

# Introduction to the regional cluster ecosystem – Input Paper for NRW

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# Economic profile of North Rhine-Westphalia

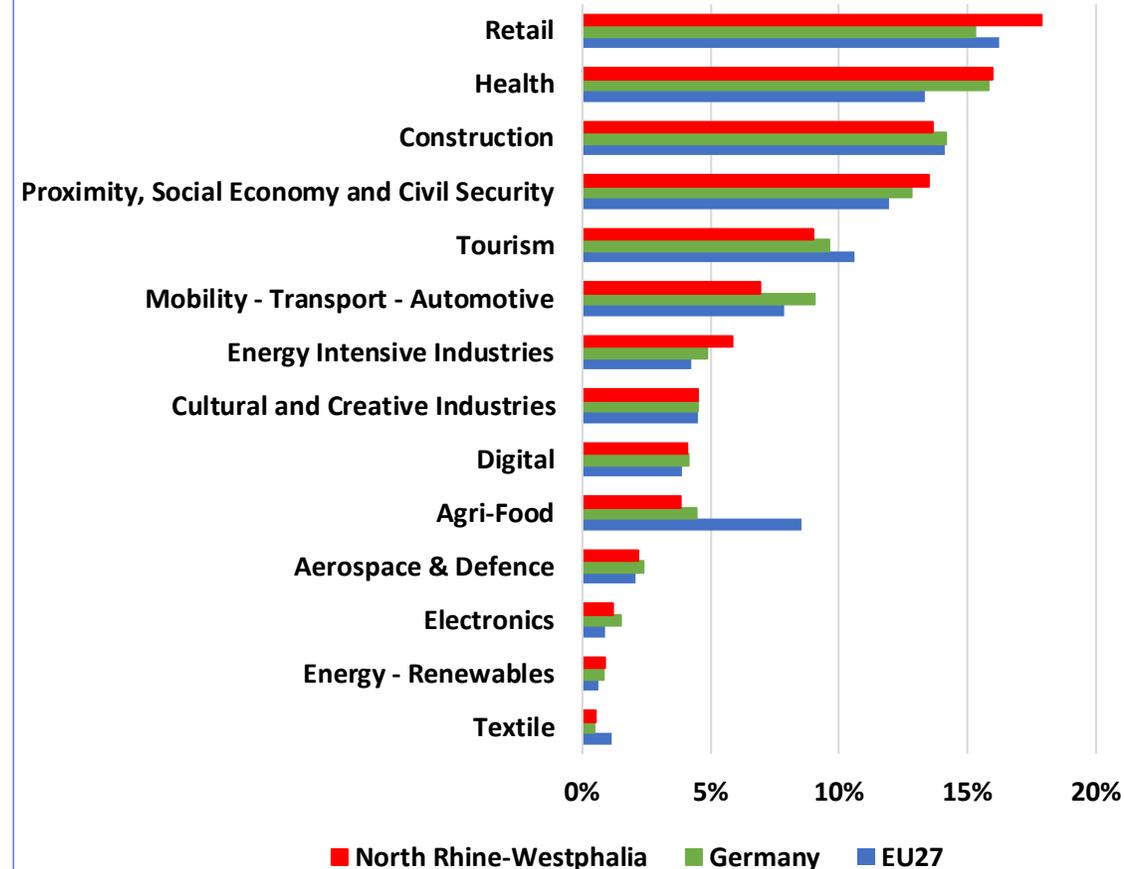
## General trends in the regional economy:

- Largest regional economy in Germany, with a GDP of **€739 billion** in 2021 (representing roughly 20% of Germany's total GDP) and the **second-largest exporter** among federal states
- North Rhine-Westphalia's **GDP per capita boasts around €37,100 (PPS)** (above EU and slightly below national average)
- Demonstrated robustness, rebounding after the **COVID-19 pandemic**, bolstered by effective government intervention

## Sectoral composition:

- **Predominantly service-oriented** (ca. 40% of total employment), however maintains a **relatively strong industrial presence** with roughly 19% workforce in the industrial sector, exceeding the EU27 average
- **Six regionally relevant sectoral nodes**, with a majority of these nodes pertaining to manufacture, indicating a distinct advantage and competency in manufacturing-related activities
- Overall, NRW boasts a **diverse economy**, which is also reflected in the region's cluster landscape & its S3 priority areas

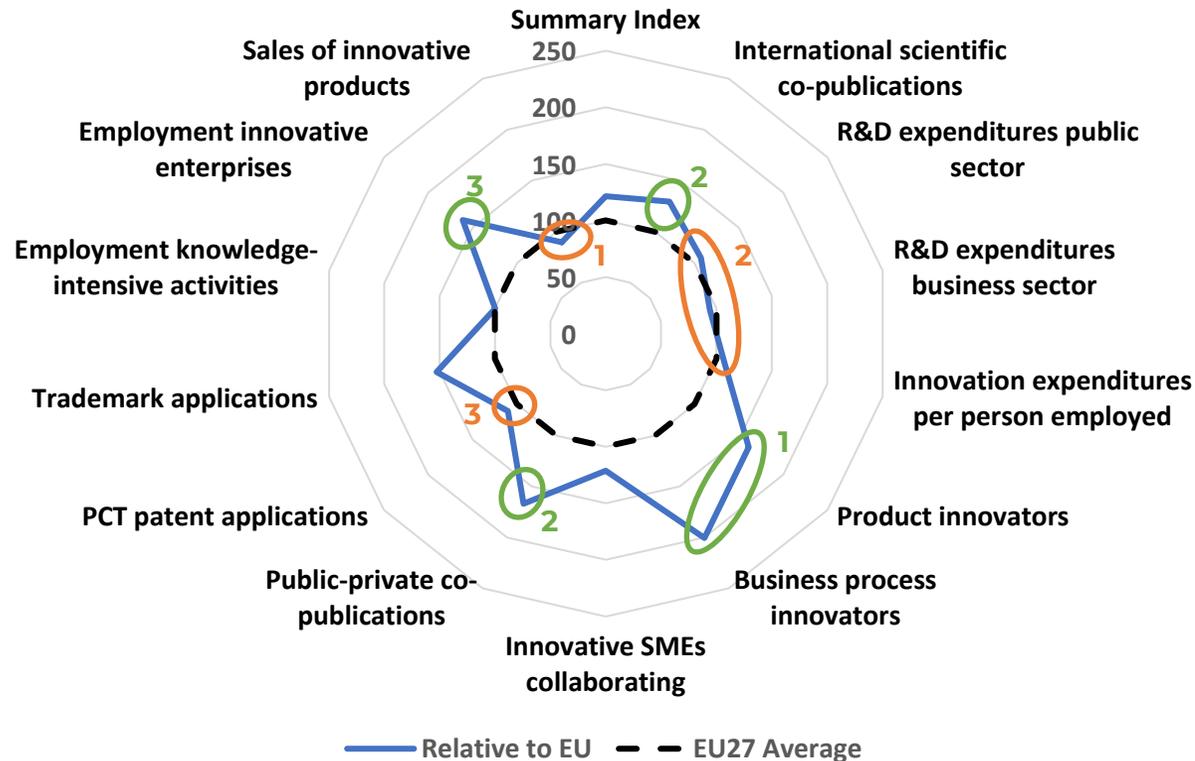
## Employment shares across the Industrial Ecosystems



Source: ECCP (2023), own elaboration based on Eurostat.

# North Rhine-Westphalia's regional innovation & competitiveness performance

## RIS 2023: DEA – North Rhine-Westphalia as a “Strong Innovator”



Note that the scores have been computed using the population-weighted average of the respective NUTS-2 regions

Source: Regional Innovation Scoreboard 2023

### Relative strengths

1. Product and business process innovators (*relative to EU*)
2. International scientific co-publication and public-private co-publications (*relative to EU*)
3. Employment innovative enterprises (*relative to EU*)

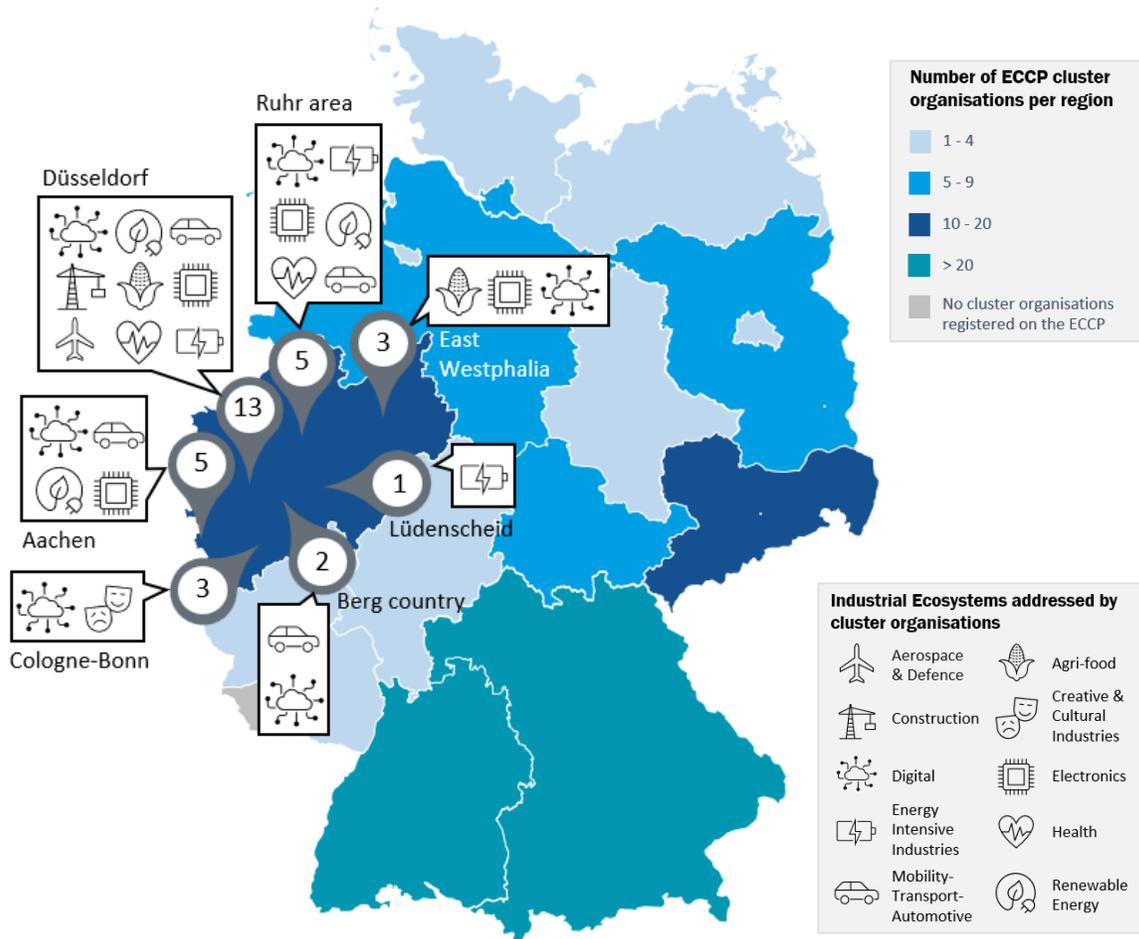
### Areas for improvement

1. Sales of innovative products (*relative to EU*)
2. R&D expenditures in the public and business sector as well as innovation expenditures
3. PCT patent applications

### Regional Competitiveness Index 2022

- North Rhine-Westphalia's five administrative districts all exhibit an overall average score falls **above the EU average**, indicating relatively high regional competitiveness
- The **regions of Cologne and Düsseldorf** stand out for their relatively high performance across all sub-indexes

# Cluster ecosystem\* in NRW: Locations, sectors and structures



## Cluster Organisations

- 32 Cluster Organisations (CO) from NRW: 27 state-level clusters (Landescluster), 12 ECCP-registered COs
- Cover 10 out of 14 EU Industrial Ecosystems
- Top 3: Digital, Energy-Intensive Industries, Mobility-Transport-Automotive/Electronics
- NRW.innovativ acts as an orchestration platform for the ecosystem

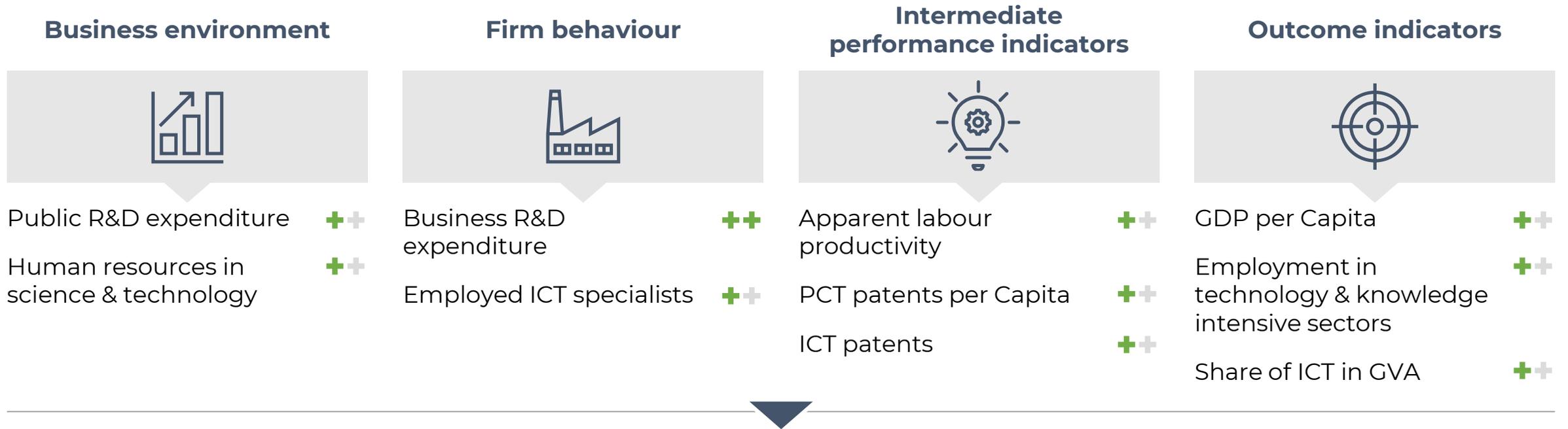
## Structure of clusters

- Relatively large COs with commonly over 100 cluster members: 50% have 150 or more members (EU: <25%)
- Cluster organisations have significantly higher numbers of staff than on EU average.
- **Collaborative Areas:** Technology scouting; partnering for projects; digitalisation; resource efficiency and circular economy

Source: ECCP (2023). Own elaboration based on <https://reporting.clustercollaboration.eu/all/>; last access 09.10.2023. \*registered on the ECCP

# Clusters and regional economic competitiveness

**Cluster organisations** are **positively correlated** with a range of **economic competitiveness indicators**:



**However:** The presence of regional industrial agglomerations is also linked with **higher air pollution**.

Source: ECCP (2022) Summary Report on Cluster Policy in the EU

**++** Positive correlation **+** Weak positive correlation

# European Commission programmes for collaborative projects among clusters & their members

2014-2020 funding period

2021-2027 funding period



## INNOSUP-1

- Horizon 2020 initiative
- Development of new-crosssectoral industrial value chains across the EU



## ESCP-4i

- COSME initiative
- Development and implementation of joint internationalisation strategies to support SME internationalisation



## ESCP-4x

- COSME initiative
- Boost the cross-cluster networking and learning within the EU and development of cluster management excellence



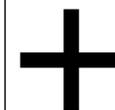
## ESCP-S3

- COSME initiative
- Boost cluster cooperation in specific thematic areas in the field of regional smart specialisation strategies



## Euroclusters

- Single Market Programme
- Support the implementation of the EC industrial strategy through cross-sectoral, interdisciplinary and trans-European cluster initiatives

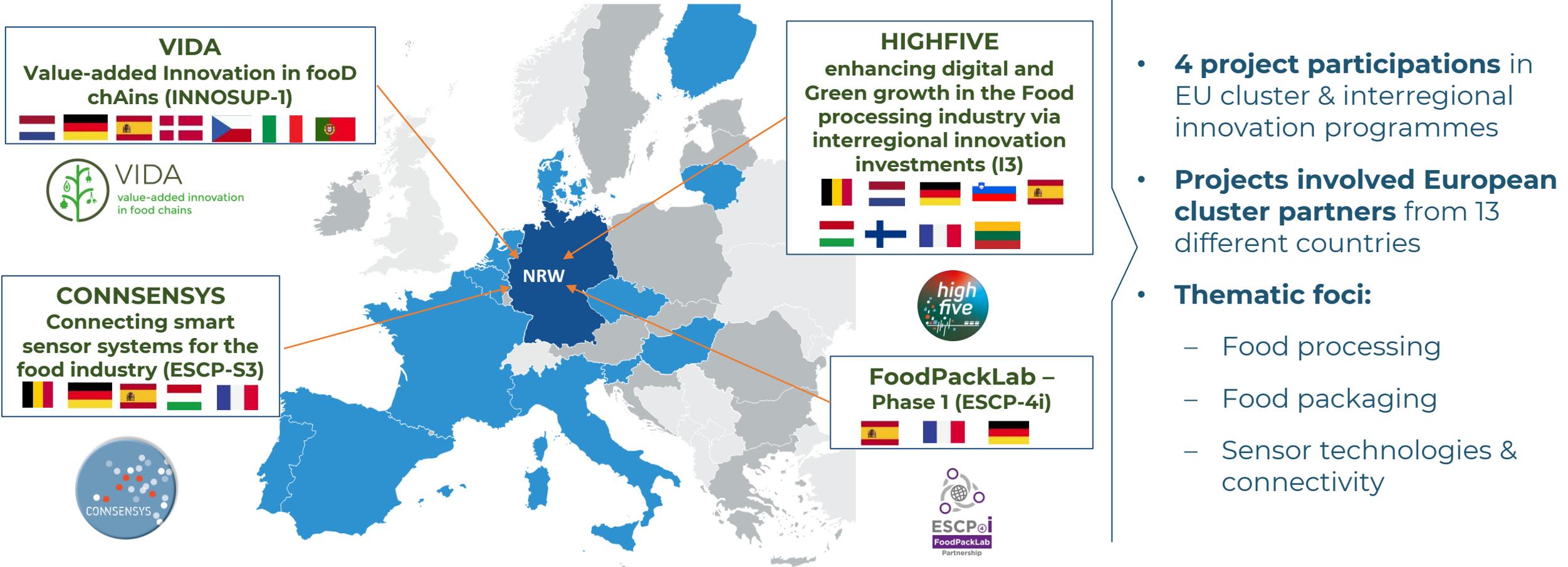


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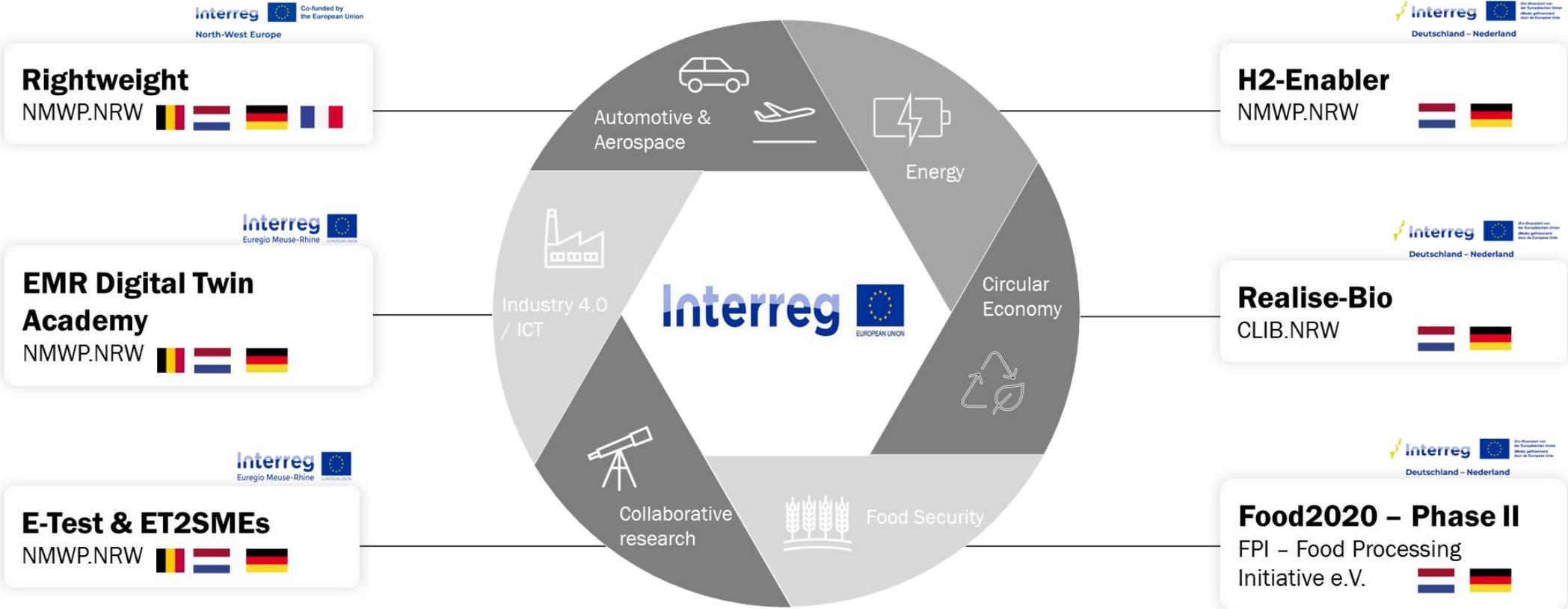


# NRW clusters in interregional cluster partnerships

## Overview of the selected projects



# Crossborder cluster collaboration for innovation within INTERREG



Source: ECCP (2023) based on information from keep.eu data hub.



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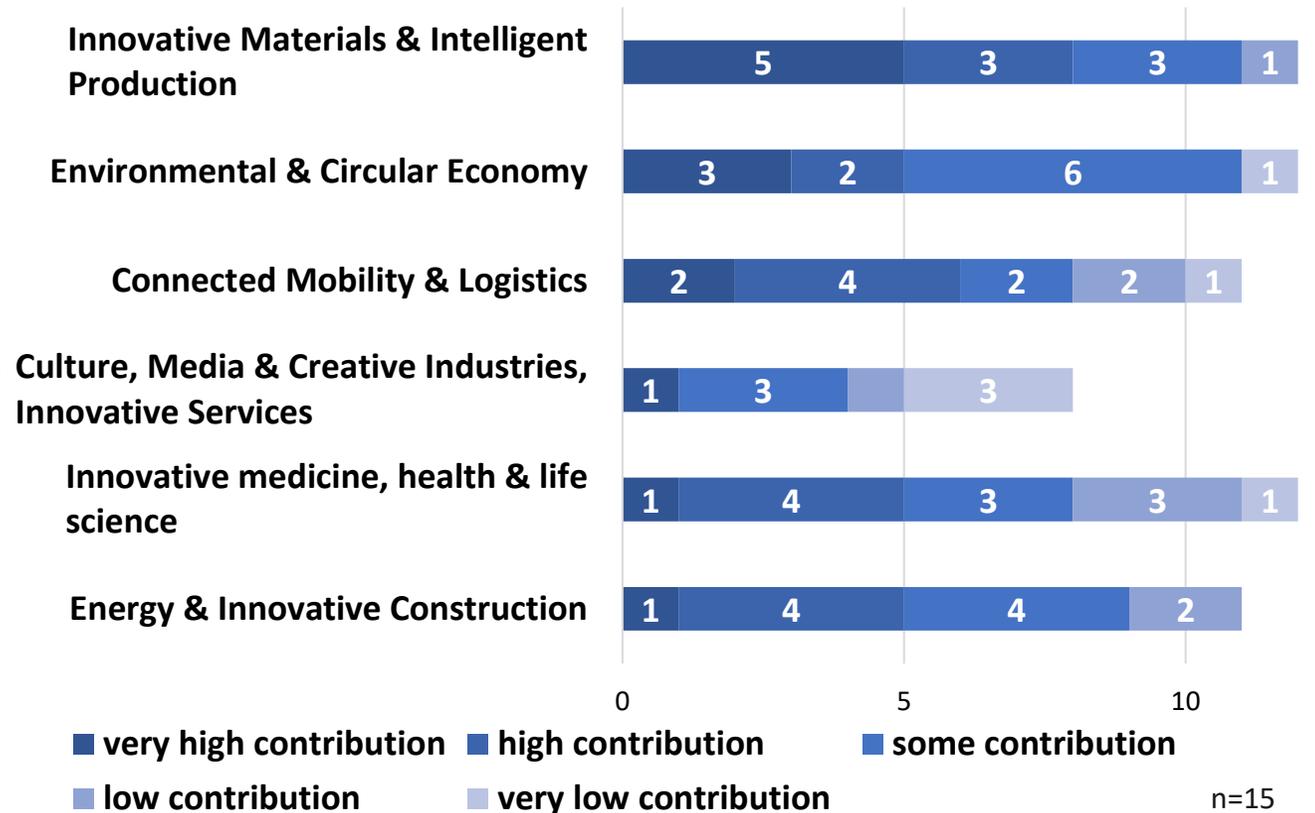


# Priorities of the NRW S3 2021-2027 & survey results

## Priority areas of North-Rhine Westphalia

1. Innovative Materials & Intelligent Production
2. Connected Mobility & Logistics
3. Environmental & Circular Economy
4. Energy & Innovative Construction
5. Innovative medicine, health & life science
6. Culture, Media & Creative Industries, Innovative Services
7. Key Technologies of the Future & ICT

## Contribution of competencies of NRW cluster organisations to the priority areas



Source: ECCP (2023) own elaboration based on the Regional Innovation Strategy 2021-2027 of North Rhine-Westphalia

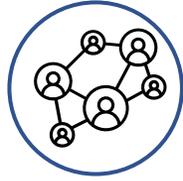
# Final Remarks



**NRW economy** boasts a **diverse** industrial ecosystem, while the state's **innovation landscape** shows **strengths** in its institutional composition and R&D activities



**NRW cluster organisations** link traditionally strong sectors in manufacturing, heavy industry and chemicals with the cross-cutting green and digital transitions

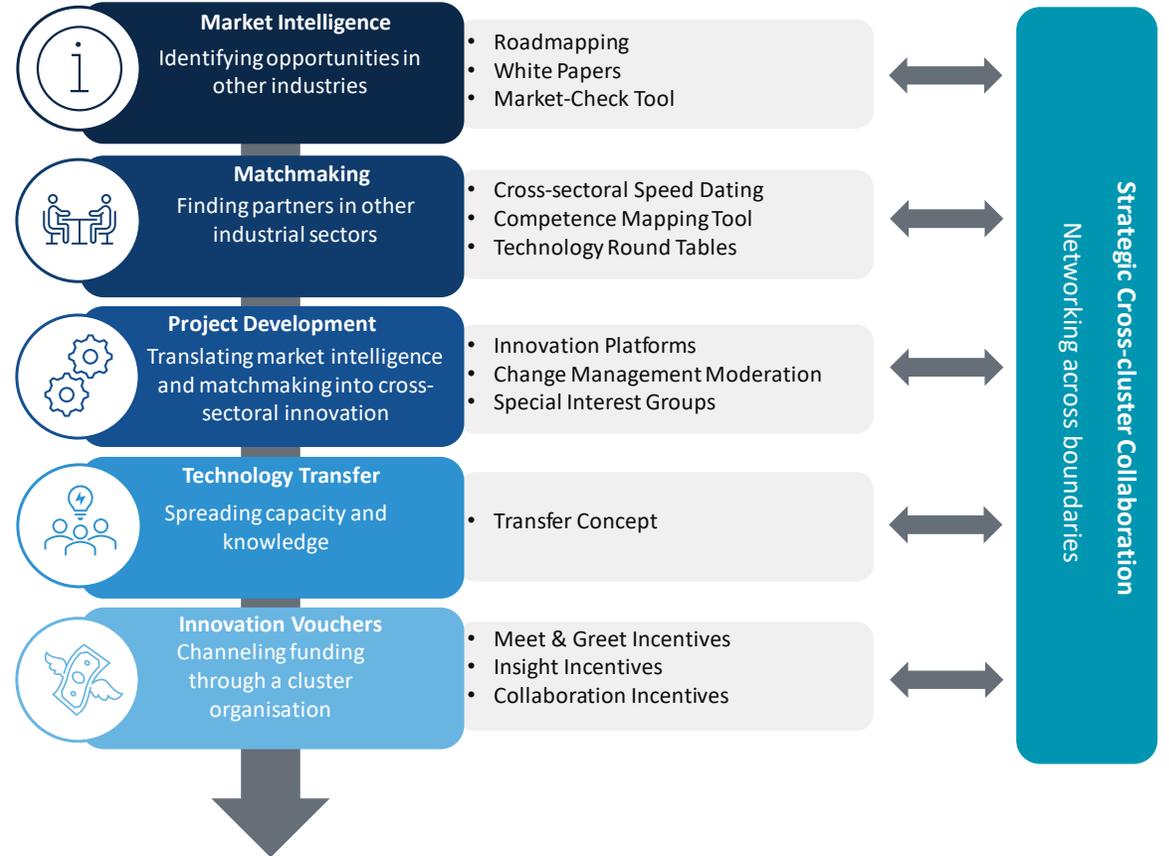


**Interregional cluster partnerships and cross-border collaboration** facilitate innovation and value chain transformation within the Single Market



Smart specialisation in NRW covers **7 priority areas** and is closely linked to **NRW's cluster ecosystem**.

## Role of cluster organisations in supporting transformation



**Facilitation of value chain transformation (twin transition), innovation and greater resilience**

Source: ECCP (2023) based on European Cluster Observatory (2014): Cluster Collaboration and Business Support Tools to Facilitate Entrepreneurship, Cross-sectoral Collaboration and Growth