



# Research Careers: Precarity, Career Pathways, Careers Observatory

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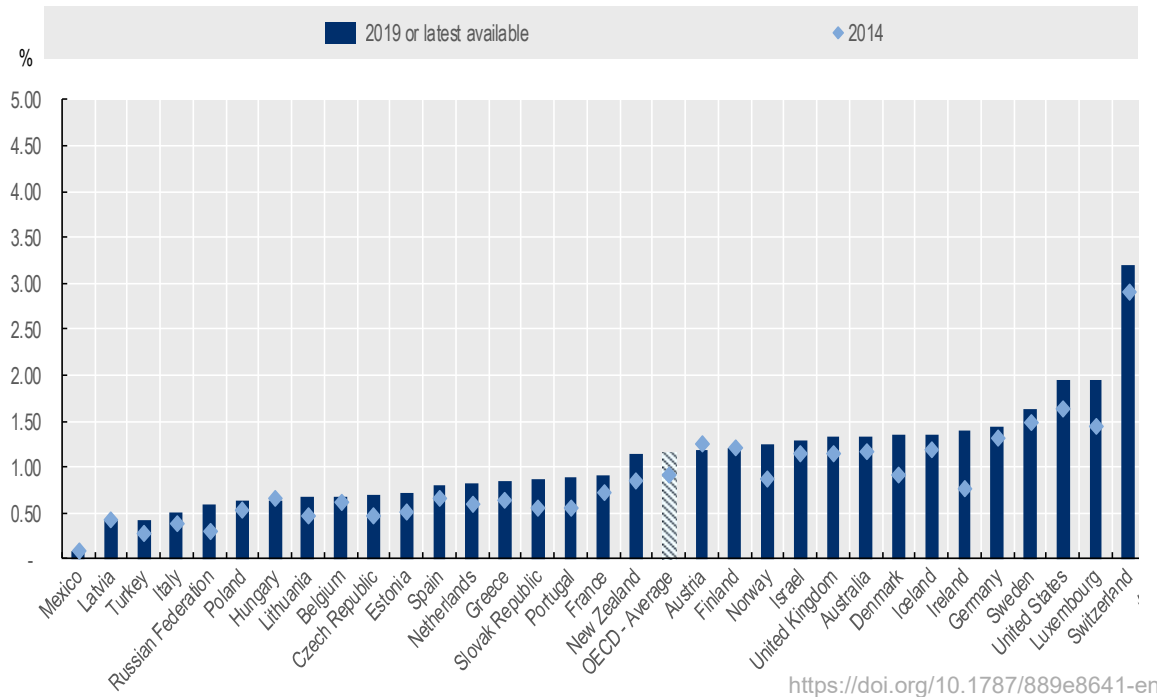


# THE BIG PICTURE



# Supply and demand

Share of doctorate level attainment in the population  
25-64 years, 2014 and 2019 or latest year available



<https://doi.org/10.1787/889e8641-en>

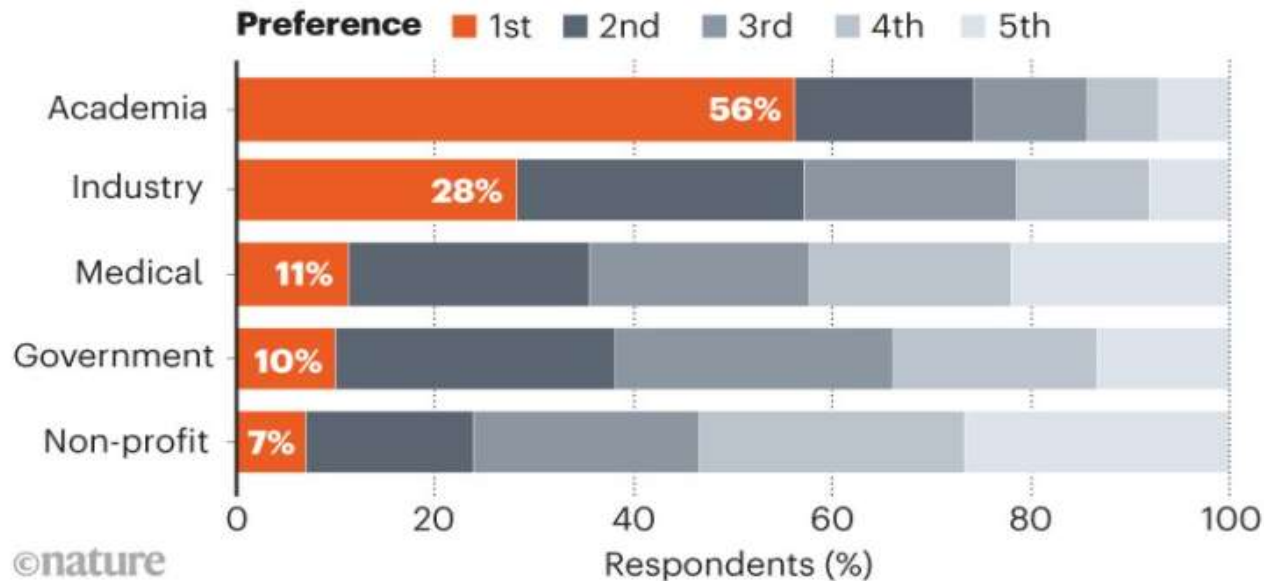
- The OECD average share of 25-64 year-olds with a doctorate is around 1%, and this share has been increasing.
- The share of doctorate holders in the population (25-64 year olds) of OECD countries **increased by 25%** during the 5-year period 2014-2019.



## Great expectations?

### What doctoral candidates want to do when they have their PhD

**Q: Which of the following sectors would you most like to work in (beyond a postdoc) when you complete your degree?**



Source: Nature PhD Survey 2019

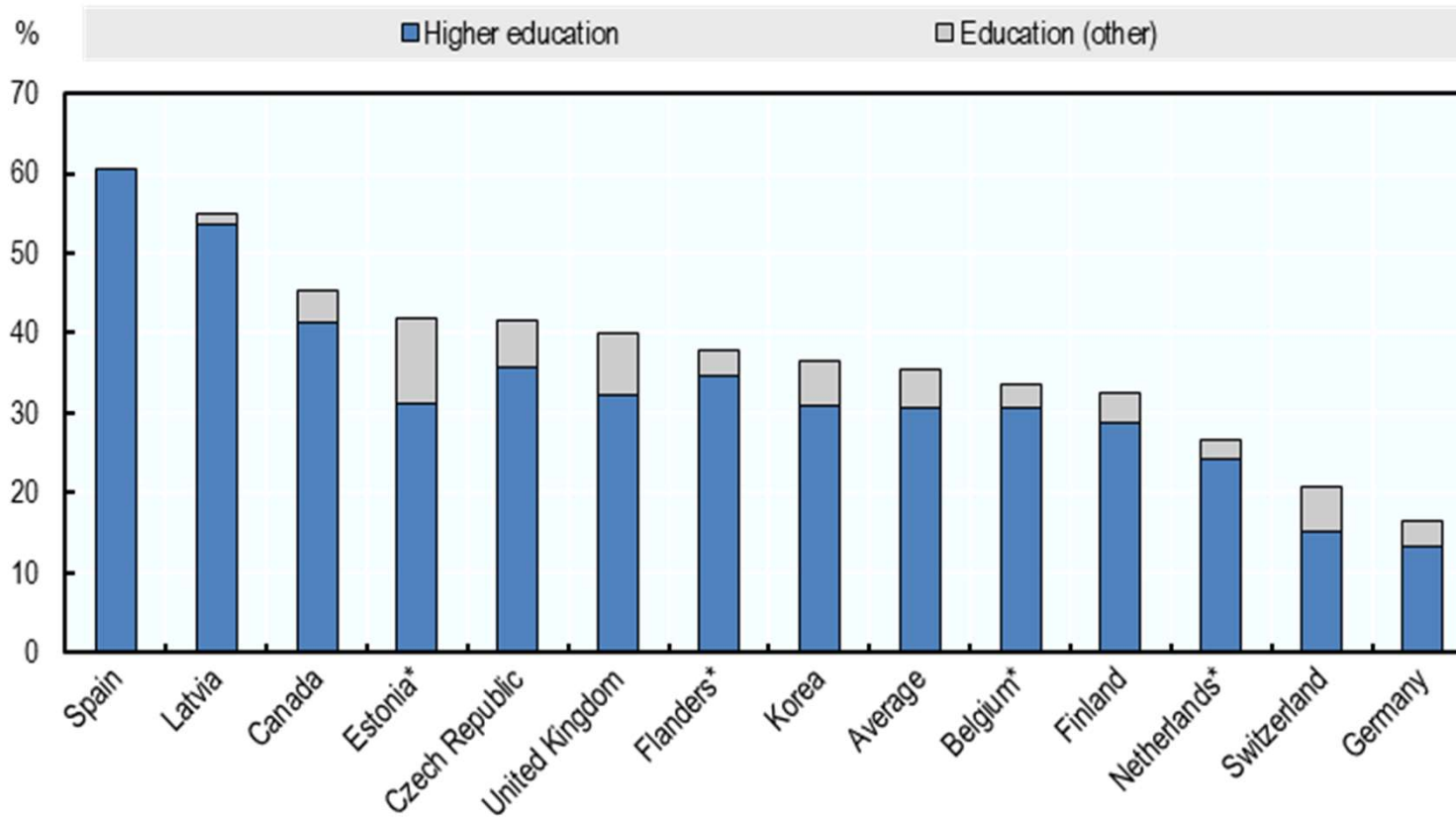
Source: 2019 Nature Survey of PhD Students <https://www.nature.com/articles/d41586-019-03459-7>

PhD candidates want to work in academia – a worldwide pattern



# Where do PhDs actually lead?

Doctoral training is a steppingstone to multiple roles



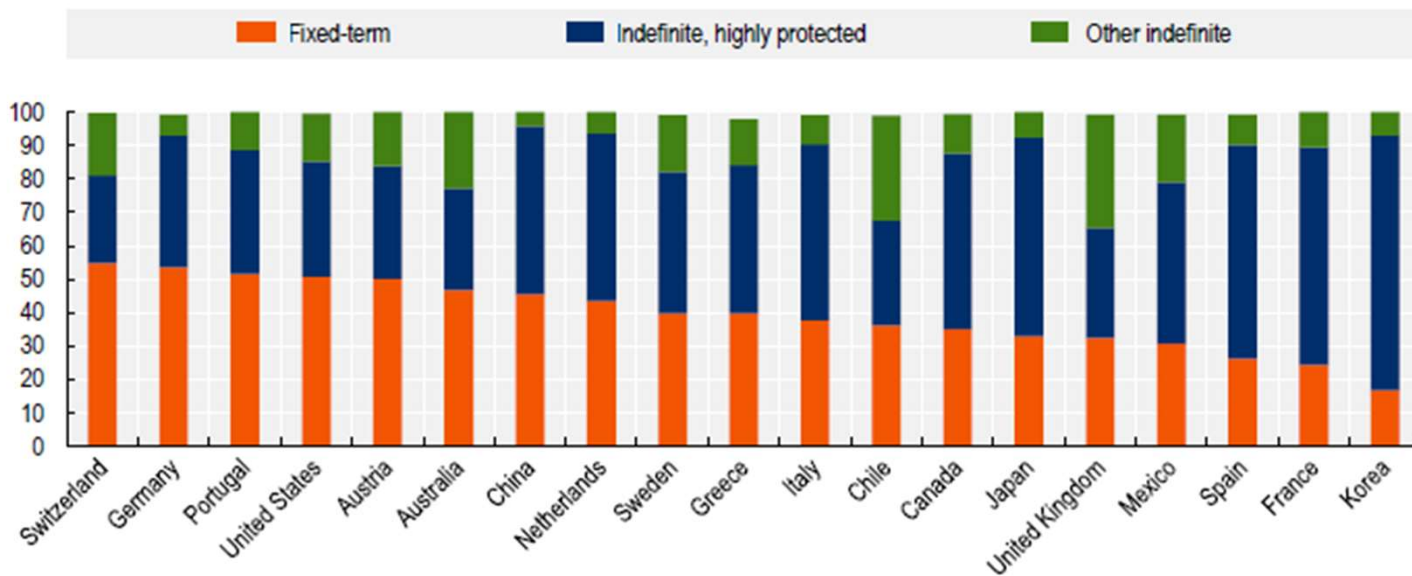
A minority of doctorate holders are employed in higher education in most OECD countries

Source: OECD (2019) Benchmarking Higher Education System Performance, based on OECD Careers of Doctorate Holders survey (CDH)



## Job security of corresponding authors, by country of residence

Percentage of corresponding authors under 45, 2018, selected economies



- **The traditional academic career cannot absorb the increasing number of doctorate holders wishing to stay in academia**
- Around one third of the OECD labour force are in temporary or part-time jobs or are self-employed, but **the scale of precarity is much higher in the academic research sector**, especially among early-career researchers.

<http://oe.cd/issa>

OECD (2021), "Challenges and new demands on the academic research workforce", in OECD Science, Technology and Innovation Outlook 2021: Times of Crisis and Opportunity, OECD Publishing, Paris, <https://doi.org/10.1787/72f6f879-en>.



# PRECARITY



OECD (2021), "Reducing the precarity of academic research careers", *OECD Science, Technology and Industry Policy Papers*, No. 113, OECD Publishing, Paris, <https://doi.org/10.1787/0f8bd468-en>.



## The effects of precarity

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Affects the well-being and mental health of researchers

Decreases the attractiveness of research as a career choice

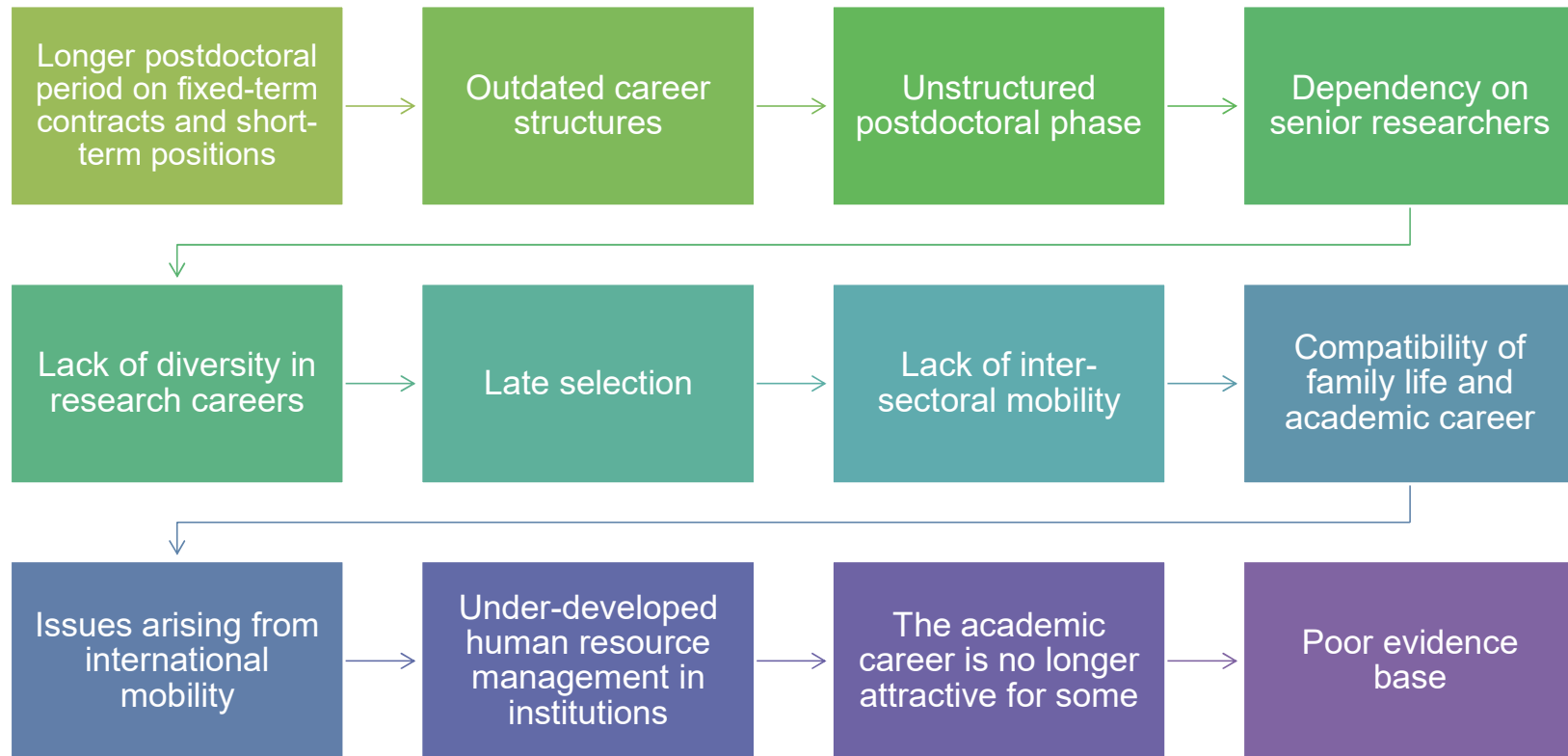
Negates efforts to promote diversity and gender equality

Ultimately affects research choices (safe vs risky) and the quality of science





## Challenges and causes





## Different perspectives on precarity

### Funders, employers, researchers, policy-makers

Permadoc is a way for universities to get low-cost labour

There is no shortage of contracts, but they are precarious

Those transitioning to industry cannot go back to academia due to assessment criteria

Students feel that the situation is risky and so fewer are doing PhDs

Lack of control and sense of urgency leads to mental health problems

Need to change the mindset of PIs

Female postdocs have difficulties to continue after having children

International staff are in worse conditions than national staff

Need to move from funding people to initiate structural change

There is no problem of unemployment of PhDs but one of career development



## Overarching policy recommendations

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Improve working conditions and offer more transparent, predictable and flexible career prospects for postdoctoral researchers



Offer broad professional development during postdoctoral training



Promote equal opportunities, diversity and inclusion in research careers by identifying and addressing existing biases and challenges



Establish better links between research assessment and funding, and human resource management policy objectives





## Overarching policy recommendations (cont'd)

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Improve institutional practices regarding human resource management in research



Promote inter-sectoral mobility of researchers



Support the international mobility of researchers



Develop the evidence base on research careers



Include all relevant stakeholders in the governance and coordination of research and ensure concerted, systemic action





## Policy options regarding working conditions (Recommendation 1)

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- Make **employment contracts** the norm and limit use of stipends
- Include post-docs in established **career frameworks** with similar salaries and benefits to permanent staff
- Improve **transparency on future** career prospects
- Implement a **minimum period for fixed term contracts** (e.g. 3 yrs.)
- Create diversified **open-ended positions** to replace fixed-term contracts that fulfil long-term needs
- **Monitor working conditions** of post-docs and employment status (via surveys and registry data)



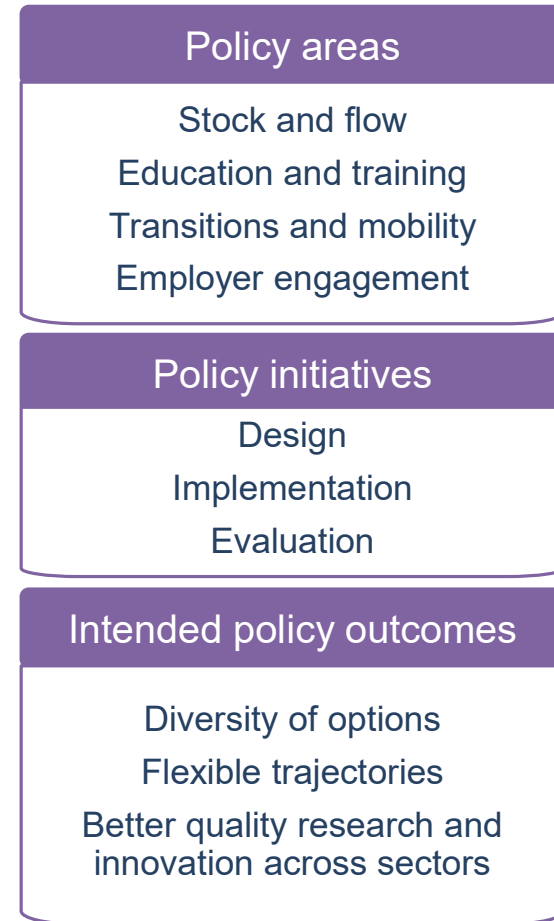
# CAREER PATHWAYS



OECD (2023), "Promoting diverse career pathways for doctoral and postdoctoral researchers", *OECD Science, Technology and Industry Policy Papers*, No. 158, OECD Publishing, Paris, <https://doi.org/10.1787/dc21227a-en>



# Framework of analysis





## Policy recommendations

Promote the **engagement** and interaction of institutions and funders with **employers** outside academia

Provide doctoral and postdoctoral researchers with **experience and skills** for diverse careers within and beyond academia

Render more **visible** and encourage **valorisation** of diverse career options within and beyond academia

Offer career development and **guidance** on career options for researchers

Promote **inter-sectoral mobility** with the **business** enterprise sector

Promote **inter-sectoral mobility** with **government** and private not-for-profit sectors

Reconfigure and support careers in **academic research**

Support international **mobility**





## Policy toolkit

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Promote the engagement and interaction of institutions and funders with employers outside academia

Survey employers

Organise events with employers outside academia (e.g. recruitment fairs, company visits)

Explicitly engage and interact with employers outside academia



## Policy toolkit

Provide doctoral and postdoctoral researchers with experience and skills for diverse careers within and beyond academia

Fund and organise collaborative doctorates

Offer skills training programmes

Develop mentoring programmes

Offer placements in other academic institutions and beyond academia

Involve doctoral and postdoctoral researchers and their supervisors in collaborative projects



## Policy toolkit

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Render more visible  
and encourage  
valorization of diverse  
career options within  
and beyond academia

Quantitative and qualitative tracking of  
careers in all sectors

Analyse and publish data

Publish information on career trajectories on  
institutional websites.



## Policy toolkit

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Offer career development and guidance on career options for researchers

Offer personal career development plans and programmes

Support career offices to offer guidance on career options and employment opportunities



## Policy toolkit

Promote inter-  
sectoral mobility with  
the business  
enterprise sector

Fund doctoral and postdoctoral researchers in enterprises

Fund placements in enterprises, and researchers from enterprises in academia

Support and facilitate the transition to start-ups, spin-offs, and own companies through, e.g. science parks

Tax instruments to encourage business enterprise to employ doctorate holders as researchers

Recognise professional experience outside academia in academic recruitment and promotion

Address the portability of pension rights between different sectors



## Policy toolkit

Promote inter-  
sectoral mobility with  
government and  
private not-for-profit  
sectors

Fund doctoral and postdoctoral researchers in national, regional and local government, and in social sector organisations

Fund placements in the public and social sectors, and for researchers from the public and social sectors in academia

Recognise professional experience outside academia in recruitment and promotion processes

Address the portability of pension rights between different sectors



## Policy toolkit

Reconfigure and support careers in academic research

National forums to discuss the working conditions, rewards and recognition, and career paths of academic researchers

Common principles regarding academic research careers via a concordat or national framework

Institutions implement initiatives to support inclusion, diversity and equity in academic research

Promote changes to academic culture, evaluation systems, incentives and rewards, to value different career paths within academia as well as experience outside academia



## Policy toolkit

### Support international mobility

Support outgoing and incoming researchers to facilitate international mobility and a fluid global labour market

Regulatory arrangements to facilitate integration of returning and foreign researchers, remove existing barriers

Institutions support the integration of foreign researchers and ensure a level playing-field with national researchers

Address the portability of pension rights across countries





## Need for systemic changes to the academic system

- Universities and research providers/ employers are the central actors
- Policy mandates and incentives (measures and indicators) shape institutional behaviour
- Funding and funder actions are an important influence
- Need systematically collected data on all research staff and their career trajectories to inform policy (policy experimentation, monitoring and adaptation).
- All actors need to work together.



# Multi-level governance



## Policy levels

### Legal and regulatory regimes

- Science policy legislation
- Employment law
- Equal opportunities legislation
- Career statutes

### Financial incentives

- Funding of research organisations
- Funding of individual and team projects

### Informational mechanisms

- Collection, analysis and publication of information on researchers and research careers

### Organisational levels

- Research councils
- Observatories
- National coordination bodies



## Main takeaways

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Not all doctorate holders will have an academic career, and it may not be appropriate to create more academic positions.

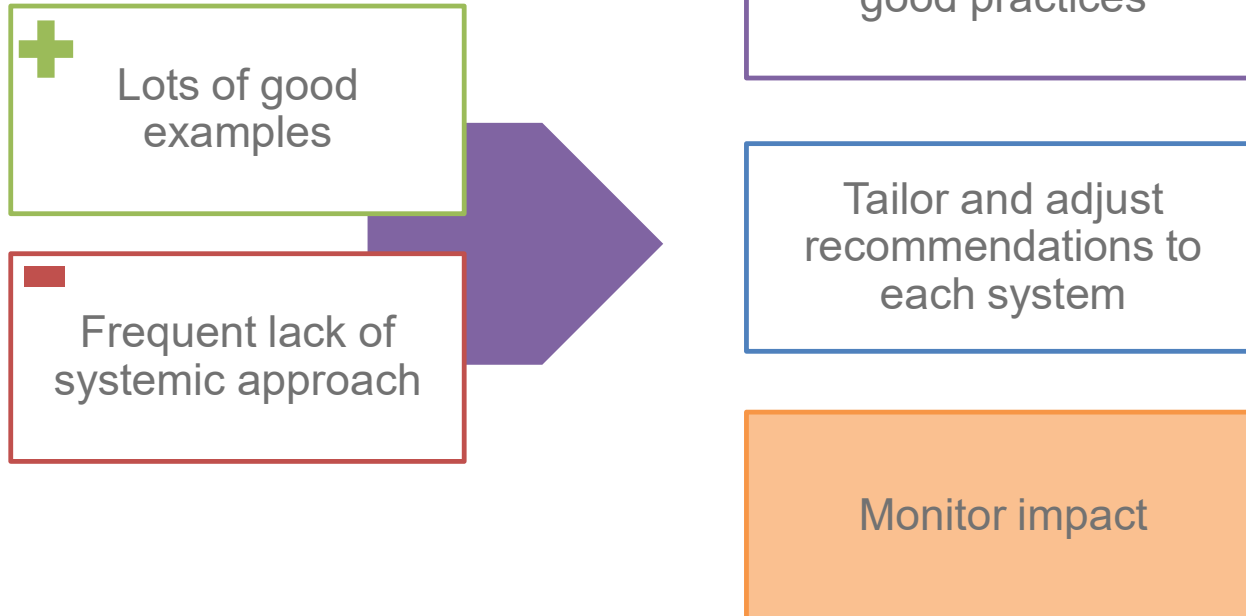
Doctoral and postdoctoral researchers should have a positive and productive experience; and continue to contribute to society within and beyond academia.

The doctorate should prepare for different paths that will address societal challenges and bring evidence-based decision-making to all sectors of economic activity.

We need to ensure that the most talented minds continue to be attracted to advanced scientific training.



## Moving forward





## Follow-up project

### Equity, diversity and inclusion in research careers

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Certain groups don't even consider doing a PhD.

Need for talented people across society to strengthen the future of science.

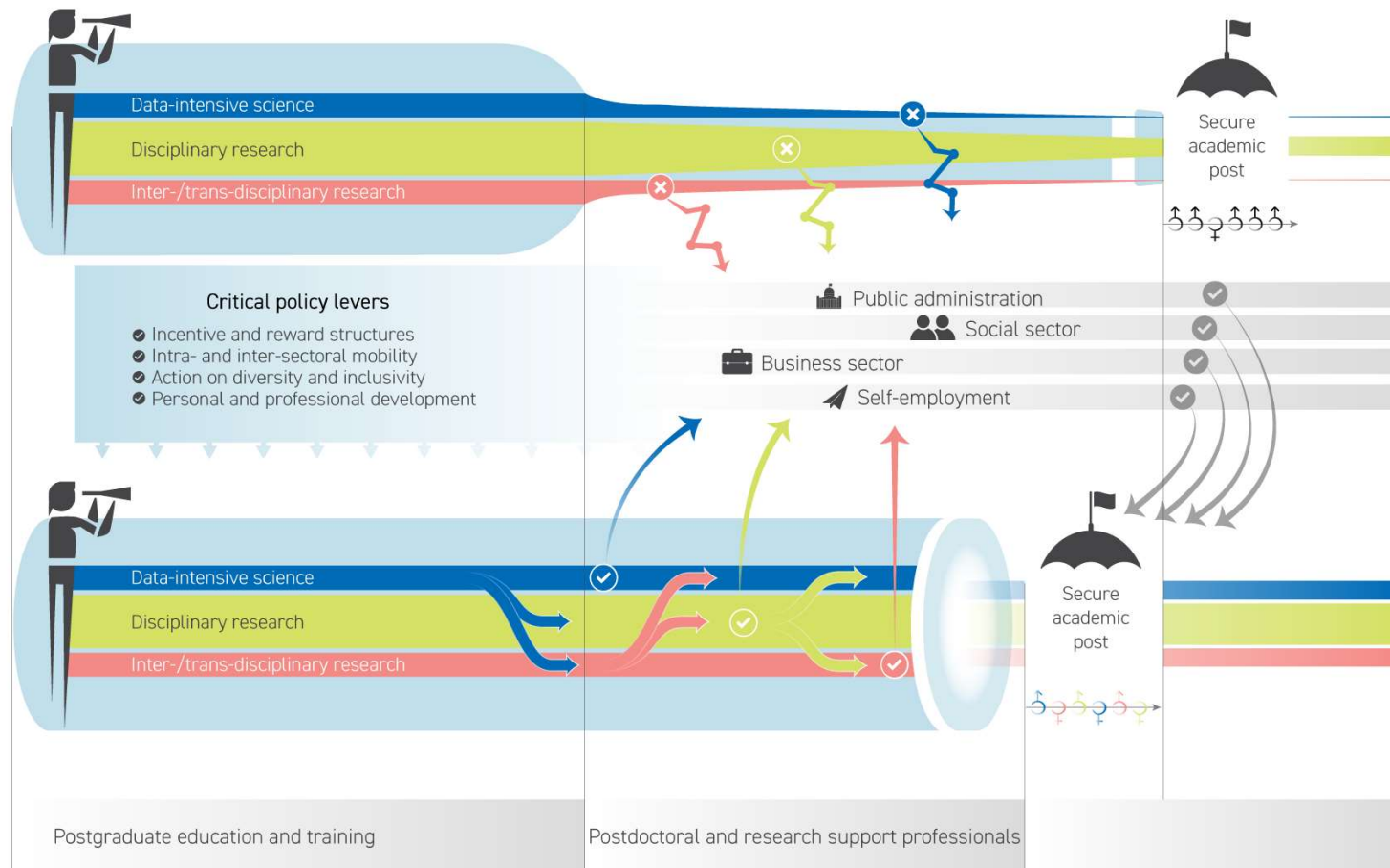
Doctorate holders and researchers are still an exclusive group.

Importance of people with advanced training in science to bring different backgrounds and perspectives to academia and society.



# Converging challenges – relieving the bottleneck

OECD (2021), "Challenges and new demands on the academic research workforce", in OECD Science, Technology and Innovation Outlook 2021: Times of Crisis and Opportunity, OECD Publishing, Paris, <https://doi.org/10.1787/72f6f879-en>.





# TOWARDS A RESEARCH AND INNOVATION CAREERS OBSERVATORY - REICO



## Rationale and objectives for ReICO

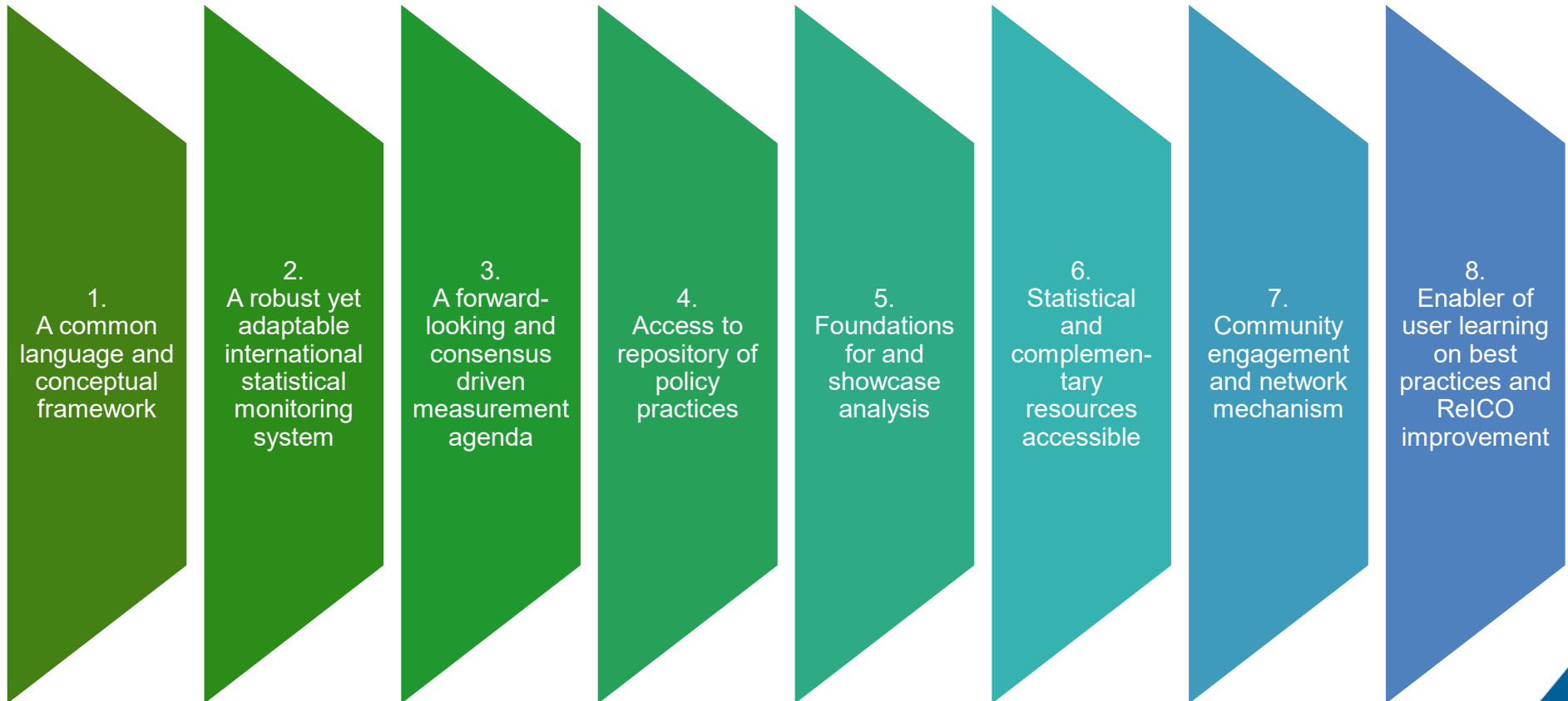
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- **Talented people** with advanced scientific and technical competences are **key to the future of STI**.
- **Understanding how this talent is nurtured and deployed** is critical for policy makers across all policy domains.
- “R&I careers” is back on **top of the policy agenda**.
- **However**, strategic policy action is still significantly hampered by the lack of systematic reliable evidence.
- **ReICO** will bring together a comprehensive and shared body of **statistics and analysis** of the key facts of **R&I careers**.



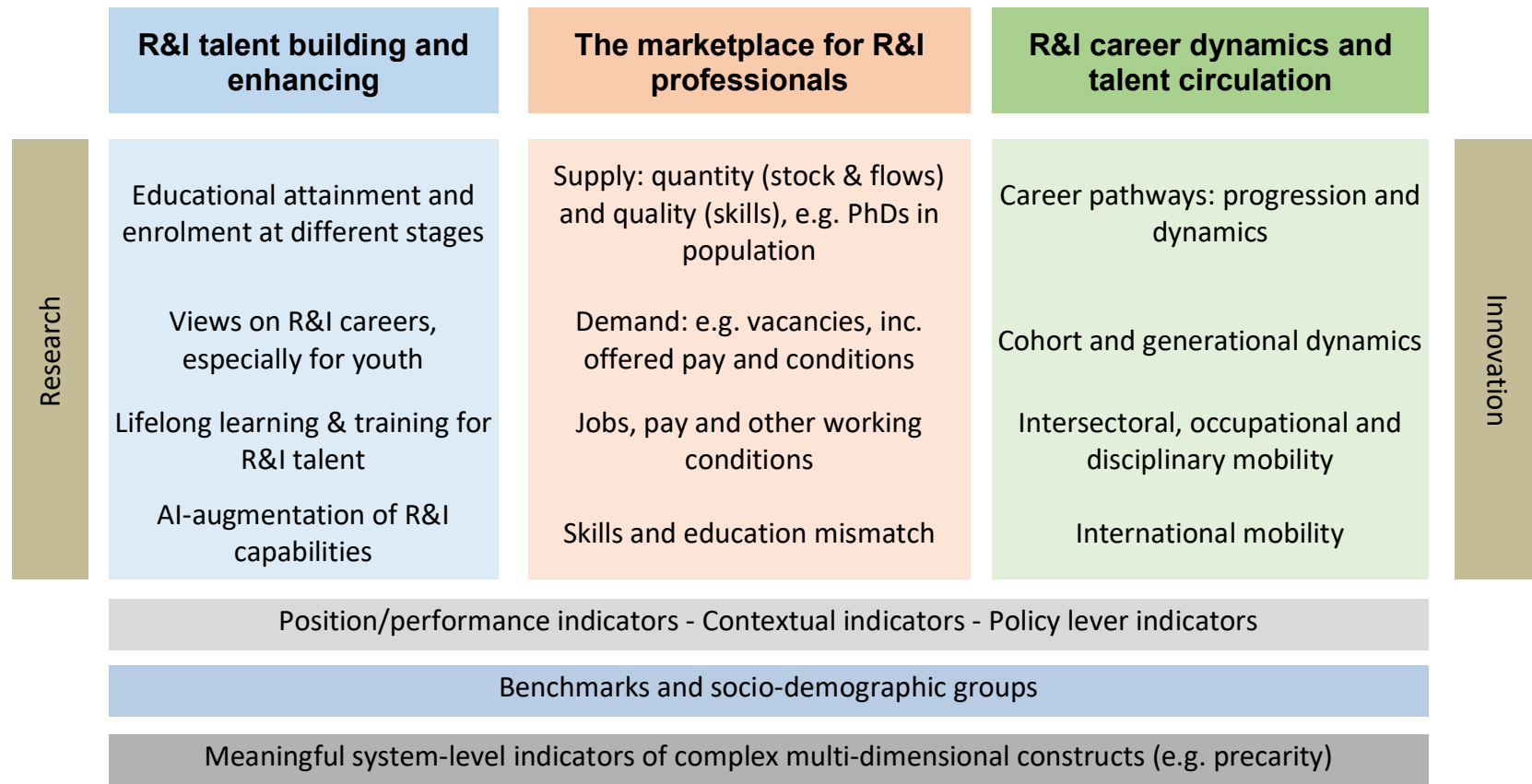


## Components of the proposed vision for ReICO





# Conceptual framework for monitoring R&I careers





*Let's discuss!*

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