

Industrial Biotechnology as a tool to achieve reliable, clean and efficient energy

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Promoting the concept of Sustainable Regions



- Recovery of **abandoned land** for sustainable production
- Soil improvement**
- Reindustrialization** of deindustrialized/polluted sites
- Rethink agricultural value chains not economically sustainable through **new integrated technologies**
- Connecting** the dot between **new innovating flagship and renewable energy** (low carbon production)
- Address issues such as: multiple use of local biomass, feed production, local use of bioproducts to reduce environmental impacts, cascading approach, CO₂ reduction achieved along the value chain, adoption of PEF/GPP, etc.
- Launch of **integrated agro industrial projects** along the value chain with involvement of **retail sector**
- Network of sustainable regions** through Protocols able to connect complementary programs, using structural funds, RDP, and other financial meanings

The italian cluster of green chemistry



SPRING

*Sustainable Processes and Resources
for Innovation and National Growth*

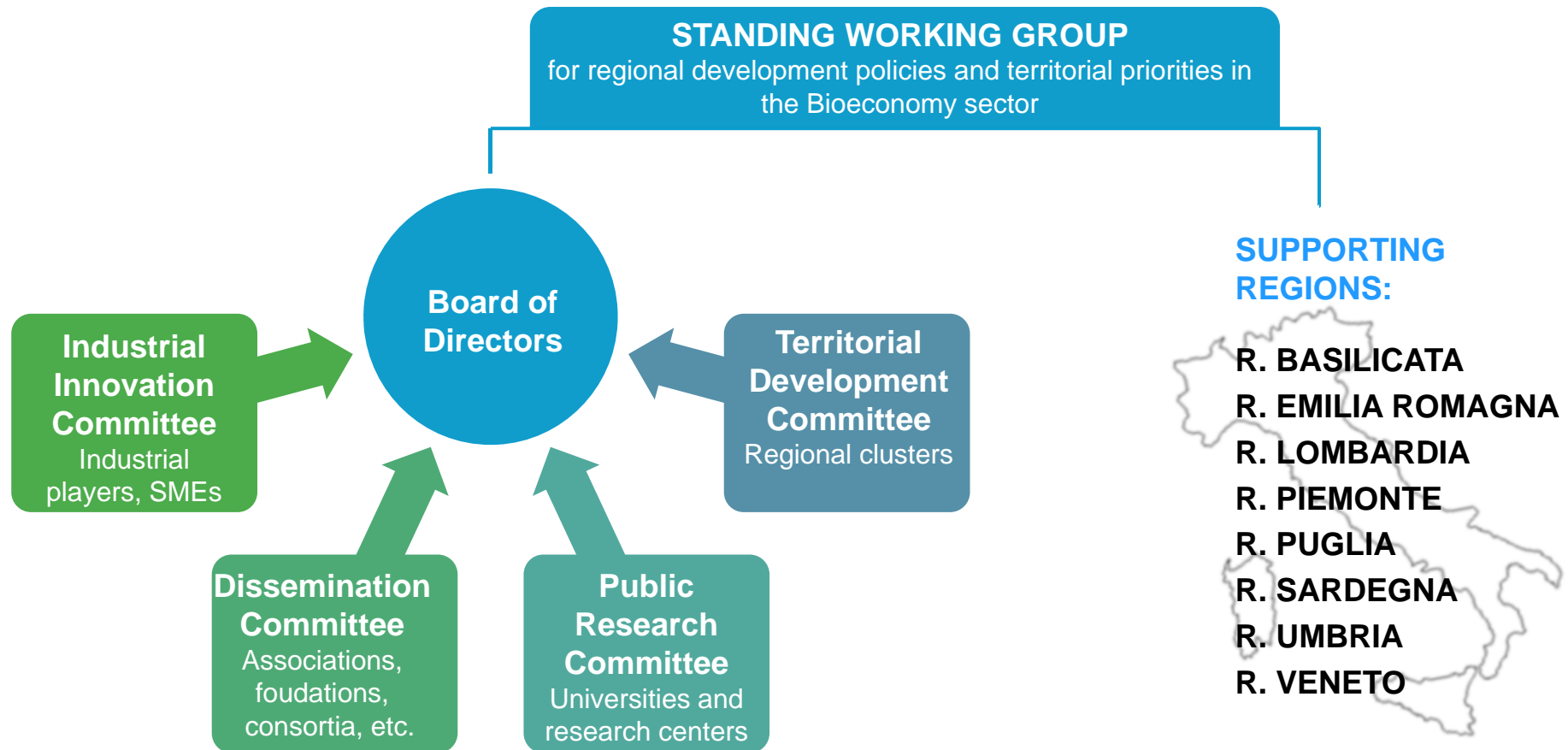
Italian Cluster of Green Chemistry



- A national platform to promote a model of **circular economy** focused on **innovative, integrated and multisector value-chains**, to foster **Bioeconomy** intended as **territorial regeneration**.
- Establishment of a **Cluster/Regional Governments Standing Working Group** to promote the debate on strategic local planning and creating interregional partnerships, stimulating the relationship with Italian and European institutions and stakeholders while fostering positive effects for local areas and sharing of best practices in support of research and innovation activities.
- Defining a **Roadmap** as a strategic document defining the position of the Cluster with regards to the Bioeconomy sector development in Italy. It represents the expression of the Cluster's stance on R&D, promoting the creation of partnerships and access to funding, and the tool for political/institutional dialogue to foster the implementation of the regulatory framework in support of the Bioeconomy.

The Italian cluster of green chemistry

Non-profit association with about 110 members (big industrial players, SMEs, universities, private and public research centres, associations, foundations, innovation centres, regional clusters and other actors involved in environmental communication and technology transfer)



INFRASTRUCTURES IN THE LOCAL AREAS AS A KEY ELEMENT FOR BIOECONOMY: THE CONTRIBUTION OF NOVAMONT

Novamont has made pioneering investments in Italy re-activating many industrial sites, thanks to its proprietary technologies, thus giving to Italy a leadership in the bioplastics market and laying the foundations for the growth of biochemicals. Up to now, Novamont investments in infrastructures in the Bioeconomy field are among the largest and most innovative in Europe

Converting
decommissioned industrial sites thanks to innovative and proprietary technologies
PROPRIETARY TECHNOLOGIES



Development of **integrated Biorefineries** aimed at enhancing the peculiarities and the biodiversity of the local areas

LOCAL AREAS



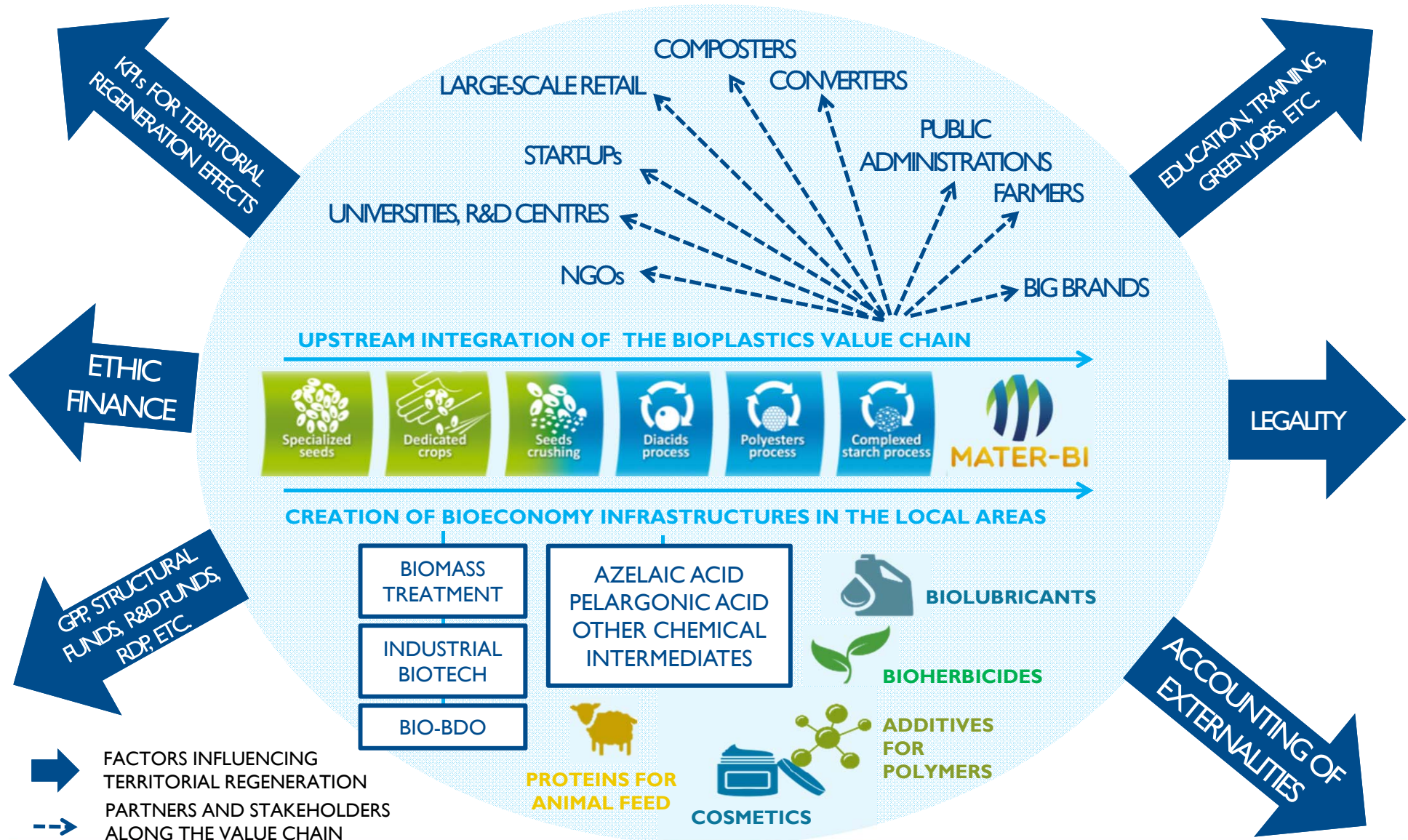
Collaborations with the world of Agriculture, Research, Industry, Institutions & Associations, large-scale distribution (LOD), big brands

PARTNERSHIP WITH OTHER SECTORS



IN ORDER FOR NOVAMONT AND OTHERS' PIONEER EFFORTS TO MAXIMISE NEW JOB OPPORTUNITIES – NEW VALUE CHAINS - NEW PRODUCTS – NEW PROJECTS – NEW SOLUTIONS FOR NEW DEVELOPMENT MODELS, BIOECONOMY MUST ENTER ITALY AND EUROPE INDUSTRIAL STRATEGY

NOVAMONT'S BUSINESS MODEL AND ITS POTENTIAL IN TERMS OF TERRITORIAL REGENERATION



NOVAMONT: A KNOWLEDGE-BASED INDUSTRY

1996: RESEARCH CENTRE
 2015: **170 MIO/€** TURNOVER
600 PEOPLE

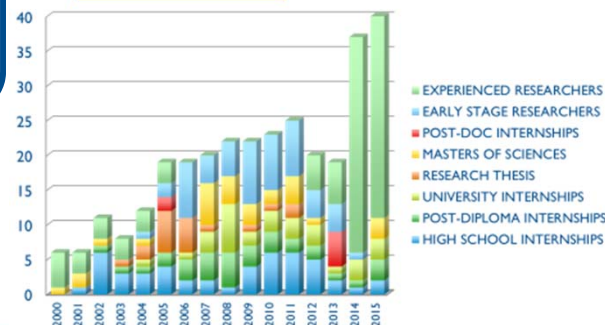
INDUSTRY

25-YEAR R&D EXPERIENCE
> 6% OF TURNOVER
20% OF EMPLOYEES
~ 1,000 PATENTS

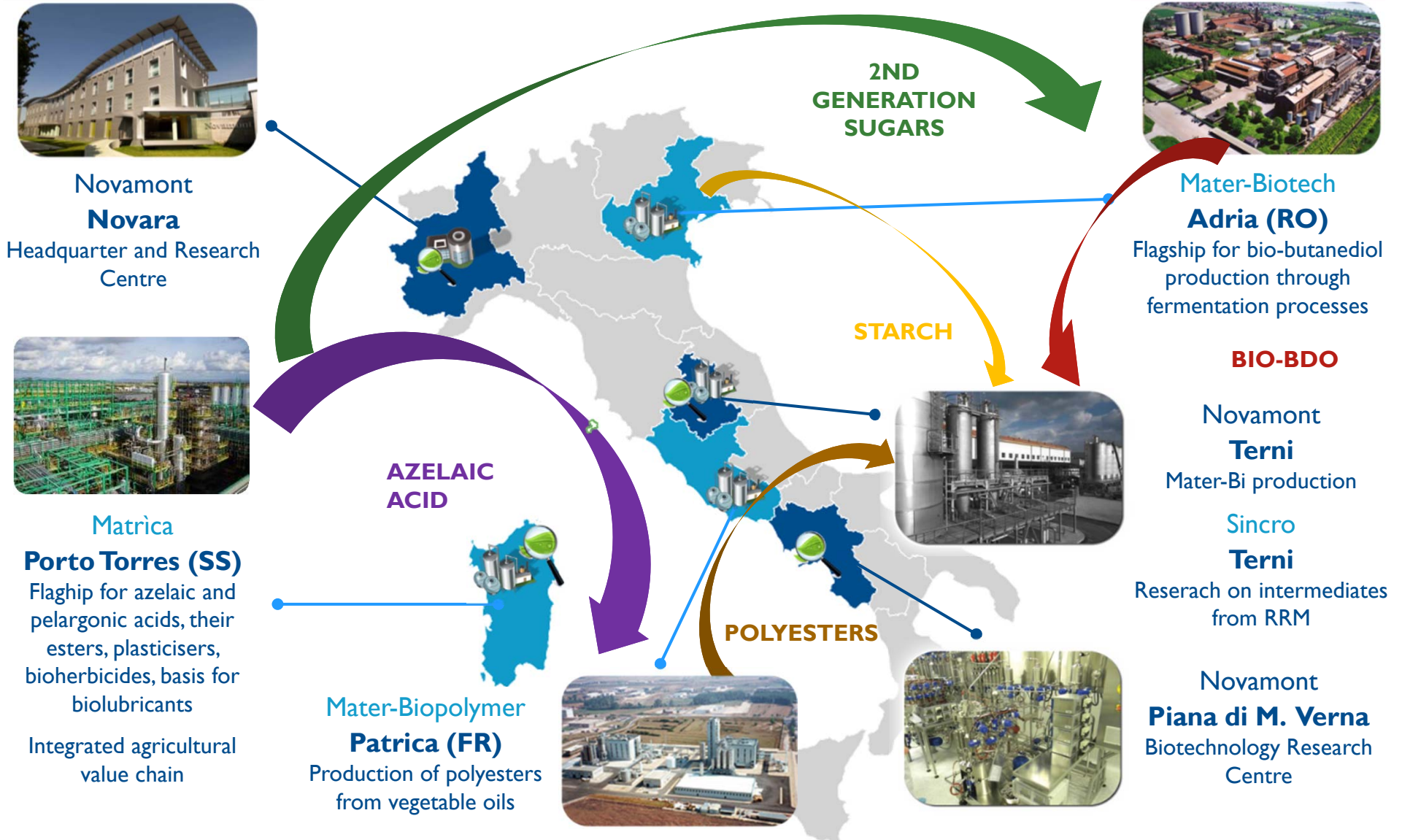
R&D

**HUMAN
 CAPITAL**

MORE THAN 300 TRAINING
 PROGRAMMES SINCE 2000 IN
 COLLABORATION WITH
 LEADING R&D INSTITUTIONS



INFRASTRUCTURES IN THE LOCAL AREAS AS A KEY ELEMENT FOR BIOECONOMY: THE CONTRIBUTION OF NOVAMONT



A WORLWIDE COMPANY



PRODUCTION

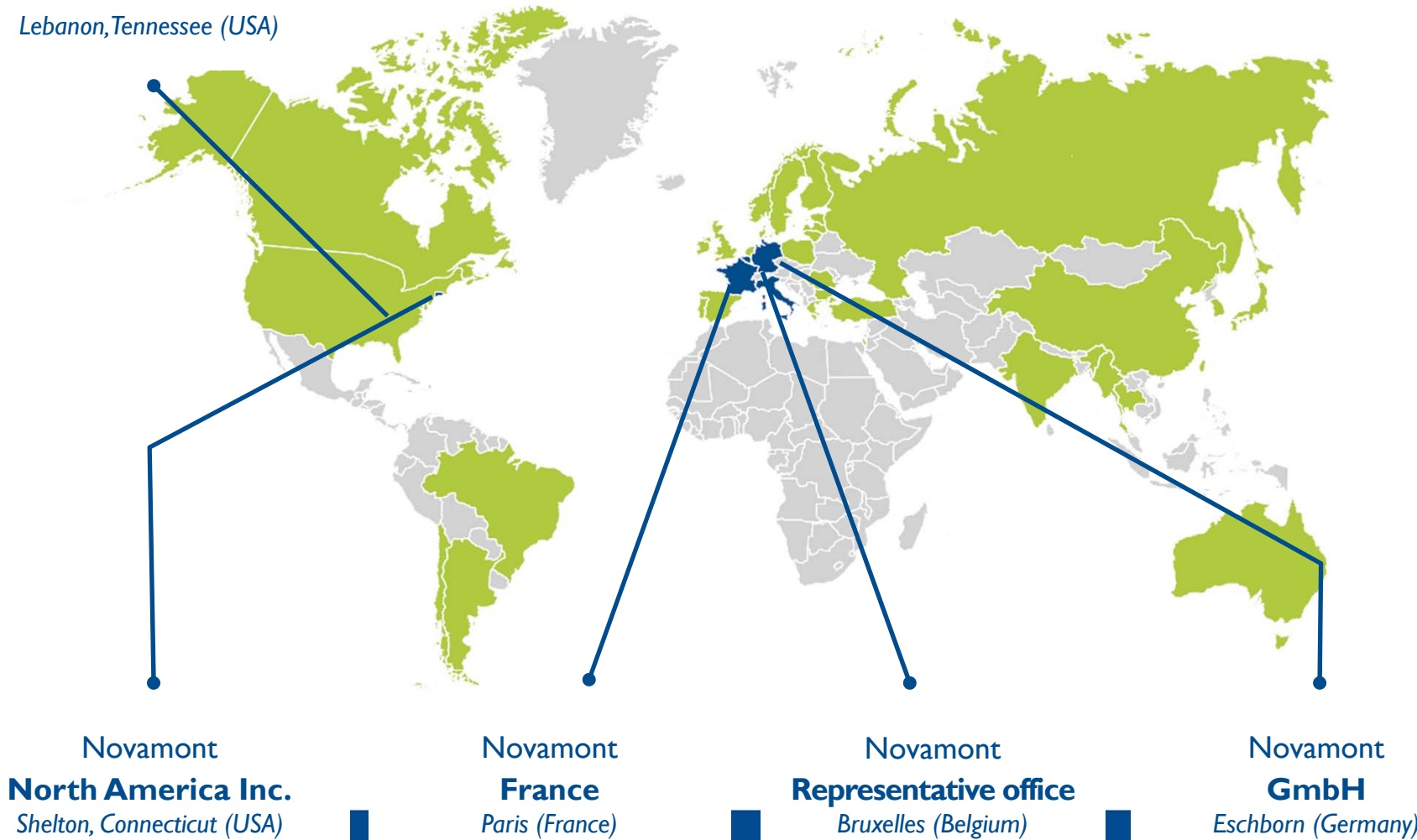
Lebanon, Tennessee (USA)



NOVAMONT location



Business network



MATER-BI, THE RIGHT SOLUTION

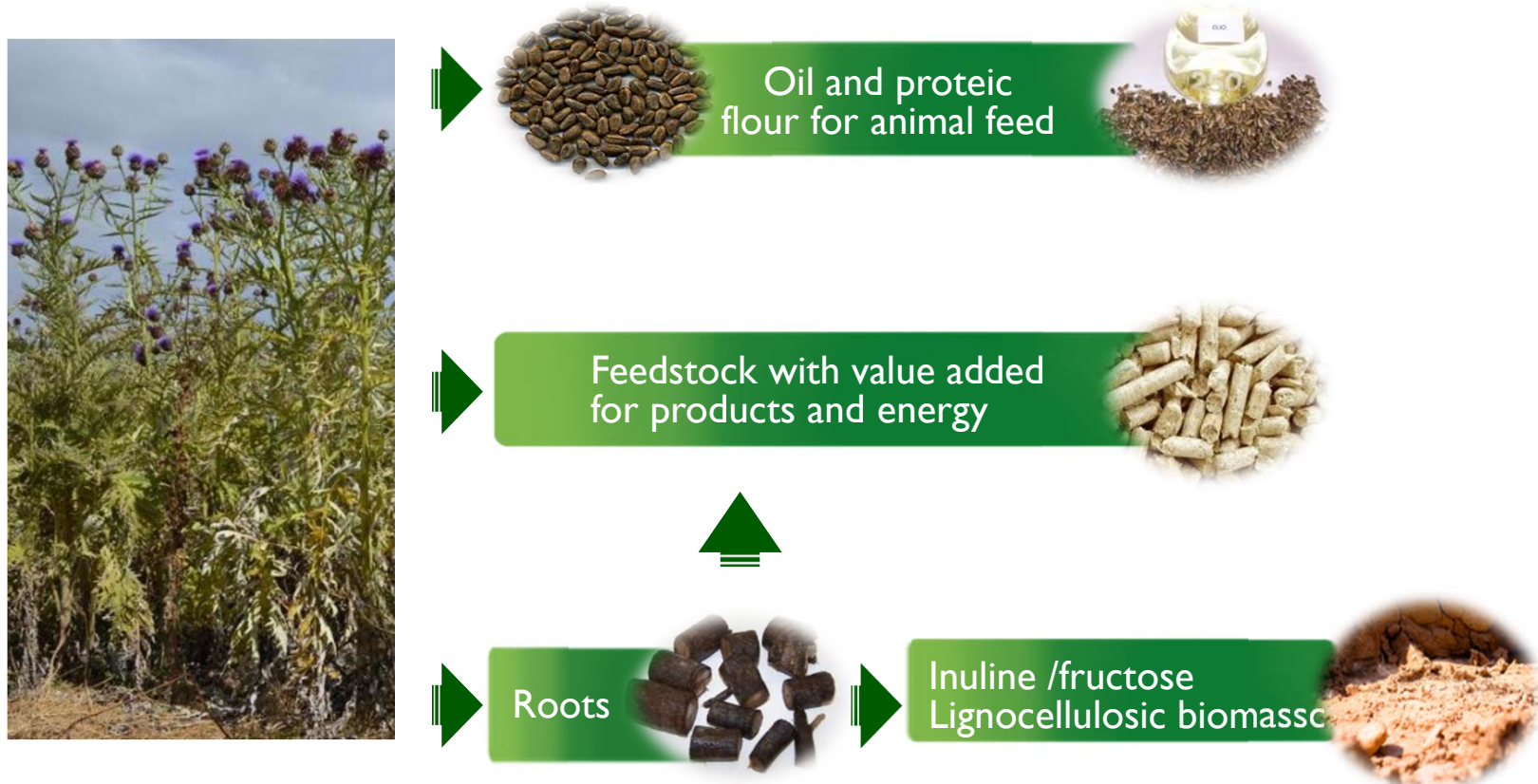


Strategic collaborations for economical and environmental sustainable solutions for specific application sectors

<http://www.lavazza.com/en/sustainability/values/partnerships/compostable-capsules/>



THE CARDOON: DIFFERENT USES AND DEVELOPMENT CONDITIONS



AFTER 3 CONSECUTIVE YEARS OF EXPERIMENTATION:

- 500 HA AND MORE THAN 50 FARMERS INVOLVED
- BIOMASS PRODUCTION > 15 TON/HA (17 TON/HA IN 2014)
- SEEDS PRODUCTION ~ 1,5 TON/HA (1,74 TON/HA IN 2014)
- ENGINEERING OF SPECIFIC FARMING MACHINES SUITABLE FOR SARDINIAN STONY GROUNDS

FIRST2RUN – FACTS & NUMBERS



1st project funded by a public-private partnership between the European Union and the European Consortium of bio-based industries (BIC)

The BBI has allocated a 17 million euros grant to the project, coordinated by NOVAMONT, in partnership with 4 companies and 1 university.

FLAGSHIP PROJECT → focused not only on research, but also on the capacity to increase the competitiveness of European industry in a strategic sector such as the green chemistry.

Horizon 2020 / BBI-JU; Call: H2020-BBI-PPP-2014-1

Topic: BBI.VC3.F1/ Type of action: BBI-IA-FLAG

Action type: Innovation action

6 partners from 4 different countries

Starting date: 01/07/2015

Duration: 48 months

Number of Work Packages: 8

Number of expected deliverables: 44

Number of Milestones: 6

The total effort in the project is relevant, being **1.665 MMS** with a total eligible **COST OF 25.022.688,75€** and **AROUND 30 MIL €** of estimated Additional Activities (Granted: 16.995.882,00 €)

This project has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 669029



Horizon 2020
European Union Funding
for Research & Innovation

INTEGRATING CHEMICAL PROCESSES FOR THE PRODUCTION OF BIOCHEMICALS WITH INDUSTRIAL BIOTECHNOLOGY

The world's first dedicated plant able to produce **butanediol (BDO) directly from sugars**, through a low impact process whose byproducts are totally re-used.

Strategic collaboration with the **US company Genomatica**, leader in the development of microorganisms for fermentation processes.

Project for the **reconversion** of the former Ajinomoto site in Adria, purchased by Novamont to be revamped and expanded in a logic of **territorial regeneration** and enhancement of preexisting skills and competencies encouraging the employment opportunities in the Green Jobs sector.

A catalyst for the regeneration of an area being facing serious difficulties and a driver for the revitalization of related or complementary sectors and downstream value chains



GRAND OPENING IN THE LAST QUARTER OF 2016

THANK YOU!

«The challenge of our millennium is in the balance between the technical means that humanity possesses and the wisdom in how we will make use of them »

Umberto Colombo