



POWER4BIO
REGIONS FOR
BIOECONOMY

FINANCING REGIONAL BIOECONOMY STRATEGY AND ITS VALUE CHAIN.

All the money is not the same

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MONEY, THE MAGIC INGREDIENT

- The money is out there: the key is knowing where to look
- Raising money takes time effort and competencies
- Before allocating any money, it is mandatory to assess what is needed, why and by whom: all the money is not the same
- Avoid mistakes already done and look at good practices in place

EUROPEAN SUPPORT FOR BIOENERGY

EU is supporting the bioenergy sector through a number of initiatives.

The main investment tools of the EU are:

- **European Structural and Investment Funds (ESIFs)** for promoting regional development and infrastructure development. Under the current ESIFs, Investment Priority 4, *Supporting the shift towards a low-carbon economy in all sectors*, can support bioenergy development.
- Rural development policy under the **Common Agricultural Policy**, which provides support for farm activity diversification via the European Agricultural Fund for Rural Development (EAFRD).
- **Horizon 2020**

They are coming to an end but both will be renewed in 2021-2027 with slightly adapted priorities.

- **European Green Deal**
- **Regional Development and Cohesion Policy in 2021-2027** will focus on five priorities, with opportunities for bioenergy development in the priority, 'Greener, carbon free Europe'
- **European Innovation Partnership on Agriculture (EIP-Agri)**
- **Sustainable Energy Technologies (SET) Plan**
- **Horizon Europe (2021-2027)** will also provide significant support for sustainable energy development,



- **The Bio-Based Industries Joint Undertaking (BBI-JU)**, a public-private-partnership between the EU and the Bio-based Industries Consortium (BIC)
- **The LIFE Programme** is the EU's funding instrument for environment and climate action, cofinancing pilot and demonstration projects that can contribute to EU goals, including the roll-out of renewable energy.
- **European Local Energy Assistance (ELENA)**, provided by the European Investment Bank and European Commission, grants technical assistance to renewable energy projects to finance costs related to feasibility and market studies, programme structuring, business plans, energy auditing, financial structuring and preparation of tendering processes and contractual arrangements.
- **InnovFin**, also from the European Investment Bank, provides loans, loan guarantees or equity type financing for innovative energy demonstration projects.
- **THE EUROPEAN BIOECONOMY FUND**

ESIF, THE EUROPEAN STRUCTURAL AND INVESTMENT FUNDS

A source to finance regional bioeconomy strategies



ESIF programme support is mainly delivered either in the form of **grants** or through **financial instruments** in the form of loans, guarantees and equity investments.

Grants schemes are NOT financial instruments because are not revolving

ESIF programmes are approved by the Commission and implemented by Member States and their regions. It is therefore the ultimate decision of managing authorities in Member States where and how funds are invested at project level within the framework of the relevant programme setting out the specific objectives, results to be achieved and types of action to deliver them.

THE NEW PROGRAMMING PERIOD AND NATIONAL RECOVERY PLANS ARE AN INCREDIBLE OPPORTUNITY NOT TO BE MISSED...

LOAN

"Agreement which obliges the lender to make available to the borrower an agreed sum of money for an agreed period of time and under which the borrower is obliged to repay that amount within the agreed time*".

Under a FI, a loan can help where banks are unwilling to lend on terms acceptable to the borrower. They can offer lower interest rates, longer repayment periods or have lower collateral requirements.

GUARANTEE

"Written commitment to assume responsibility for all or part of a third party's debt or obligation or for the successful performance by that third party of its obligations if an event occurs which triggers such guarantee, such as a loan default*".

Guarantees normally cover financial operations such as loans.

EQUITY

"Provision of capital to a firm, invested directly or indirectly in return for total or partial ownership of that firm and where the equity investor may assume some management control of the firm and may share the firm's profits*".

The financial return depends on the growth and profitability of the business. It is earned through dividends and on the sale of the shares to another investor ('exit'), or through an initial public offering (IPO).

QUASI-EQUITY

"A type of financing that ranks between equity and debt, having a higher risk than senior debt and a lower risk than common equity. Quasi-equity investments can be structured as debt, typically unsecured and subordinated and in some cases convertible into equity, or as preferred equity*".

The risk-return profile typically falls between debt and equity in a company's capital structure.



ESIF FINANCIAL INSTRUMENTS (or PRODUCTS)

ALL THE MONEY IS NOT THE SAME

What Managing Authorities need to know before starting..



Before allocating money to a financial instrument, Managing Authorities **have to assess** **what** is needed, **why** and by **whom**.

Financial instruments are usually managed by nationally or regionally operating financial institutions (such as banks) that are selected and entrusted with running financial instruments on behalf of the managing authority.

For grants, ex ante assessment is not required

Financial instruments supported with the ESIF must comply with specific regulatory provisions which are set out in a range of legislation: **the Common Provisions Regulation (CPR)** which governs implementation of ESIF

Each of the fund-specific regulations and several related delegated and implementing regulations.

RESULTS FROM OUR FINANCIAL ASSESSMENT

Main challenges/problems from regions with:



1) LOW-MEDIUM BIOECONOMY MATURITY

1. Development of new plants or new processes;
2. **Exploitation of scientific and research results including IP**
3. Support to the commercialisation of bio-based product
4. **Lack of support for start-ups and young innovative farmers;**
5. Attracting private funding (in high TRL projects);
6. Difficulty in interconnecting sectors and to complete value chains
7. Lack of grants with a larger extent
8. Lack of targeted financial support for the bioeconomy sector
9. **Lack of competencies among managing authorities to access different European funding possibilities**

2) MEDIUM-HIGHT BIOECONOMY MATURITY

1. Lack of targeted financial mechanism for the Bioeconomy sector and **for bio-based start-ups and scale-ups to overcome the "valley of death"**
2. Lack of holistic approaches
3. **Lack of funding schemes for R&D, technology transfer enabling cooperation between Academia and industry**
4. **Lack of specialised investors in the bioeconomy sector**
5. Fostering interactions and synergies between ERDF and EAFRD.

EQUITY vs DEBT Financial Instruments

1. **Job creation: Long term vs Short term**
2. **Quality vs Quantity (no. of companies and types of jobs):**
High Risk High Return vs Low Risk Low return: (Financial and Economic)

Why we need new innovative bio-based companies

Good practices: : Regional equity funds: the Ingenium funds

Main conclusions and take away

WHY DO WE NEED KNOWLEDGE INTENSIVE COMPANIES?

The US market



New jobs are created by new companies:

TOP 1% OF NEW COMPANIES = 10% of all new jobs, 40% indirect**

NEW COMPANIES = 100% new jobs*

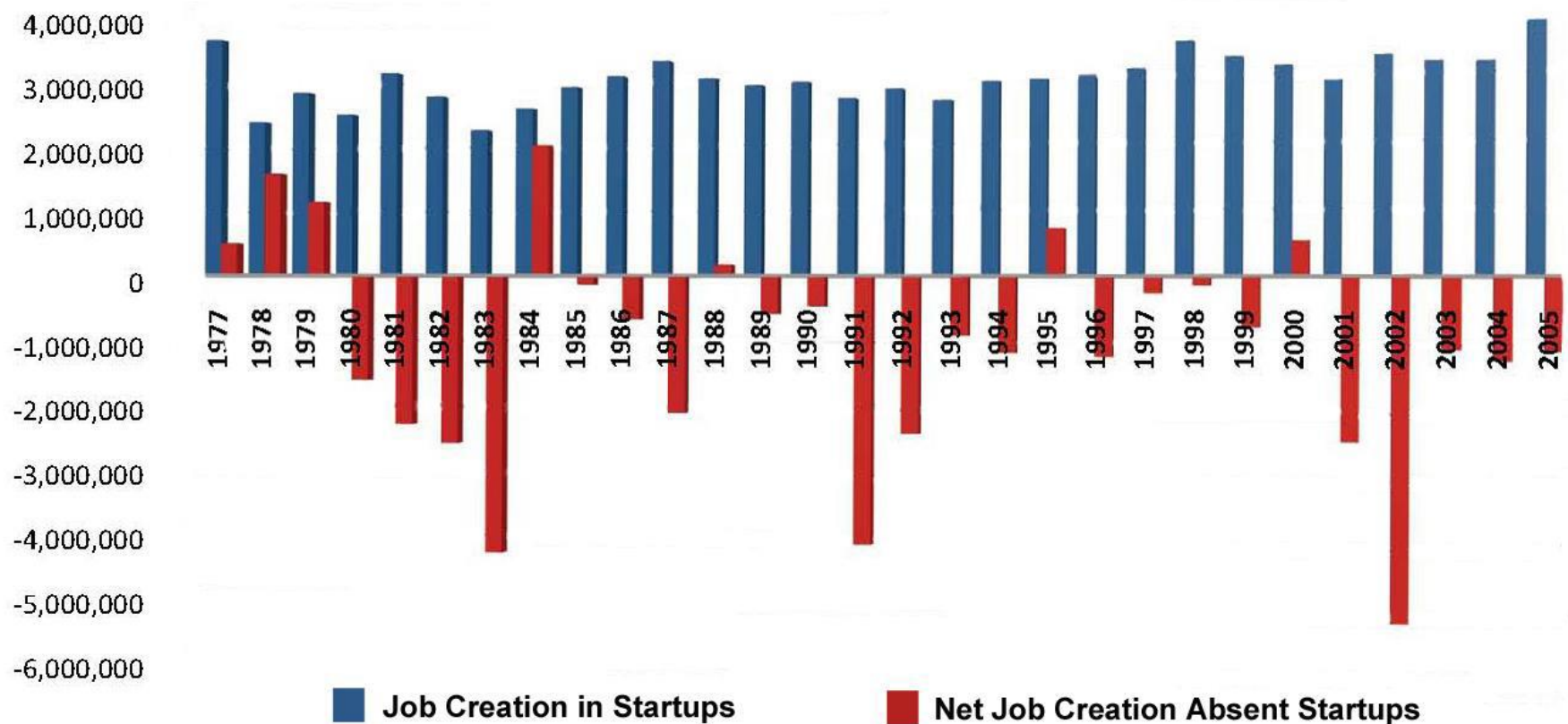
*High-Growth Firms and the Future of the American Economy – Kauffman Foundation - March 2010

WHY DO WE NEED KNOWLEDGE INTENSIVE COMPANIES?



ENTREPRENEURS ARE KEY TO JOB CREATION

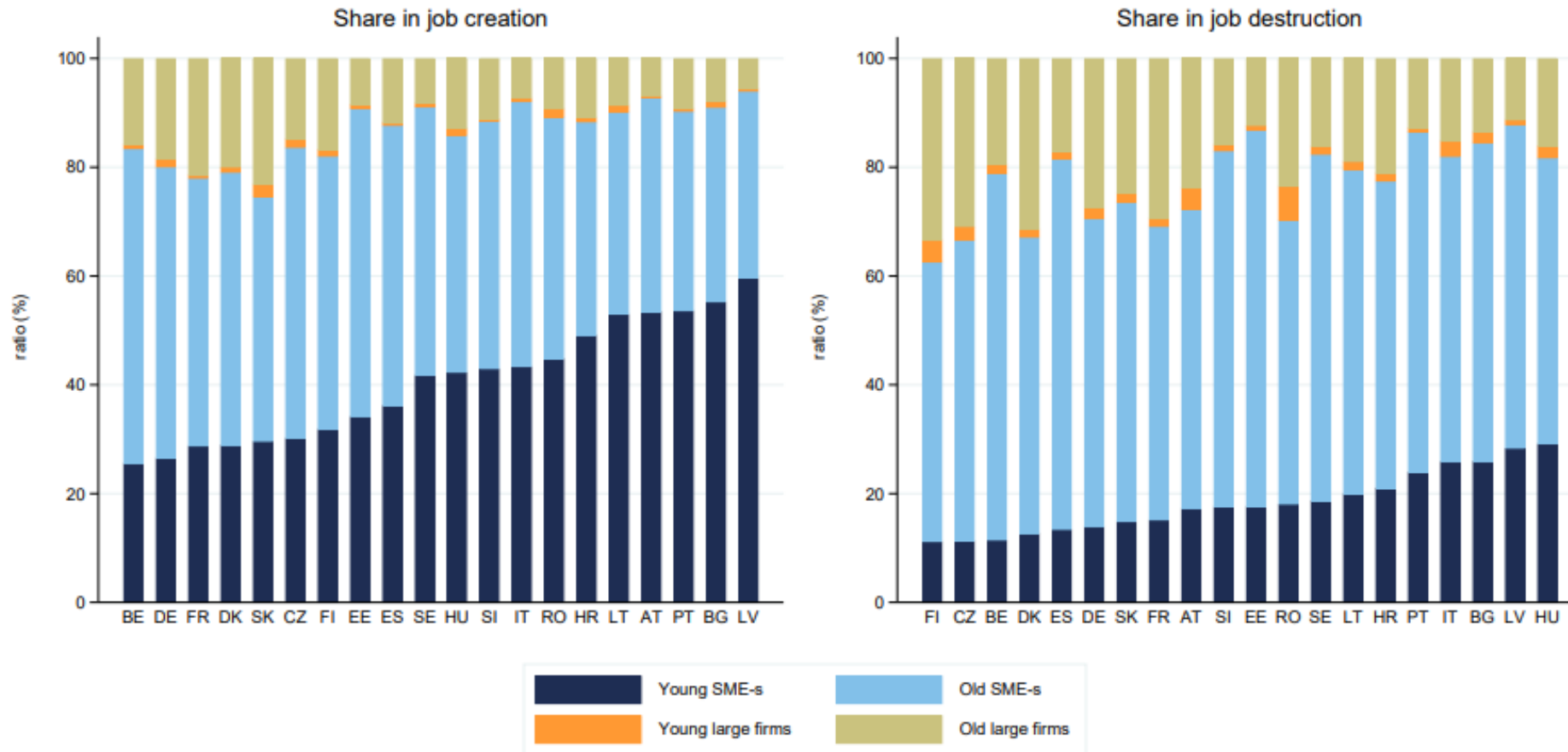
No Startups, No Job Creation



Source: Business Dynamics Statistics Briefing: Jobs Created from Business Startups in the United States. Census Bureau and Kauffman Foundation, January 2009

SHARE IN JOB CREATION AND JOB DESTRUCTION IN EU

Within-country Averages



Job Creation in Europe: A firm-level analysis, 2019 , Hallak, Issam Harasztosi, PÈter

SHARE IN JOB CREATION AND JOB DESTRUCTION IN EU

Within-country Averages



Main findings:

- SMEs are the main contributors to both job creation and job destruction.
- SMEs contributions is relatively even across countries, not the split between young and old SMEs.
- **Young SMEs are large net job creation contributors.**
- New member states are those most benefiting from young SMEs job creation.

WHY KNOWLEDGE INTENSIVE BIO-BASED COMPANIES?



Bio-based Industries expected impact:

- Help diversify and increase farmers' incomes by 40%
- Develop existing value chains and build new ones to revitalise rural environments
- Support a new generation of bio-based materials and composites produced in biorefineries
- Create a competitive biobased infrastructure in Europe
- Boost job creation, 80% of which will be in rural and underdeveloped areas
- Facilitate Europe's target to replace at least 30% of its oil-based chemicals and materials with bio-based and biodegradable ones by 2030
- Facilitate Europe's target to meet 25% of Europe's transport energy needs with advanced biofuels by 2030

TO SUM UP



- Knowledge intensive companies are crucial for the Regions => They account for 100% of new jobs+
- Their value is based on intangible and a future cash flow
- They need money BUT they are not attractive for banks (Debt money)
- They need equity, but there is a market gap in early stages
- **ESIF, European Structural and Investment funds (ERDF+ EARDF) are a viable option to channel money to be used to set up new (or improving) existing financing mechanisms at regional/national level**

WHY EQUITY MAIN TAKEAWAYS

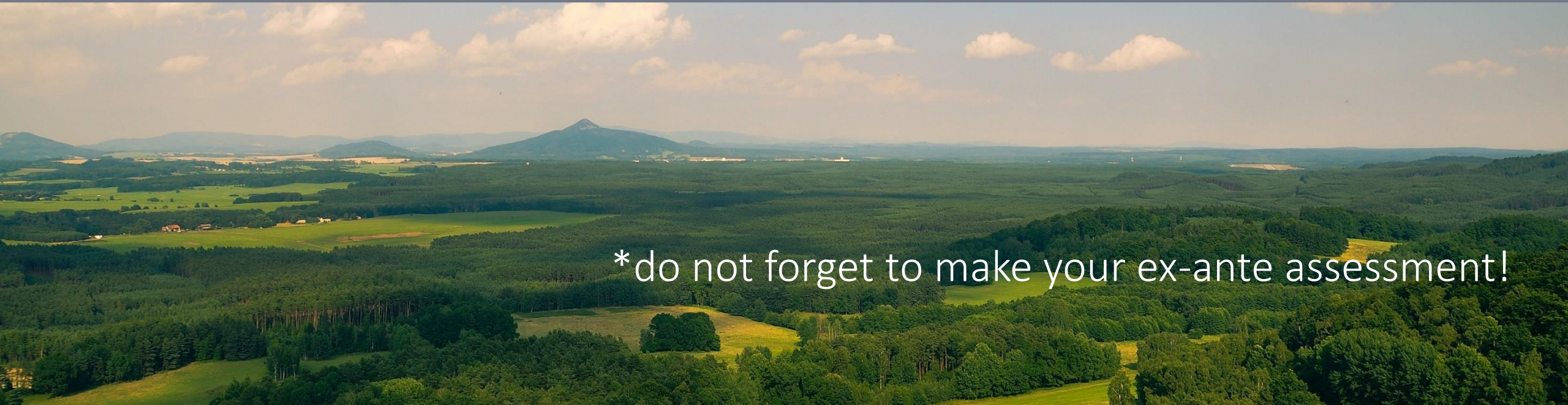
Lessons learnt



- Equity is the suitable financial instruments for knowledge intensive companies, the engine for prosperity and job creation
- Equity can be complemented with additional financial products (loans and guarantees) including grants for lower TRL
- Co-investment equity facilities are suitable Financial Instruments for managing authorities willing to support High Growth companies and R&D results exploitation (A deal by deal approach is what was missing so far and is key to leverage at its best the contribution of the private sector)
- Commercially driven fund manager is necessary to align interests, take the necessary risk and build the adequate portfolio
- Do not reinvent the wheel: a number of good practices are available both at the European and international level that can be copied and/or adjusted, fitting specific regional needs and challenges.

Different ESIF instruments for different regions*

*do not forget to make your ex-ante assessment!



ONE SIZE DOES NOT FIT ALL

Regional Differences



Indicator	Emilia Romagna	Sardinia	Slovenia	Poland
Population	4.357.700	1.671.700	2.000.092	38.200.037
GDP/capita	24.396,00	15.895,00	17.500,00	9.300,00
Inhabitants/Km ²	195,8	69,4	100,0	121,9
Youth unemployment rate	18,3%	44,7%	12,4%	23,7%
Public exp in education (% GDP)	2,9	5,3	5,2	5,38
Number of Universities	4	2	4	24
Productivity Level	44.500,00	38.600,00	29.323,30	16.914,40
EU Patents applications per million inhabitants	118,64	7,16	118,85	3,5

Case studies: Regional equity funds: the Ingenium funds



THE INGENIUM FUNDS

Ingenium is an early stage co-investment risk capital fund typically built around a Region of a few million inhabitants focused on Seed and Start-up but also considering expansion phase, companies with high value of intangibles, knowledge intensive companies with high growth potential, Regional coherence of sector of activity.

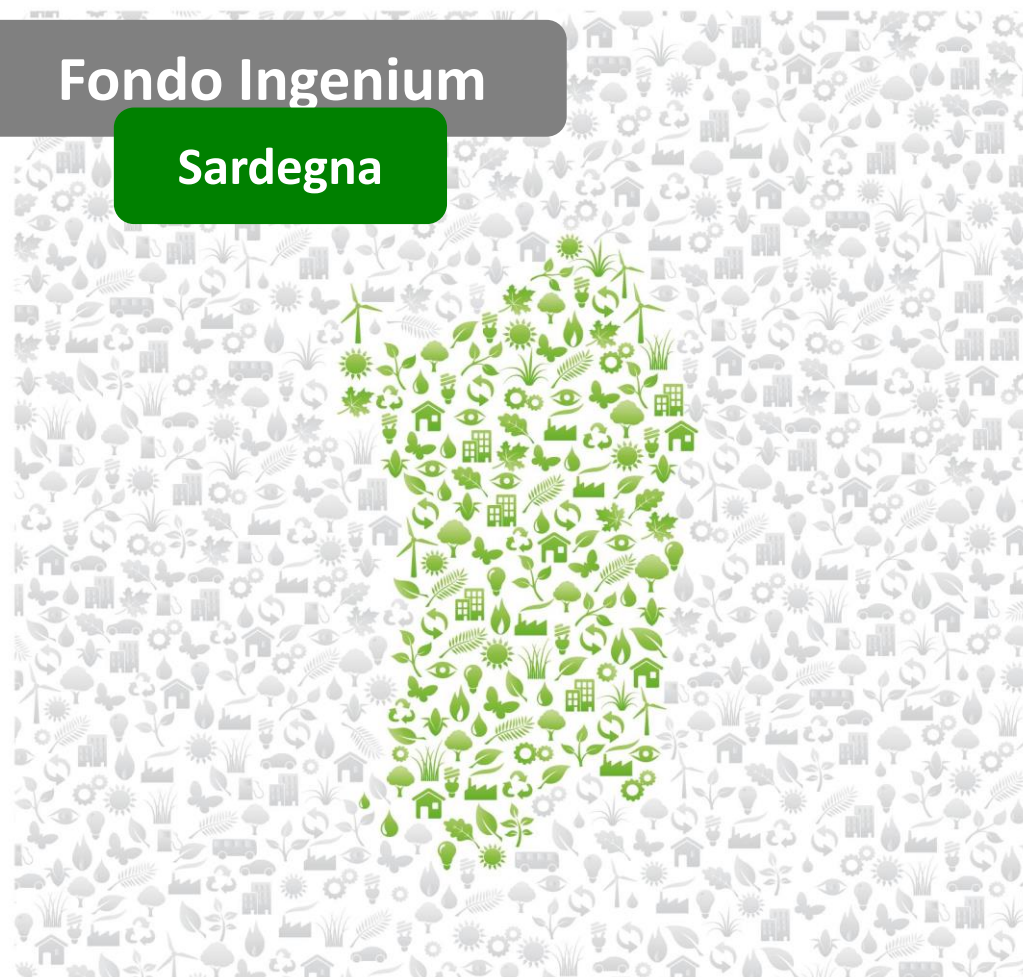
Those funds have been co-financed by EARDF

INGENIUM ER I & INGENIUM ER II vs INGENIUM SARDEGNA



Fondo Ingenium

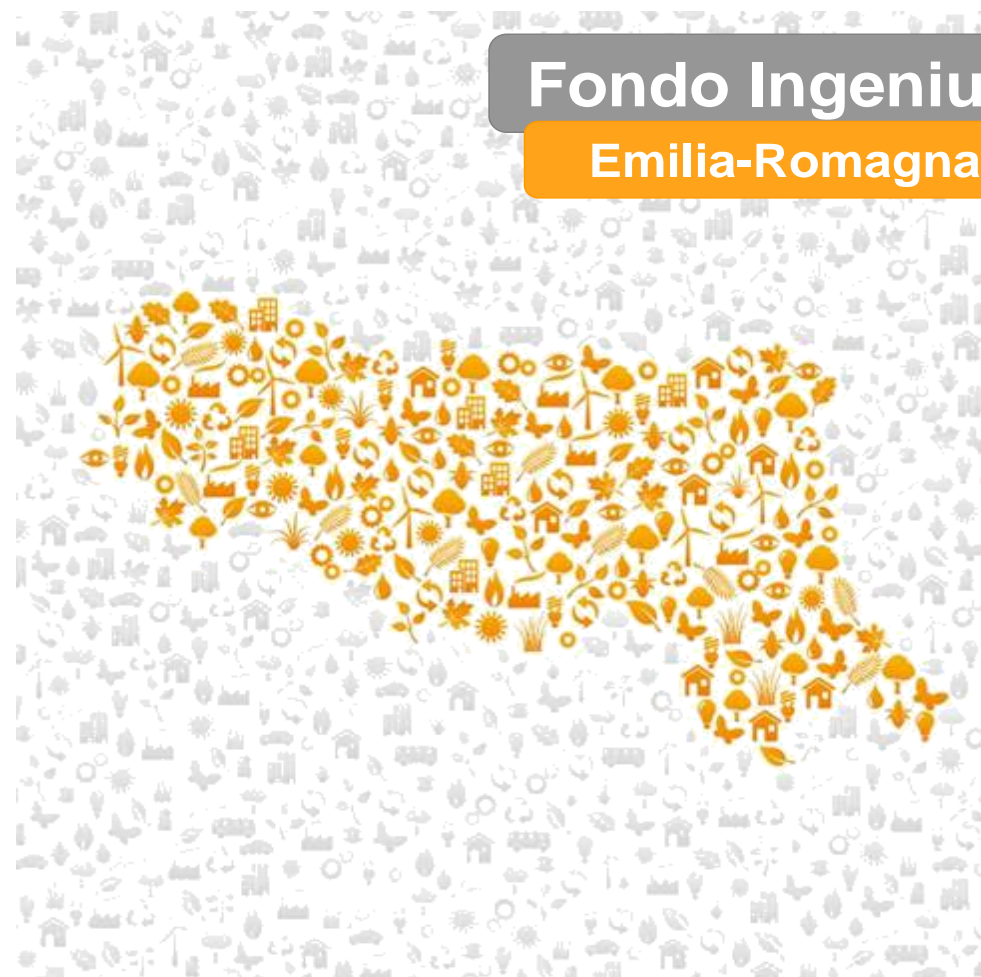
Sardegna



MAIN GOAL OF THE MA: to support the internationalization of Sardinian traditional companies

Fondo Ingenium

Emilia-Romagna



MAIN GOAL OF THE MA: to show world class innovation capacity of Emilia Romagna Region

CO-INVESTMENT FACILITY



Ingenium Emilia Romagna II

50% Private Investors



50% Emilia Romagna Region

14 Meuro Total Investment



SEED
FINANCING



START UP
FINANCING



EXPANSION
FINANCING

- Innovative companies: preferably ICT, Biotech
- Based or willing to be based in Emilia Romagna
- Up to 2 Meuro per company per year

Results: 14 Million invested into 13 companies: 2 exit, 3 write off



GreenBone Ortho is an innovative company founded in 2014 and located in Faenza (Italy), led by a world-class team that has advanced multiple products including orthopedic ones from bench-to-market. GreenBone provides innovative and easy to use nature-inspired solutions to cure severe bone defects.

The company has developed a patented, innovative, wood-derived, bone regenerative implant for extensive bone damage in non-loaded and load-bearing skeletal segments such as long bone non-union fractures, spinal damage, trauma and cancer induced bone loss. Due to its structure and chemical composition, GreenBone has the ideal biomimetic, resorbable and regenerative properties for bone grafting.

The unmet need of a new generation of bone substitute

Every year, millions of patients undergo orthopedic surgeries where bone grafts are used to reconstruct different skeleton defects. All available solutions, including bone transplant (autograft), which is still the gold standard, have well known limitations. **The GreenBone Bone SubstituteTM** will offer physicians and patients a new solution to avoid these surgical and postoperative complications in surgically created bone defects or osseous defects resulting from traumatic injury to the bone, in the extremities and pelvis.

GreenBone is expected to enable patients a faster return to normal life with their own bone completely regenerated with a significant reduction of health care and social costs. Ongoing clinical trials are showing very promising results

Future development will address the treatment of bone infection, bone cancer, spine fusion and other applications.





1° ROUND in 2015

Pre-money: 3, 5 Mln €

- Total round 3 M
- META Ventures:
- IAG Business Angels



1. Company set up
2. In vitro study
3. Start in vivo study

2° ROUND IN 2017

Pre-money: 10 Mln

Total round 8,4 M

- Helsinn Investment Fund SA,
- Invitalia Ventures.
- Tiare
- Innogest
- IAG Business Angels



1. Conclude in vivo study
2. Enter into clinical phase
3. Buy back of the IP
4. CE mark
5. FDA application

3° ROUND IN 2020

Pre-money: 25 Mln

Total round 10 M+ 5 (debt)

- Helsinn Investment Fund SA,
- CDP Venture .
- Innogest
- IAG Business Angels
- Meta Ventures
- Founders and other private Italian and foreign investors.



1. Conclude the clinical phase (more patients in different hospital need to be treated)
2. Realize the new manufacturing site to host Operations
3. Develop and implement a new production line to be validated by 1Q 2023 for the commercialization in EU and USA
4. Support development and approval of the product pipeline including new intended use (Spine, Dental, Maxillo-facial) in the main regulatory area (EU, US, MDSAP)



IF GREENBONE SUCCEEDS:



- there will be a new way of bone substitution worldwide
- there will be a value creation in the order of hundreds of high-quality jobs for the region
- hundreds of millions of euros for the investors

FOSTERING INVESTMENT FOR THE BIOECONOMY

Main conclusions and take away



The increase in funding and improved coherence of financing mechanisms must be a part of any revised Bioeconomy Strategy

- **Increase funding and finance for the bioeconomy** by a coherent approach, part of a revised Bioeconomy Strategy, which streamlines the funding tools and instruments while increasing the total allocated funding to the bioeconomy both as grants and revolving financial product (loans guarantees and equity)
- **Reduce the complexity of the current funding landscape** EU and national public funding opportunities as well as regional non-EU funds should be combined into a limited number of easily understandable and accessible bioeconomy-targeted funding and financial mechanisms
- **Explore possibility to use more equity** for investing into new bio-based companies and bring new bio-based solution into the market (all the money is not the same) **ERDF+ EARDF** to set up new or improving existing financing mechanisms
- **Have a one-stop-shop** for companies to access in-depth information, support and enhance investment decisions based on expertise and practical, real time advice on integrated funding and financial instruments
- **Training&awareness raising programme for managing authorities** a comprehensive technical assistance platform (ig fi-compass) to provide methodological guidance and awareness-raising support to, MS/MA and stakeholders in the field of financial instruments with specific reference to supported ESI Funds

POWER4BIO website and social media



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Thank you for your attention!

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