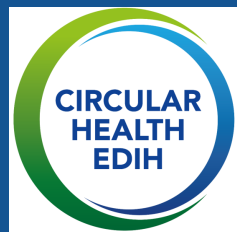# Smart solutions to support the sustainable transition of agrifood SMEs: GUARDIANS project and CHEDIH initiative

Dario Vallauri (M.I.A.C. Scpa) – Cluster Manager Polo AGRIFOOD

Workshop SME4Green - How to finance your sustainability, 20 October 2023

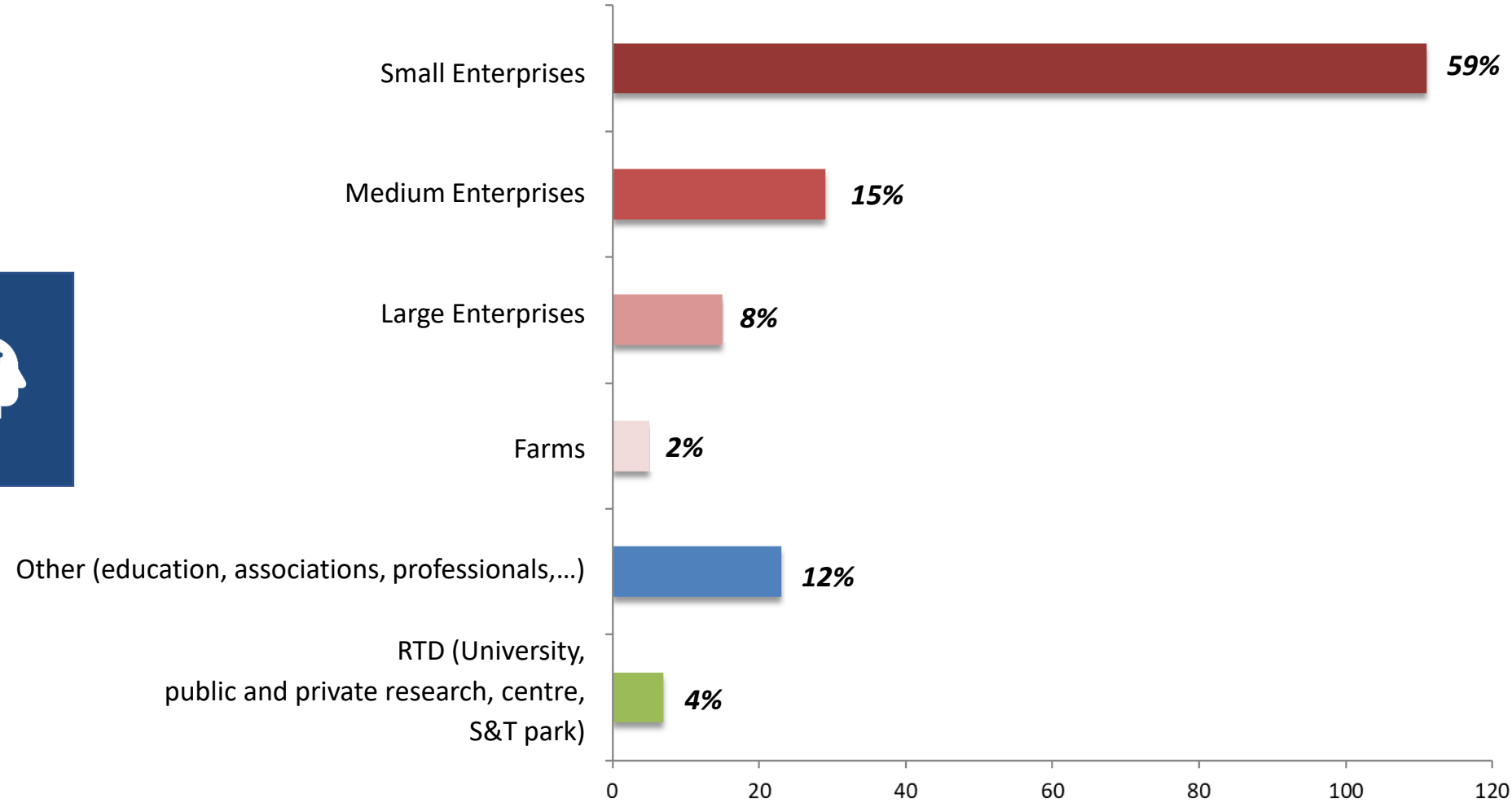# The Piedmont Innovation Cluster "Polo AGRIFOOD"

AGRIFOOD Innovation Cluster of Piemonte Region

- **Network** of F&D industry, research and institutions at regional level

- **Funded in 2009**, renewed in 2016

- **Mission**: to identify the innovation needs of the regional agrifood industry, mainly SMEs, and to support them to innovate their processes and to foster their competitiveness

- Actions for members:

  - R+D+I: project building at regional, national and EU level

  - Fund raising for research and development and technology transfer

  - Services, skills and laboratories focused on innovation and technology transfer in specific areas (e.g. packaging; sanitization; product/process innovation)

  - Organization of/participation to: workshops, seminars, B2B, conferences, training

The Cluster members

Small Enterprises — **59%**
Medium Enterprises — **15%**
Large Enterprises — **8%**
Farms — **2%**
Other (education, associations, professionals,…) — **12%**
RTD (University, public and private research, centre, S&T park) — **4%**

190 members of the Cluster

GUARDIANS

SMART SOLUTIONS TO EMPOWER SMALL- AND MEDIUM-SIZED FARMS AS GUARDIANS OF THE TERRITORY

GUARDIANS – SMART SOLUTIONS TO EMPOWER SMALL- AND MEDIUM-SIZED FARMS AS GUARDIANS OF THE TERRITORY

Call: HORIZON-CL6-2022-FARM2FORK — *Smart solutions for the use of digital technologies for small- and medium-sized farms and farm structures (Innovation Actions)*

Partnership: **22 partners** from **9 EU countries**

CTIC centro tecnológico — art21 — Carbon Harvesters — PEDAL CONSULTING — RINA

Fondazione links PASSION FOR INNOVATION — CAMPOASTUR — FLOX — SHINE 2Europe

ICONS — AGRO družstvo Sebranice — CZU Czech University of Life Sciences Prague — natur-beteskött

SERIDA — ivl SVENSKA MILJÖINSTITUTET — SMACT competence center — jmits — Central Lechera ASTURIANA Sociedad Agraria de Transformación

MIAC Mercato Ingrosso Agroalimentare Cuneo — Nofima — CAPSA FOOD — INSTITUTO TECNOLÓGICO AGRARIO — Junta de Castilla y León

Timeline:

21-22 June 2023: kick-off meeting in Asturia, Spain

Duration: 48 months

GUARDIANS

GUARDIANS – SMART SOLUTIONS TO EMPOWER SMALL- AND MEDIUM-SIZED FARMS AS GUARDIANS OF THE TERRITORY

POLO AGRIFOOD REGIONE PIEMONTE

Main Objective:

- The **empowerment** of small- and medium-sized farms through **smart solutions**.

How?

- Multi-actor **co-creation** methodology

- Farmer **engagement and acceptance** package

- Design and development of **9 digital solutions**

- Testbed trialling and implementation in **pilots**

- Effective rollout and **replication** phase in other farms
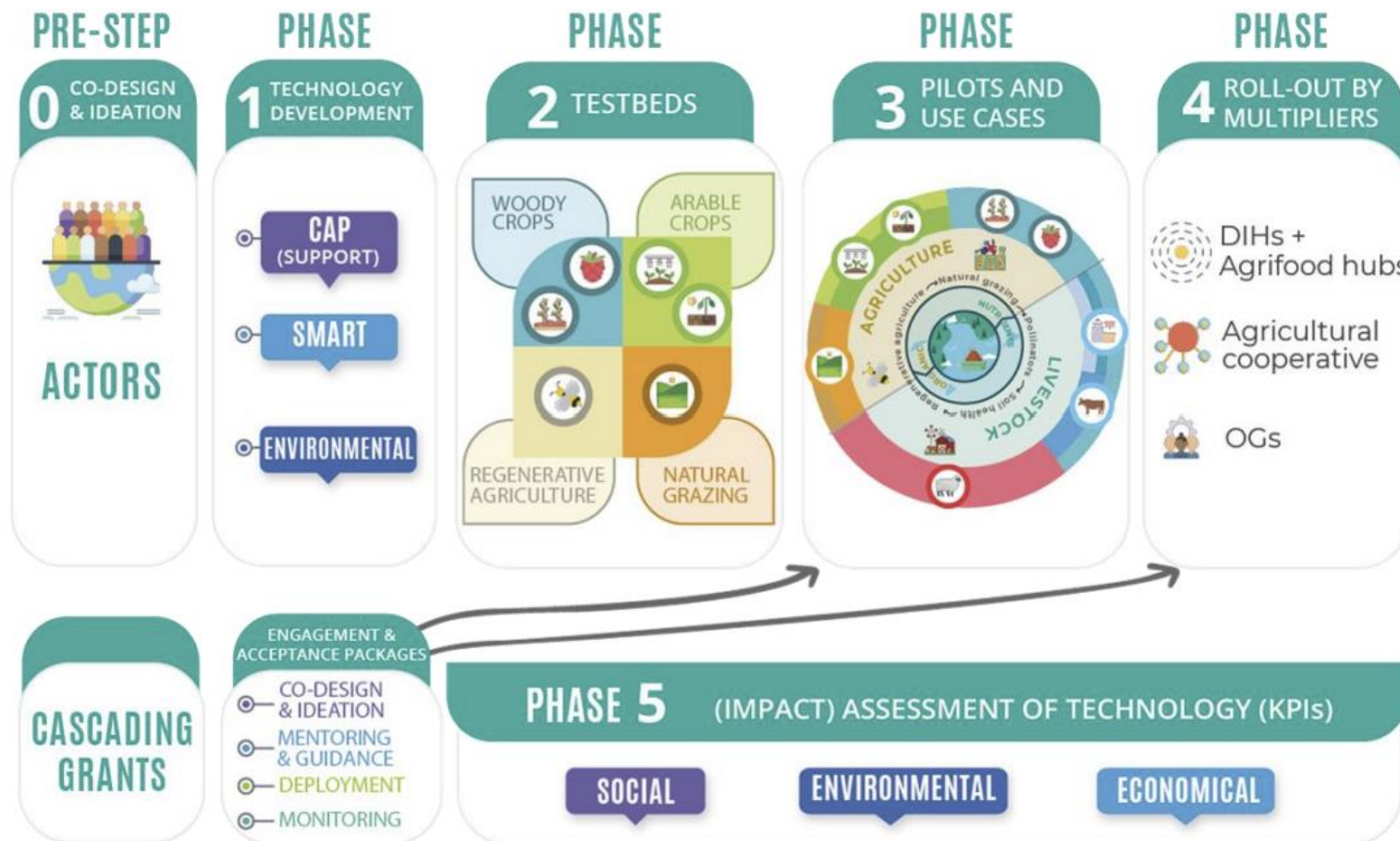
- 2 **Open Calls**.

GUARDIANS

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GUARDIANS – *SMART SOLUTIONS TO EMPOWER SMALL- AND MEDIUM-SIZED FARMS AS GUARDIANS OF THE TERRITORY*

METHODOLOGY:

GUARDIANS – *SMART SOLUTIONS TO EMPOWER SMALL- AND MEDIUM-SIZED FARMS AS GUARDIANS OF THE TERRITORY*

Specific Objectives

- Tailored set of **digital innovative solutions**

  > KPI: **17 technologies**
  > (9 internal + 8 from Open Calls)

- **Multi-actor co-creation methodological framework**

  > KPI: **31 technologies** uptaken and **95 farms** (at least one technology)

- Pathways towards more sustainable, productive and resilient **agricultural business** and **governance models**

  > KPI: **4 agroecological farming models** and multi-actor co-creation **methodology**

- **One-stop-shop** Concept (farming cooperatives, communities or associations) to foster technological innovation for small- and medium-sized farms

  > KPI: **5 farming cooperatives** working as one-stop-shops

- **Enhance environmental and social impact** of new farming approaches by sustainable actions to the benefit of the small- and medium-sized farms

  > KPI: +**10% soil health**;
  > -**50% chemical pesticides**;
  > -**20% fertilisers**;
  > -**20% water use**;
  > -**55% GEIs**

- Foster a **cascading grants** mechanism

  > KPI: **26 third parties beneffiting from 2 Open Calls**

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Technologies

Digital Innovative Solution (Technology provider)
1. CAP-support tool for crop management, SATIVUM (ITACyL)
2. Env. progress, profitability & provenance tool (CARBON)
3. Drones for grassland care, GrassGuard (CZU)
4. Climate & weather monitoring platform (LINKS)
5. Beehive protection and monitoring system (ART21)
6. Drones for field protection & wildlife management (FLOX)
7. GHG monitoring platform for stables (CTIC)
8. Biodiversity assessment service (IVL)
9. Blockchain-based environmental certification system (CTIC)

Pilots & crops

1. Arable crops: irrigated crops & dry land crops / Castilla y León (Spain).
2. Woody crops and arable crops: orchards & dry land and irrigated crops / Piedmont (Italy).
3. Arable crops & livestock production: dry land crops & woody crops & cattle and sheep grazing / Stockholm (Sweden).
4. Regenerative agriculture: woody crops, arable crops & livestock production / Asturias (Spain).
5. Livestock production: dairy cattle & beef cattle / Asturias (Spain).
6. Grassland for livestock grazing: Cattle grazing / Pardubice (Czechia).

GUARDIANS – SMART SOLUTIONS TO EMPOWER SMALL– AND MEDIUM–SIZED FARMS AS GUARDIANS OF THE TERRITORY

Goals of the project:

- **digital innovative solutions** to be tested in **four testbeds** and in **27 small- and medium-sized pilot farms**

- different types of crops, grassland, and livestock considered: in **Italy**, Spain, Sweden, UK, and Czech Republic

Pilot «Cuneo» (Italy):
Technology to test: **AI-based crop monitoring** &
precision irrigation management platform *(berry fruits – strawberry, raspberries, cranberries / maize – potatoes - beans)*
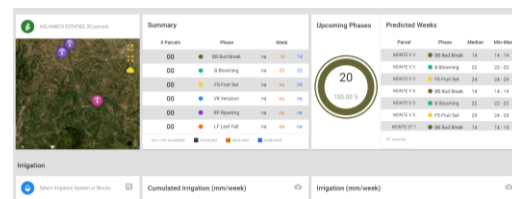
in collaborazione con

GUARDIANS

GUARDIANS Open Calls

2 Types of Open Calls (1 Mio € funding):
1. CO-CREATE   December 2024
2. TEST BEFORE INVEST   March 2026

- CO-CREATE (CC) Open Call - to provide funding and business support to **8 consortia** consisting of a research and technology expert and a **small- or medium-sized farm**, external to the consortium, to enrich the GUARDIANS' **portfolio of digital technologies**.

- TEST BEFORE INVEST (TBI) Open Call - focused on **attracting end-users (farms)** aiming to **test, validate and adopt** GUARDIANS' digital technologies and results.

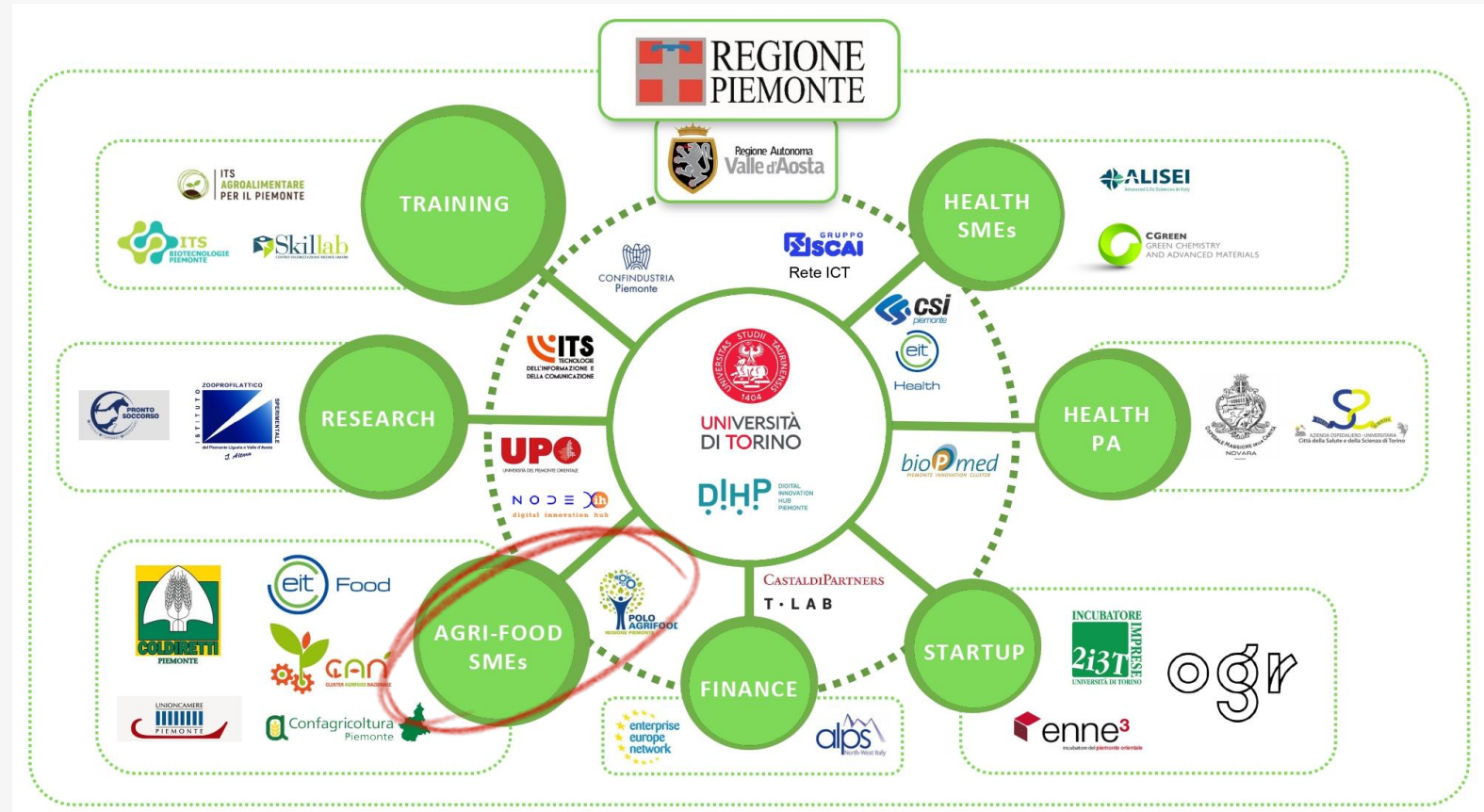# CHEDIH - Circular Health European Digital Innovation Hub

CHEDIH is the Italian EDIH specific to the **agrifood** and **health** supply chains.

AIM: to become a **one-stop shop** to support the **digitalisation** of **SMEs** (and **PAs**) in the two sectors, active in Piedmont and Valle d'Aosta.

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CHEDIH - Circular Health European Digital Innovation Hub

THE ECOSYSTEM

CHEDIH - Circular Health European Digital Innovation Hub

GOALS

- To support companies through all phases of their digital transition.

- To solve the problem of fragmentation of the offer regarding the digital transition, allowing **SMEs and PAs** to have a **single «supporting partner»** towards the **"twin digital and green transition"**.

- Particular attention is paid to **environmental issues and the use of digital technologies for sustainability and circularity.**

Adoption of advanced digital technologies:

- **Artificial Intelligence (IA)**
- **High performance computing (HPC)**
- **Cybersecurity**
- **Blockchain**

CHEDIH - Circular Health European Digital Innovation Hub

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SERVICES:

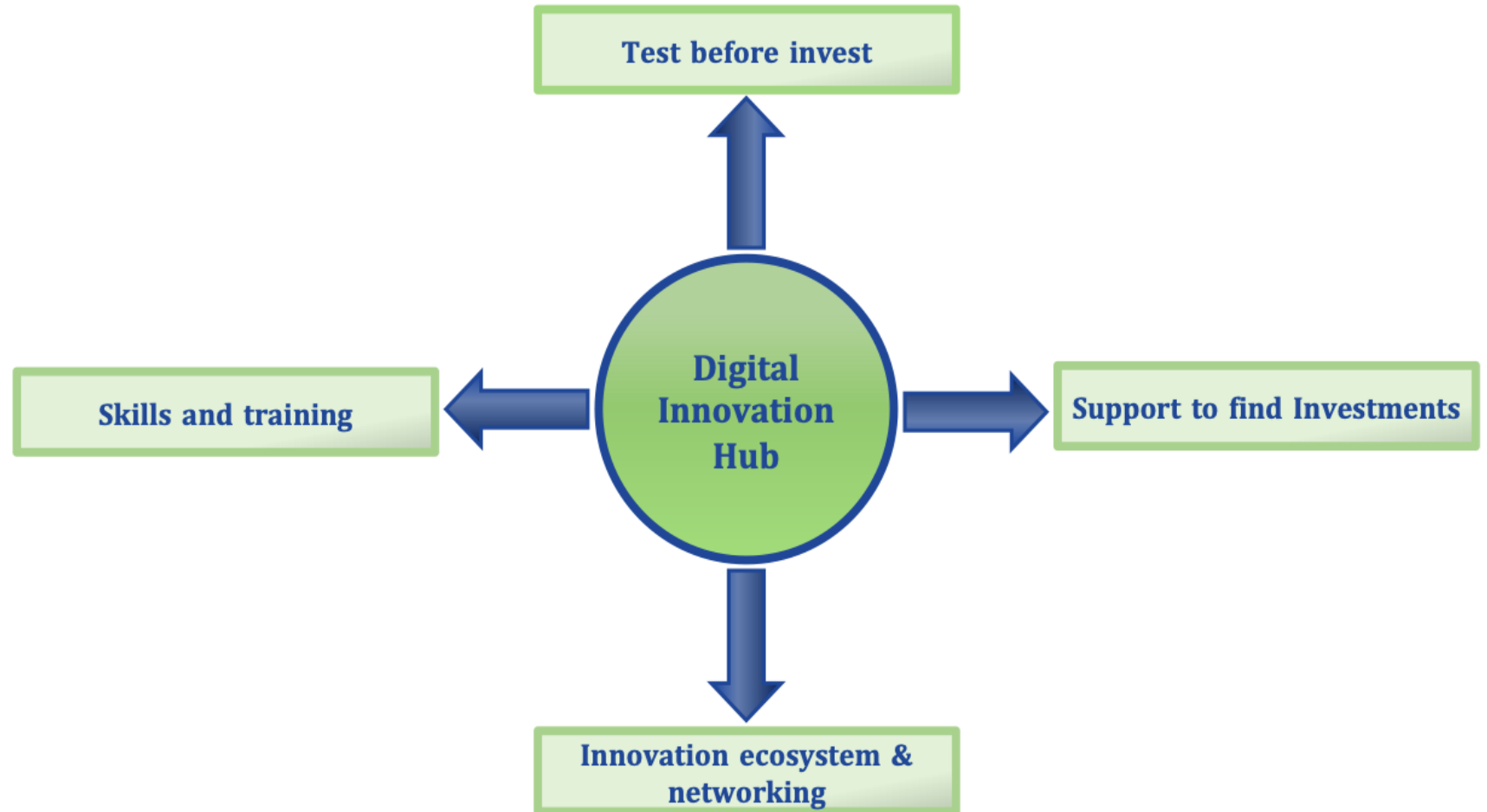Wide range of specialized **services** offered (free or discounted) by over 30 partners / selected technology suppliers.

PARTNERS

+ 25 ICT SUPPLIERS

CHEDIH - Circular Health European Digital Innovation Hub

Onboarding
- Entry point
- Digital awareness
- Onboarding of the customer

Assessment
- Needs analysis
- Digital Readiness Assessment
- Digital roadmap

Test before invest
- Matchmaking and B2B
- Feasibility study and technology experimentation
- Training

Funding
- Business plan
- Support access to finance
- EU markets

sistema poli innovazione Piemonte

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CIRCULAR HEALTH EDIH

CHEDIH - Circular Health European Digital Innovation Hub

ACTIVITY

TEST BEFORE INVEST: AGRIFOOD

- Precision farming
- Blockchain for traceability
- Data analytics in agrifood
- Web and data management
- Predictive maintenance
- IOT sensors for monitoring
- Robotic rovers
- AI Vision

- Monitoring crop with drones
- Infrastructures (Mechatronics)
- Cyber assessment and data protection
- Phytopathogens analysis
- Irrigation
- Earth observation
- Weather
- Drones

CHEDIH - Circular Health European Digital Innovation Hub

TRAINING

- **Short reskilling and upskilling courses** for SME and PA employees

- Integration with **higher education**:
  - ITS Academy (higher technical institute)
  - master's degree
  - Doctorate, PhD
  - high apprenticeship

CHEDIH - Circular Health European Digital Innovation Hub

FUNDING

- **Public financing**:
  - information
  - support to access to funding tenders
  - participation in EU calls and projects

- **Private financing**:
  - identify business data relevant for due diligence; sustainability verification;
  - building business plan for the digital transition and identification of the company value;
  - contacts with investors: private, equity, venture capital, M&A, support to bank loans;
  - support to negotiation and post deal integration.

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THANK YOU!