“Reviewing S3 in Tuscany: experiences from regional integrated projects”

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Tuscany in brief: main features

Population: **3.742.437 inhab.**

Area: **23.000 km²**
GDP per capita: **€ 29.466**
GDP composition: **73.4%** Services;
per sector (2015) **24.3%** Industry;
2.3% Agriculture (including Fishery and Forestry)

Registered companies: approximately **351.000** (ISTAT- 2015)
Around **95%** of companies have less than 10 employees (ISTAT- 2015)
Manufacturing: over **32%** of regional workforce (ISTAT- 2015)

Employment rate **69,9%**

Mountain area represents **25% of the territory**
Hilly landscape is predominant, representing more than **66%**
Flatland accounts for about **8%**
Forests cover about **51% of the landscape** and are **well distributed** in the Region
Total agricultural surface is about **8.000 Square Km.**

Population with higher education: **10%**
R&D expenditure as a % of GDP: **1,36%** (40% from private sector)
University size: **150.000 students**

Tuscany RIS3

1) ***Investing on excellences;***

2) ***Mitigating inbalances.***

ICT Photonics

Smart Factory

Chem&Nanotech

Direct Support (ERDF – EARDF)

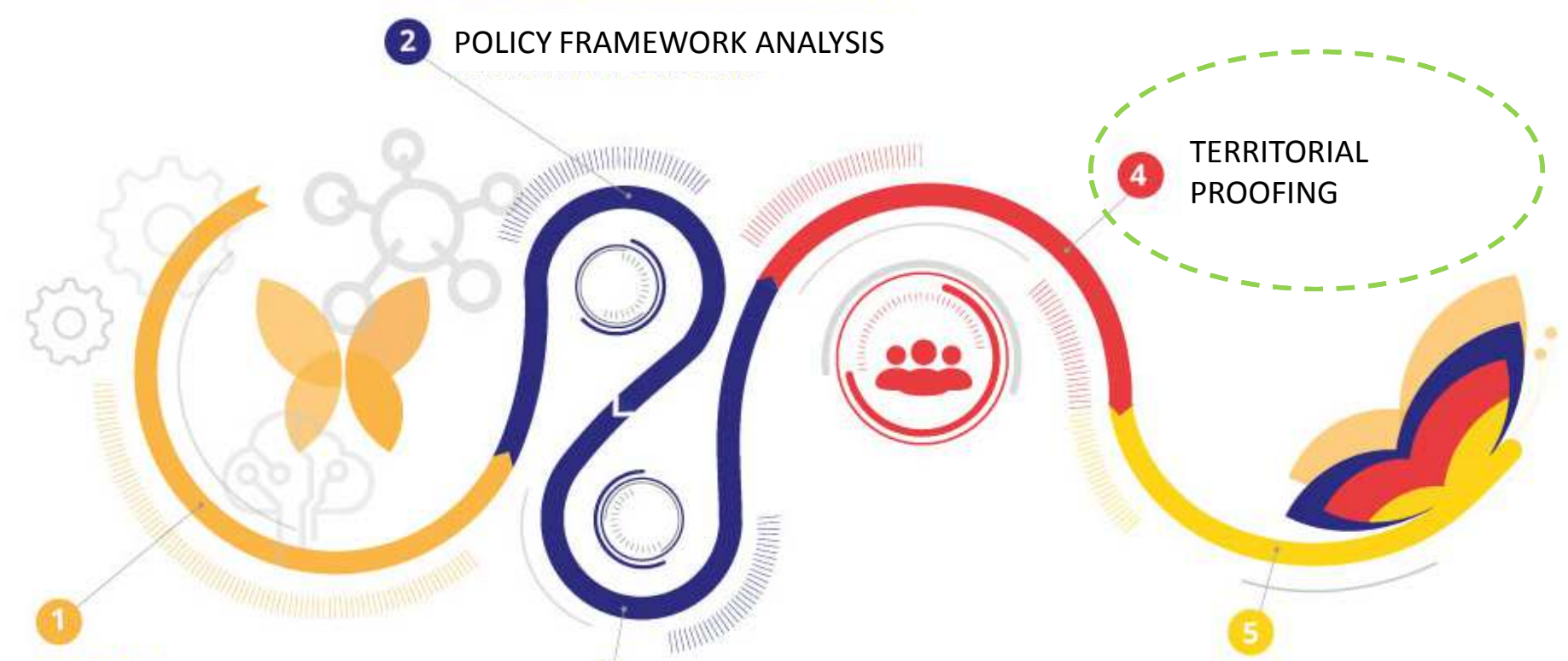
R&D	108M€
Innovation	305M€
Enabling initiatives	445M€
Total	**858M€**

Indirect support

Digital Agenda
ESF ROP
Regional Development Programme

778M€

On-going steps: MTR (Mid-Term Review)



Territorial proofing

What is it all about?

A synthesis of "**Territorial Impact Assessment**" (TIA) and "**Rural Proofing**" (RP) together with roadmaps technical validation, provides a **place-evidence** contribution on the relevance of strategic roadmaps and their **expected impacts at territorial level**.

Analyse the potential application of innovation roadmaps to territories:
- correlation of the **innovation roadmaps** to **territorial value chains**;
- analysis of "**territorial stocks**" enabling roadmaps effectiveness;
- feedback from **S3 local development mirror group** (LAGs, FLAGs, EIP-OGs…).

The aim is to **combine excellence** with **relevance;** supporting **excellences** while reducing **disparities** and fostering equal development **opportunities**: "***from rivalry to synergy***"!

“Territorial VCs” and “Territorial Stocks” (1/2)

TVCs

Roadmap proximity

- **Direct**
  - Subsets containing relevant groups of producers
  - Subsets containing relevant groups of users
- **Indirect** — Indirect/supply chain links with other direct subsets
- **Poor** — Weak or absent link

Main information from:

- **Distribution** and **perfomance** indicators;
- **I/O models**;
- **Labour Market Areas** dynamics.

TSS

DEMOGRAPHY

ECONOMIC SYSTEM

COMPETENCES

PUBBLIC SERVICES

INFRASTRUCTURES

Good Territorial Stocks

Poor Territorial Stocks

“Territorial VCs” and “Territorial Stocks” (2/2)

Territorial Stocks

TSS

TVCs

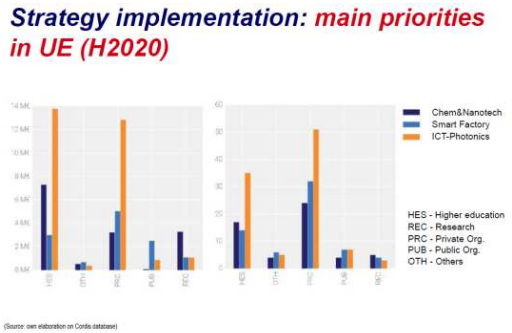
Roadmap proximity

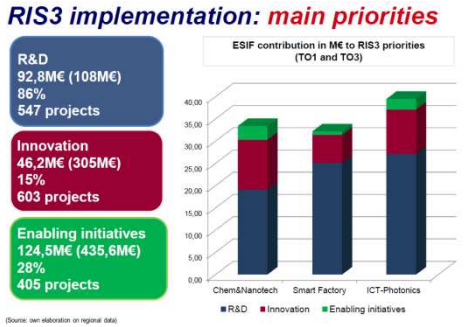
	GOOD	POOR
DIRECT	«Easy winners»	«Obstacle course runners»
INDIRECT	Likely adopters	«Ball and chain» adopters
POOR	Tapped potential?	

To be discussed with **S3 local development mirror group** (LAGs, FLAGs, EIP-OGs…)

Behavioural insights from R&D projects….

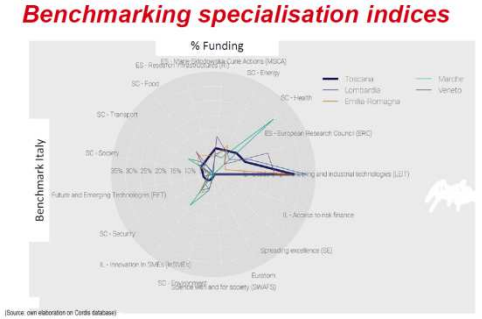
Regional calls for proposals



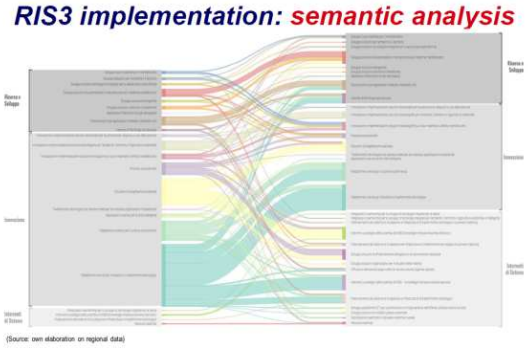


Regional proposals on H2020 calls

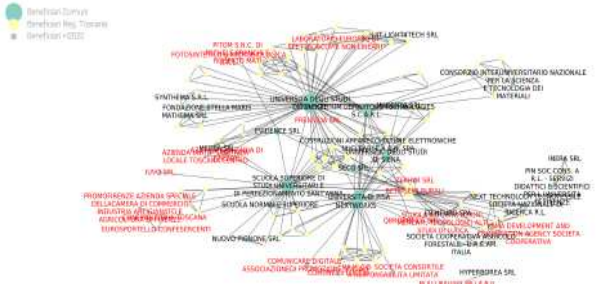
Benchmarking specialisation indexes



Semantic Analysis



Social Network Analysis



MTR MID-TERM REVIEW RIS3 TOSCANA

RIS3 RESEARCH AND INNOVATION STRATEGIES FOR SMART SPECIALISATION

Unione europea
Fondo Europeo di Sviluppo Regionale

REPUBBLICA ITALIANA

Regione Toscana

PSR 2014-2020 Programma di Sviluppo Rurale Regione Toscana

ERIAFF network

European Commission

SMART SPECIALISATION PLATFORM

S3

S3 High Tech Farming Platform - Territorial agricultural development on innovation and digitalization: the Tuscany approach.

Marco Vieri … *on behalf of*
Fausta Fabbri – *Tuscany Region - innovation, training and consultancy in agriculture*

Tuscany Region's Projects on PF and HTF

active PROJECTS – > 40 founded projects on 16.2 measure with more that 13 MIO €

All Territory Communities of Products involved

- arable crops
- horticulture
- nursery
- viticulture oenology
- oil olive
- beekeeping

use cases - success cases

APPCoT - 2014 PIF EARDF EMFF

IRRIGO 2013 PIF EARF EMFF

QUASAR 2013 PIF EARDF EMFF

Ortorutta T Bio 2013 PIF EARDF EMFF

OENOSMART 2017 PIF EARDF EMFF

VELTHA 2017 PIF EARDF EMFF

TINIA 2017 PIF EARDF EMFF

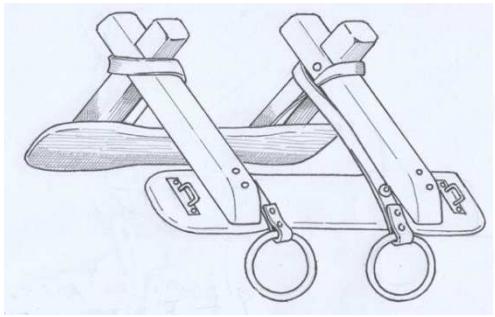
SEMIA 2017 PIF EARDF EMFF

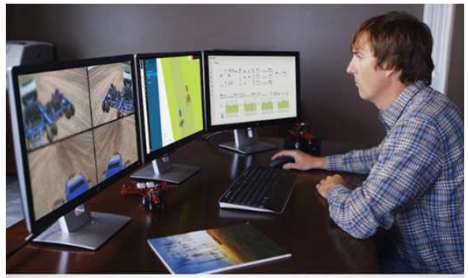
+

SMASH 2018 ERDF

AND NOW AWARE TO BE IN A NEW REVOLUTION

The new paradigm: from drawbar and manual labour to motorization and digitalization - connectivity

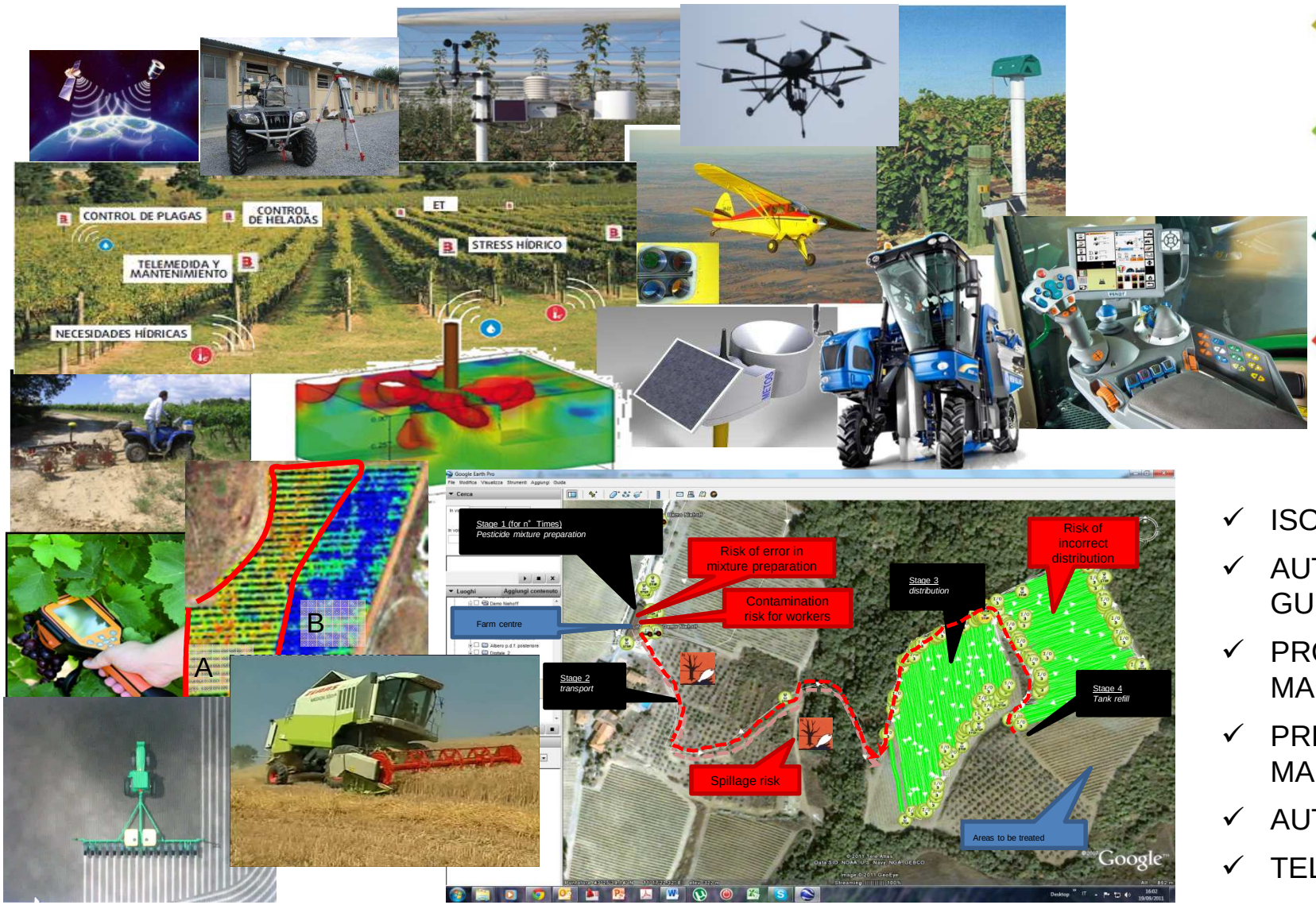




TUSCANY REGION SYSTEMATIC APPROACH

Technological evolution will be profitable with a balanced inclusive and deep rooted social evolution
… from 90% to 5% of agricultural employers.
… motorization was effective with the emergency of services and infrastructures

MAKING ORDER IN A CHAOTIC UNIVERSE OF TECHNOLOGICAL PROPOSALS



iM FARMING

- iM Ready
- iM inControl
- iM Global
- iM Intelligent

- ✓ ISOBUS
- ✓ AUTOMATIC GUIDE
- ✓ PRODUCTION MAPS
- ✓ PRESCRIPTION MAPS
- ✓ AUTOMATION
- ✓ TELEMETRY

CLEARLY DEFINE THE AREAS IN WHICH THE TECHNOLOGIES BECOME "ENABLING" AND PROFITABLE

Precision sustainable Farming is Spatial Intelligence and Precise Management High Technology Farming is a way that makes it possible

EYES
monitoring wide areas
(sensors and digital maps)

TOUCH
understanding the answer
on the treated elements
(proximity sensors)

ARMS
intelligent
to develop accurate assignments
(automation, robot)

MIND
to knowingly choose thing,
where and whether to intervene
on the single elements
(models e Decision Support
System)

MEMORY
to keep trace of things
done
(telemetry, traceability)

EXPERIENCE
multi-annual data handling

IDENTITY
local and regional in the sustainable
use of the resources

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MAKE CLARITY ON THE TECHNOLOGICAL MATURITY OF INNOVATIONS FOR THE PRODUCTION SYSTEM

RHEA: Robot Fleets for Highly Effective Agriculture and Forestry Management
NMP2-LA-2010-245986

TRL - Technological Readiness Level

TRL		
	9	Commercialized
	8	Pre-production
	7	Field Test
	6	Prototype
	5	Bench / Lab Testing
	4	Detailed Design
	3	Preliminary Design
	2	Conceptual Design
	1	Basic Concept

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REGIONAL FARMING INNOVATION DIFFUSION and FARMERS / SERVICES EDUCATION SYSTEM

High technology Farming for all farms

those high productive and branded but in sinergy with the new trend towards family and small farms

this is the main scope of the platform

A TERRITORIAL DEVELOPMENT SYSTEM FOR INNOVATION

The evolution of agricultural mechanics has become profitable when:

✓the machines have become appropriate and reliable *(historic failures of the Borello tractor and Bonmartini tire tracks);*

✓retailer, motorist, mechanic and gum services have become present in the territory *(within 100 km);*

✓training centers have been established *Famous in Tuscany was the Agricultural Mechanization Training Center of Borgo a Mozzano (Lucca) financed by the Government and by the ESSO.*

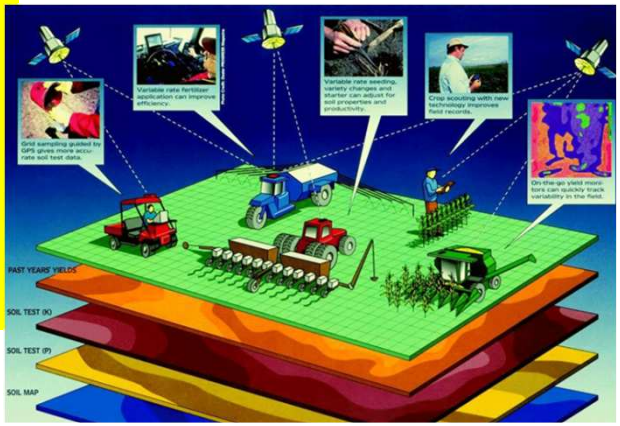
1970 - PICCOLA ENCICLOPEDIA DI MECCANICA AGRARIA ESSO.pd
Ultima modifica il 18 Settembre 2009

Fig. 302
Cingolo tubolare Bonmartini montato su trattrice agricola.

Tuscany first highlighted these needs and identified them as essential

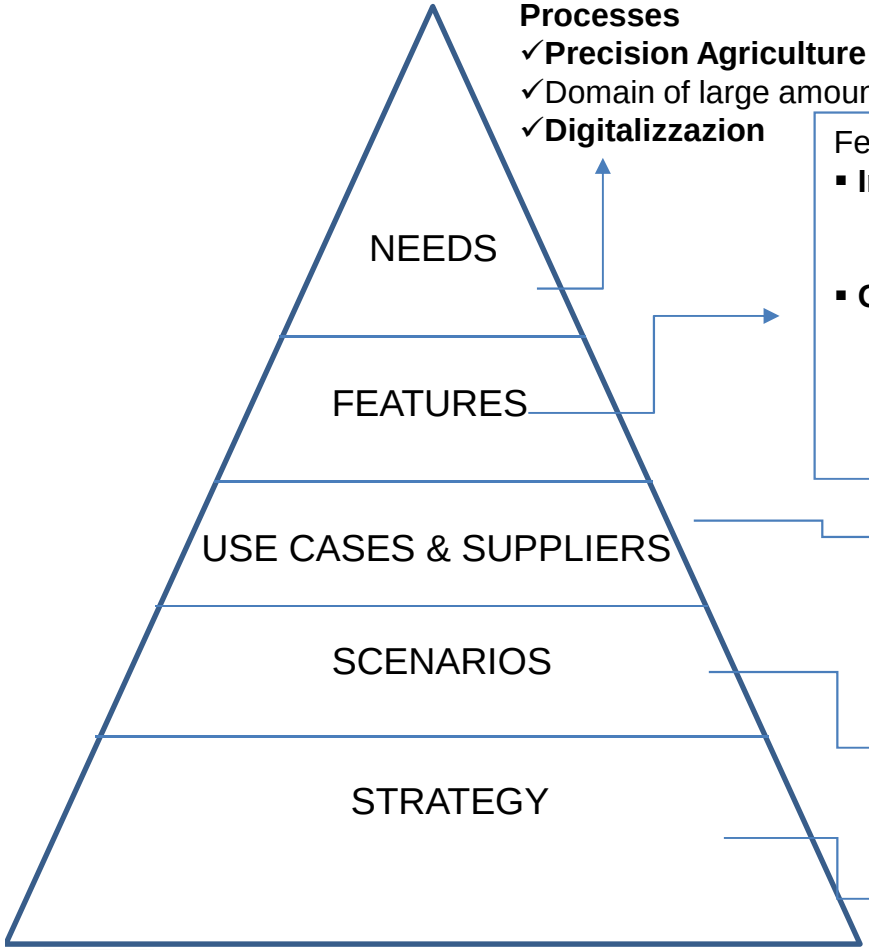
•The **territoria**l approach of the **PRODUCTION ECOSYSTEM**. This had already been defined in the regional ROADMAP for RIS3, defining the INNOVATION support PLATFORMS

•The **BUSINNES CASE** in agriculture, which is a non-relocatable external rural activity, is the **CASE OF TERRITORIAL USE** and not the single product, service or activity.



TUSCAN APPROACH IN FORSTERING INNOVATION IN AGRICULTURE

Needs:
- ✓**Biological, Eco-compatible, Profitable Processes**
- ✓**Precision Agriculture**
- ✓Domain of large amounts of data
- ✓**Digitalizzazion**



Features:
- **Indoor**
  - ✓ agro-industry, fixed farms, greenhouses
- **Outdoor**
  - ✓ Seasonality
  - ✓ Variability
  - ✓ changeability
  - ✓ timeliness

Cases of use and System of Services

SCENARIOS
- ✓ Farms
- ✓ Product & services suppliers
- ✓ Training system
  - ✓Renewal in institutional education
  - ✓Innovation Brocker bottom up like itinerant professorships
  - ✓Territorial farmlab

Territorial, regional, national, .. policy

LEAN TERRITORIAL FARMING cycle

Fausta Fabbri – Tuscany Region – Unit nnovation, training and consultancy in agriculture

ECOSYSTEM MULTI-ACTOR APPROACH IN FORSTERING INNOVATION IN AGRICULTURE

PROVIDERS
businness development approach

- Technologies suitable & mature (TRL9)
- Reciprocal stakeholders deontological respect
- Farmers acceptance and effective domain
- Territorial facilities minimul level
- Conformity to territoral ecosystem
- Linking with territorial educational system

FARMERS
users adsorbity capacity

- Technologies suitable & comprehensive
- Technology scalability
- Inclusivity
- Systemic approach
- Territoral ecosystem
- Educational system

TECHNIQUES
Technological Reliability & Suitebility

- Sort
- Set in order
- Cluster technologies
- Focus providers in identified technology cluster

EXPERTS - CONSULTANTS
innovation brockers

- Have an overall vision
- Must be Indipendent
- Reliables & Skilled
- Focus priority

SOCIETY
Territorial productive Community

- Providers
- Services
- Education
- Sustainability

FINAL REMARKS

- Behavioural insights from projects analyses (benchmarking, SNA, specialisation, data mining) to detect the regional innovation outlook;
- Combining the territorial engangement and evidence-based approaches in order to foster integrated policies and place based growth;
- Territorial proofing as an attempt to combine territorial excellence with territorial relevance: "*from rivalry to synergy*";

With a special focus on hi-tech farming:

- foundamental to make order in the innovative proposed technologies;
- foundamental to be honest on the technological maturity in terms of TRL;
- to ensure inclusivity in the introduction of technologies and attention to the "adsorbity capacity of the farmers";
- technology is efficient and profitable only if supported by and ecosystem of actors and services;
- The quadruple helix appears to be the best way to foster innovation in a multi-actor and multi-competencies cooperating system.

THANK YOU FOR
YOUR LİSTENİNG

DO YOU HAVE
ANY QUESTİONS?

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www.regione.toscana.it/smart-specialisation-strategy

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