



# FIRST2RUN

*Flagship demonstration of an integrated biorefinery for dry crops  
sustainable exploitation towards biobased materials production*

## WP 4

# Biobased products formulation and validation

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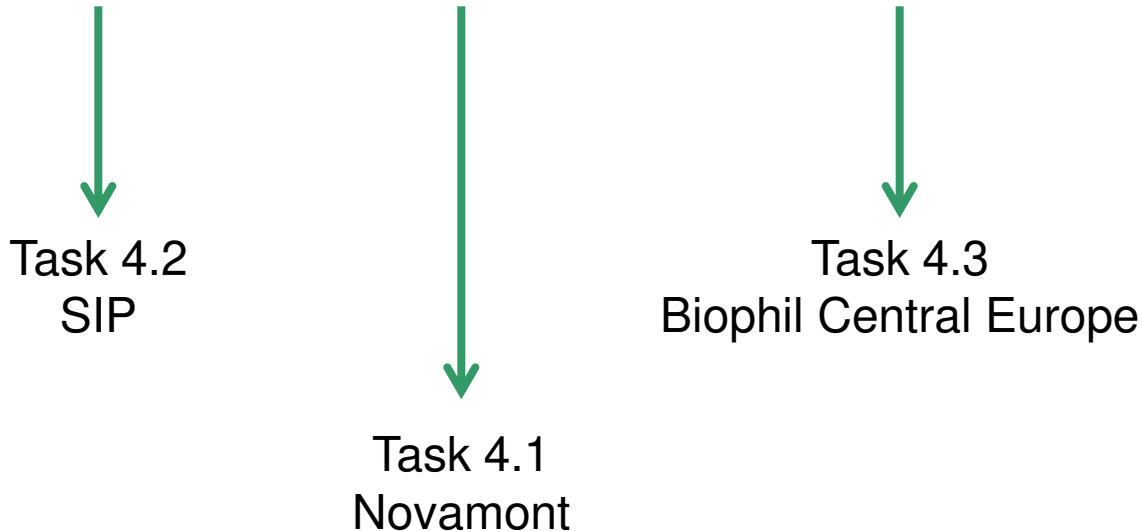
Bio-based Industries  
Consortium



# Biobased products formulation and validation

## Main Objective

- To validate the bio-based materials produced in *WP2* (biodegradable esters – *Matrica*) and *WP3* (scale-up of *WP2* - *Novamont*) within the formulation of biobased products, i.e. biolubricants, bioplastics and **cosmetics**.



# Specific objectives

- Validation and demonstration of **at least one biobased polymer** able **to be used in** the formulation of a biodegradable and compostable **bioplastic** for mulch films and hand bags.
- Validation and demonstration of **at least one formulation of biolubricants** for agriculture applications.
- Validation and demonstration of **at least one formulation of oil palm-free constituents for cosmetic applications.**

# Task 4.1

## Bioplastic formulation and validation

- Task leader: ***Novamont***
- From polyesters of the *WP3* to rigid films for packaging application.
- Films will be characterized and tested on packaging machines, printing and lamination steps.
- New prototypes derived from the addition of organic and inorganic materials to films, will be developed, tested and characterized.

## Task 4.2

### Biolubricant formulation and validation

- Task leader : **SIP**
- Steps of separation, selection and modification of esters from *WP3* will lead to biolubricant development.
- Novamont and Matrica will formulate biolubricant, advised by SIP, who will test the products and analyze results and benchmark.
- A particular attention will be given to the choice of additives to guarantee biodegradability and non-toxicity of the bioproduct.

# Task 4.3

## Cosmetics validation

- Task leader: ***Biophil Central Europe***
- Esters from *WP3* with high purity and low acidity will be compared to benchmark for personal care application.
- Toxicity and safety of the products will be tested.
- The efficacy of new esters in finished cosmetic product will be tested (skin-care, sun-care, baby-care, hair-care, toiletries and make-up).
- Demo-scale of 3 to 5 finished products with different applications.

# Main expected results

- Task 4.1: at least one biobased polymer for bioplastic.
- Task 4.2: at least one formulation of a tested and biodegradable lubricants for agriculture application.
- Task 4.3: 3 to 5 finished cosmetic products for different applications.
  
- Milestone 4: Suitability of esters and polyesters for targeted final application

# Deliverables

- **D4.1** Prototype of a machine for the use of the organic/inorganic additives into biobased polymers.
- **D4.2** Prototype of a new biobased material for packaging applications.
- **D4.3** Formulation and validation of one biobased lubricant.
- **D4.4** Formulation of one oil palm free biobased compound and validation through further application in cosmetic and personal care products.





# Time scheduling

	Months	Year 1		Year 2		Year 3		Year 4	
		0	12	13	24	25	36	37	48
<b>WP4</b>				From month 18 <sup>th</sup>	-----	-----	-----	-----	-----
D4.1							X		
D4.2									X
D4.3									X
D4.4									X
M4 <i>Suitability of esters and polyesters for targeted final application</i>							X*		

**\*Verification:** *Application of esters and polyesters in final products.*

# Partners involved in the WP4

- Biophil Central Europe (25 PM)
- Novamont (70.3 PM)
- Matrica (65 PM)
- SoliQz (1 PM)
- SIP (21 PM)

PM: Person/months per participant

# Contacts

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**Thank you for your attention!**