



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



SECOND VIRTUAL MEETING
15th December 2020

HISTORIC CITIES AGAINST PLASTIC WASTE (HISCAP)

This project has received funding from the
European Union's Horizon 2020 research and
innovation programme under grant agreement No.
860407





BEST PRACTICES FOR SUSTAINABLE PLASTIC WASTE MANAGEMENT IN MEDITERRANEAN COUNTRIES



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 860407



AGENDA

Time	Topic	Speaker
11.00-11.10	Network of Historic Cities against Plastic Waste (HISCAP)	Jelena Barbir (Hamburg University of Applied Science, DE)
11.10-11.20	Circular economy as key strategy to sustainably manage plastic waste in Europe	Prof. Alessandra Bonoli (University of Bologna, IT)
11.20-11.35	The commitment of the Mediterranean countries towards marine plastic pollution	Prof. Alberto Bellini (BlueMed Initiative, IT)
11.35-11.50	Clean Sea Life Fishing For Litter: addressing a crucial gap in the legislation and promoting the implementation of a powerful tool in the fight against marine litter	Simona Clò (MedSharks, IT)
11.50-12.05	LIFE4FILM & LIFEPLASMIX: Towards a cleaner environment by improving the mechanical recycling of plastic waste	Verónica Godoy (Univeristy of Granada, ES)
12.05-12.20	Sustainable plastic waste management in the Greek island as replicable example for the historic cities	Xenia Tombrou (International Centre for Research on the Environment and the Economy, GR)
12.20-12.35	Zlarin island (Croatia) local community engagement in reducing single-use plastics in foodservice operators and cafes	Paula Damaška (Green Energy Cooperative, HR)
12.35-13.00	Panel discussion “Scenarios for improving plastic waste management and reducing marine littering in Mediterranean cities”	All presenters

BIO-PLASTICS EUROPE

Developing and Implementing Sustainability-Based Solutions for Bio-Based Plastic Production and Use to Preserve Land and Sea Environmental Quality in Europe

October 2019 – September 2023



Project kicked-off in October 2019



PARTNERSHIP



22 partners
13 countries
8.5 million Euros



CONTACT INFO

HAMBURG UNIVERSITY OF APPLIED SCIENCES

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

Ulmenliet 20, 21033 Hamburg, Germany

E-mail: bioplastics@ls.haw-hamburg.de, www.bioplasticseurope.eu

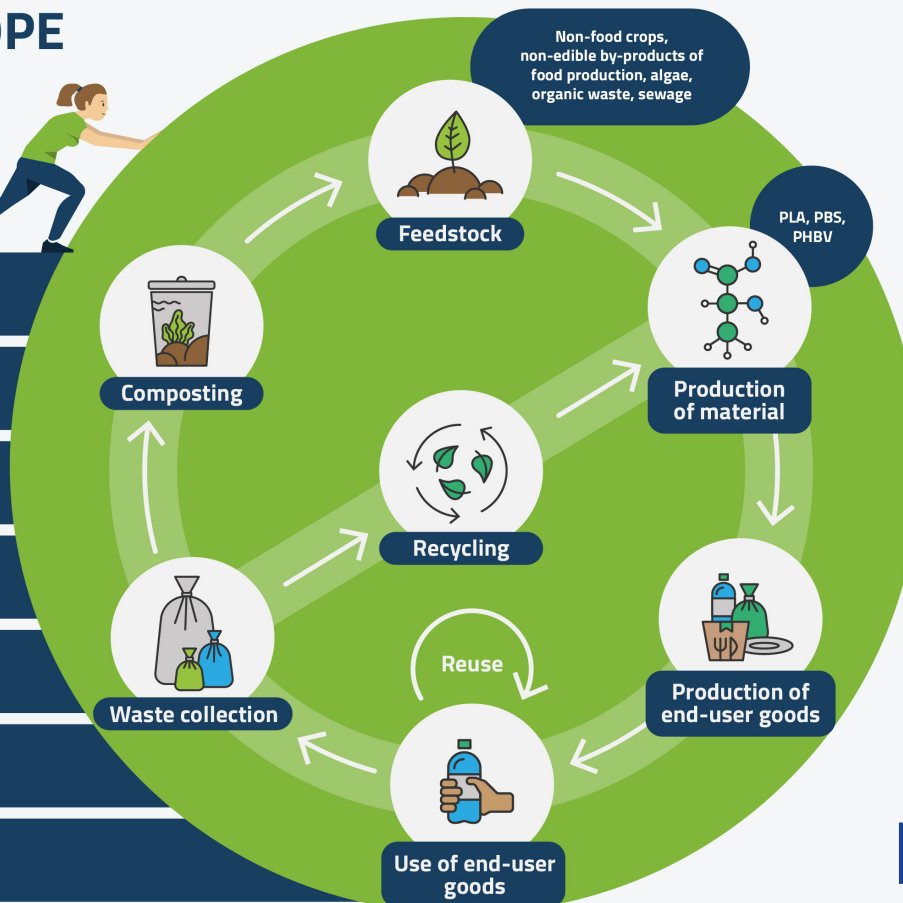


BIO-PLASTICS EUROPE

Pushes towards
circular economy



- WP3 Identification and test of innovative product design
- WP4 Plastic waste collection, recycling and littering
- WP5 Prenormative research and field tests
- WP6 Health and environmental safety
- WP7 Replication, policy-making, capacity-building and upscaling
- WP8 Life cycle assessment environmental and economic
- WP9 Information, communication, and dissemination of results



EXPECTED RESULTS

FOCUS

Cutlery, Soft and Rigid Packaging,

Agricultural Mulch Film, Toys and Aquatic Materials

● INNOVATIVE MATERIALS

to foster and encourage deployment of innovative bio-based and biodegradable materials

● STAKEHOLDERS ENGAGEMENT

to ensure strong commitment of producers, politicians, industrial and private consumers

● BUSINESS MODELS

to experiment with innovative business models by incorporating circularity and sustainability to maximize the value of materials along the entire value chain

● SAFETY PROTOCOLS

to ensure the safe use and end-of-life management on innovative bio-based plastics

NETWORKS



**SUSTAINABLE SOLUTIONS FOR
BIO-BASED PLASTICS ON LAND AND SEA**



**EUROPEAN BIOPLASTICS
RESEARCH NETWORK**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 880407



LinkedIn: over 180 members
Preparing events
Foster communication
Share experience



**SUSTAINABLE SOLUTIONS FOR
BIO-BASED PLASTICS ON LAND AND SEA**



**HISTORIC CITIES AGAINST
PLASTIC WASTE**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 880407



Connect cities
Preparing events
Exchange experience
Offer solutions

First event
17th of
September



ALESSANDRA BONOLI

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI INGEGNERIA CIVILE,
CHIMICA, AMBIENTALE E DEI MATERIALI



Professor at UNIBO, Alessandra is also founder and coordinator of the research group “Engineering of Transition, Raw Materials and Circular Economy” the Department Research Center for international Cooperation and Development on Engineering, Environment and Emergency (CODE^3). She is Delegate of the University of Bologna at UN Sustainable Development Solutions Network. She is also Member of the Operational Group of the European Innovation Partnership on Raw Materials (EIP Raw Materials).



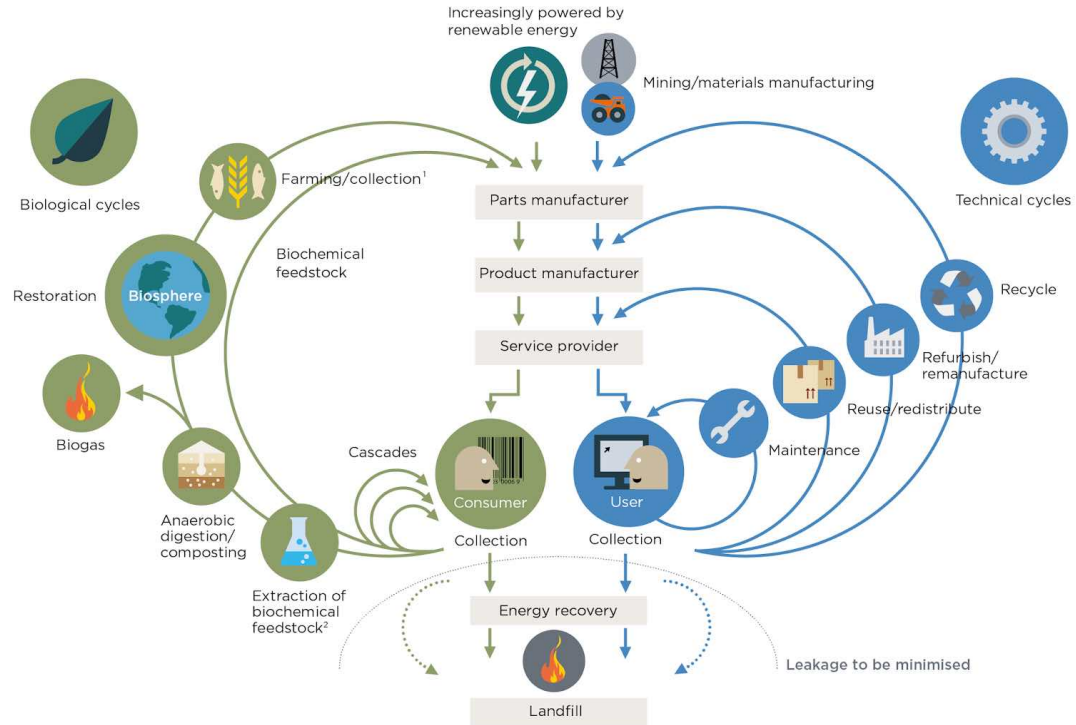
Circular economy as key strategy to sustainably manage plastic waste in Europe

Circular Economy and Sustainability

PREVENTION at the top of the hierarchy



CIRCULAR ECONOMY - an industrial system that is restorative by design



1 Hunting and fishing
 2 Can take both post-harvest and post-consumer waste as an input
 SOURCE: Ellen MacArthur Foundation -
 Adapted from the Cradle to Cradle Design Protocol by Braungart & McDonough

WORLD AND EU PLASTICS PRODUCTION DATA

2019, global plastics production almost reached 370 million tonnes.

In Europe, plastics production almost reached 58 million tonnes.



World



Europe (EU28+NO/CH)

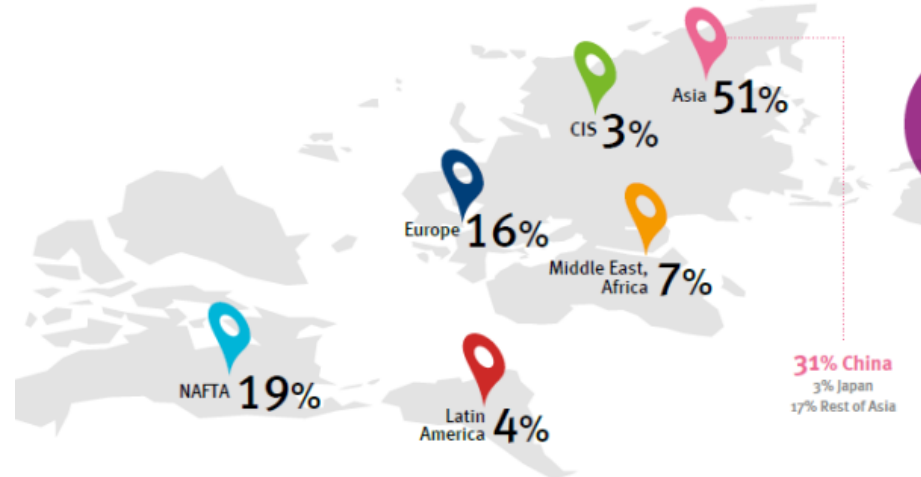


SOURCE: PlasticsEurope
Market Research Group
(PEMRG) and Conversio
Market & Strategy GmbH

* Includes Thermoplastics,
polyurethanes, thermosets,
elastomers, adhesives, coatings
and sealants and PP-fibers.
Not included: PET-fibers,
PA-fibers and Polyacryl-fibers

DISTRIBUTION OF GLOBAL PLASTICS PRODUCTION

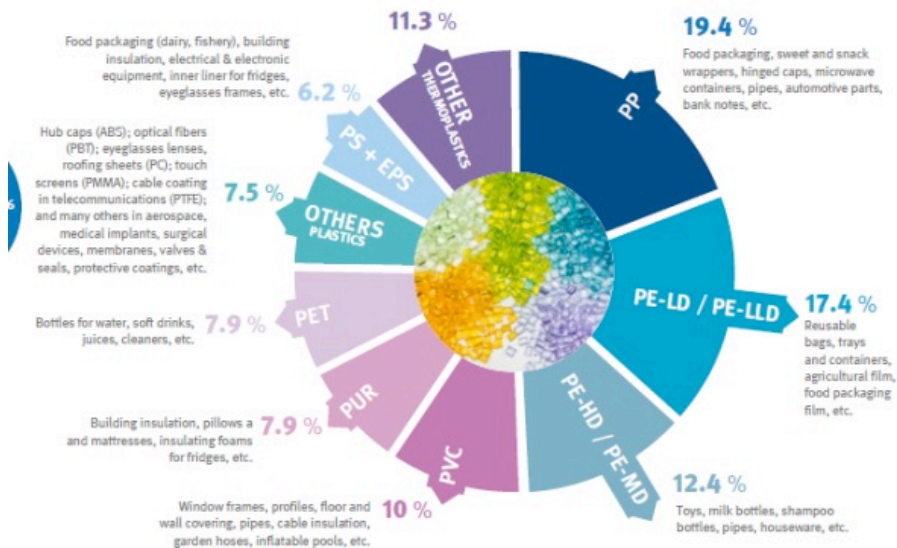
In 2019 China reached 31% of world's plastics production.
World plastics* production: 368 million tonnes.



PLASTICS DEMAND DISTRIBUTION BY RESIN TYPE 2019

Data for EU28+NO/CH.

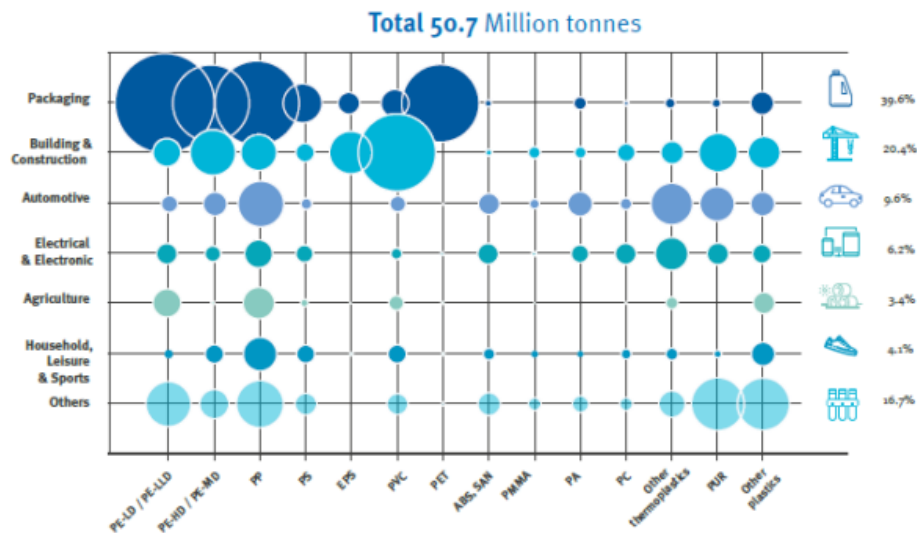
SOURCE: PlasticsEurope Market Research Group (PEMRG) and Conversio Market & Strategy GmbH



PLASTICS DEMAND BY SEGMENT AND POLYMER TYPE IN 2019

Data for EU28+NO/CH.

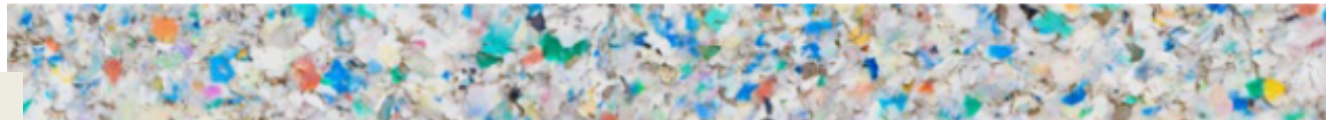
SOURCE: PlasticsEurope Market Research Group (PEMRG) and Conversio Market & Strategy GmbH



PLASTIC POST-CONSUMER WASTE TREATMENT IN 2018

SOURCE: Conversio Market & Strategy GmbH

In 2018, 29.1 million tonnes of plastic waste were collected in the EU28+NO/CH in order to be treated. Plastic waste exports outside the EU have decreased by 39% from 2016 to 2018.



SOURCE: Conversio Market
& Strategy GmbH

*From household, industrial
and commercial packaging

RECYCLING IS THE FIRST OPTION FOR PLASTIC PACKAGING WASTE

In 2018, 17.8 million tonnes of plastic post-consumer packaging waste were collected in order to be treated.

Plastic PACKAGING* waste treatment in 2018 (EU28+NO/CH)

17.8 M t Collected plastic post-consumer packaging waste

42%

39.5%

18.5%



RECYCLING



ENERGY
RECOVERY



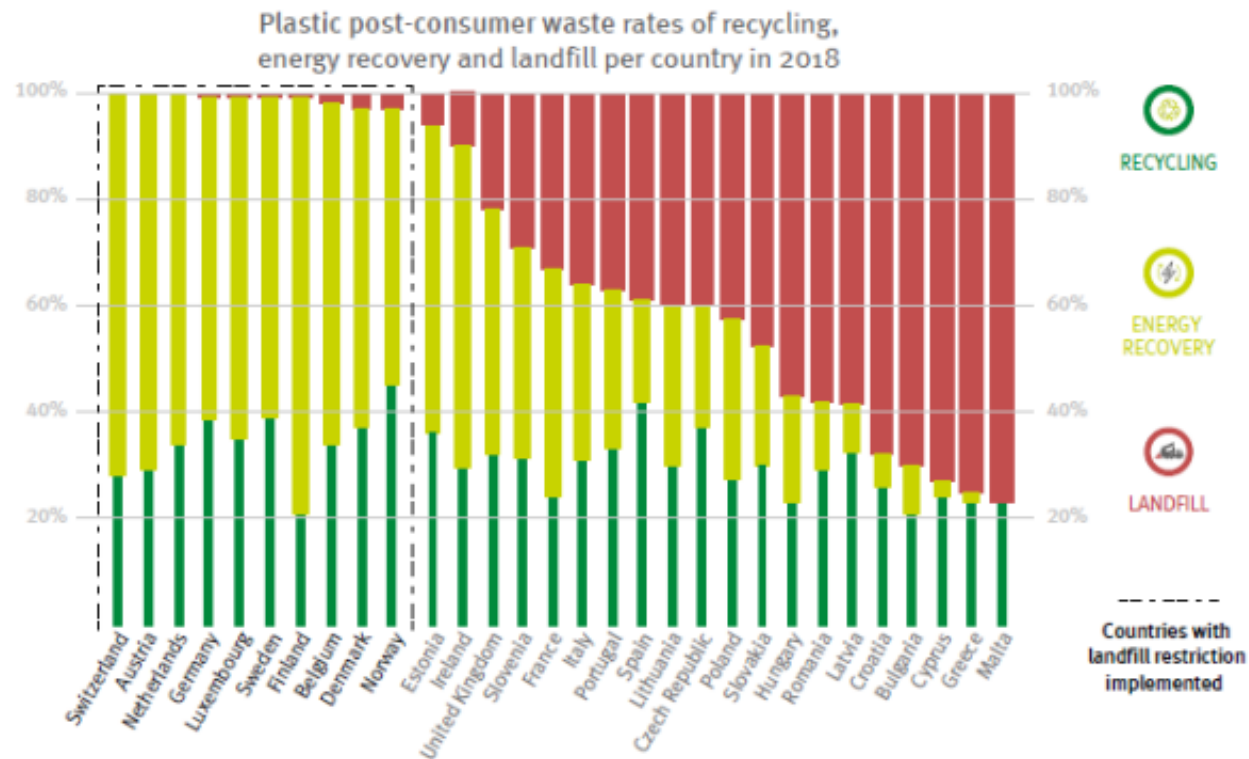
LANDFILL



ZERO LANDFILLING IS NEEDED TO ACHIEVE THE CIRCULAR ECONOMY OF PLASTICS

SOURCE: Converso Market & Strategy GmbH

Countries with landfill restrictions of recyclable and recoverable waste have, on average, higher recycling rates of plastic post-consumer waste.




European Legislative framework in plastic fields



CIRCULAR ECONOMY PACKAGE

EUROPEAN STRATEGY FOR PLASTICS IN A CIRCULAR ECONOMY

SUPs DIRECTIVE

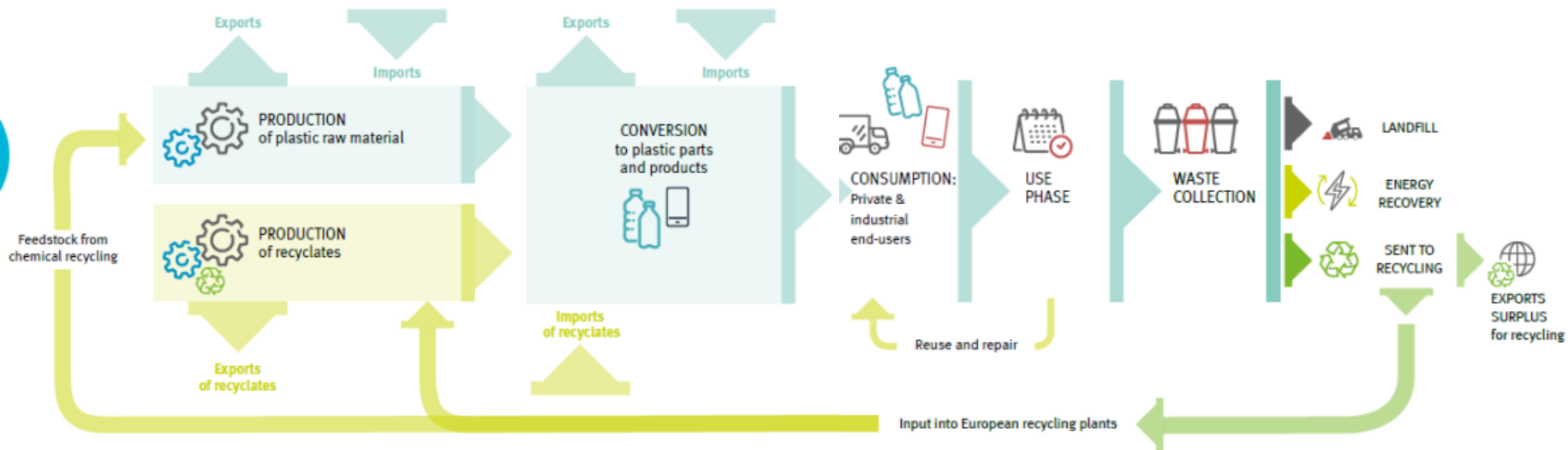
COLLECTIO N	Separate collection for hazardous household waste (by end 2022), bio-waste (by end 2023), textiles (by end 2025).		<ul style="list-style-type: none"> 77% of such single-use plastic beverage bottles must be collected separately by 2025 90% of such single-use plastic beverage bottles must be collected separately by 2029
	<ul style="list-style-type: none"> 50% of plastic packaging waste must be recycled by 2025; 55% of plastic packaging must be recycled by 2030 	<ul style="list-style-type: none"> More than half of plastics waste generated in Europe will be recycled by 2030 Sorting and recycling capacity will increase fourfold since 2015 by 2030 	
RECYCLING			
REMANUFACTURING	 <p>EU PLASTICS STRATEGY</p> <p>European Commission</p>	<ul style="list-style-type: none"> All plastics packaging placed on the EU market must be reusable or recycled in a cost-effective manner by 2030 Secondary plastic market will increase fourfold since 2015 by 	<ul style="list-style-type: none"> 25% of recycled plastics must be included PET bottles by 2025 30% of recycled plastics must be included in PET bottles by 2030

THE CIRCULARITY OF PLASTICS

In order to increase circularity, it is important to analyse the life cycle of plastics, from production to recycling and closing the loop. The use-phase is critical to understand its life cycle.

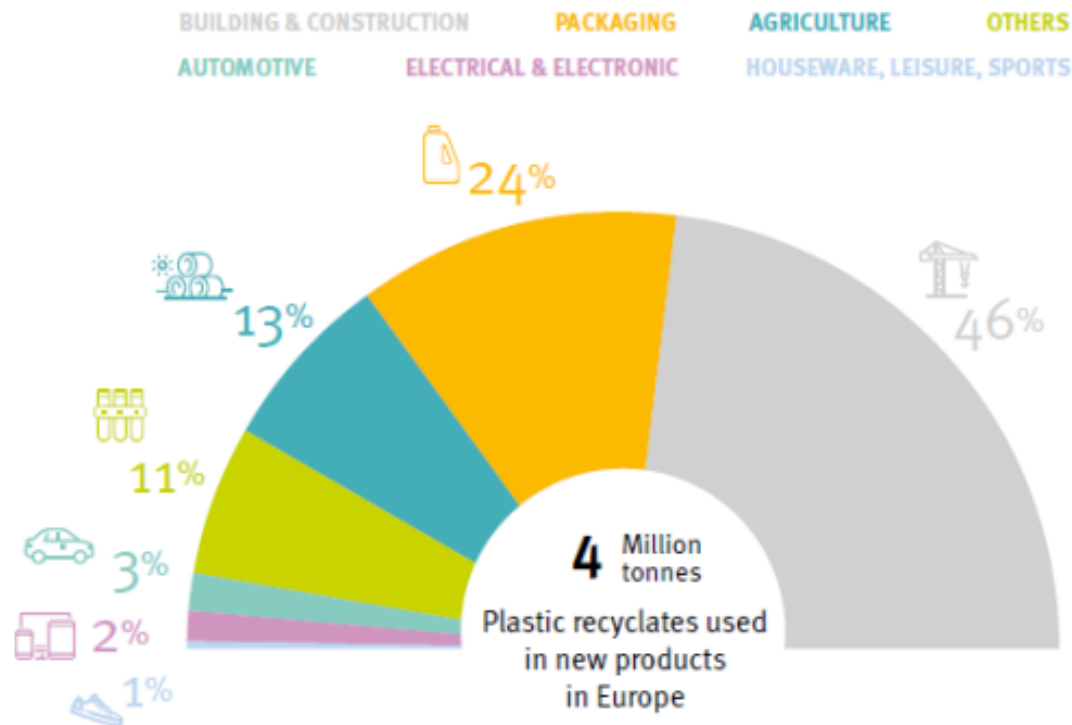
Today, 60% of plastic products and parts have a use phase between 1 and 50 years, or even more. This lapse of time determines when they will potentially become waste.

This is why, in a single year, the quantity of collected plastic waste does not match the quantity of production or consumption.



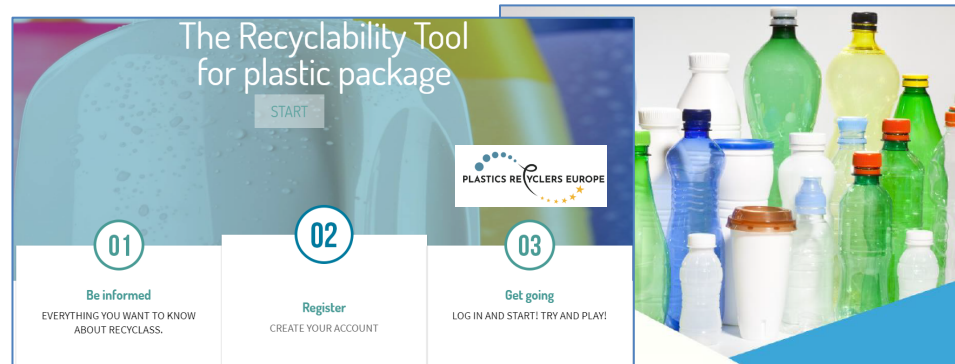
PLASTIC RECYCLATES: WHERE ARE THEY USED

In 2018, from the 5 million tonnes of plastic recyclates produced in Europe, 80% re-entered the European economy in order to manufacture new products. The rest was exported outside Europe to re-enter other regions of the world's economies.



Circular plastic economy - the design stage

- Design for and from **recycling**
- Design for assembly, disassembly
- Design for reuse



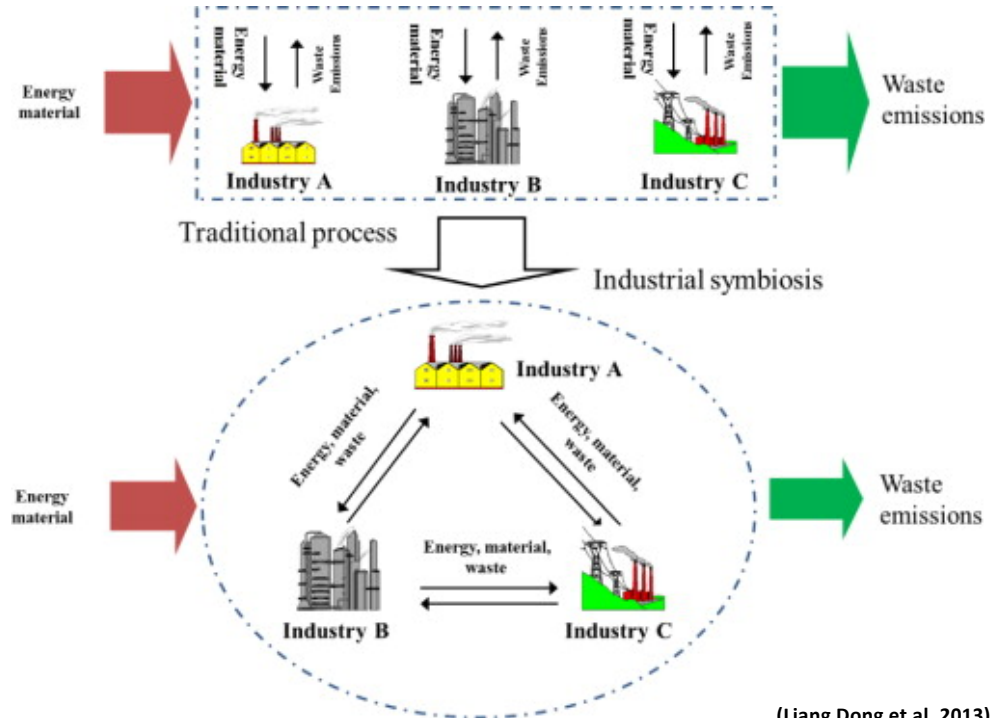
Organisation:	Country:	What?	Used for:
Citeo	France	recyclability assessment tool (LCA-based, free)	-
Cotrep	France	DfR guidelines (do & don't approach)	-
Danish Plastics Federation	Denmark	DfR guidelines	-
Der Grune Punkt (DSD)	Germany	DfR guidelines	-
EPBP	Europe	DfR guidelines + lab protocols	technology approvals
EXPRA	Europe	DfR guidelines + tool	-
FH Campus Wien	Austria	DfR guidelines + methodology	-
HTP-Cyclos	Germany	recyclability assessment (certification)	certification
IK	Germany	Eco Design of Plastic Packaging	-
IKV	Netherlands	DfR guidelines (do & don't), decision tree (for rigids)	-
OPRL (on pack recycling label)	UK	recyclability assessment (tool and labelling, only for members)	certification
Petcore Europe	Europe	DfR guidelines + recyclability protocol	technology approvals
Recoup	UK	DfR guidelines + tool (Packscore) - aligned with RecyClass	certification
RecyClass	Europe	DfR guidelines, recyclability assessment (free online tool) + certification, lab protocols	technology approvals
Suez.Circpack	Global	DfR guidelines, recyclability assessment - aligned with RecyClass	certification
WRAP	UK	DfR guidelines (yes please/no thanks approach)	-
Zentrale Stelle	Germany	DfR guidelines + methodology	certification
APR	US	DfR guidelines + lab protocols	technology approvals

KIDV RECYCLE CHECK
RIGID PLASTIC PACKAGING

Linee guida per la facilitazione delle attività di riciclo degli imballaggi in materiale plastico

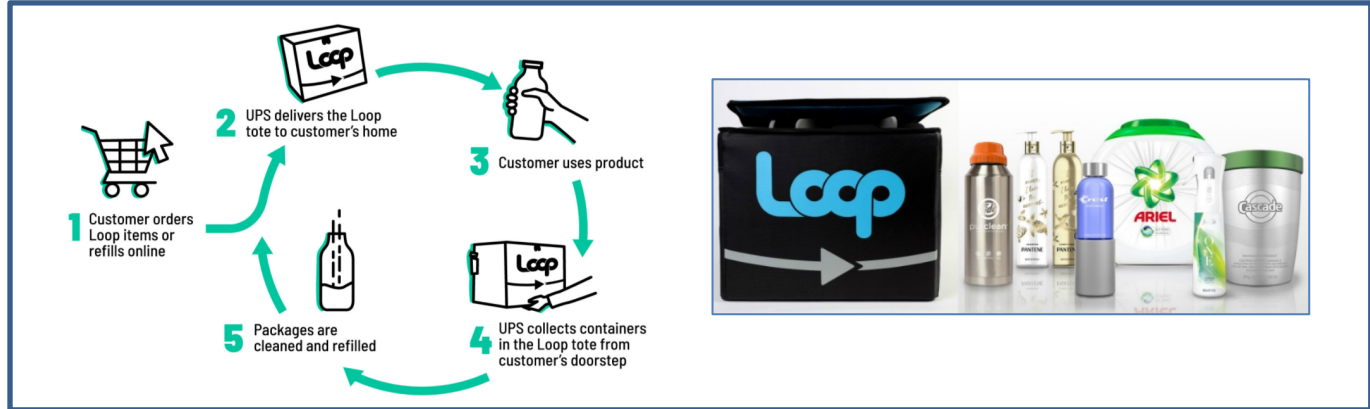
Circular plastic economy - the manufacturing stage

- **By-product** valorization
- Process efficiency (green energy)
- **Industrial symbiosis**



Circular plastic economy - the consumption stage

- Reuse
- Share
- Repair



Circular plastic economy – the EoL stage

- Waste valorization
- Remanufacturing

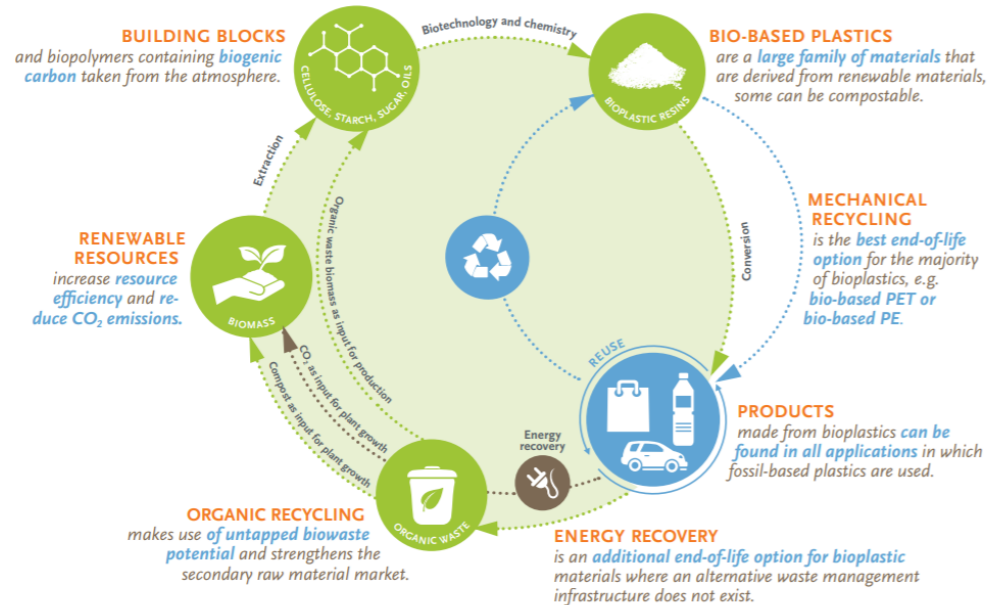


Circular economy in BIOPLASTICS

- Reducing the carbon footprint and sourcing from sustainable feedstocks
- Utilizing compostable materials that bring nutrients back to the soil
- Increasing the quality of bioplastics through technological innovations, increasing utility value, life cycle and functionality

Ongoing research:

- **COMPOSTABILITY AND RECYCLABILITY**
- **DURABILITY vs BIODEGRADABILITY**



MEDFreeSUP

Single-use plastic free systemic local applications along the Mediterranean east coast, path for a common set of protocols through experiments in Italy, Croatia and Greece

The mission

Innovation and new perspectives to promote a change in citizens'/consumers' behaviours and eliminate single-use plastic in food packaging.



Actions

- **New tools for cities: protocols to encourage the adoption of solutions which do not make use of disposable plastic products (SUP-free solutions)**
- **Identification of solutions based on operators' needs**
- **Experimentation with solutions: Tests in cities and with operators**
- **Behavioural change: digital innovation to involve stakeholders and citizens**



JELENA BARBIR



She joined the FTZ – NK team in 2019 as an expert in the H2020 project management.

With over 5 years of experience in the H2020 proposals development, she now leads the BIO – PLASTICS EUROPE project, funded by Horizon 2020 Program.

She has a strong background in sustainable development, conservation of biodiversity and environmental sciences.

Her current research focus stands on environmental sustainability, bio – based and biodegradable solutions and climate change.



Network of Historic Cities against Plastic Waste (HISCAP)

WHY historic? WHY plastic?

Europe has more than 500 mil. 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.



Vision

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

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 sorting of complex waste streams to improve quality of recycling output
- ✚ Provide necessary infrastructure to allow processing of compostable packaging



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 are committed to undertake the following actions with the BIO-PLASTIC EUROPE project partners, in order to implement appropriate sustainable solutions on local levels:

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

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



Benefits for the cities

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, biodegradable plastics and bio waste

Access to latest European bio-based plastics research

Events

Connect cities
Preparing events
Exchange experience
Offer solutions

First event
17th of
September



BIO PLASTICS EUROPE

SUSTAINABLE SOLUTIONS FOR
BIO-BASED PLASTICS ON LAND AND SEA

**HISTORIC CITIES AGAINST
PLASTIC WASTE**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 80070

Second event
15th of
December

Preserve tourism
Minimize urban littering
Unconventional practices

BIO PLASTICS EUROPE

SECOND VIRTUAL MEETING
"Best practices for sustainable plastic waste management in Mediterranean countries"
15.12.2020 11.00 – 13.00 CET

**HISTORIC CITIES AGAINST
PLASTIC WASTE
(HISCAP)**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 80070

HISCAP WORKSHOP 1

SAVE THE DATE:

- 24th of February 2021 (10-12 h CET)
- ORGANISED by HAW Hamburg

Plastic Waste Management in North European Cities and “match finding”

Membership



The network will involve stakeholders of historic and further cities who are involved in the planning, management or operations of waste on public grounds.

Agencies and Institutions

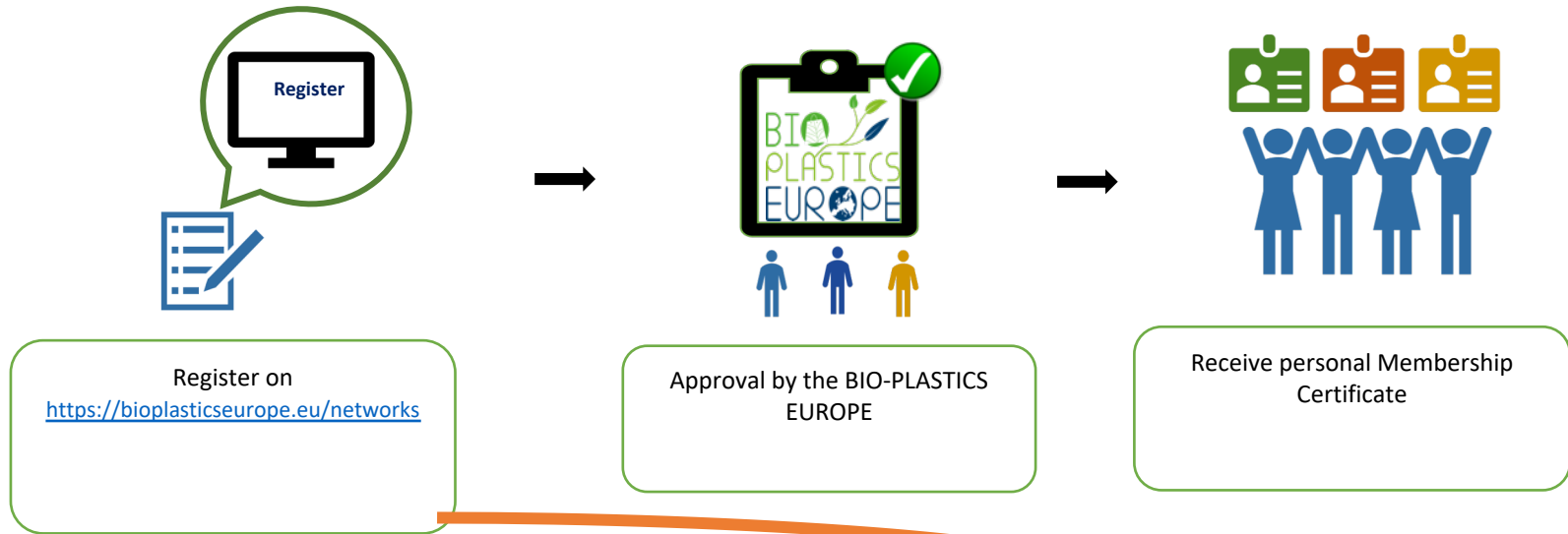
- Agency for Urbant Environment, Oslo, Norway
- University of Applied Sciences Utrecht, the Netherlands
- Department of Air pollution and Climate policy, Warsaw, Poland



Municipalities

- Banja Luka, Bosnia
- Belfast, United Kingdom
- Belgrade, Serbia
- Bologna, Italy
- Braga, Portugal
- Burgas, Bulgaria
- Graz, Austria
- Hamburg, Germany
- Jakobstadregion, Finland
- Linz, Austria
- Narva, Estonia
- Osmangazi, Turkey
- Seville, Spain
- Tirana, Albania
- Toulouse, France
- Vilnius, Lithuania

How to become a member?



Go to the chat!

Follow up...

- Next HISCAP meetings/events/workshops!
- **SAVE THE DATE: 24th February 2020**
- TOPIC: WORKSHOP 1

-and many many activities and events to come in 2021!
- Stay tuned on our website: <https://bioplasticseurope.eu/news-events>

Lets stay connected!



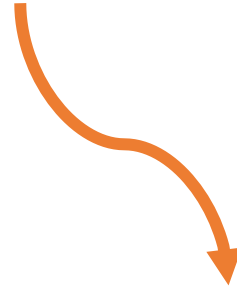
Do follow us on social media channels
(LinkedIn, Twitter, Instagram, Facebook)

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

ALBERTO BELLINI



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DIPARTIMENTO DI INGEGNERIA DELL'ENERGIA ELETTRICA
E DELL'INFORMAZIONE "GUGLIELMO MARCONI"

Alberto Bellini is an associate professor of electric machines and drives.

His main research interests are in the area of power conversion and generation from renewable energy sources, of electric drives and diagnosis of electric machines, and of circular economy. He is a vice-chair of the steering committee of IEEE SDEMPED. He was guest editor of IEEE Transacpublished on international journals or conferences proceedings, of three patents, a textbook and a book.tions on Industrial Electronics in 2008 and 2009.

Since 2017 he is the director of Master program in Electronics Engineering for Energy and Information and of master program ICT for climate.

Since 2018 he is the Project Coordinator for eCircular the EIT Climate-KIC Loop Flagship for Circular Economy. Since 2020 he is vice director of Alma Climate, the multidisciplinary center for research on climate and sustainability.



The commitment of the Mediterranean countries
towards marine plastic pollution

eCircular programme,
regional hub model experiment
in Italy



blue med Research and Innovation
for blue jobs and growth
in the Mediterranean Area

The BLUEMED initiative: aims and actions



The R&I BLUEMED Initiative fosters integration of knowledge and efforts of Countries of the Mediterranean for a more sustainable blue growth in the area.

It was launched and implemented by the EU MS of the area in close cooperation with the EU commission (DG RTD, DG MARE). It was then open to all Countries of the area interested in joining it.

April 2014 >>
Priority of the
Programme of
the Italian
Presidency of
the EU Council

Nov 2015 >>
UfM Ministerial
Declaration on
BlueEconomy

April-May 2017 >> BLUEMED-
UfM Conference & Valletta
Declaration endorsed by UfM,
28 EU MS and Commissioners
Moedas & Vella

Cyprus, Croatia, France,
Greece, Italy, Malta,
Portugal, Slovenia, Spain
Algeria, Egypt, Libya,
Morocco, Tunisia, Jordan
Turkey

Oct 2015 >> Venice
Declaration endorsed
by 10 EU Member
States and launch of
the BLUEMED
Strategic R&I Agenda

Oct 2016
BLUEMED
CSA and
other
projects
started

Nov 2017 >>
BLUEMED WG
EuroMed GSO
Launched
(coordination
EC and UfM)

<http://www.bluemed-initiative.eu/>

The marine litter problem in the MED (a)

The Mediterranean is the most affected area worldwide:

- # 320 Millions inhabitants
- A closed basin
- 25- 30% of the maritime traffic
- A touristic destination
- Large rivers (Rhône, Nile, Po)

1% of the World's waters

the Med Sea is a "plastic trap"

7% of all global microplastics



- Up to 1000 000 items/ km2 (Sea floor, submitted)

After Gargani 2019

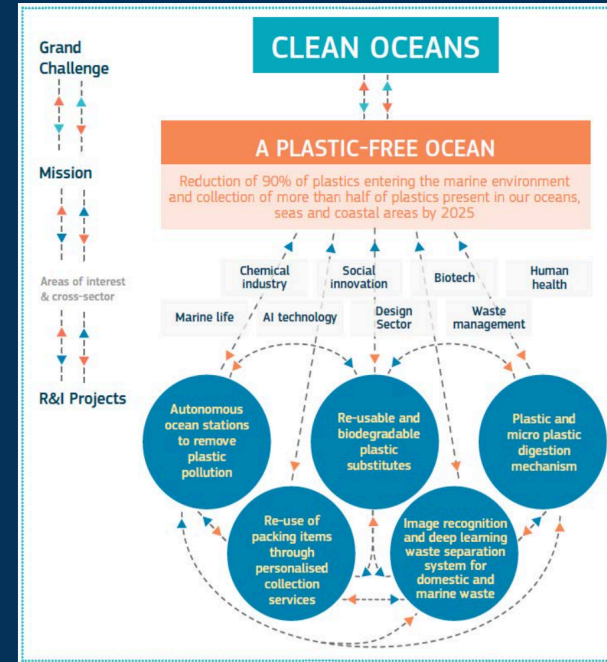
The BLUEMED Pilot Towards a healthy plastic-free Mediterranean



Currently, Mediterranean sea is one of the most plastic-polluted seas at the world scale. With 1% of the world water, it contains 7% of the global microplastics detected so far in marine habitats.

BLUEMED Countries launched (April 2018) a Pilot for a plastic-free, healthy Mediterranean Sea with the actions:

- Mapping in all Countries ongoing actions and initiatives with clear technological, business, policy, educational and social impacts (2019);
- Set up a joint digital platform to share the mapped initiatives/projects and the best experiences (2020);
- Building a broad partnership to implement joint concrete actions to remarkably reduce marine litter in the Mediterranean sea (2021-).



The BLUEMED Pilot: main joint achievements

Countries involved: Algeria, Egypt, France, Greece, Israel, Italy, Malta, Morocco, Spain, Tunisia, Turkey

- **Set up of Country hubs with the most relevant national marine litter mitigation and prevention actions/initiatives** with clear technological, business, policy, educational or social impacts classified under the sections: 1) Monitoring and Assessment; 2) Preventing/ Recycling / Circular thinking; 3) Collection and Valorization; 4) Education/Training/Communication; 5) Policies/Regulatory framework/Financing.

Overview at: <http://www.bluedmed-initiative.eu/pilot-action-on-a-healthy-plastic-free-mediterranean-sea/> (Dec. 2019)

- Analysis of the main strength, weakness and complementarities of the **national hubs and their interconnection via a digital platform** (July 2020);
<https://semed.eu/>; <http://bluedmed-initiative.eu/e-training-course/>
- **Co-design of a portfolio of inter-country multi-stakeholders and multilevel actions**, also via joint workshops (the next is with plastics producers of the Mediterranean sea at Ecomondo 2020) **to be jointly implemented under the BLUEMED umbrella**, to exploit the patrimony of experiences to develop joint/better aligned more robust regulations/legislation, R&I actions, and education (2021-).

eCircular Vision and Mission



VISION

*eCircular envisions a **circular carbon-neutral plastic system in Europe by 2050***

MISSION

eCircular fosters the circularity of plastic-based material systems and dematerialisation of urban plastic demand based on preventative and digital solutions.

The innovations boost smart manufacturing solutions through advanced eco-design approaches, new business models and alternative consumption patterns, as well as advanced policies and industry standards to foster systemic **innovation** in plastic waste prevention

eCircular community in 2018



ACADEMIA

CHALMERS
UNIVERSITY OF TECHNOLOGY



UNIVERSITAT
ID VALÈNCIA



BUSINESS



The University of Dublin



LUND UNIVERSITY



ecomatters



RTO



Bergische Gesellschaft für Ressourceneffizienz mbH

PUBLIC/NGO

The regional hub model within eCircular strategy

- Value-chain assessment based on stakeholders' needs
- Policy assessment at EU and regional levels on plastic waste prevention

Insights



Networking and Peer Learning



- Peer to peer networking at regional and European levels
- Vocational training (e.g. training, courses, presentations, success stories)

- investment/risk- sharing in regional ecosystems: identification of investors and partners on plastic waste prevention
- Access EU innovation Funding, Grants and Sponsorship

Investment



Solutions and models



- Testing, piloting, and scaling with SMEs and Big companies on **Eco-design and Social innovation** on plastic waste prevention
- Ecosystems growth to foster the **re-design of the value chains** with a **demand-led** approach on plastic waste prevention



The regional hub model exploration in Italy: stakeholders engaged



Companies (among Big and SMEs)

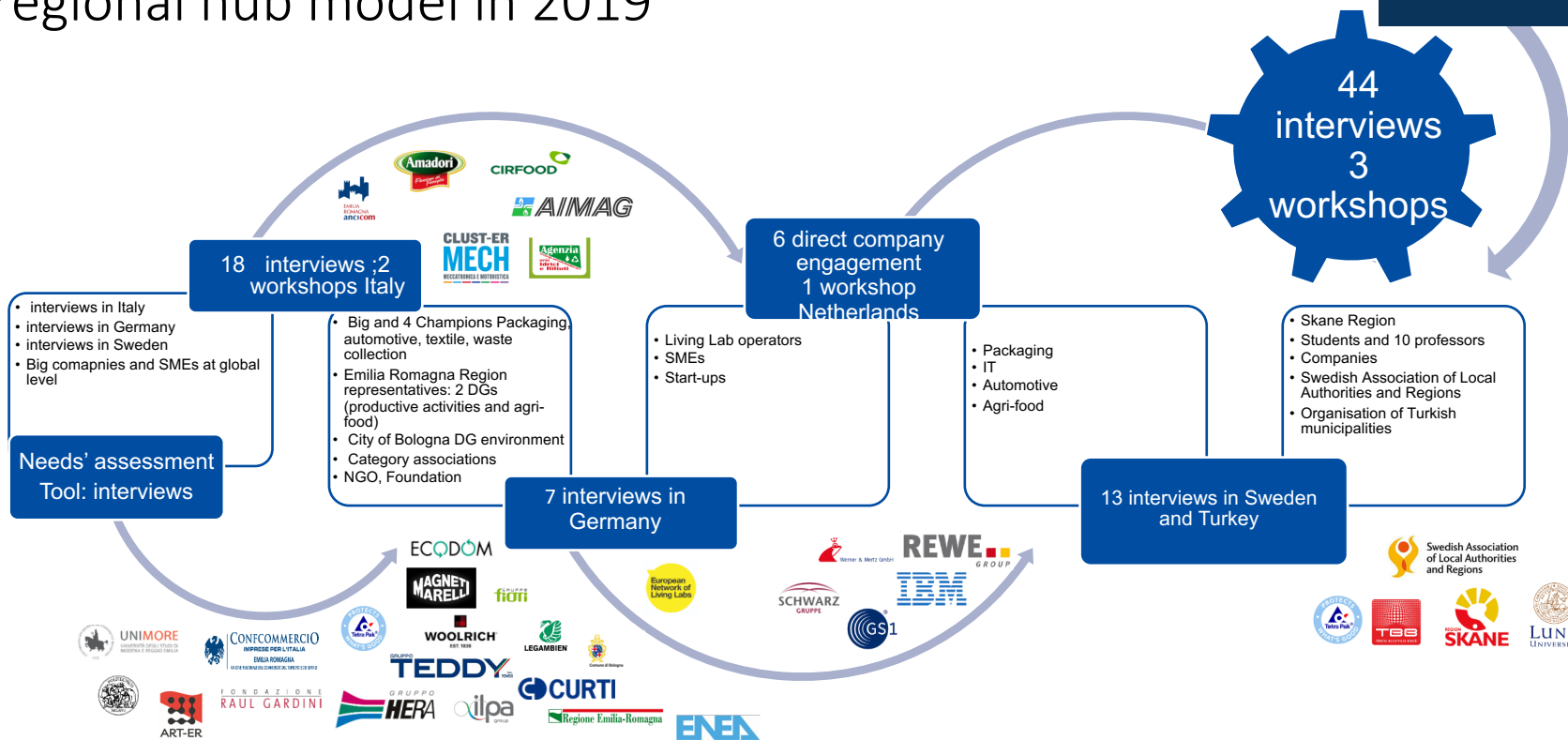
- Fashion/textile
- Agrifood
- Packaging
- Automotive
- Buildings
- Plastic collectors



E-R Region

- DG manufacturing activities
- DG environment
- Association of municipalities
- Regional innovation cluster representatives
- NGOs
- Category associations
- Foundations

Problem owners' needs exploration to set up the regional hub model in 2019



eCircular regional hub assessment outcomes in Emilia Romagna, Italy



Market needs



Strengthen citizens' awareness and empowerment on PWP

Training on plastic waste prevention strategies and solutions devoted to companies

Co-creation (eco-design, LCA) along the value chain, proof of concept

Plastic volumes and use mapping and monitoring/ incentives identification

Policy assessment to contribute to harmonize preventative approaches (including regional and city levels)

Stakeholders



Association of Municipalities; Waste collection companies; Region

Companies, Category Associations

Companies

Companies, Region, Municipalities Associations

Companies, Region, Municipalities Associations

Main solutions to be explored in a pilot in 2020



Solution: educational and promotional initiatives among citizens

Solution: training to Companies on solutions and PWP adoption

Solution: Value chain networking workshops to support co-creation among regional value chain actors on SUP directive

Solution: Observatory on PWP strategies to support policy assessment

Thanks for the attention!

a.bellini@unibo.it

arianna.ruggeri3@unibo.it



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

DIPARTIMENTO DI INGEGNERIA DELL'ENERGIA ELETTRICA
E DELL'INFORMAZIONE "GUGLIELMO MARCONI"



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

