Key aspects of the technical implementation of the action plan in Piedmont

Daniela Nepote, senior researcher at IRES Piemonte
Reflections at the end of this journey

- Do we have a better understanding of how to connect monitoring and evaluation of individual tools?

- Are we able to evaluate the contribution of strategic policy tools objectives?

- With regards to data analysis are we capable to balance quantitative and qualitative data?

- Have we agreed on the importance of having a data visualization tool?

- Have we managed to take into account the interaction between the different mechanisms by which the policies operate?
Action Plan implementation

What we have done so far...
The 3 selected indicators

- Enterprises that have carried out R&D activities **in collaboration with external actors** (% on the total of enterprises that carry out R&D)

- Enterprises that have carried out R&D activities **using public or private R&D infrastructure and services** (% on the total of enterprises that carry out internal R&D)

- Enterprises with more than **10 employees** which introduced **technological innovations** (products and processes) (% on the total of enterprises with more than 10 empl.)

**R&D collaboration with external partners** as key element to strengthen and broaden the innovation capacity of an economic system.

**Collaboration with academia & RTD centres** as key element to strengthen the innovative capacity of an economic system.

**Diffusion of innovation. Innovation rate of the manufacturing and service system.**
Data from ISTAT [1]

R&D WITH EXTERNAL ACTORS

PIEMONTE
ITALIA

Data from ISTAT [2]

R&D FROM PUBLIC OR PRIVATE ENTITIES

- **PIEMONTE**
- **ITALIA**
INNOVATION RATE OF THE MANUFACTURING AND SERVICE SYSTEM

Data from ISTAT [3]

PIEMONTE
ITALIA

The regional surveys

Survey n. 1:
Questionnaire to 300 companies from the innovation clusters

Results:

• 51% of the projects are oriented towards smart solutions
• The aim of most projects are
  - monitoring the territory
  - Internet of things
  - sensors
• 35% of projects have a resource efficiency profile
Survey n.1 – results

Projects per the trajectory of intervention (% in 2020)

Full consistency with the S3 trajectories of S3 in Piedmont
Survey n.1 – results

Patents as a proxy for measuring innovation

<table>
<thead>
<tr>
<th>Polo</th>
<th>Biopmed</th>
<th>Clever</th>
<th>Mesap</th>
<th>Agrifood</th>
<th>ICT</th>
<th>Pointex</th>
<th>Cgreen</th>
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<tbody>
<tr>
<td>Brevetto tot</td>
<td>26</td>
<td>18</td>
<td>41</td>
<td>12</td>
<td>9</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Nessuno</td>
<td>16</td>
<td>23</td>
<td>27</td>
<td>17</td>
<td>19</td>
<td>13</td>
<td>2</td>
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<tr>
<td>Nazionale</td>
<td>7</td>
<td>7</td>
<td>14</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>1</td>
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<tr>
<td>Europeo</td>
<td>6</td>
<td>1</td>
<td>11</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
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<tr>
<td>Internazionale</td>
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<td>16</td>
<td>4</td>
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</tr>
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</table>

The MESAP cluster on MEchatronics and Systems for Advanced Production is particularly active in patenting.
The regional surveys

Survey n. 2: Questionnaire to 1000 SMEs (also including those belonging to the innovation clusters)

Objective:

to find out the state of the art for:

- innovation
- internationalization
- employment
- projects for the future

Results:
The confirmation of weak elements of the entrepreneurial environment... but highlighted the competitive advantage for companies belonging to innovation clusters.
A comprehensive interpretation of the performance of Piedmont in R&D in Advanced Manufacturing (combining our analysis with other sources)
After the outbreak of the economic crisis… the weakening of the economy

Possible explanations:

- Resizing of big players
- Pivotal role of the Lombardy area
- Loose of pre-existing connections
- Dynamic firms releasing from the region
For the fourth year, Piedmont population keeps decreasing.

- natural decrease (-23 thousands residents)
- in relation to the past, weak migration flows
- in the new century growth of migration towards foreign countries (two third of Italian origin)
- demographic decline especially in the centre-north regions of Italy
The largest NUTS 2 regions in terms of employment, Manufacturing, EU-27, 2017 (thousands)

Source: Eurostat (online data code: sbs_r_nuts06_r2)
Important role of SME: the Piedmont productive system nowadays is more populated with SMEs than big companies.

However the Piedmont entrepreneurial system could be more dynamic.

Source: Infocamere, 2017
The gap between R&D and innovation

Good performances on the R&D indicators do not result in a more effective innovation activity
European innovation scoreboard

Le regioni secondo il Regional Innovation Index (RII)

**Leaders:** RII superiore a 120 rispetto a media EU=100

**Strong:** RII tra 90 e 120 rispetto a media EU=100

**Moderate:** RII tra 50 e 90 rispetto a media EU=100

**Modest:** RII inferiore a 50 rispetto a media EU=100

Fonte: European Commission, Regional Innovation Scoreboard 2019
## European regional innovation scoreboard 2019

<table>
<thead>
<tr>
<th>REGIONAL INNOVATION SCOREBOARD 2019</th>
<th>Population with tertiary education</th>
<th>Lifelong Learning</th>
<th>R&amp;S expenditure business sector</th>
<th>SMEs innovating in-house</th>
<th>Sales of new to market and new to firm innovations</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIEMONTE</td>
<td>Italy</td>
<td>0.217</td>
<td>0.221</td>
<td>0.691</td>
<td>0.673</td>
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<td>NORD PAS DE CALAIS</td>
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<td>0.377</td>
<td>0.466</td>
<td>0.403</td>
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<tr>
<td>NIEDERBAYERN</td>
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<td>0.705</td>
<td>0.416</td>
<td>0.679</td>
</tr>
<tr>
<td>PAIS VASCO</td>
<td>Spain</td>
<td>0.377</td>
<td>0.466</td>
<td>0.403</td>
<td>0.463</td>
</tr>
</tbody>
</table>

Fonte: Elaborazioni IRES su dati Regional Innovation Scoreboard 2019
244M € of public resources invested in the regional policy-mix. We put a lot of fuel but the engine is not as brilliant as it should be.
Conclusions

mission accomplished?

... or still room for improvement?
Food for thought

- Industries, specifically SMEs, low propensity to collaborate and to work on joint collaborative projects
- Entrepreneurial ecosystem less dynamic than in other comparable (Italian and foreign) regions
- Enterprises with a high propensity towards incremental innovation and little awareness of their innovation potential
- Skills mismatch between a large demand for specialized technicians and the offer of a manufacturing sector scarcely attractive to young generations
- Abundance of technical competences, but lack of managerial skills necessary to migrate towards more modern business models
- Mismatch in the expected timing for innovation from the industry side and the evaluation time of the call for proposals, due to complexities in the administrative procedures
Piedmont challenges

❖ Continue to sustain apprenticeships for higher education and research

❖ Contribute to a coordination between the national and regional efforts on A.M.:
  ✓ Digital Manufacturing Competence Centre
  ✓ High-Performance Centre for Artificial Intelligence

❖ Embrace societal and economic goals: promote innovation projects with a social impact
Recommendations for the future

so far so good but...

To make a more effective regional policy evaluation in Piedmont, we recommend to back-up the MANUMIX Action Plan developed so far with future additional actions, such as:

- The further inclusion of new indicators specific to A.M.
- Run ad-hoc analysis focused on venture capital
- Create a data platform for user-friendly visualization
- Run ad-hoc studies on the generational change and on the new generation of A.M. entrepreneurs
Thank you!

Questions welcome…

Daniela Nepote, senior researcher at IRES Piemonte