

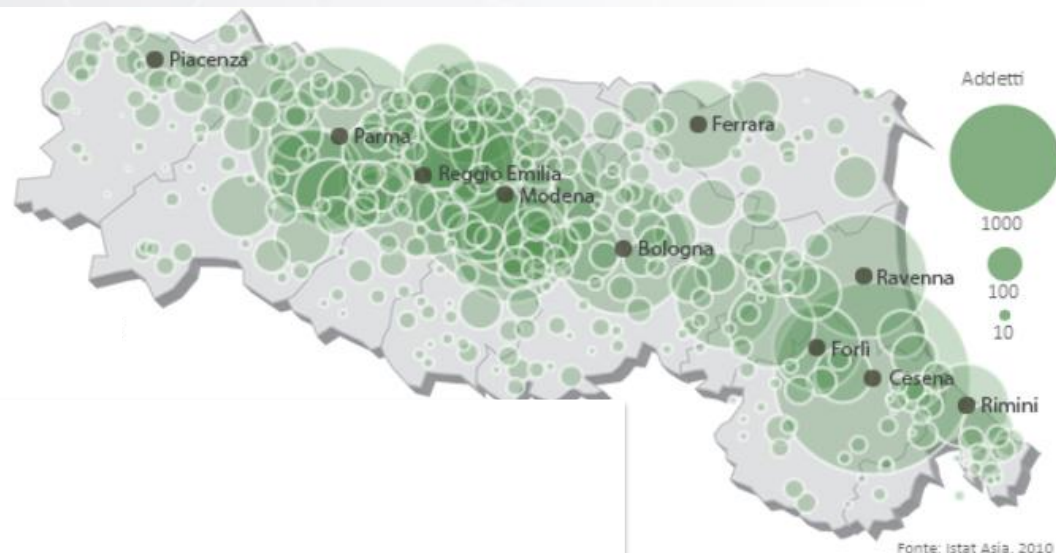


BIOECONOMY IN EMILIA-ROMAGNA

Daniela Sani

**PERFORMING
INNOVATION**

A vibrant and dynamic ecosystem



Surface: 22,453 Km²

Inhabitants: 4,454,393

Population density: 200 inhabitants/sq km

Source: ISTAT, 2016

GDP: 144.515 M€

GDP per Capita: 32.487 €

Source: ISTAT, 2011

Enterprises: 372.719

Starups and Spinoff: 911

Source: ISTAT, 2015

A vibrant and dynamic ecosystem



1. Valorization of agriculture/industrial/municipal organic waste, scale up of digestion and composting
2. 35% cultivated land, 3% accessible residual land available to biomass feed

A vibrant and dynamic ecosystem



3. **2nd IT turnover in biotech gives good attractiveness index and foreign investment (*Bio-on, Olostem*)**

A robust research and innovation ecosystem



6 Universities with 11 locations

10 National Research Centers

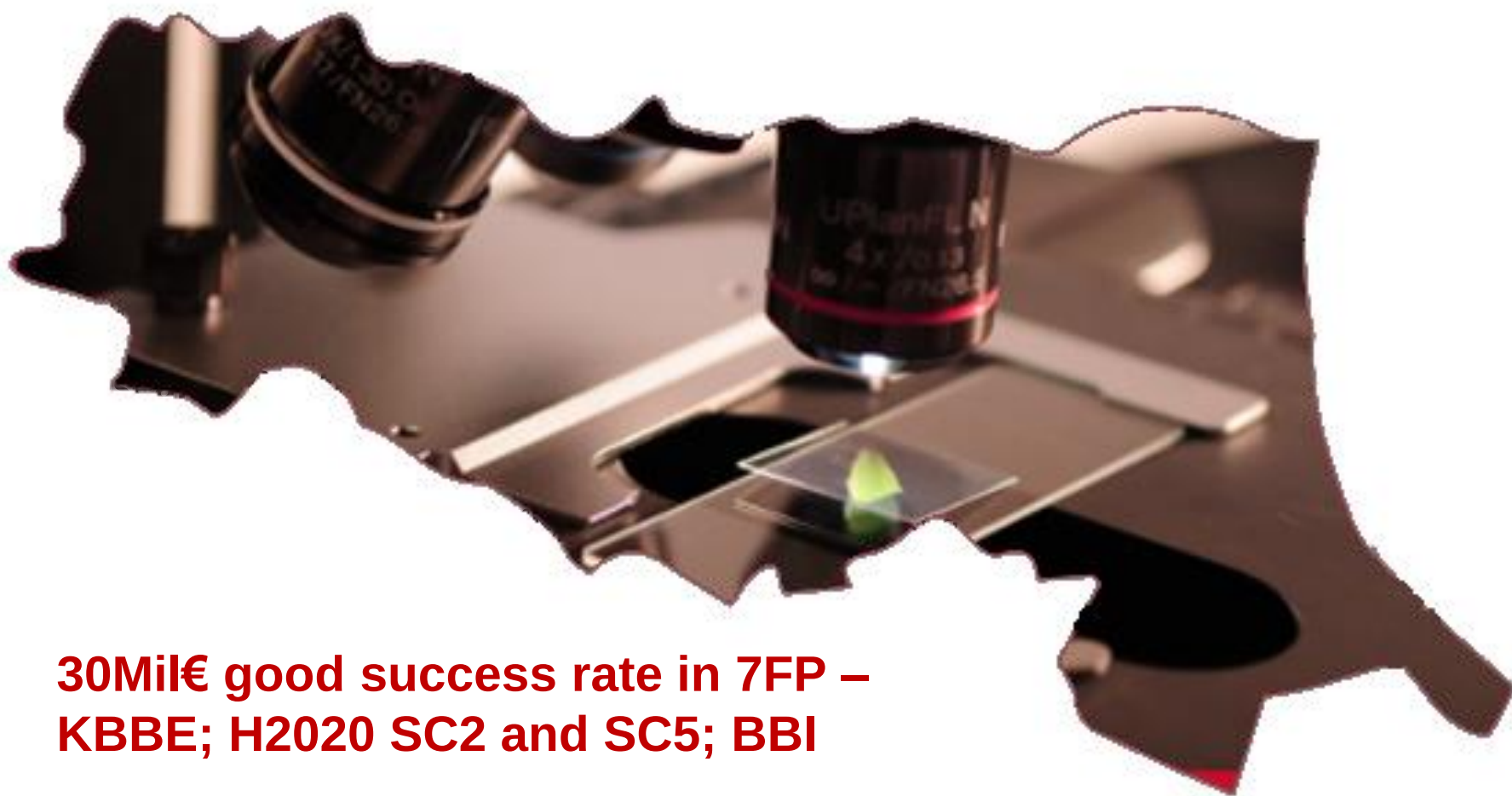
90 RTOs and Innovation Centers, the High Technology Network

10 Technopoles, 6 Thematic Platforms

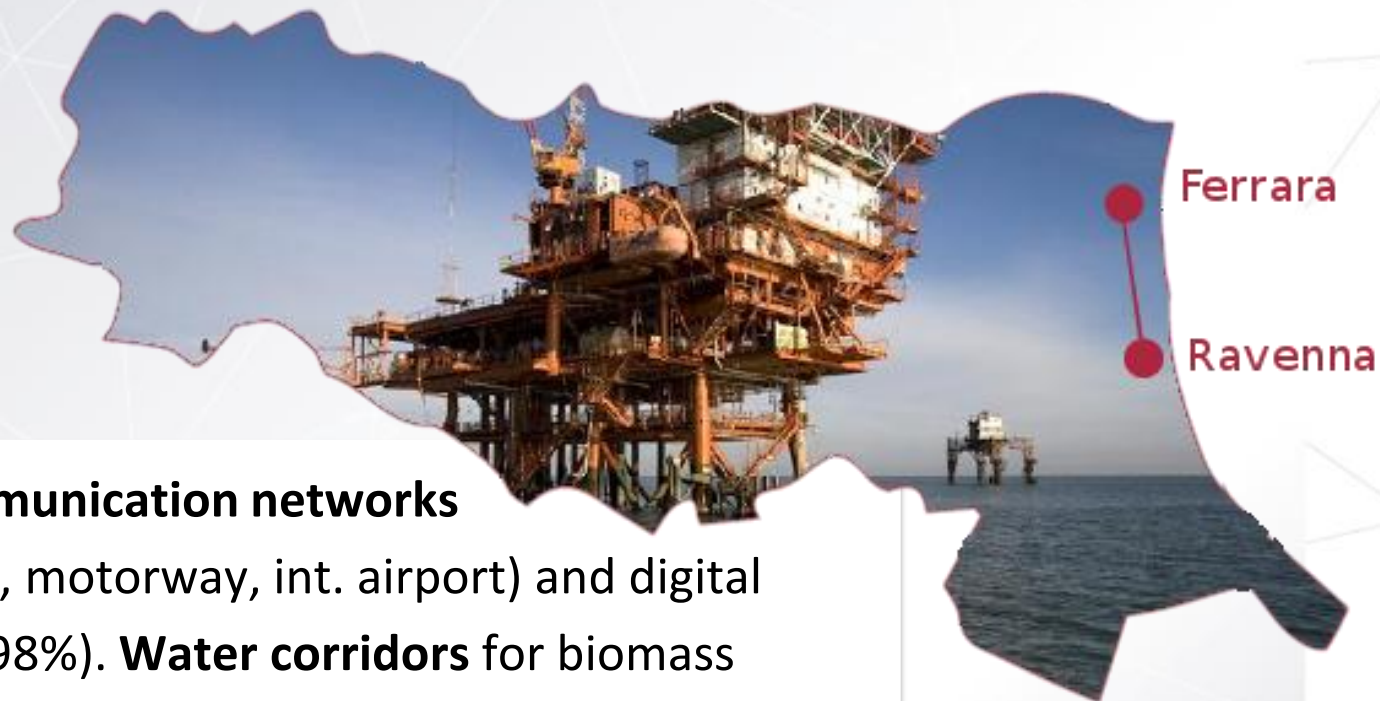
60 Business Incubators

Source: ASTER, 2016

A robust research and innovation ecosystem



A high speed connected region



High speed communication networks

Transports (train, motorway, int. airport) and digital infrastructures (98%). **Water corridors** for biomass transportation

2 Petrochemical areas

Ravenna (RA) commercial port and Ferrara (FE) connected to the Italian Chemistry Quadrilateral (Lombardia and Veneto)

5 Areas of Specialization for Innovation Policies

Pillars of the regional economy (% of the total number of employees)



16,7%
AGRI-FOOD



18,8%
BUILDING
AND CONSTRUCTION



18,2%
MECHATRONICS
AND TRANSPORT



Over **1 million** EMPLOYEES,
more than **50%** of regional employment



80% OF REGIONAL EXPORT

Emerging areas with high growth potential (% of the total number of employees)



8,9%
HEALTH AND WELL-BEING INDUSTRIES



6,9%
CULTURAL AND CREATIVE INDUSTRIES



Over **300,000** EMPLOYEES,
more than **15%** of regional employment

Source: Emilia-Romagna Region, 2016

Green Lab Valley and Vaguard pilot projects: a relevant set of data

Pilot Project	Democases
Bio - economy Interregional cooperation on innovative use of non - food biomass 	1. Biobased aromatics (RA) 2. Lignocellulose refinery: European value chains for second-generation sugar and lignin (FE) 3. Turning (waste)gas into value 4. Biogas beyond energy (RA) 5. Aviation biofuel 6. High value food and feed from agro-food waste 7. Food & Feed Ingredients from Algae
Green Lab Valley - GLV	Biomass hub for the feedstock characterization and monomer/polymer formulation (FE)

MDR enabling indicators 1/2

Key factors	Main enabling indicators
KF1 - Long term, stability and availability of feedstock KF6 - Strength and availability of regional markets	• Qualitative and quantitative data on both biomass and waste • Identified actors (big international players as well as SME's) and potential markets (<i>packaging, agriculture by-products</i>)
KF2 - Infrastructure to handle feedstocks and production	• Ferrara (FE) and Ravenna (RA) petrochemical areas • Ravenna commercial port in growth (<i>Elastomers, Aromatics, LNG-DAFI directive</i>) • High speed connected region
KF8 - Public Support Policies	• The Smart Specialization Strategy and related axes and measures • A <i>MoU</i> signed with Lombardia and Veneto

MDR enabling indicators 2/2

Key factors	Main enabling indicators
KF3 - Access to finance	• High attractiveness index and foreign investment • Identified demo cases with feasibility studies and action plans (<i>business model and plan ongoing</i>)
KF4 - Skilled workforce, technical expertise, training KF5 - Existence of support institutions KF7 - Entrepreneurship	• High IP/patent rate and high new business creation rate • The regional ecosystem of research and Innovation • The regional Agency for Innovation and Technology Transfer (<i>ASTER</i>)

MDR barriers

Key factors	Main barriers
KF1	• Large amount of dispersed or fragmented data • Integration, homogenization and harmonization (<i>data clearing and management</i>) needs
KF3 KF6	• A cultural friction to finance demonstrative action
KF2 KF4 KF5 KF7	• No relevant or limiting barriers
KF8	• Limited public funding (<i>ESIF</i>) • Leviathan bureaucracy limiting innovation actions



CNR Bologna Research Area
Via Gobetti, 101 - 40129 Bologna, Italy
Phone +39 051 6398099

Emilia-Romagna Region - EU Office, Rue Montoyer 21
1000 Brussels, Belgium
Phone +32 (0) 25132456

info@aster.it | www.aster.it |  @Aster_ER



***Final Conference EC-ECRN: Boosting Regional Investment in Sustainable Chemicals
Brusselles 14 September 2017
Daniela Sani, daniela.sani@aster.it***