

# FIRST2RUN

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



## Summary

The FIRST2RUN project will demonstrate the environmental sustainability and economic profitability of an integrated biorefinery in which low input and underutilized oil crops grown in arid and marginal lands and not in competition with food nor feed, are valorized for the extraction of vegetable oils. These oils will be further converted into bio-monomers (mainly pelargonic and azelaic acids) as building blocks for high added value bioproducts (biolubricants, cosmetics, bioplastics, additives) through the integration of chemical and biotech processes

By extracting and converting caroon seeds into oil that can be used to create bio-based products such as lubricants and bioplastics, Sardinia's will play a key role in turning arid and marginal lands into a growing sustainable bio-based business.

The project will create a cost-effective and environmentally sustainable closed-loop system that will have no impact on valuable land use for food production. It will also generate new incomes for local farmers.

<http://www.first2run.eu/>

**Type of Action:**

Innovation Action – Flagship

**Value Chain:** VC3 – agro-based

**Start date:** 01 July 2015

**End date:** 30 June 2019

**BBI JU contribution:** € 16.995.882

## Objectives

- Demonstrate the technological, economic and environmental sustainability at an industrial scale of the processing of underutilized oil crops (i.e. caroon) into bio-monomers and esters that will be further transformed into bio products, such as biolubricants, cosmetics and bioplastics.
- Valorize by- and co-products for energy, feed products and added value chemicals.
- Certify and standardize the developed products and processes and facilitate their market penetration and social acceptance

## Expected impacts

- Potential valorization of currently unexploited 3500 ha of marginal lands, which results in at least 0.375 ton/ha of vegetable oil to be processed to bioproducts and 16.2 MWth of installed thermal power from the energy generation plant using the lignocellulosic fraction
- Potential revitalization of the local economy by reconvertng old industrial sites and the creation of skilled jobs: estimated 60 new skilled jobs every kton of produced bioplastics, taking into account the whole value chain, from agriculture to the end life of the final products (i.e municipalities, composting plants)

## Achievements & milestones

**Bioeconomies aim to become a beating heart of local communities, both rural and urban**



As the EU aims to head towards a sustainable, low-carbon future, experts in bio-based industries at the forefront of this transition are turning food waste and wastewater sludge into bioplastics and converting decommissioned factories into new biorefineries by working with local populations. [Read more](#)

### **Creating value from stony ground**

*06 October 2017*

The BBI JU's project, First2Run, uses marginal land and hardy native plants to produce valuable chemicals for the possible manufacture of a range of products including cosmetics and bioplastics. The goal is to harness the potential of local areas and build a sustainable, profitable and job-creating value chain. [Read more](#)

- Novamont Spa (Italy)
- Matrica Spa (Italy)
- Soliqz BV (The Netherlands)
- Sip Ltd (United Kingdom)
- Università di Bologna (Italy)
- Chemtec UK Ltd (United Kingdom)
- Roelmi HPC Srl (Italy)

#### Former members

- Elementi SRL, Italy

#### Project coordination

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