 εκατ.

13,7-17 δισ.

ΚΑΛΑΜΑΚΙΑ*

Περίπου 900 εκατ.

46,5 δισ.

ΣΥΣΚΕΥΑΣΙΕΣ ΦΑΓΗΤΟΥ

37-58 εκατ.

2,4-2,6 δισ.

*Στοιχεία μόνο από ταχυφαγεία



ΠΗΓΗ: Οργάνωση Seas At Risk

Η ΚΑΘΗΜΕΡΙΝΗ

CORFU CUP

A REUSABLE CUP FOR ALL

It is a cup “to rent” for your take away coffee

You do not own it

The cafe does not own it

The whole island has the same cup

You can return it to any cafe that uses the Corfu Cup

anywhere on the island

CORFU CUP

A REUSABLE CUP FOR ALL

- **The experiment will last 4 week**
- **700 cups will be distributed**
- **10 cafes will participate**
- **Cups will be used for event after the experiment**



CORFU CUP

A REUSABLE CUP FOR ALL

For more information

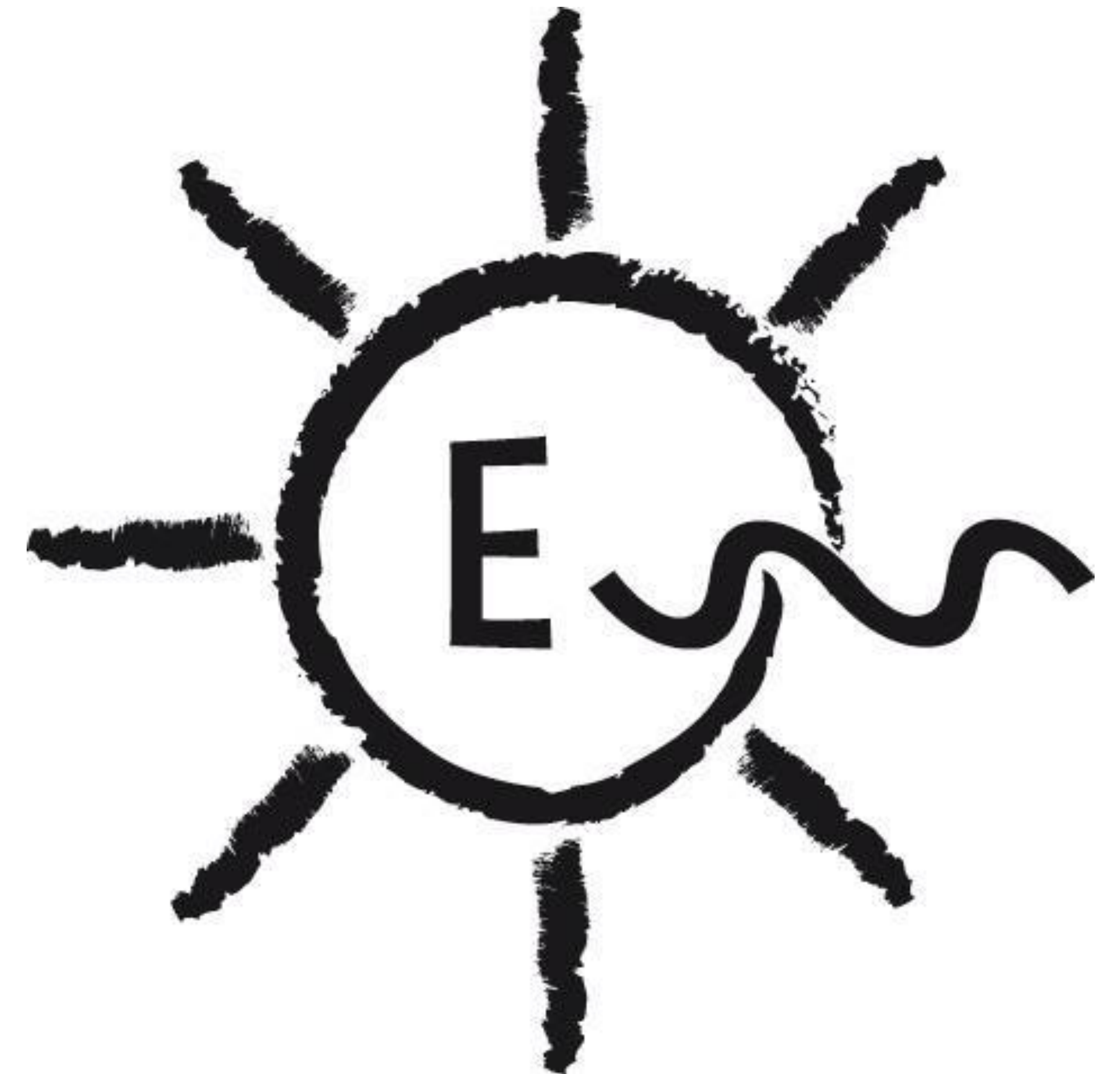
<https://www.facebook.com/ellahellas.eu>



HELLASTRAW

THE STRAW FOR THE COCKTAIL PRO

- **System created by bar owner**
- **10 different sizes of metal straws**
 - 5 length for different glasses
 - 2 widths
- **Long brush for cleaning**

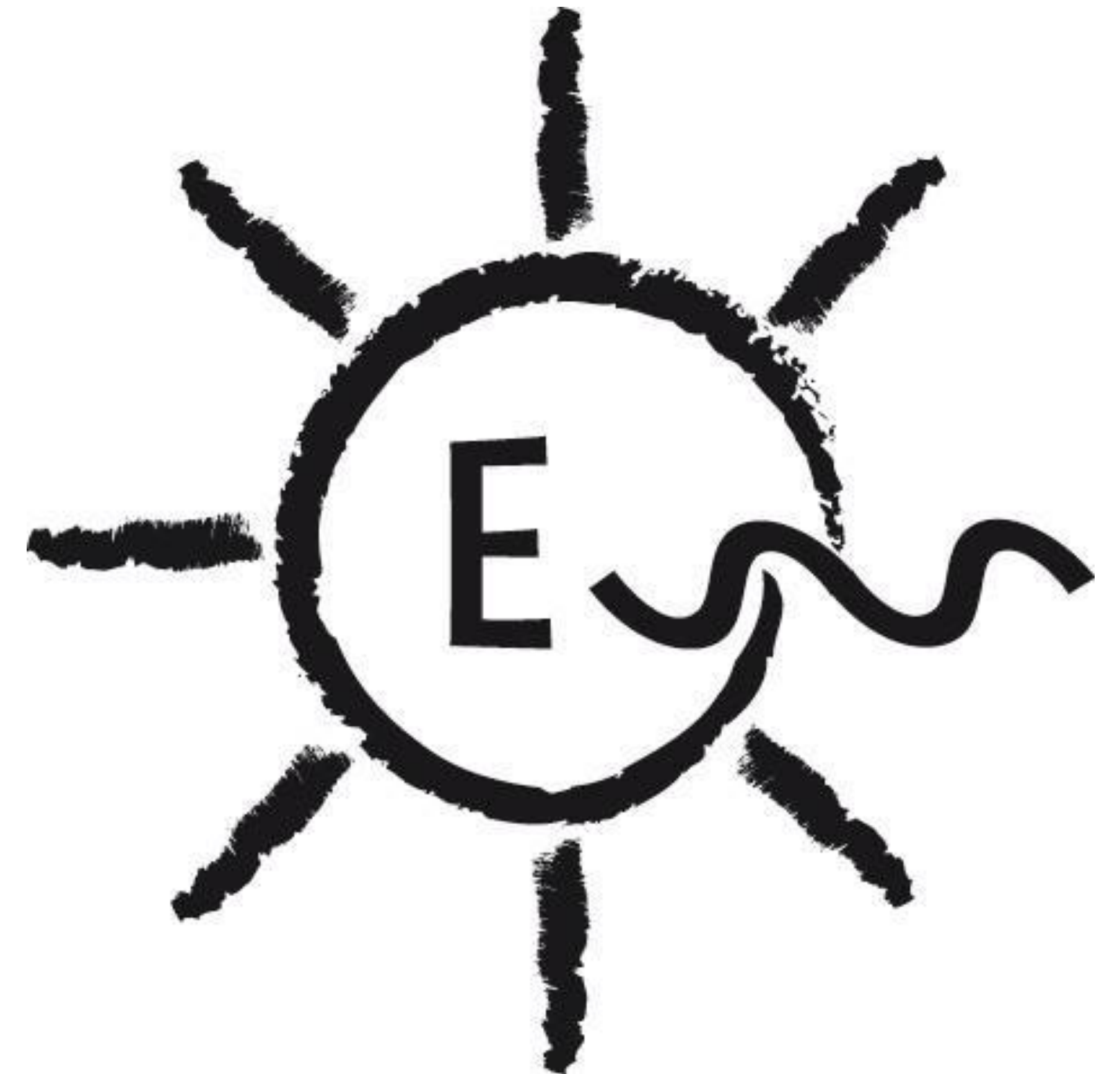


HELLASTRAW

THE STRAW FOR THE COCKTAIL PRO

For more information

<https://www.facebook.com/ellahellas.eu>



ROADMAP

THE LOCAL STAKEHOLDERS DESIGN THE CHANGE

- The roadmap will show what steps stakeholders are willing to make short-term (1 year), mid-term (5 years) and long-term (10 years)
- First session with stakeholder representatives of the horeca and the Municipality was fruitful
- Open call for the citizens is for 13th of October
- Experiments will show what can be implemented and how





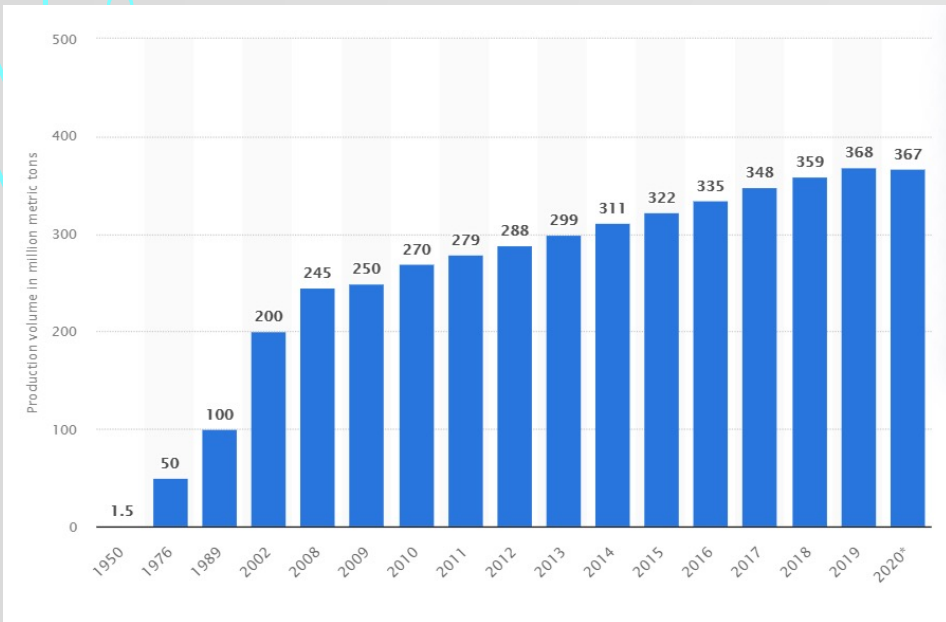
CORFU

HOW DO WE CHANGE OUR RELATIONSHIP WITH TRASH?

PLASTIC WASTE IS AFFECTING OUR COASTS - EXPERIENCE FROM ITALY



Antonella Penna
Departmente of Biomolecular Sciences
Urbino University
email: antonella.penna@uniurb.it



Annual world production of plastic from 1950 to 2020

Source: Eurostat

World and European production of plastics from 2018 to 2019

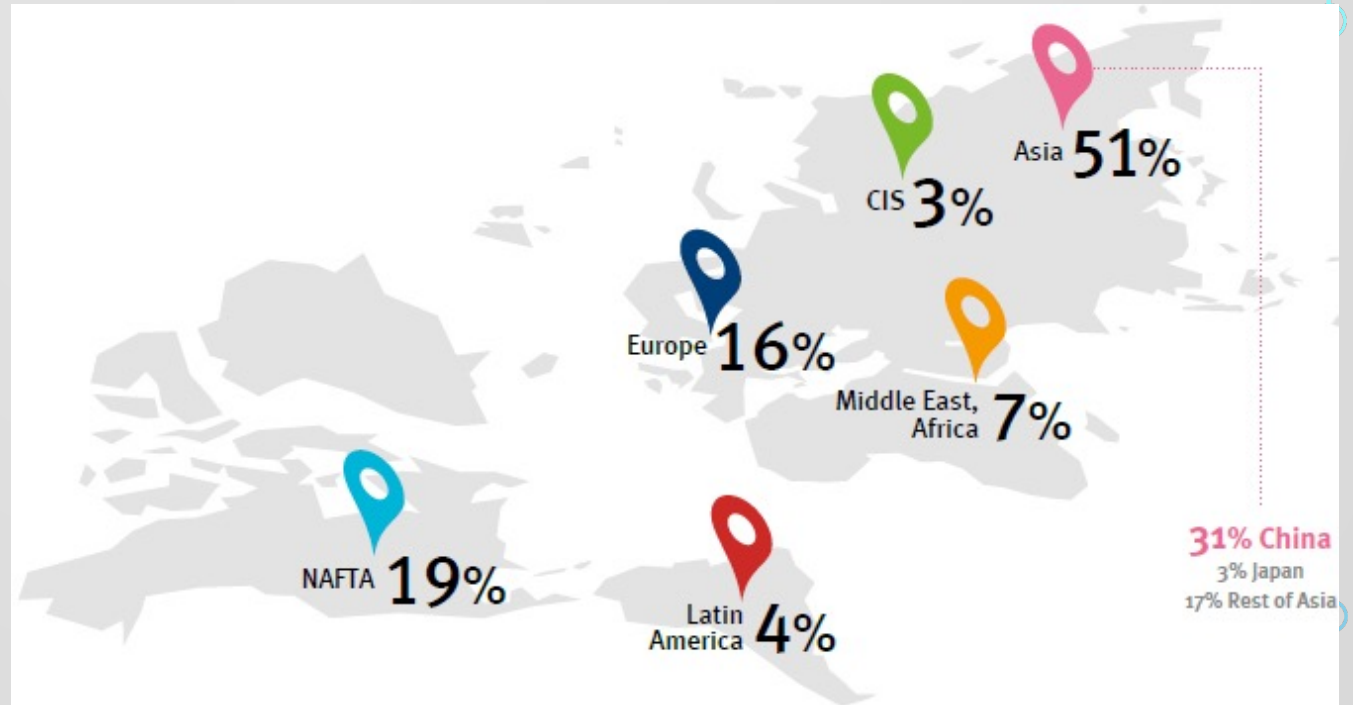
Source: PlasticEurope Market Research Group and Conversio Market and Strategy GmbH

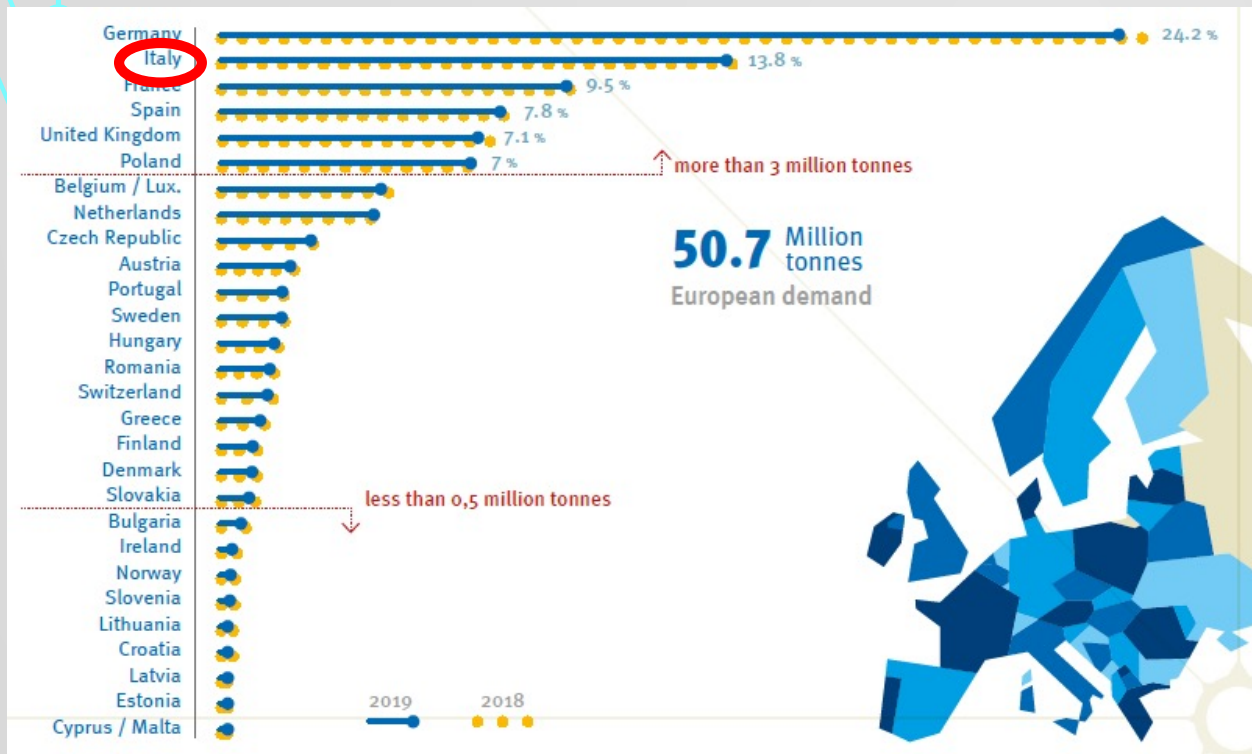


... more in detail ...

Distribution of world plastic production in 2019

Source: PlasticEurope Market Research Group and Conversio Market and Strategy GmbH





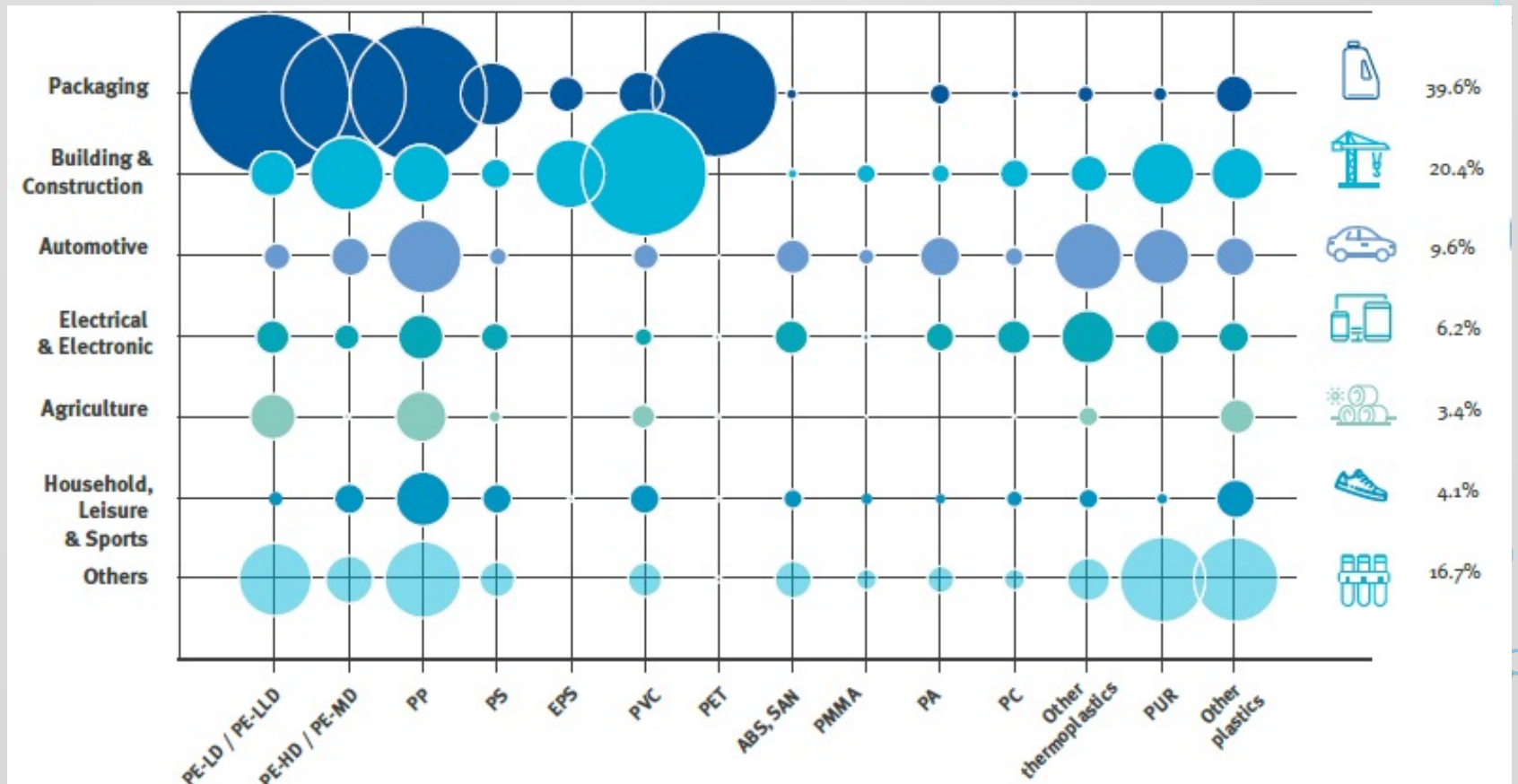
- About 50% of European demand is concentrated between Germany, Italy and France.
- Italy is the second largest consumer of plastic in Europe (13.8%).
- In Italy, from 2018 to 2019, there was a slight reduction in demand.

Plastic demand in Europe: comparison 2018 and 2019

Source: PlasticEurope Market Research Group and Conversio Market and Strategy GmbH

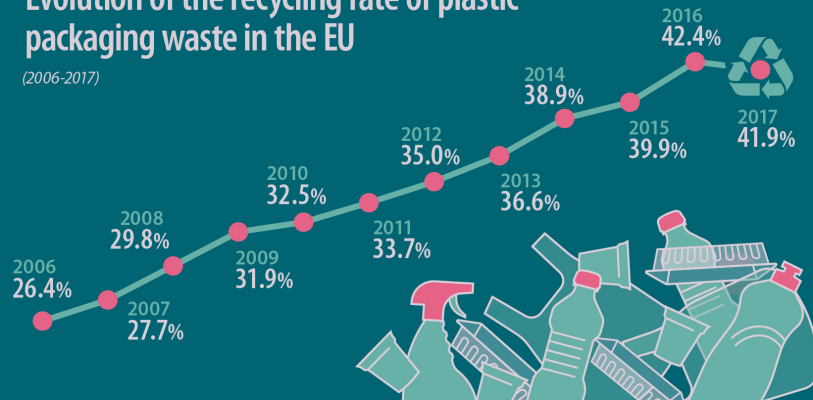
Distribution of demand by EuPC and polymer type 2019

Source: PlasticEurope Market Research Group and Conversio Market and Strategy GmbH



Evolution of the recycling rate of plastic packaging waste in the EU

(2006-2017)



ec.europa.eu/eurostat

Recycling rate of plastic packaging waste in the EU Member States (2017 data)



* 2016 data instead of 2017

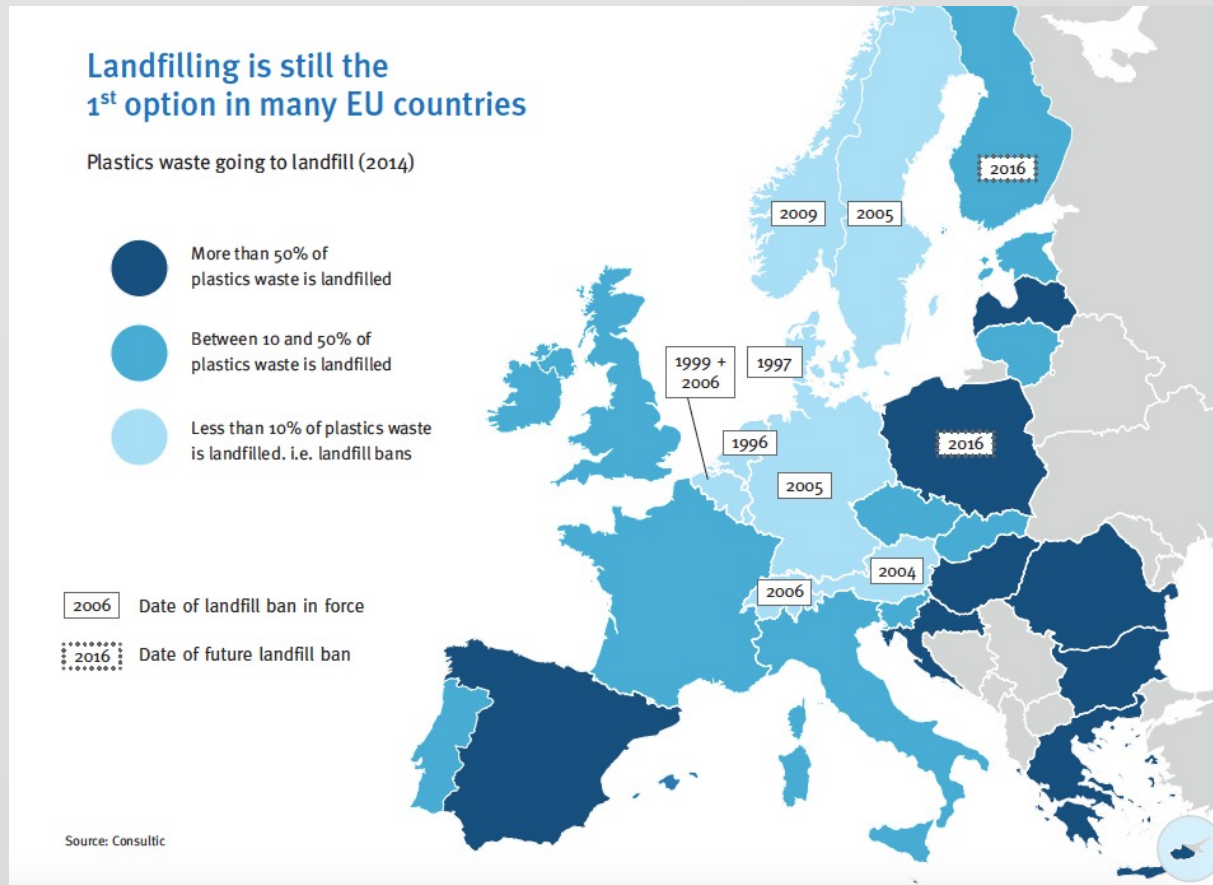
ec.europa.eu/eurostat

Most of the plastic waste is recycled and re-introduced into production processes to generate new products ...

... Especially in the packaging sector

WHERE DOES THE PLASTIC GO?

However, 25% of plastic waste in Europe is sent to landfill every year!

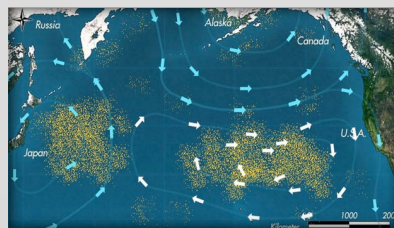


THE PROBLEM OF PLASTIC WASTE IN THE OCEAN - IMPACT ON MARINE ECOSYSTEMS LEGISLATION OF MARINE STRATEGY FRAMEWORK DIRECTIVE (MSFD 2008/56/EC)

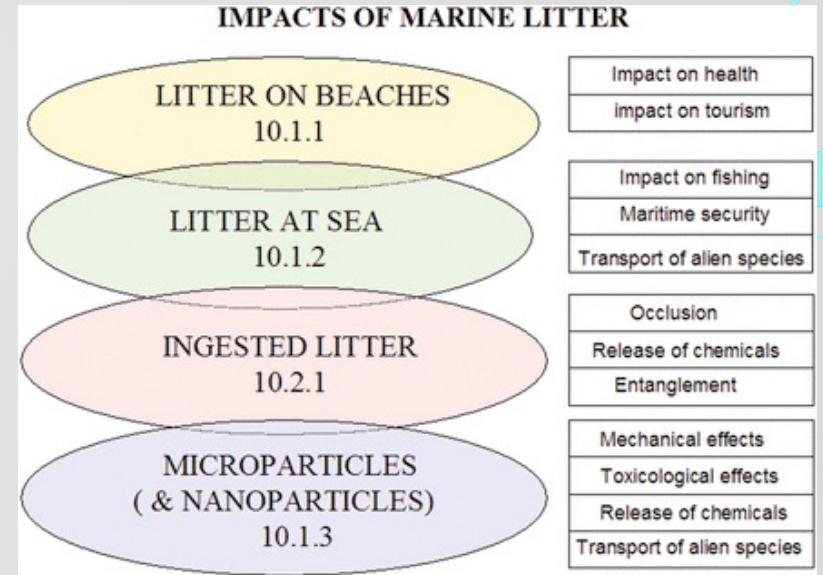
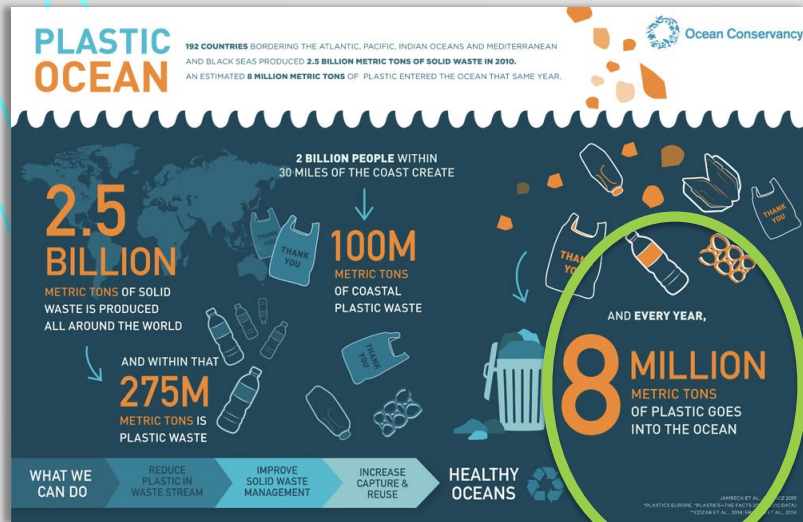
Descriptor 10 (D 10) MARINE LITTER

Reducing marine litter (i.e. plastics) is a key element of the MSFD

- 1- Litter will persist in the sea for years, decades and centuries
- 2- Assessment of sources alone will not be enough
- 3- Long-term monitoring in the marine environment will be required to understand trends
- 4- Mitigation plan and practical solutions are needed



Major impacts of marine litter and related MSFD indicators



Galgani et al. 2013. ICES J. Mar. Sci., 70:1055-1064



PRESENCE OF LITTER IN EUROPEAN WATERS:

- (i) do not cause harm to marine life and habitats
- (ii) do not pose direct or indirect risks to human health
- (iii) do not lead to negative socio-economic impacts



GES achievement

Galgani, F., Hanke, G., Werner, S., and De Vrees, L. 2013. Marine litter within the European Marine Strategy Framework Directive. – *ICES Journal of Marine Science*, 70: 1055–1064.

LEGAL FRAMEWORK, ACTORS, WASTE MANAGEMENT: AN ITALY OVERVIEW

- 1. Legislation on waste and marine litter: Italian legislation contains an articulated set of rules on waste



- 2. The primary actors:

- national,
- waste management,
- scientific research,
- non-governmental organisations (NGOs),
- advocacy organisations.

National actors are responsible for increasing awareness, designing and applying policies and implementing EU directives and international protocols.

		LEGISLATIVE	LAW ENFORCEM.	SURVEILLANCE	INSPECTION	MONITORING	RESEARCH	INFORMATION	CAMPAIGNING	ADVOCACY	TECH. SUPPORT	IMPLEMENTATION
NATIONAL STATE ACTORS												
State (Parliament)	Public	●										
Regions	Public	●										
MATTM	Public					●	●	●	●	●	●	●
ISPRA	Public					●	●	●	●	●	●	●
ARPAs	Public					●	●	●	●	●	●	●
SNPA	Public					●	●	●	●	●	●	●
Police forces	Public		●	●	●	●						
ARERA	Public	●	●	●	●							
MAIN WASTE MANAGEMENT (WM) ACTORS												
wm organisations	Public/Private								●			●
CONAI	Public						●	●				●
COREPLA	Public						●	●				●
CONIP	Public						●	●				●
MAIN SCIENTIFIC RESEARCH ACTORS												
CNR	Public						●	●				●
ISMAR	Public						●	●				●
ENEA	Public						●	●				●
CONISMA	Public						●	●				●
MAIN NGO AND ADVOCACY ORGANISATIONS												
Marevivo	NGO							●	●	●		
Legambiente	NGO						●	●	●	●		
WWF Italia	NGO						●	●	●	●		
Greenpeace Italia	NGO						●	●	●	●		

3.3. Waste and marine litter: Italy does not have a national waste management plan, but rather it delegated this function to regional administrative powers.

- In line with the MSFD, which requires an initial evaluation of the marine environment, MATTM initiated an extended monitoring programme conducted by the 15 (coastal) Regional Protection Agencies (ARPAs).
- These collect data on monitoring areas (58 for beach litter, 54 for microplastics) communicate these findings to MATTM, which has a validation and publication role.
- MATTM communicated the results of the monitoring campaigns to the EU.

Beach litter by items (Italian monitoring activities according to MSFD). These were conducted in 4 periods, autumn and spring of 2016 and 2017.

period \ items percent	WEST MEDITERR. SEA				IONIAN AND CENTRAL MED. SEA				ADRIATIC SEA				average (percent values)
	Autumn 2015	Spring 2016	Autumn 2016	Spring 2017	Autumn 2015	Spring 2016	Autumn 2016	Spring 2017	Autumn 2015	Spring 2016	Autumn 2016	Spring 2017	
Plastic	60	77	65	73	81	85	82	88	78	86	74	83	79,33%
Sanitary waste	8	5	8	10	1	0	0	2	7	5	4	4	4,14%
Glass/Ceramic	2	4	4	3	5	5	3	3	3	2	3	2	3,30%
Metal	3	3	3	2	5	3	2	2	2	1	2	2	2,41%
Wood	2	2	2	1	2	1	2	1	1	2	2	1	1,51%
Paper/Cardboard	17	5	16	8	4	4	9	2	7	2	13	5	7,06%
Textile	1	2	1	1	1	1	1	1	1	1	1	2	1,11%
Rubber	7	2	1	2	1	1	1	1	1	1	1	1	1,15%

PLASTICS IN THE MEDITERRANEAN SEA



«Plastic Soup» (Suaria et al., 2016)

- Being a biodiversity hot spot, this has a devastating impact on marine life.
- Waste is not evenly distributed, but it tends to accumulate near coasts, in urbanized areas and along commercial shipping struggles.
- 23,150 tons of plastic in the Mediterranean Sea (Eriksen et al., 2014).
- The average density of plastic present in the Mediterranean basin is 1 - 4 pieces per m² (Cózar et al., 2015).
- Plastic accounts for 96.87% of all floating debris in trawl sampling conducted in 2011 and 2013. (Ruiz-Orejón et al., 2016)

PLASTICS



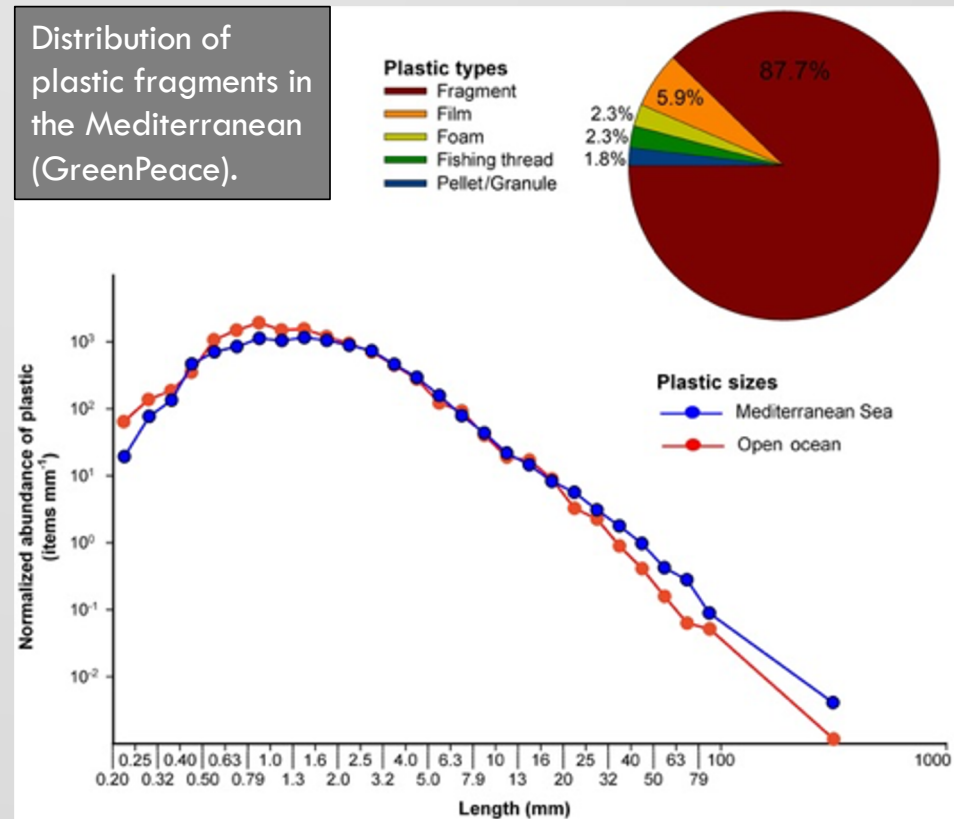
The presence in our seas is due to a continuous increase in the use of plastic materials and poor waste management.

PLASTICS are divided according to size into:

- ❑ **Macro-plastics:** >200 mm
- ❑ **Meso-plastics:** 5 – 200 mm
- ❑ **Micro-plastics:** 0 - 5 mm
- ❑ **Nano-plastics:** <20 μm

5.250 billion pieces of plastic weighing 268.940 tons float on the sea. (Eriksen et al., 2014)

Distribution of plastic fragments in the Mediterranean (GreenPeace).



And what does it do in Italy?

- ◆ **MSFD Marine strategy monitoring (coastal harp, research institutes, protected marine areas): since 2015.**
- ◆ **European projects: many!**



2013-2015 - **SMILE** – *Strategies for Marine Litter and Environmental prevention of sea pollution in coastal areas*



The action of SMILE developed on several levels:

- 1) identification of effective recovery and recycling actions
- 2) construction of shared waste management strategies at local level
- 3) raising the awareness of citizens and tourists to encourage correct behavior

Shallow water waste monitoring in Pietra Ligure



Final monitoring - waste on Pietra Ligure beach

- ✓ 79% Artificial polymers
- ✓ 4% Paper and cardboard
- ✓ 11% Metals
- ✓ 2% Rubber



35% NOT IDENTIFIABLE



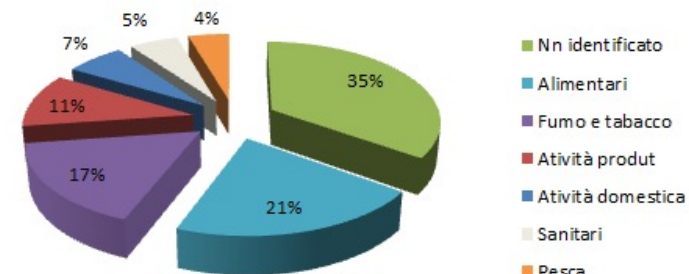
21% FOOD-RELATED ITEMS

11% PRODUCTION ACTIVITIES (BUILDING)

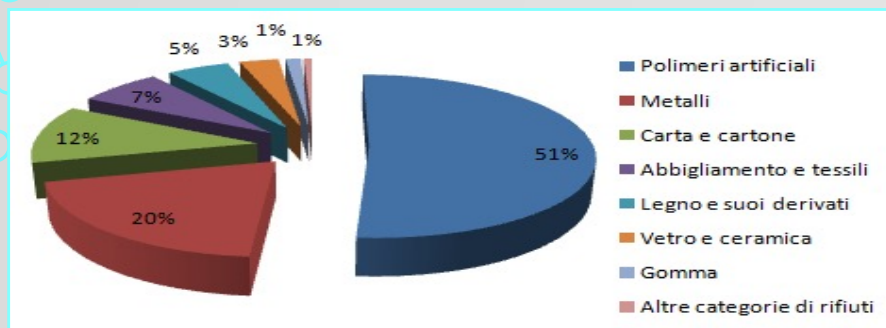


17% SMOKE AND TOBACCO

Monitoraggio finale



Bottom waste monitoring: results



- ✓ 51% artificial polymers
- ✓ 20% Metals
- ✓ 12% Paper and cardboard
- ✓ 7% Clothing and textiles



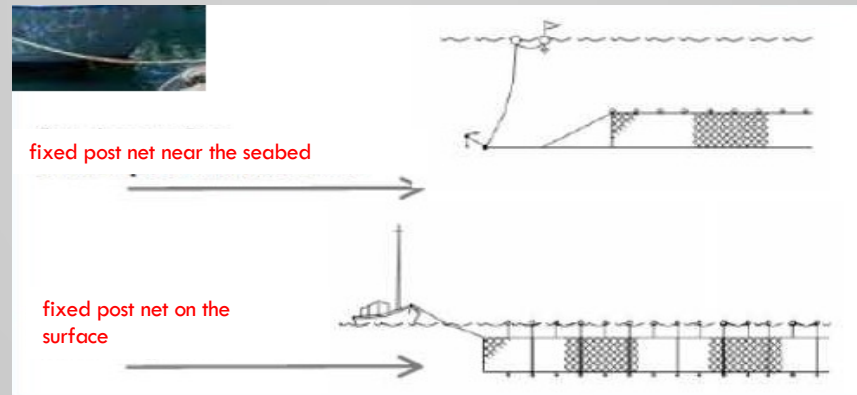
- ✓ 56% Not identifiable
- ✓ 17% Fishing items
- ✓ 9% Food
- ✓ 6% Smoking and tobacco



INTEGRATED APPROACH AT THE BASIN LEVEL

- Most of the marine litter is of terrestrial origin.
- It is important to act above all with prevention on the coast and inland, and not only with collection at sea.

Laying "litter catching" nets - an innovative marine litter "capture mechanism" in a pilot area.



- **Involvement of fishermen and divers**





Particular thanks to:

Dr. Chiara Lodi , University of Urbino

Dr. Rosella Bertolotto, ARPAL, Agenzia Regionale per la Protezione dell'Ambiente Ligure, Genova



A systemic approach to the plastics challenges in the coastal city of Porto

4th HISCAP ONLINE EVENT

Plastic Waste Management of European Coastal Cities

12 October 2021, BIOPLASTICS EUROPE

Brief information about our coastal City of Porto



Portugal

Population: 10 286 300 inhabitants (2019)

Total area: 92 090 km²

Coastal length: 943 km

City of Porto

Resident population: 231 962 inhabitants (2021)

Porto coastal length: 4 km

Porto total area: 2,040 km²



A few numbers on single used plastics in Portugal

Tons of single used plastics
(packages for food, drinks
other materials) declared in
Portugal (2016)

195.902 tons

Plastic bottles

721 million units

Plastic cups

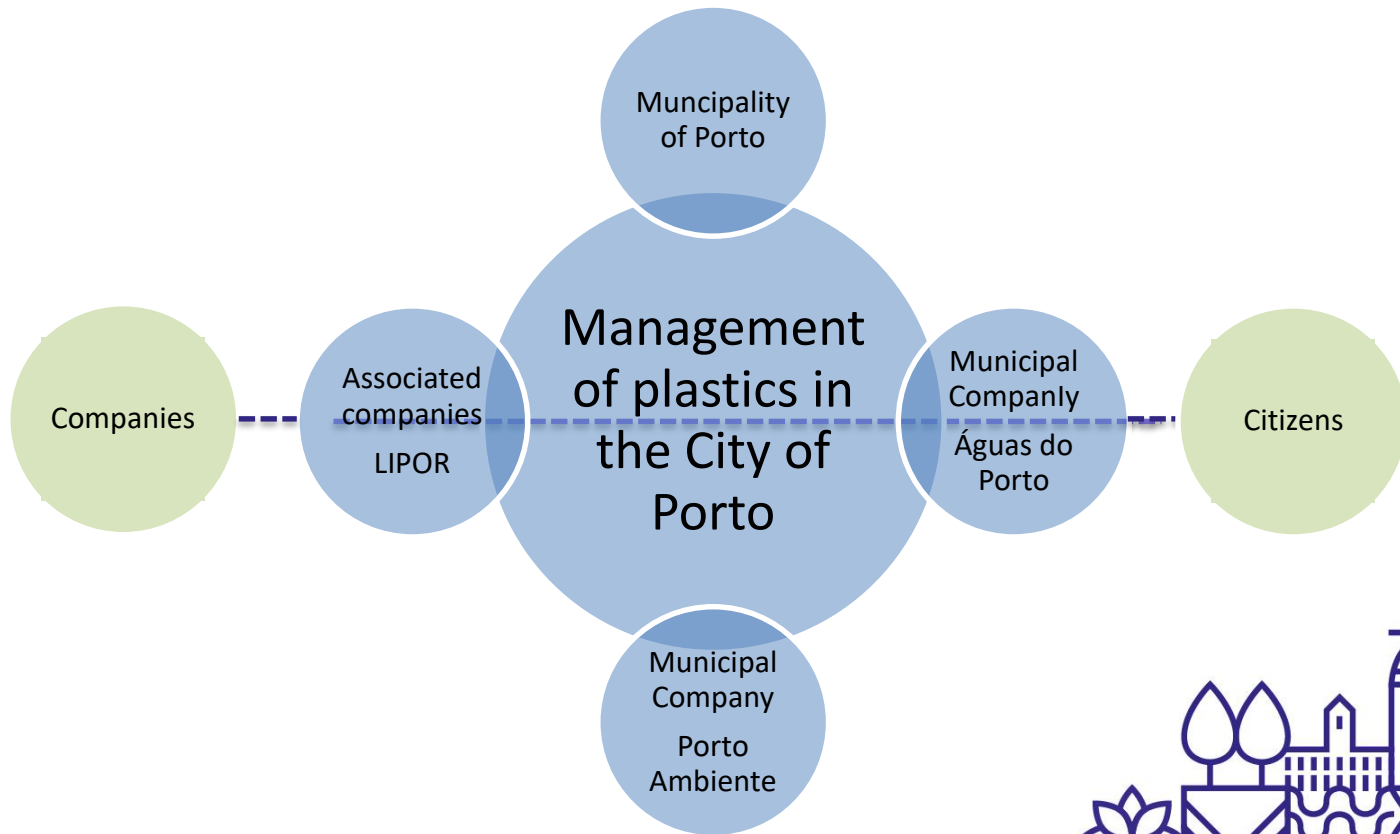
250 million units

Plastic straws

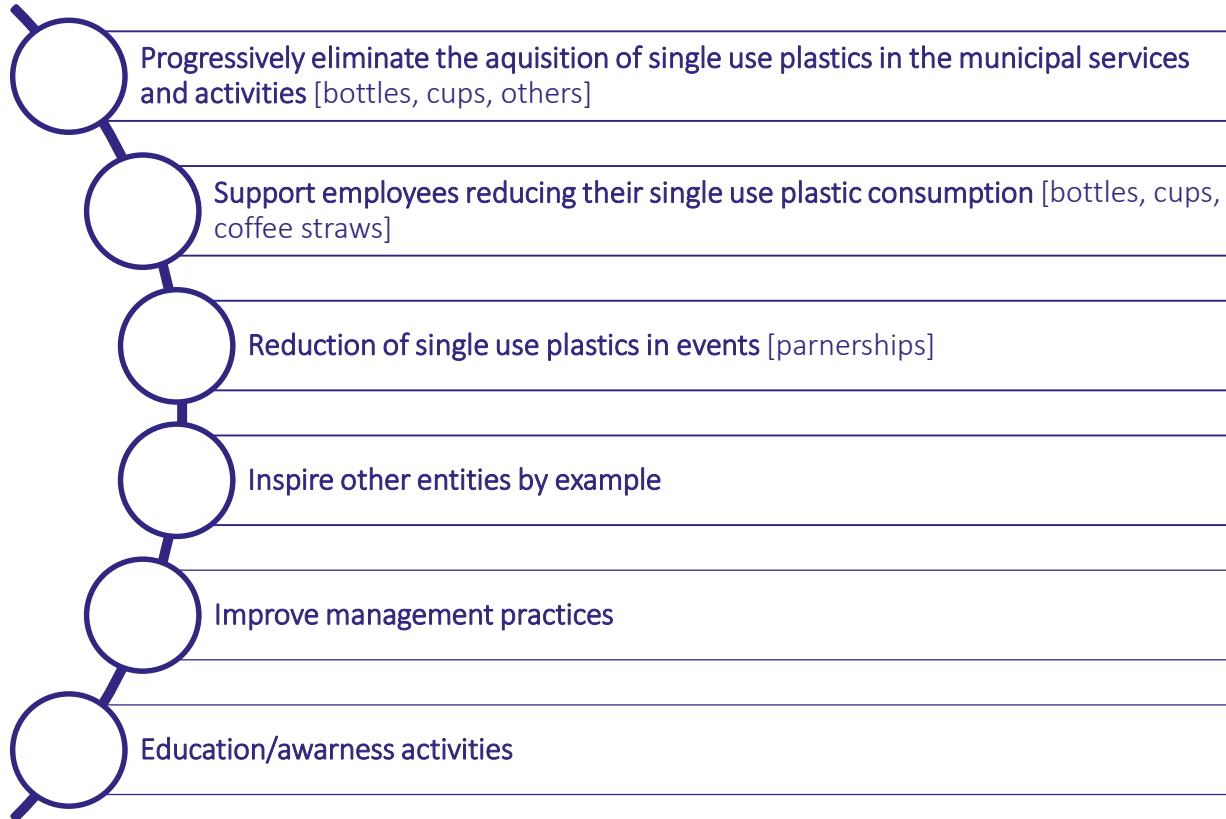
1.000 million units



Cities hold great responsibility on plastics management



What we are committed to – from the inside to the outside



What we have done so far **INSIDE** the Municipal structure

2015

BEBA ÁGUA DO PORTO: É BOA TODOS OS DIAS!

Incentive Campaign to increase tap water consumption



↑ 112 glass bottles (in conferences and meeting rooms)

↓ 6.109 plastic bottles (0,33cl)/ano (minimum; considering only 12 uses/year)

↓ 64 kg plastic/year (minimum; considering only 12 uses/year)



What we have done so far INSIDE the Municipal structure



↓ 600.000 single use cups

↓ 4,8 ton. Plastic

↓ 91% of the total plastic weight collected



What we have done so far INSIDE the Municipal structure



↓ 18.000 plastic bottles (0,33cl) /year

↓ 187 kg plastic /year

↔ 13.855 plastic bottles (146 kg) to be eliminated



What we have done so far **INSIDE** the Municipal structure

Between 2019-2021

Circular Economy Roadmap – best practices

Municipal Agenda with plastic challenges – More Porto, Less plastic

Plastic Roadmap – eliminate all single use plastics (ongoing)

Creation of specific thematic activities in the Environmental Education Centres

Sustainable and circular public purchasing project – reducing purchasing of single use plastics (ongoing)



What we have done so far **OUTSIDE** the Municipal structure

- **Porto Ambiente (Municipal Company)**
 - Porta-a-porta project: increase selective collection
 - +770 new participants
 - +100 new recycling bins (+200 on the way)
 - Reinforcement of awareness and fiscalization initiatives and requalification of the existing waste management sites



What we have done so far OUTSIDE the Municipal structure

- **Águas do Porto (Municipal Company)**
 - Development of conferences;
 - Communication/awareness initiatives;
 - Training activities – waste prevention and management and circular economy
 - Plastic collection to produce reusable masks;
 - Awareness collection activities in local coastal areas for waste collection connected with artistic initiatives.





Thank you!

4th HISCAP ONLINE EVENT

Plastic Waste Management of European Coastal Cities

12 October 2021, BIOPLASTICS EUROPE

4th HISCAP ONLINE EVENT
October 12th , 2021

Coastal cities in Europe: Current plastic waste management practices

BIO-PLASTICS EUROPE



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 860407. BIOPLASTICS EUROPE project website: www.bioplasticseurope.eu



“According to the UN, the world’s urban population is expected to grow by 2.5 billion by 2050, with over 90 per cent of this growth to take place in Africa, Asia, Latin America and the Caribbean.”

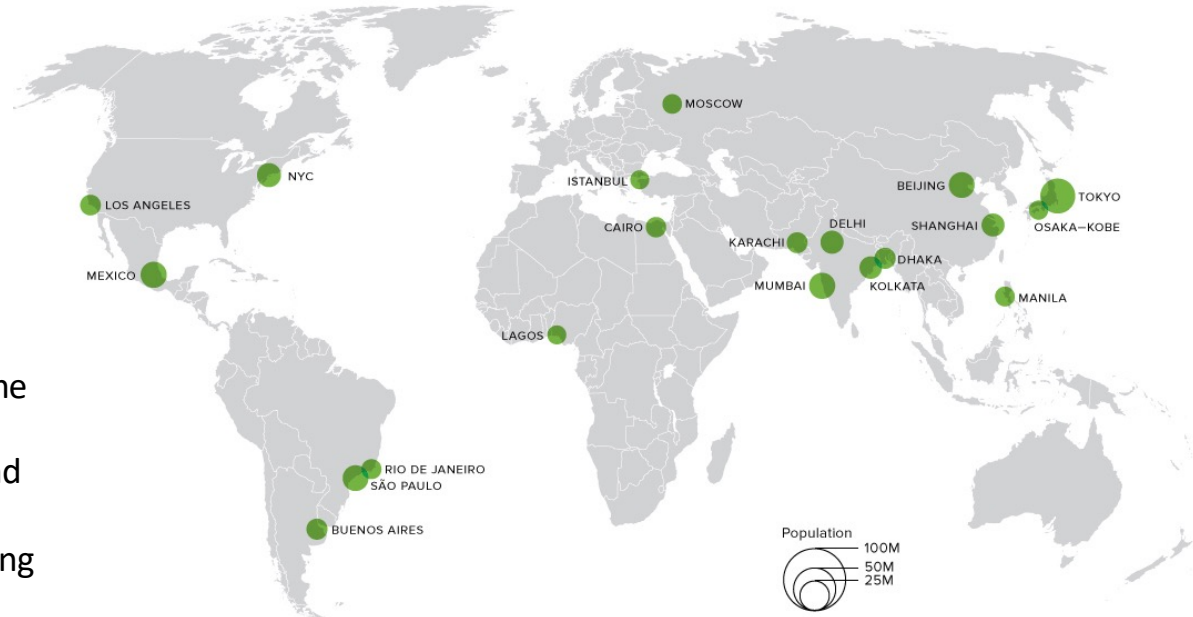
Two thirds of the whole worlds of people by the year of 2050 will live in urban areas and this process of rapid urbanization is shaping our cities.

Mega-cities are emerging in places we never heard of before. Bigger cities come with major economic growth. “By 2025, urbanization will welcome and additional 1.8 billion consumers to the world economy, 95% of them in emerging markets”

THE WORLD'S 20 MOST POPULOUS MEGACITIES (2010 - 2100)

A total of 13 African cities will surpass New York in size over the next 80 years

2010 TOP 20 CITIES BY POPULATION

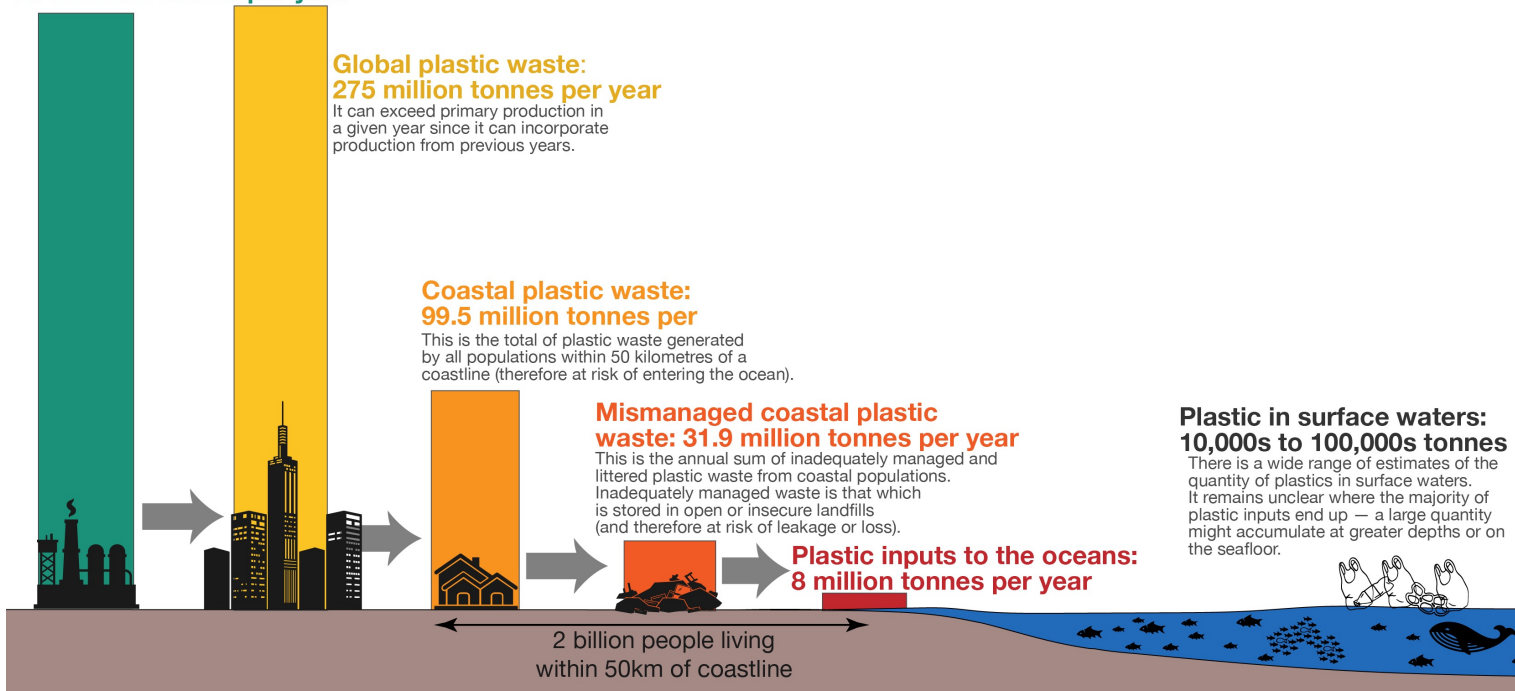


The pathway by which plastic enters the world's oceans

Our World
in Data

Estimates of global plastics entering the oceans from land-based sources in 2010 based on the pathway from primary production through to marine plastic inputs.

Global primary plastic production:
270 million tonnes per year



Source: based on Jambeck et al. (2015) and Eriksen et al. (2014). Icon graphics from Noun Project.

Data is based on global estimates from Jambeck et al. (2015) based on plastic waste generation rates, coastal population sizes, and waste management practices by country

This is a visualization from OurWorldinData.org, where you will find data and research on how the world is changing.

Licensed under CC-BY-SA by the authors.

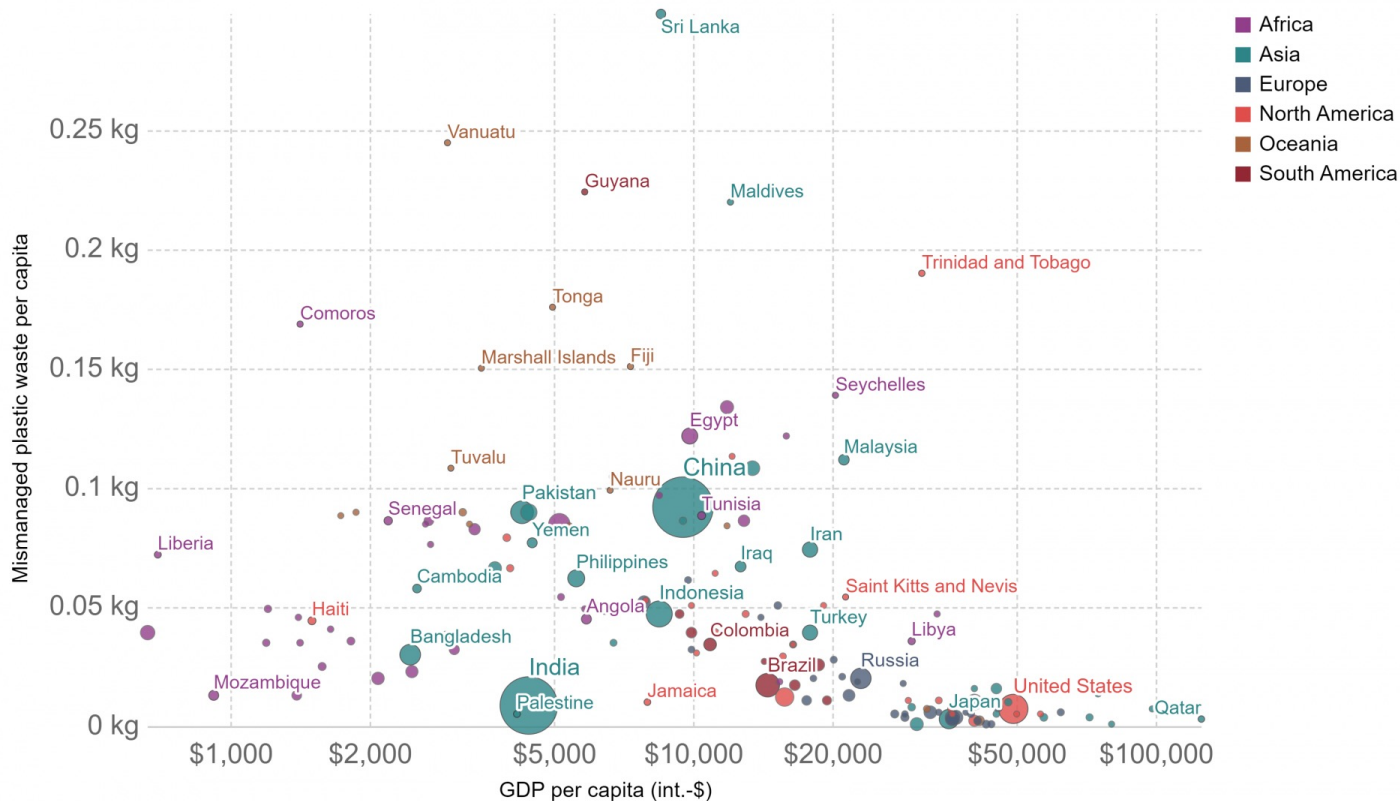
Plastic leakage



Mismanaged plastic waste per capita vs. GDP per capita

Mismanaged waste is waste that is littered or not formally managed, which includes disposal in dumps or uncontrolled/open landfills.

Our World
in Data



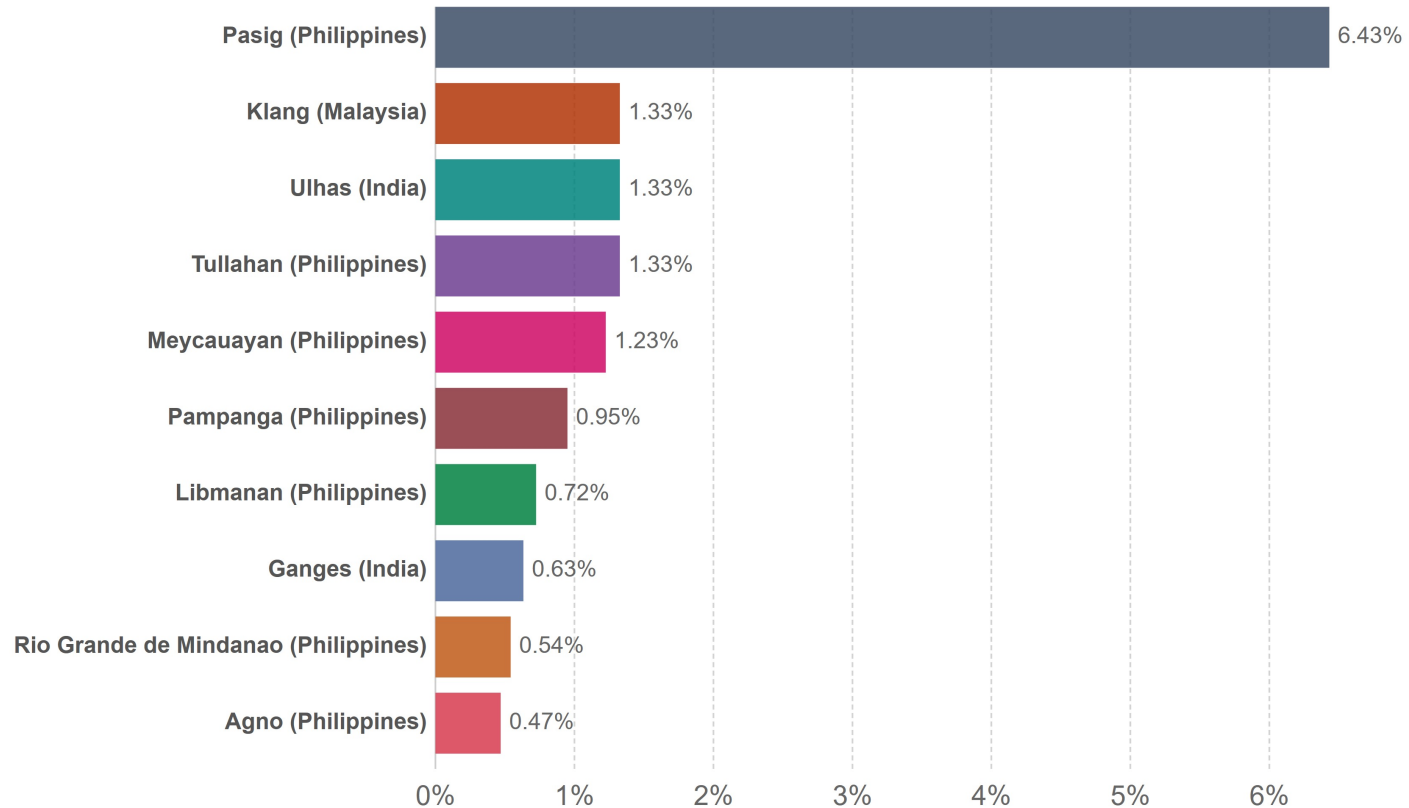
Source: Plastic Waste - Jambeck et al. (2015) and World Bank.

OurWorldInData.org/plastic-pollution • CC BY

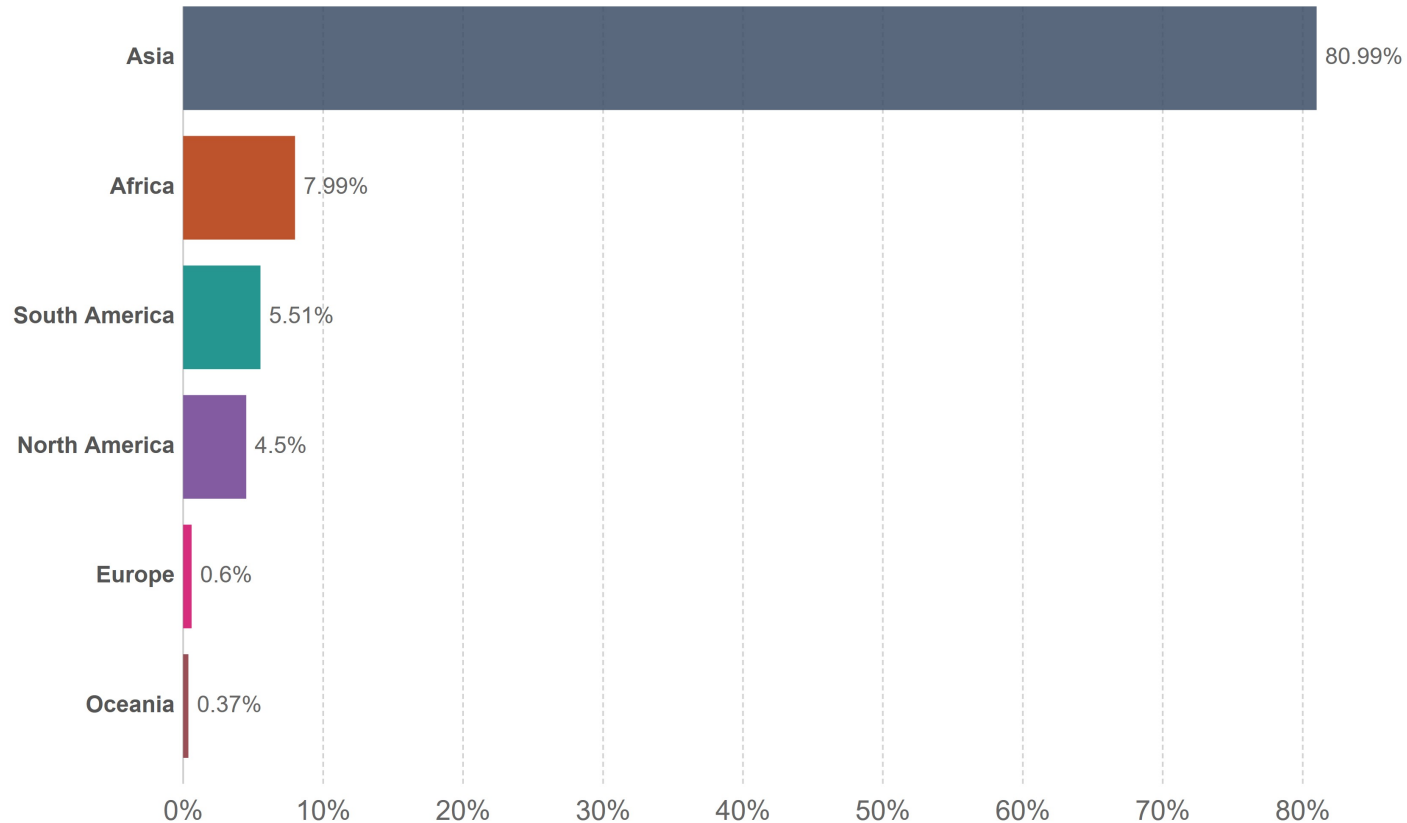
Share of ocean plastics that come from the largest emitting rivers

Our World
in Data

Shown is the share of global ocean plastic pollution that comes from the world's largest emitting rivers.



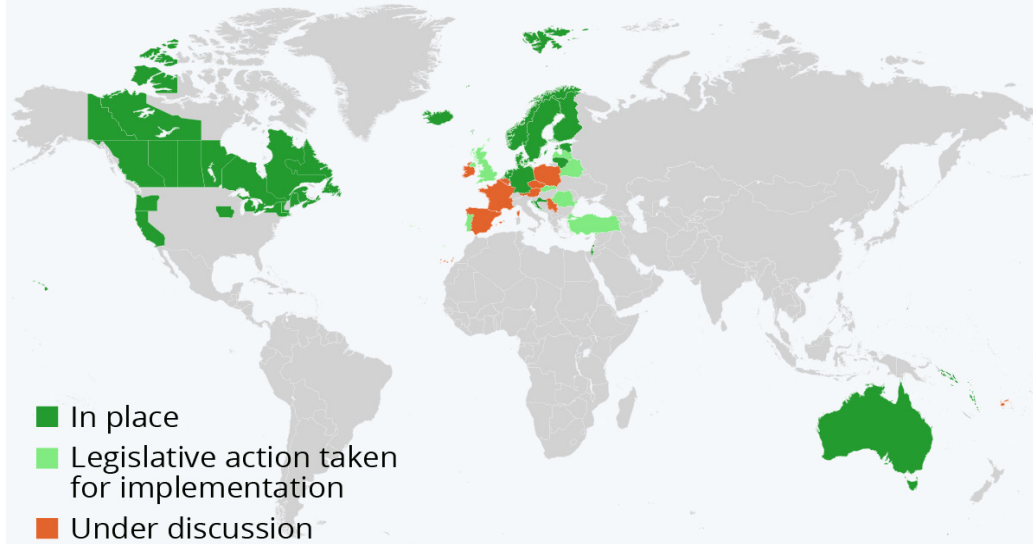
Share of global plastic waste emitted to the ocean, 2019

Our World
in Data

Good practices: Deposit refund system (DRS)

Which Countries Have Bottle Deposit Systems?

The global status of bottle recycling systems in 2020*



* Partly implemented in Australia. Will be fully implemented by 2023.

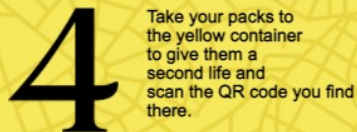
Source: The Changing Markets Foundation

Good practices: RECICLOS (Spanish Incentive System)

HOW DOES IT WORK?

AT HOME

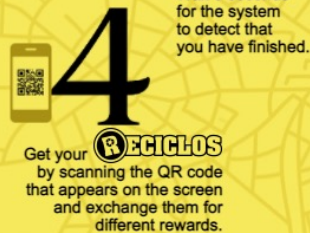
AT THE RECICLOS MACHINES



HOW DOES IT WORK?

AT HOME

AT THE RECICLOS MACHINES



Sustainable prizes



Local products



Public transport and sustainable mobility



Environmental and social collaborative projects

Good practices: Hamburgs Werkstoff Innovative”

– Regional bottle-to-bottle recycling of HDPE

- Stadtreinigung Hamburg (local waste management authority): Collects the recyclables (plastic packaging) in the Hamburg region and delivers it to Veolia’s sorting facility.
- Veolia (recycler): Accepts the separately collected materials, carries out the sorting and recycling process in order to produce the target HDPE recycle material.
- Unilever (producer): Designs the product and uses the produced recycle to produce HDPE bottles for their laundry detergent product.
- Budni (drugstore chain): Sells the product on their shelves.
- Hamburg University of Technology (research institute): Supports the extensive tests conducted and the project with their scientific expertise.

Policy recommendations to combat plastic waste and marine debris include (1):

- Strengthen solid waste management practices, knowledge and incentives in rural areas, in addition to ongoing improvements in urban areas.
 - Improve overall waste collection coverage (“closing the tap”) and provide better access to solid waste management facilities, particularly in rural areas.
 - Increase national sanitation campaigns at the household level, particularly in rural areas, to enhance community understanding of healthy waste behaviors and reduce the household practice of disposing waste directly into waterways.
- Invest in new, well-managed final disposal sites and upgrade existing sites, including those near waterways.

Policy recommendations to combat plastic waste and marine debris include (2):

- Optimize the use of existing structures in waterways and drainage to prevent plastic waste from reaching the sea.
- Promote a circular economy to reduce plastics consumption and prevent plastic pollution.
 - Prevention should start at source and even at an earlier life-cycle stage, considering reduction of critical single-use plastic items and design for reuse, recovery and recycling of plastic waste, which can have many other social, economic and environmental benefits.
 - Cost-effective, impactful policy instruments such as taxes and incentives should be implemented.
- Systematically monitor and improve waste data.

Thank You

Contact:

WP4 leader

Žaneta Stasiškienė

zaneta.stasiskiene@ktu.lt

