

### IMPROVING WASTE MANAGEMENT OF BIOBASED PLASTICS AND THE UPCYCLING IN PACKAGING, **TEXTILE AND AGRICULTURE SECTORS**



# How the challenge is addressed

Safe and Sustainable by Design - LCA - LCC





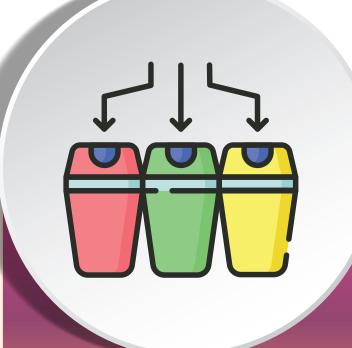






#### COLLECTION

- Waste generation (mapping and characterization)
- Waste stream collection
- Mixed streams
- Multicomponent
- Future/social trends Local authorities engagement



#### SORTING

- BIO stream identification • IR-UV
- Other

high-performance sorting technologies (hyperspectral/ chemometrics)



#### **TREATMENT**

- Best technology selection per polymer/value chain
- · LCA TCA criteria-Good practises
- Targeted polymer/DEMO case
- Pretreatment
- Upgrading requirements



#### **UPCYCLING**

- Closed loop recycling r-polymer
- Target polymer/DEMO case
- Formulation/Target
- DSS-digital SSBD principles?



#### **VALIDATION END USER**

- Social acceptance
- Brand owners involvement
- Authorities engagement
- · LCA TGA& exploitation



**WASTE STREAM** 

WASTE **MANAGERS** MSW Separate collection

Mechanical recycling

**VALIDATOR OF** R-PRODUCT FOR **PACKAGING** 

**BRAND OWNER** 





WASTE **MANAGERS** 

WASTE

**MANAGERS** 

Post-use

**Post-industrial** 

SORTING **EXPERTISE MACHINERY** Post-use **PARTNER Post-industrial** 

Bio-recycling

Chemical recycling

Thermochemical recycling **VALIDATOR OF AGRICULTURE** 

R- PRODUCT **MANUFACTURER** 

> **VALIDATOR OF** TEXTILE R- PRODUCT **MANUFACTURER**

**BRAND OWNER** 

**BRAND OWNER** 

Decision Support System - Best Practices

## Closing the loop of the BIOs End of Life

Coordinator:







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1 June 2024 -31 May 2028

· Technology development and implementation along/across the (3) value chains (system innovation) ·Integration with current technologies/current recycling lines and models

> Multi-actor and transdisciplinary approach engaging relevant agents.

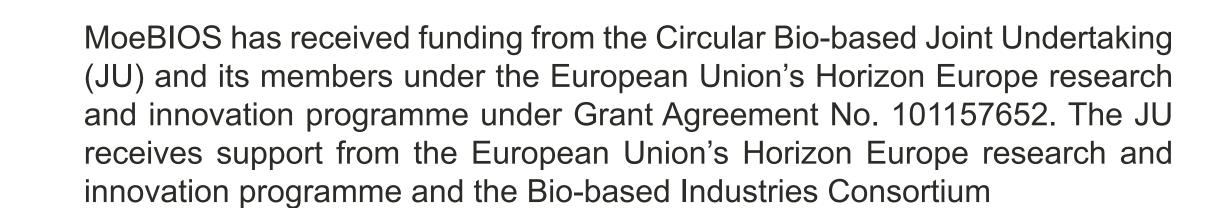
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regulations