

Research landscape in Germany

Main figures, actors and strategies

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Plan

0. Key figures

1. Main actors

- A. Federal scale : the relevant ministries
- B. Regional scale : the 16 « Länder »
- C. Main research organizations

2. Strategies to stimulate research & innovation

- A. The « High-Tech strategy»
- B. Fostering academic research
- C. At the European level

3. German-French cooperations in research

Key figures (year 2015)

- Money spent on R&D: **90,3 bn €**, of which
 - public R&D : **27,9 bn €** (30% of total)
 - private R&D activities : **62,4 bn €** (70% of total)
- **3,0% of Germany's GDP dedicated to R&D activities (reached in 2016)**
- About 350 000 researchers (Full-time equivalent)

I. Main actors

A. Federal ministries

- Federal ministry for Education and Research (BMBF)
- Federal ministry for Economy and Industry (BMWi)
- Other ministries

B. The 16 « Länder »

C. Extra-universitary research organizations

Institutional actors (1/5)

- **Federal ministry for Education and Research (BMBF)**



Bundesministerium
für Bildung
und Forschung

- Minister : Johanna Wanka (CDU)
- Budget (2017) : **17,6 bn €**
- Sets the agenda of the main Research and Innovation political guidelines
 - › High-Tech strategy
 - › Framework programmes
 - › National thematic research programmes

Institutional actors (2/5)

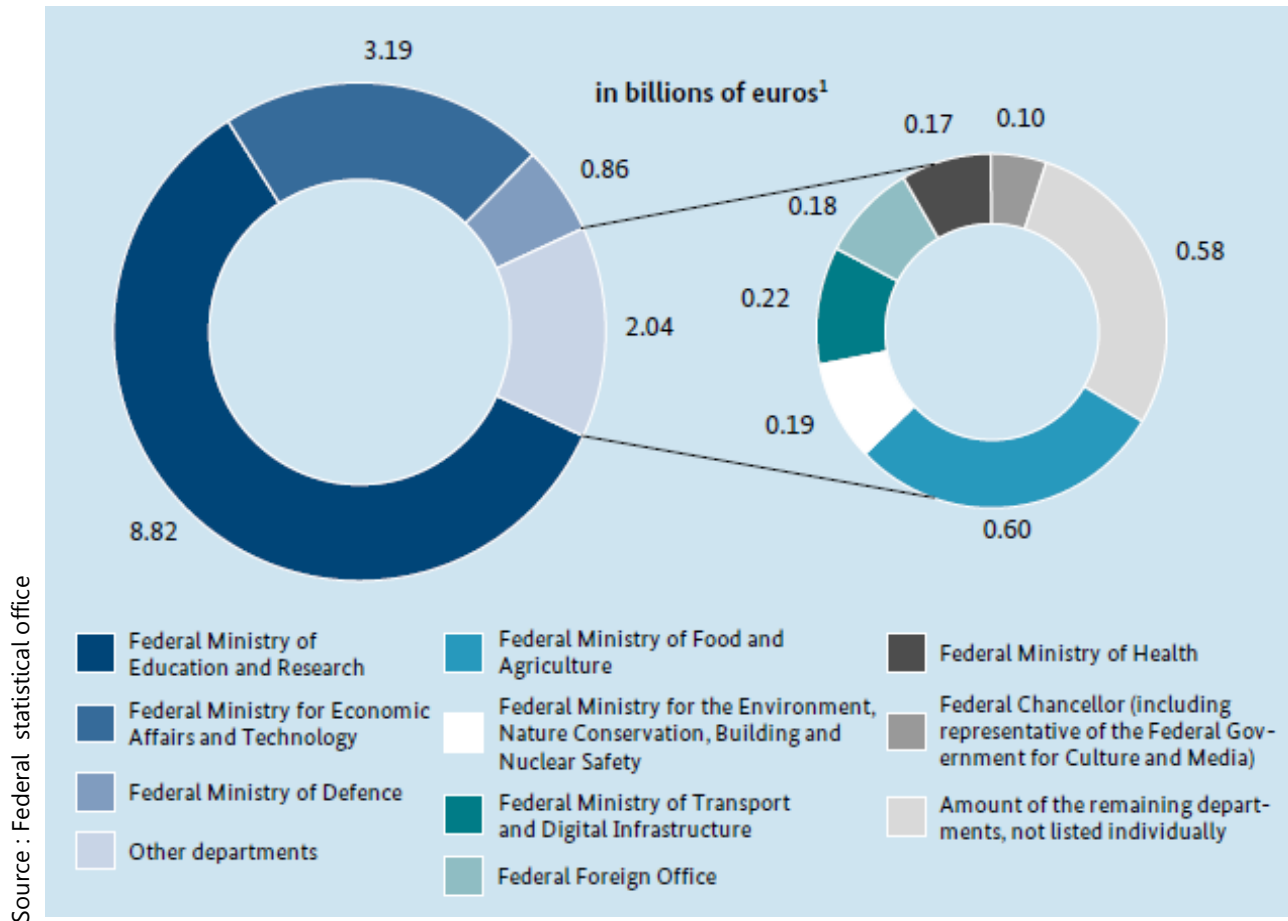
- **Federal ministry for Economy and Industry (BMW*i*)**



- Minister : Brigitte Zypries (SPD)
- Budget (2015) : **7,7 bn €**
- Areas of involvement :
 - › Innovation, technology, electromobility...
 - › Support to SMEs and start-ups
 - ZIM Programme (innovation in SMEs) : 540 million €
 - › Energy and sustainability
 - Energy research : 313 million €
 - › Aerospace
 - 1,6 bn € (incl. German contribution to ESA)

Institutional actors (3/5)

- **Other ministries also contribute to R&D activities and funding :**



Institutional actors (4/5)

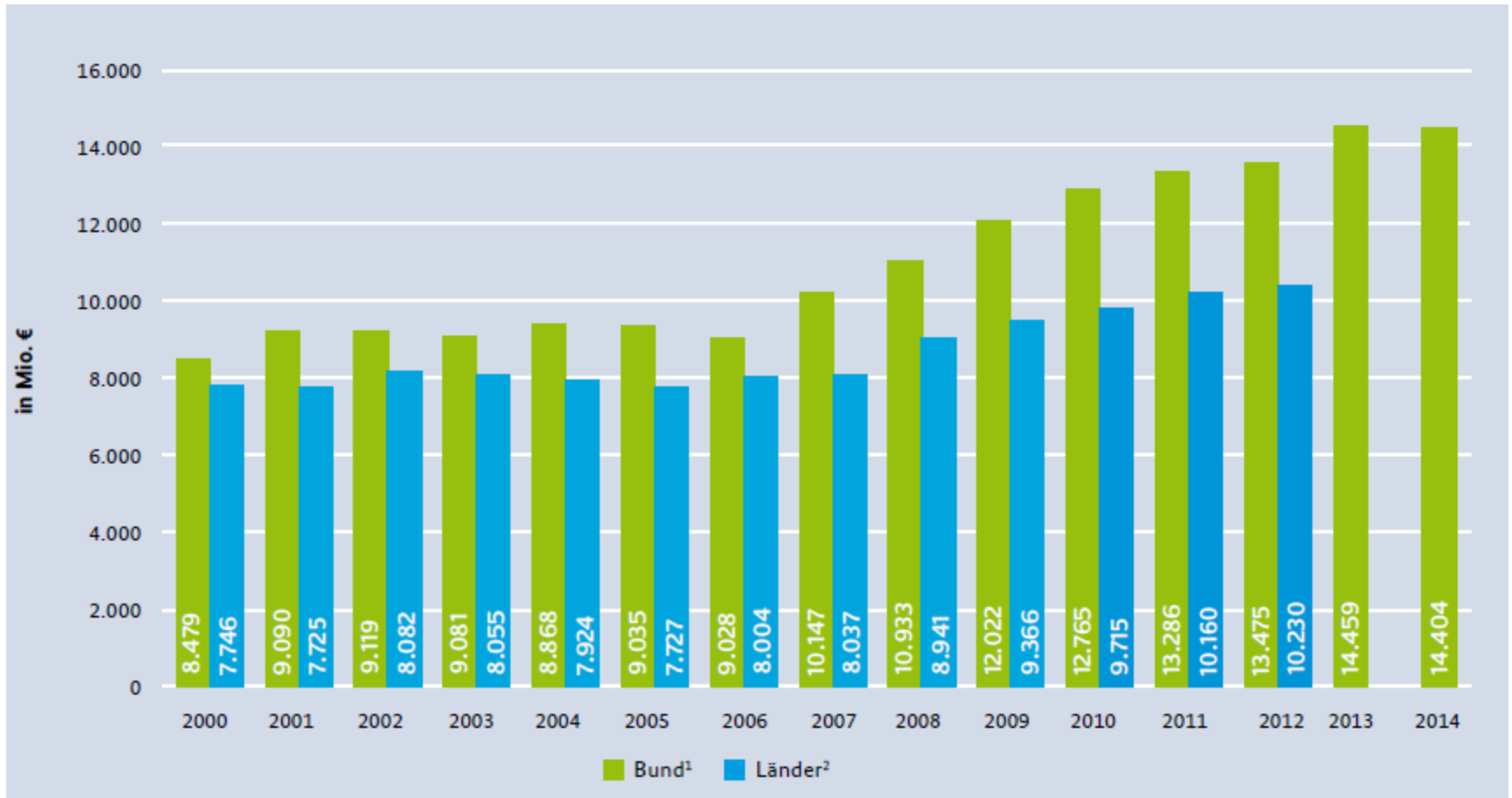
- **16 Länder**

- Key role in funding academic research
- 16 regional research policies aligning with federal research policy
- Regional R&D expenditure:
10,5 bn € (2013)



Source : BuFI 2016

Institutional actors (5/5)



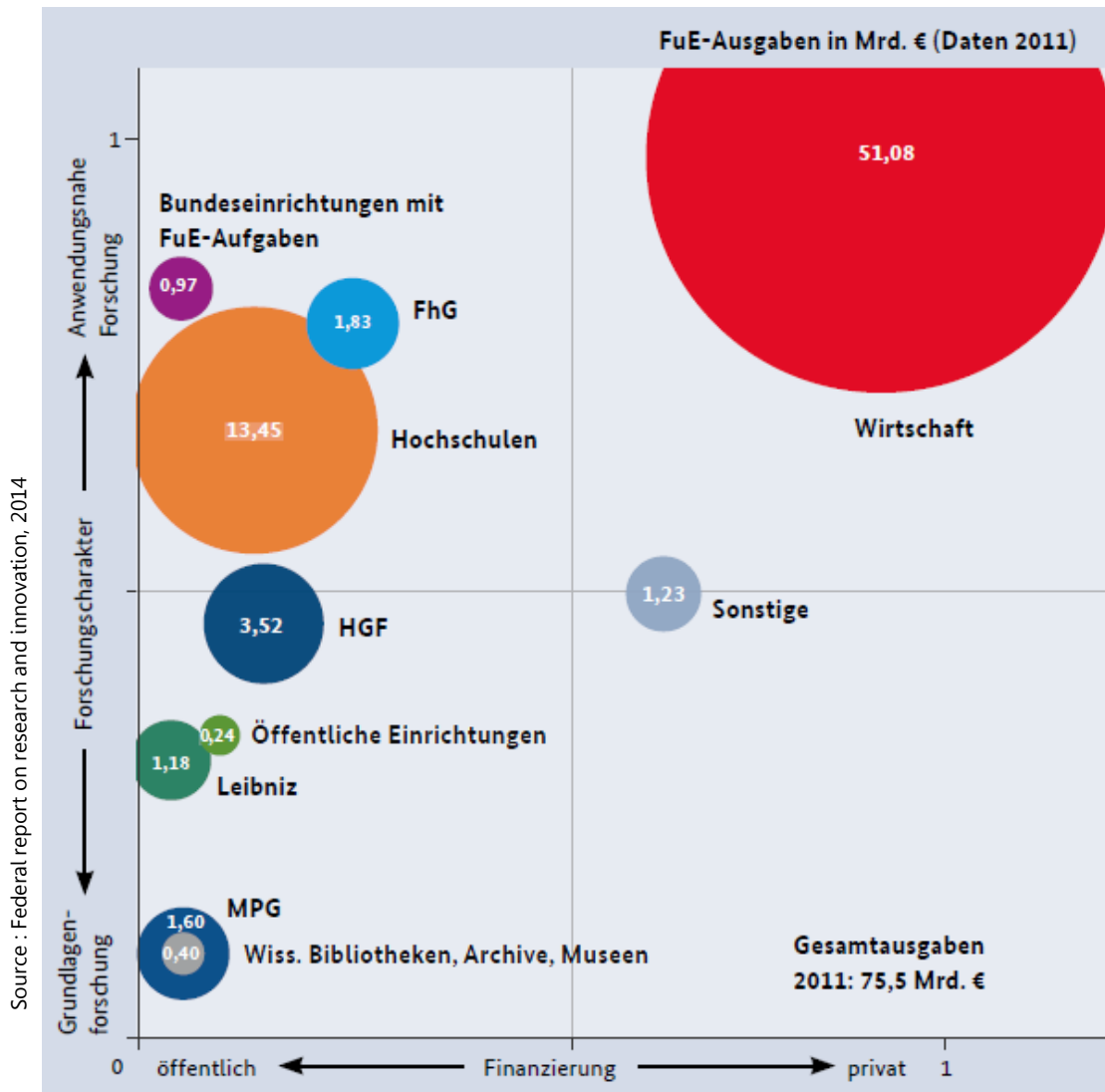
Source : BuFI, 2014

Extra-universitary research organizations

	Focus	Budget (2015)	Funding	Institutes	Employees
Max Planck Society	Fundamental research	1,7 bn €	State: 39% Länder: 39% Other: 22%	83 institutes	17 280
Helmholtz Community	Research infrastructures	4 bn €	State: 63% Länder: 7% Other: 30%	18 centers	38 000
Leibniz Community	Regional-focused, applied research	1,6 bn €	State: 38% Länder: 38% Other: 24%	89 institutes	18 100
Fraunhofer Society	Applied research	2 bn €	State: 20% Länder: 2% Other: 78%	66 centers	24 000



Main research organizations



- **FhG**: Fraunhofer Society
- **HGF** : Helmholtz Community
- **MPG** : Max Planck Society

Mobility and funding organizations

- Funding: DFG

The logo for the Deutsche Forschungsgemeinschaft (DFG), consisting of the letters 'DFG' in a bold, blue, sans-serif font.

- Mobility: DAAD, Alexander von Humboldt Stiftung...

The logo for the Deutscher Akademischer Austausch Dienst (DAAD), consisting of the letters 'DAAD' in a bold, blue, sans-serif font.

Deutscher Akademischer Austausch Dienst
German Academic Exchange Service



Alexander von Humboldt
Stiftung / Foundation

II. Strategies to support R&I

A. The « New High-Tech Strategy »

B. Fostering academic research

- Pact for Research and Innovation
- The « Excellence Incentive »

C. At the European level

New High-Tech Strategy (1/2)

- Released by BMBF in september 2014, following:
 - 1st High-Tech Strategy (2006-2010)
 - High-Tech Strategy 2020 (2010-2014)
- Sets overall directions for German R&I Policy
- Goal: make Germany a global player in Innovation
- The High-Tech strategies have the vocation to provide guidance : does not provide funding

New High-Tech Strategy (2/2)

- 6 strategic priorities :
 - **Economy and digital societies**
 - › Industry 4.0, Big Data, Intelligent Services, Cloud computing...
 - **Economy and sustainable energies**
 - › Bioeconomy, sustainable agriculture, energy research, raw materials...
 - **Innovation in the working world**
 - › Innovative services, digitalization at the workplace
 - **Health, ageing and wellbeing**
 - › Civilizational diseases, personalized medicine...
 - **Smart mobility**
 - › Electromobility, smart grids, autonomous driving...
 - **Security**
 - › Cybersecurity, protection of private data...

Fostering academic research (1/3)

- **Pact for Research and Innovation**
 - Gradual increase of budget for the 4 extra-universitary research organizations (Max-Planck, Leibniz, Helmholtz, Fraunhofer) : between +3% and +5% /year (=increase of 150-200 M€ every year)
 - Started in 2006
 - Allows cooperation with universities with support from BMBF
 - Objective : By securing the budget, the objective is to foster and stimulate German research, in order to comply to the Lisbon objective (3% GDP dedicated to R&D activities)

Fostering academic research (2/3)

- **Excellence Initiative**

- 3 phases:

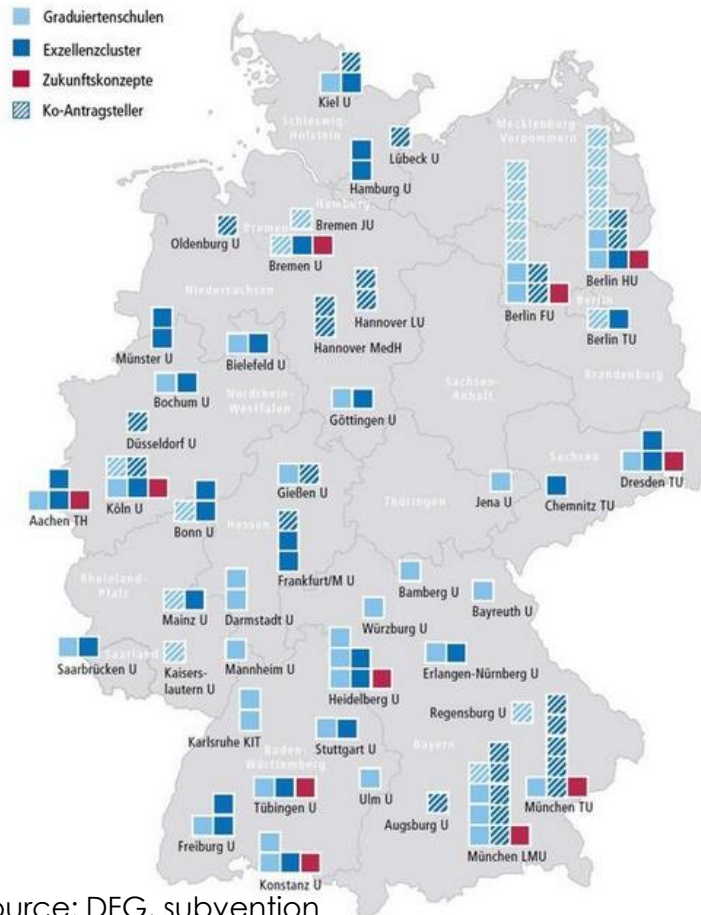
- 2006-2012
- 2012-2017, funding runs until 2019
- 2019-... (selection ongoing)

- Objective :

- Establish major academic centers, by selecting 11 « Elite Universities » (« *Zukunftskonzepte* », future concept)
- Reinforce German academic research, by funding about 40 « Excellence clusters »

- Overall investment of 5 bn € since 2006 – 500 M€/year

Fostering academic research (2/3)

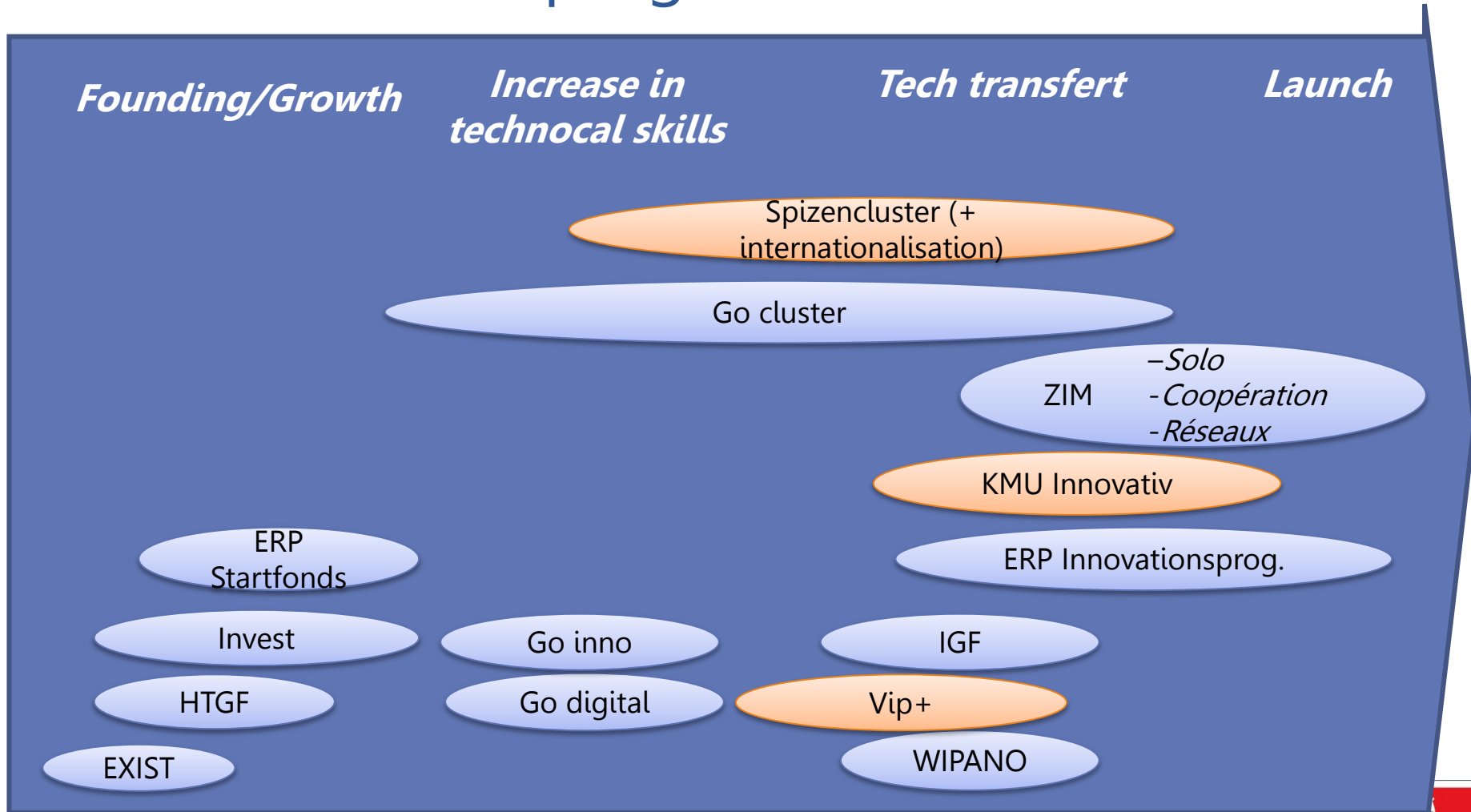


Source: DFG, subvention phase 2012-2017

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Fostering innovation: federal/transversal programmes



BMWi

BMBF



At the European level

- Germany in H2020 (update october 2017) :
 - **first recipient** with 16,2% of the fundings
 - 8.074 participants receiving 4.390 M € in H2020
- Germany and the future Framework FP9 (position paper):
 - Tackle european challenges collectively
 - FP9 has to be more integrative, result-oriented, consistent and user-friendly
- Germany in favour of an European Research Area

III. French-German cooperation

A. Cooperation : policy and actors

B. Examples



Cooperation: Policy Framework

- **French-German Ministerial council**
 - At least once a year
 - Scientific/research topics may be addressed

- **French-German Research Forum**
 - Every 3 year
 - Defines a roadmap towards long-term cooperation opportunities

Cooperation: Actors and programs

- **French-German university (UFA/DFH)**
- **French-German call for projects**
 - ANR/DFG : Social sciences,
 - ANR/BMBF : civil security, energy (2018)

Examples of cooperation

- Platform for antibioresistance research
- Call for projects:
 - Procope I&II (bilateral with DAAD)
 - Procope Accelerator
- Industry of the future
 - The Academy: Partnership between Technical University of Munich and Institut Mines Télécom, Paris
 - The Institute: Between CNAM (Metz) and KIT (Karlsruhe)
- Innovation, call for projects between competitiveness clusters, and the « Pôles de compétitivité ».
BPI France and ZIM



Resources

- **Report on German Research and Innovation (« BuFI »), last edition 2016**
- **BMBF: www.bmbf.de and Data Portal www.datenportal.bmbf.de**
- **DAAD: www.daad.de**
- **Science Allemagne: www.science-allemande.fr**
- **Wissenschaft Frankreich: www.wissenschaft-frankreich.de**
- **Newsletter: <https://fdip.fr/veilleST>**

Thank you for your attention



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