The Ukrainian academic ecosystem: Universities and the National Academy of Sciences
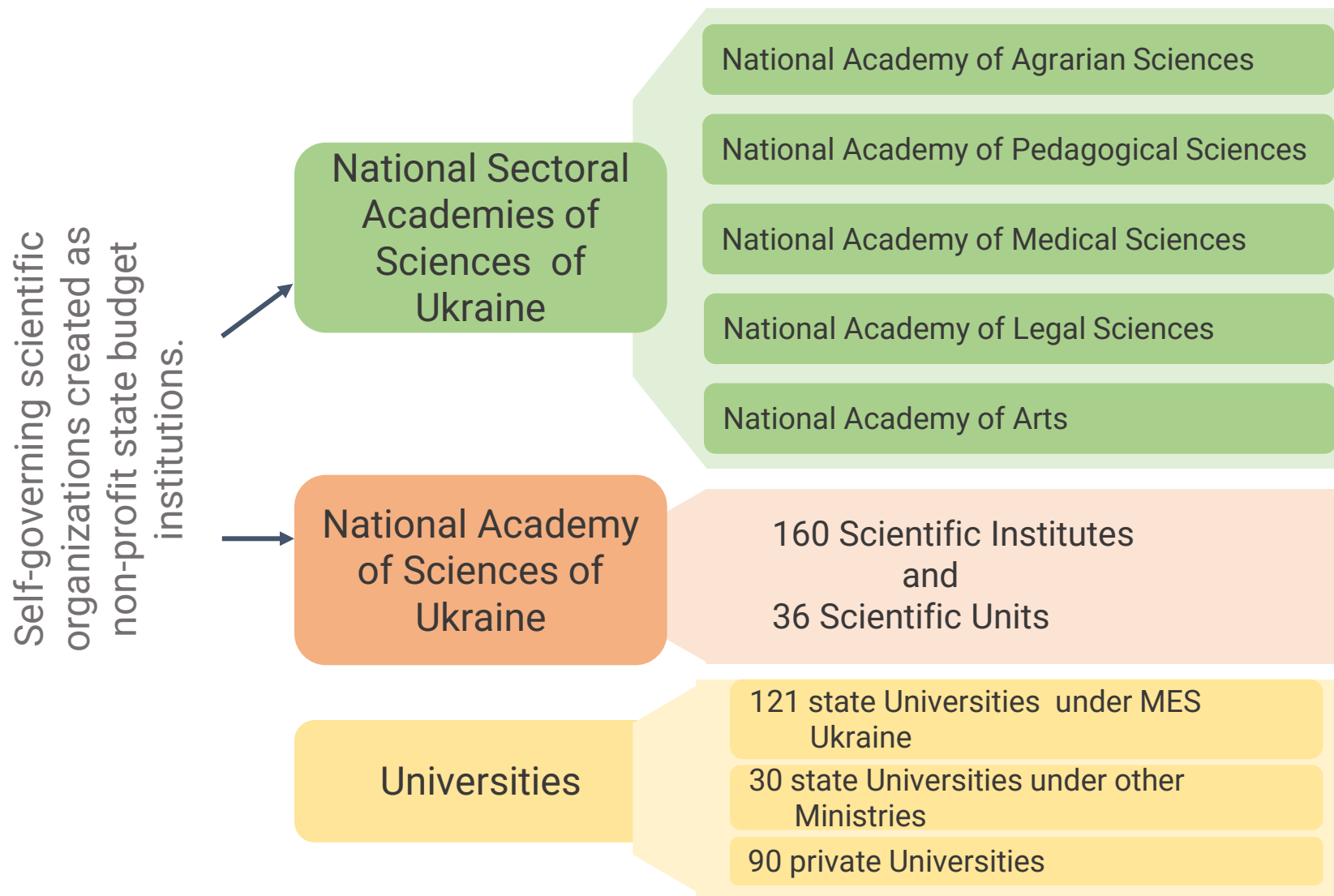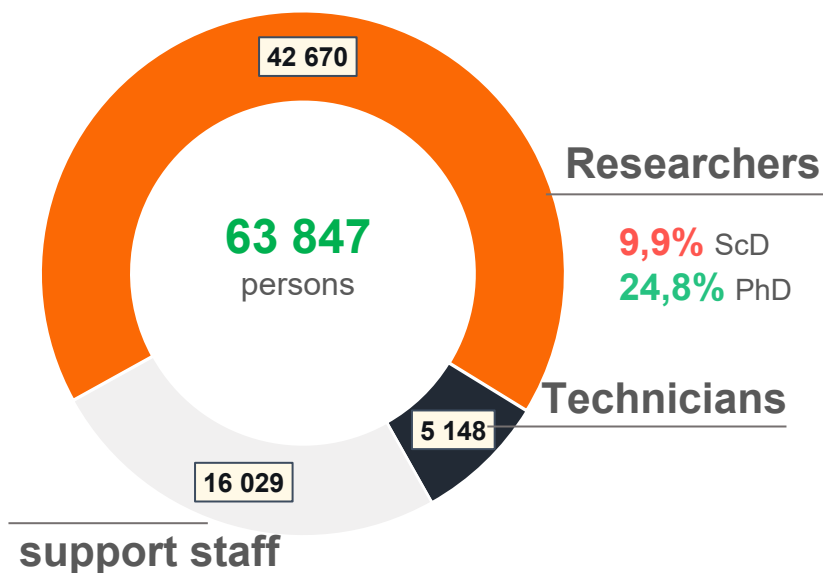
Ganna TOLSTANOVA, PhD, Dr.Sc
Vice-rector for research TSNUK
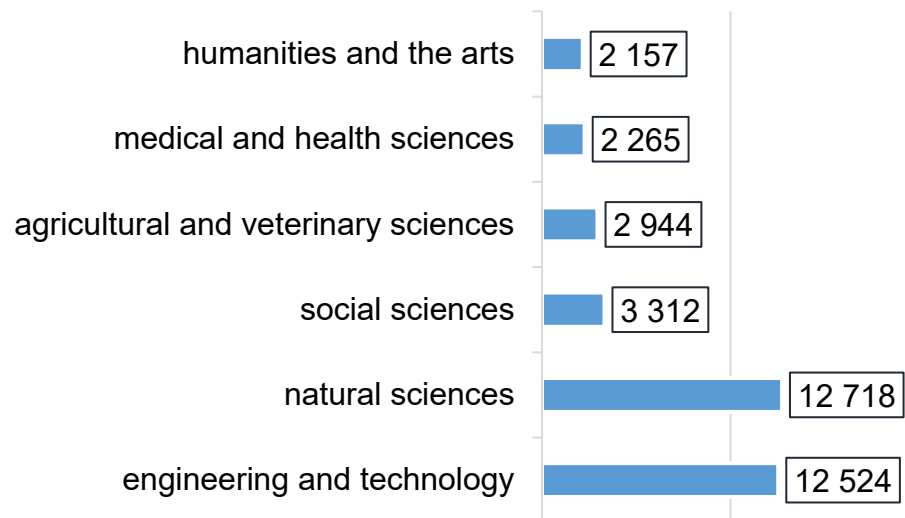
Research Ecosystem of Ukraine

Self-governing scientific organizations created as non-profit state budget institutions.

National Sectoral Academies of Sciences of Ukraine

- National Academy of Agrarian Sciences
- National Academy of Pedagogical Sciences
- National Academy of Medical Sciences
- National Academy of Legal Sciences
- National Academy of Arts

National Academy of Sciences of Ukraine

160 Scientific Institutes
and
36 Scientific Units

Universities

- 121 state Universities under MES Ukraine
- 30 state Universities under other Ministries
- 90 private Universities

Statistical Data on Researchers Infrastructure of Ukraine (2024)

Number of R&D staff

42 670

Researchers

63 847
persons

9,9% ScD
24,8% PhD

Technicians

5 148

16 029

support staff

Number of R&D staff by field of science (full time research)

Field	Number
humanities and the arts	2 157
medical and health sciences	2 265
agricultural and veterinary sciences	2 944
social sciences	3 312
natural sciences	12 718
engineering and technology	12 524

Before War (2020) – 78 860 persons

Researchers (full-time) distribution by regions of Ukraine (2024)

122
100
21 315 city Kyiv
141
271 Sumy region
365 Zhytomyr region
788
Kyiv region
408 Poltava region
4663 Kharkiv region
1583 Lviv region
345
Ternopil region
165
246
2620 Dnipropetrovsk region
59
173
Vinnytsia region
209
Zakarpattia region
184
486 Mykolayiv region
45
956
Odesa region

Before War (2020)
39 484 - city Kyiv
11 637 - Kharkiv region
7 679 - Dnipropetrovsk region
1 148 - Sumy region

На платформе Bing
© ...

Early career researcher according Ukrainian Law

Doctor of sciences (early career researcher) - ambitions, energy for career growth and the formation of scientific direction

under 40 y.o.

Postdoc– crossroads (financial issues, starting a family)

PhD student – there is a defense (one dominant), psychological pressure – uncertainty

Master's degree – open roads

under 35 y.o.

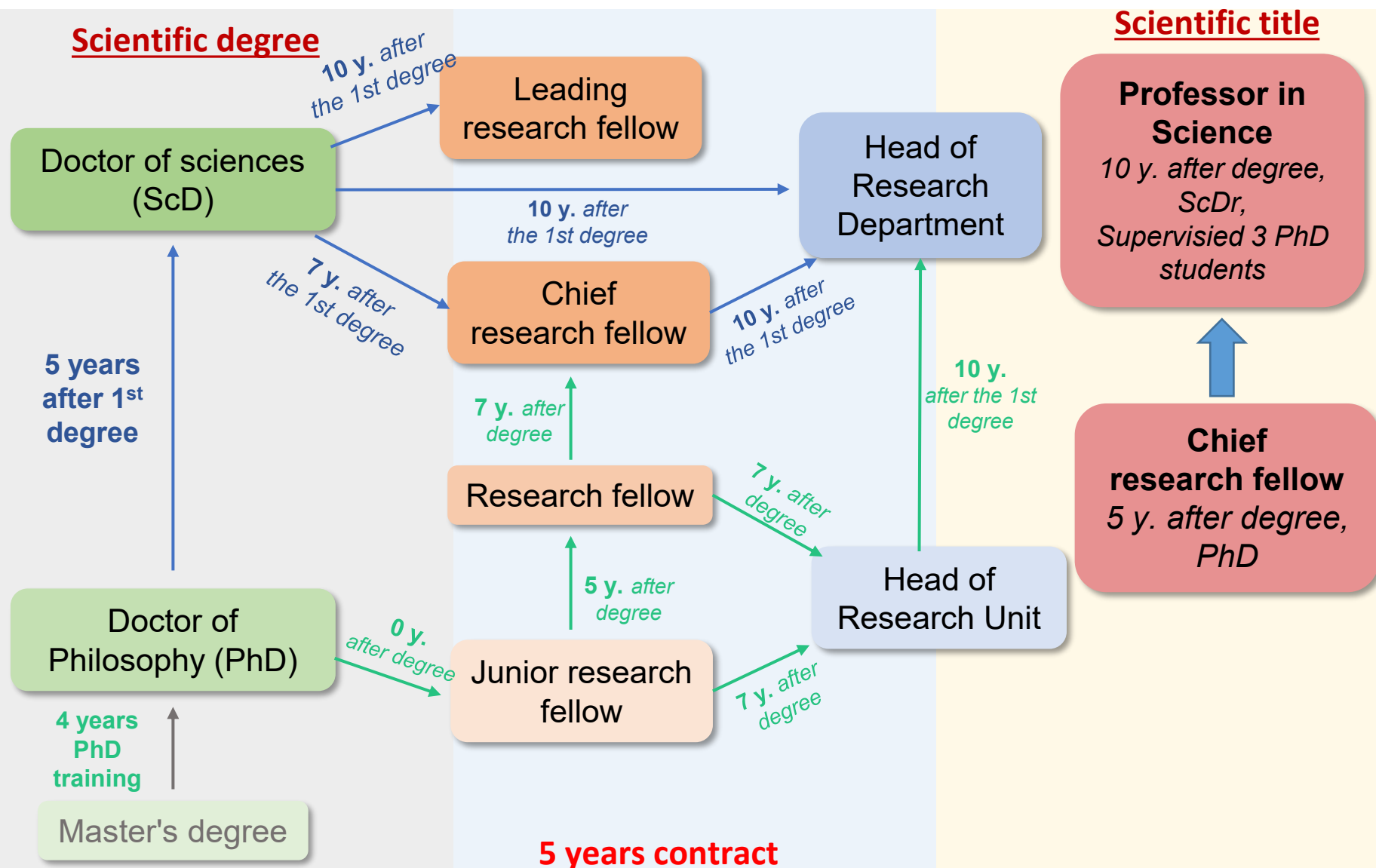КНУ ім Тараса Шевченка

53 430 **PhD students**

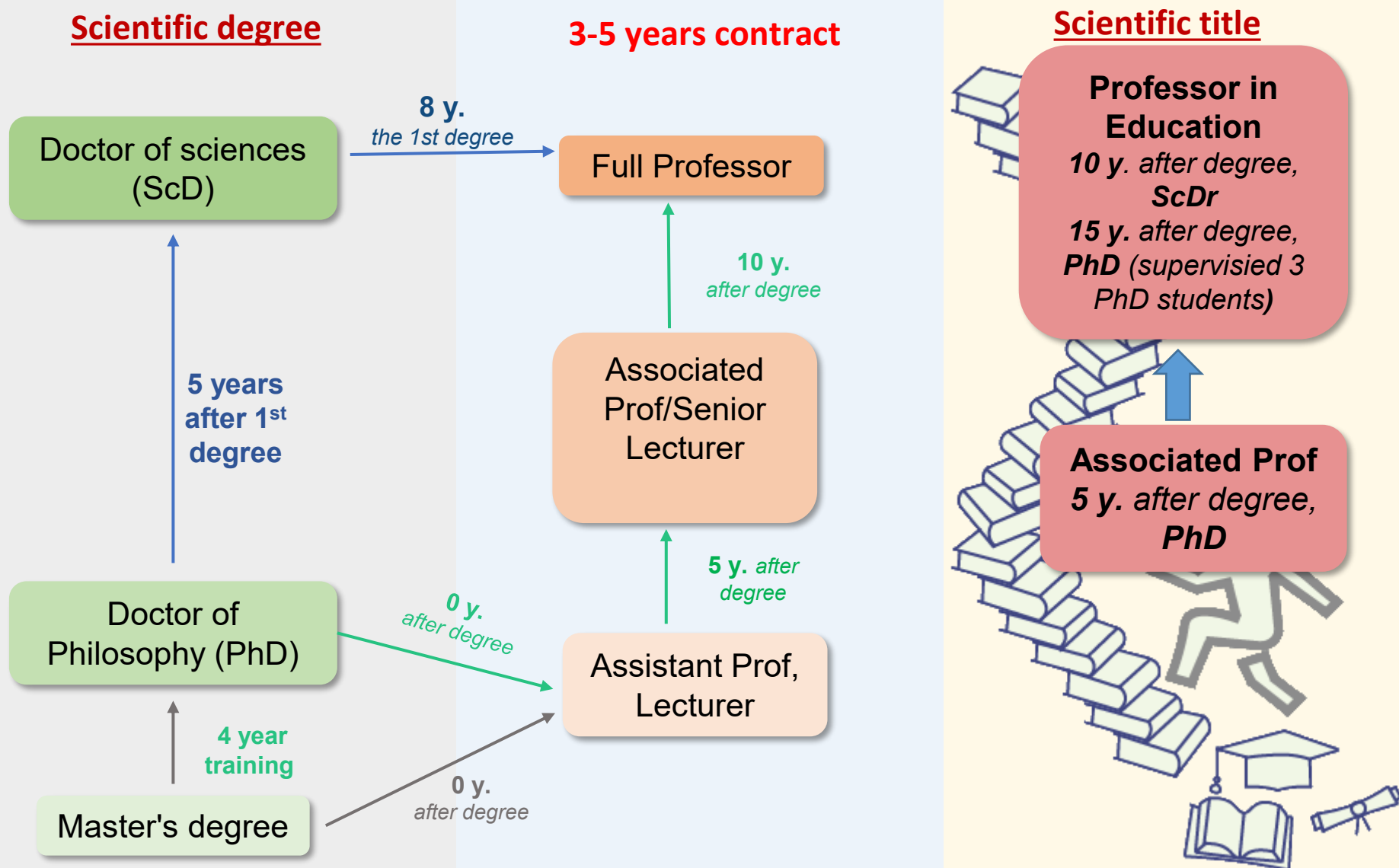**1410** **PhD students** (2,6%)

400 institutions have PhD programs:
-215 universities - 49,830 PhD students (93%)
-185 research institutes - 3,600 PhD students (7 %)

• *Annual report of the National Agency for Higher Education Quality Assurance. URL: https://naqa.gov.ua/wp-content/uploads/2022/02/%D0%97%D0%B2%D1%96%D1%82-2021.pdf*
• *Report on the work of postgraduate studies (2021) of Taras Shevchenko National University of Kyiv. Section I. Number of postgraduates, admission and graduation*
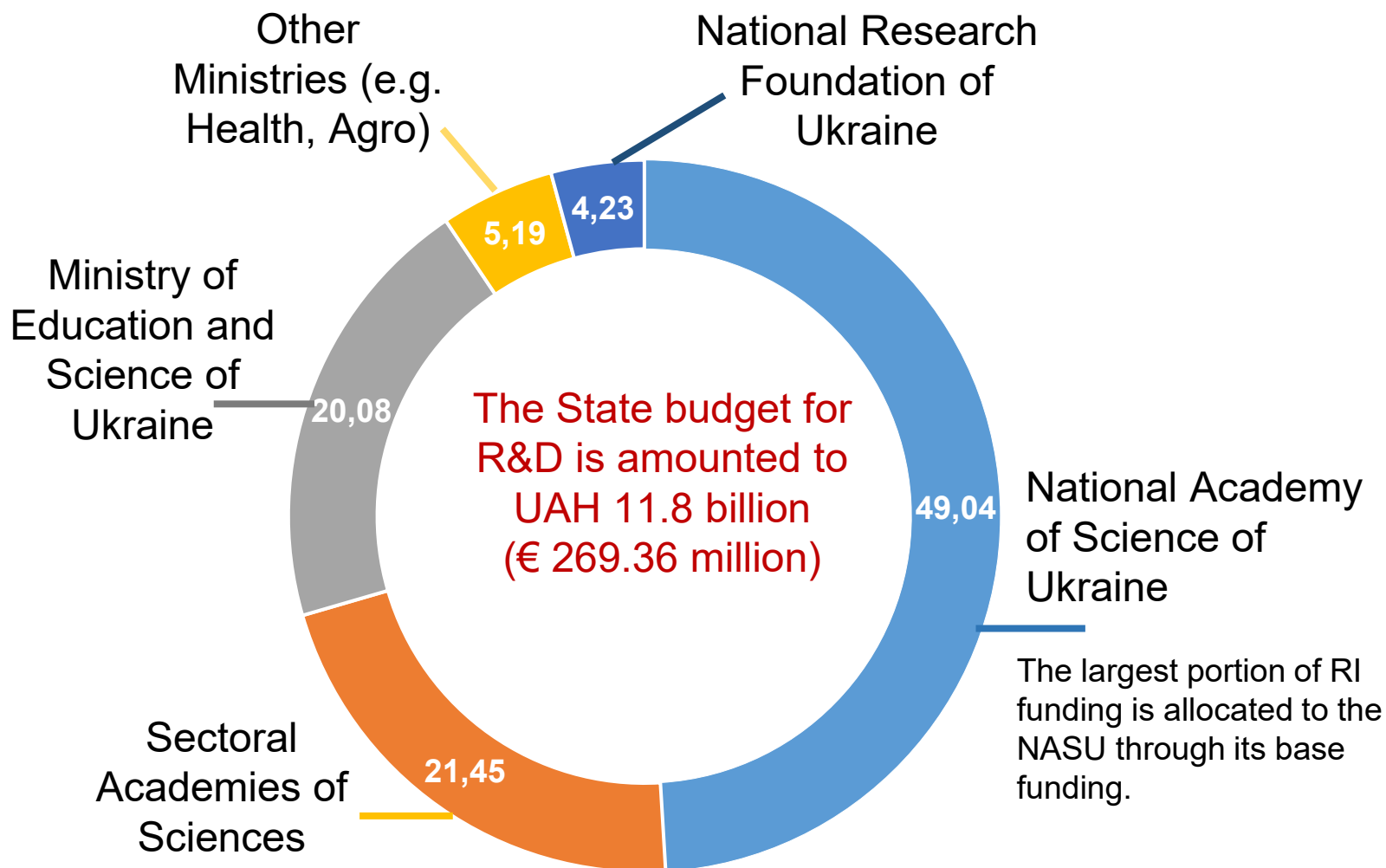
Academic career – Research track

Scientific degree

Scientific title

10 y. *after the 1st degree*

Leading research fellow

Doctor of sciences (ScD)

10 y. *after the 1st degree*

Head of Research Department

Professor in Science
10 y. after degree, ScDr, Supervisied 3 PhD students

7 y. *after the 1st degree*

Chief research fellow

10 y. *after the 1st degree*

5 years after 1st degree

7 y. *after degree*

10 y. *after the 1st degree*

Research fellow

7 y. *after degree*

Chief research fellow
5 y. after degree, PhD

5 y. *after degree*

Head of Research Unit

Doctor of Philosophy (PhD)

0 y. *after degree*

Junior research fellow

7 y. *after degree*

4 years PhD training

Master's degree

7 y. *after degree*

5 years contract

Academic career - Professorship in Universities

Scientific degree

3-5 years contract

Scientific title

Doctor of sciences (ScD)

8 y.
the 1st degree

Full Professor

Professor in Education
10 y. after degree, ScDr
15 y. after degree, PhD (supervisied 3 PhD students)

5 years after 1st degree

10 y.
after degree

Associated Prof/Senior Lecturer

Associated Prof
5 y. after degree, PhD

Doctor of Philosophy (PhD)

0 y.
after degree

5 y. *after degree*

Assistant Prof, Lecturer

4 year training

0 y.
after degree

Master's degree

The distribution of expenditure on R&D in Ukraine (2023)

Other Ministries (e.g. Health, Agro)

National Research Foundation of Ukraine

4,23

5,19

Ministry of Education and Science of Ukraine

20,08

The State budget for R&D is amounted to UAH 11.8 billion (€ 269.36 million)

49,04

National Academy of Science of Ukraine

The largest portion of RI funding is allocated to the NASU through its base funding.

Sectoral Academies of Sciences

21,45

R&D Funding streams in Ukraine

https://op.europa.eu/en/publication-detail/-/publication/2cd5cc93-2faa-11f0-8a44-01aa75ed71a1/language-en
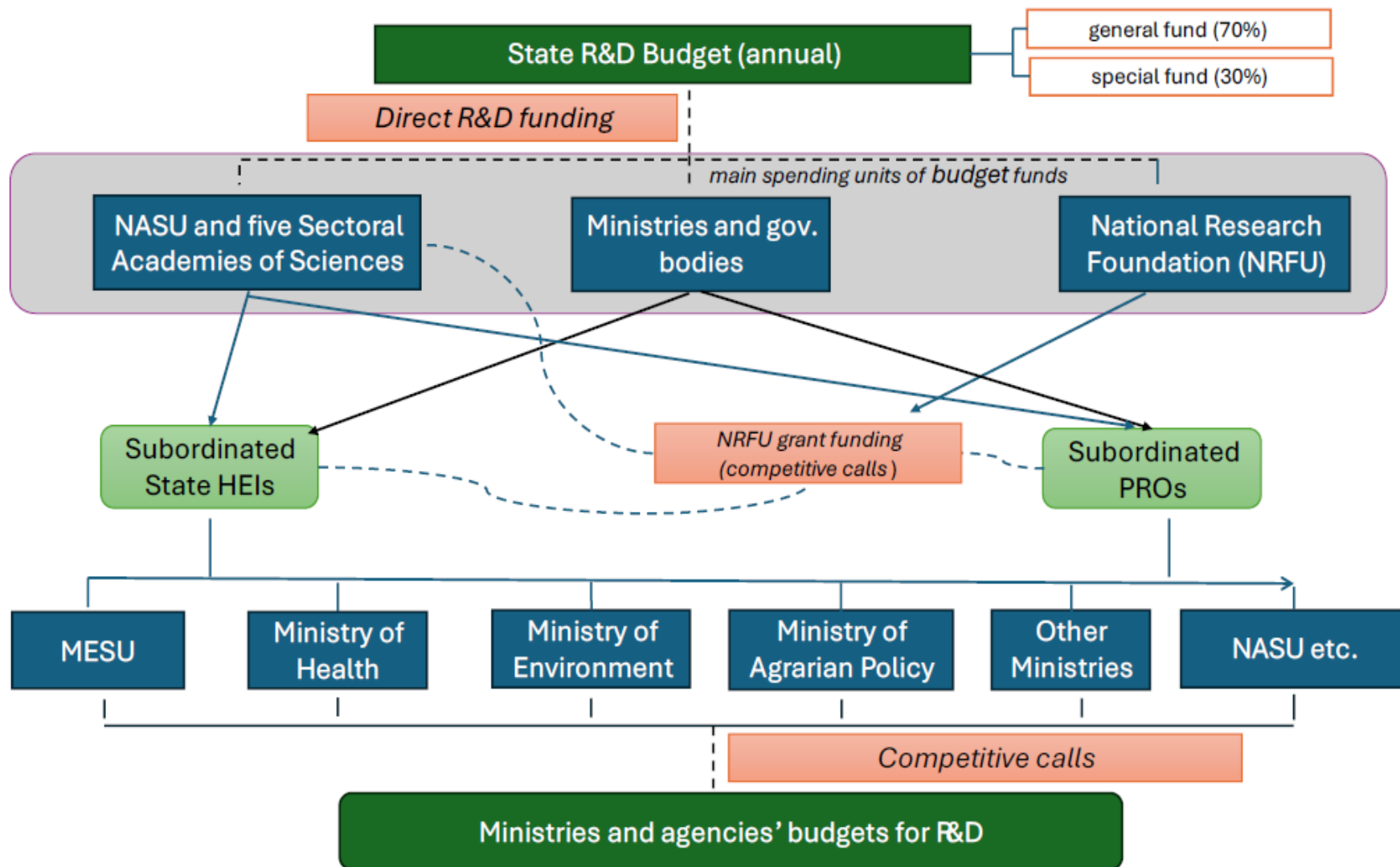
Funding scheme by Ministry of Education and Science of Ukraine (peer-review)

- Fundamental R&D
- Applied R&D
- Annual
- UAH 1,2M
- 3 yrs. grant
- 30% teams out of MESU system

Grants for scientists who work in HEIs subordinated by the MESU

Bilateral projects (mostly EU)

- Poland-Ukraine
- Austria Ukraine
- Litva –Ukraine
- China – Ukraine etc

  2 yrs. grant

Projects funded to fulfill Ukraine's obligations under the EU FP "Horizon 2020"

R&D under the State order

- Research grants
- Innovation infrastructure
- Research Infrastructure

Applied TRL 5-6
- Annual
- 2 yrs. grant
- Consortium
- UAH 10M

Funding scheme by National Foundation of Fundamental Research (since 2020) (peer-review)

NATIONAL RESEARCH FOUNDATION OF UKRAINE

Blue sky research grant

- Fundamental R&D
- Annual
- 3 yrs. grant
- UAH 7M
- 30% ECRs

International partnership Initiatives (since war started)

- NWO-NRFU Partnership Initiative (2023)
- Swiss Foundation of Research – NRFU (2024)
- Cambridge - NRFU)22. Individual grants

Science for security and & defense capabilities of Ukraine grant

- Annual
- 2-3 yrs.
- UAH 2M/yr.

Research infrastructures for advanced scientific research grant (2024)

- Development of new RI for EU integration
- 3 yrs.
- UAH 30M

Group grants for Early Carrier Researchers

- **Grants for young scientists who work (study) in HEIs subordinated by the MESU (since 2016)**

- for teams of ECRs (no more than 7 people);
- 30% of team might be out of MESU system
- competitive basis, the grant amount does not exceed 800k UAH;
- 3 years;

Grants of the NASU to research laboratories / groups of young scientists of the NASU to conduct research in priority areas of science and technology (since 2018)

- for teams of ECRs from NASU (no more than 5 people);
- competitive basis, the grant amount does not exceed 1 million UAH;
- 2 years;

Individual Support Grants for Early Carrier Researchers

**Postdoctoral research program
at the NASU
(since 2021)**

•- 30 Senior Researcher positions in scientific institutions of the NAS of Ukraine;
•- 2 years;
•- up to 35 years of age, and not more than 5 years from the dissertation defense date;
- for Ukrainian citizens;

NATIONAL RESEARCH FOUNDATION OF UKRAINE

The grants of the President of Ukraine to young scientists and doctors of sciences for research projects

 (since 2024)

- For PhD – under 35 y.o

- For ScDr – under 40 y.o

 - Who are working in Ukraine

 - 1 year grant

International projects opportunities

HORIZON EUROPE
Office in Ukraine

Horizon Europe Office was established in 2023
36 representatives of Ukraine to the PC are selected

✓ *Ukraine is an associate member of the Horizon Europe RP;*
✓ *Ukrainian organizations can participate in the preparation and implementation of projects on the same basis as EU organizations.*

Львів (3)
Житомир (1)
Іванків (1)
Київ (7)
Суми (1)
Переяслав (1)
Харків (4)
Івано-Франківськ (2)
Дніпро (1)
Чернівці (1)
Запоріжжя (1)
Одеса (1)
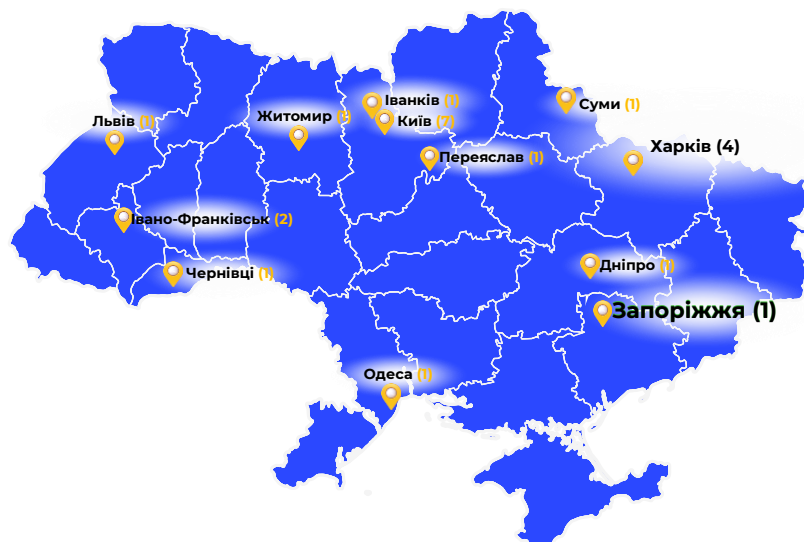
22 National contact point in 10 regions of Ukraine

https://horizon-europe.org.ua/uk/heo-in-ua/

The general statistics on the participation of Ukrainian organizations in joint projects under Horizon Europe (July 01, 2024)

✓ The average success rate of Ukraine is 17% (all participating countries is 17.19%).

✓ Ukraine ranks 7th out of 18 associated countries in terms of the amount of funding received.

✓ Ukraine ranks 6th among associated countries in terms of the number of participants

Others   *Public Sector*

12,1   6,3

Universities

29,8

Private Companies

34,8

17

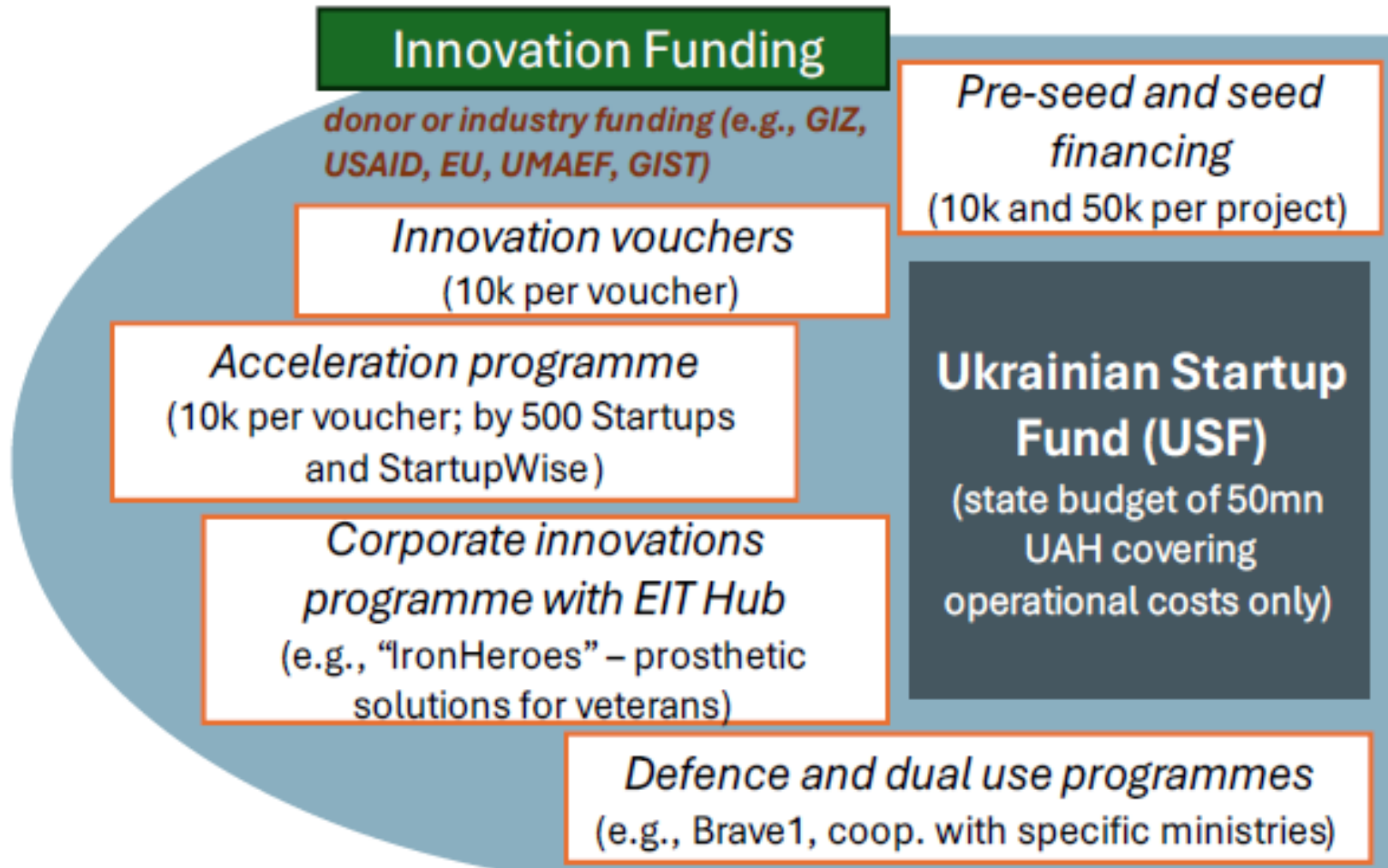*National Academy of Science of Ukraine*
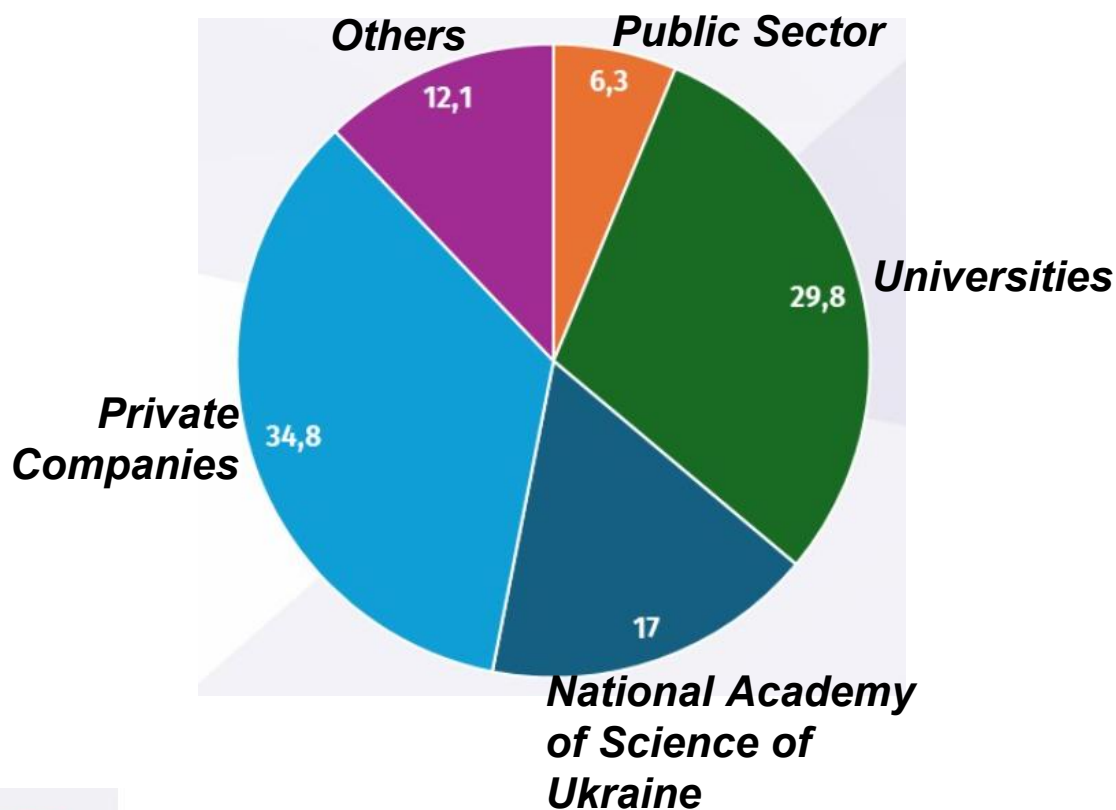
The Interactive map on the key stakeholders of the Ukrainian and European Innovation Ecosystem
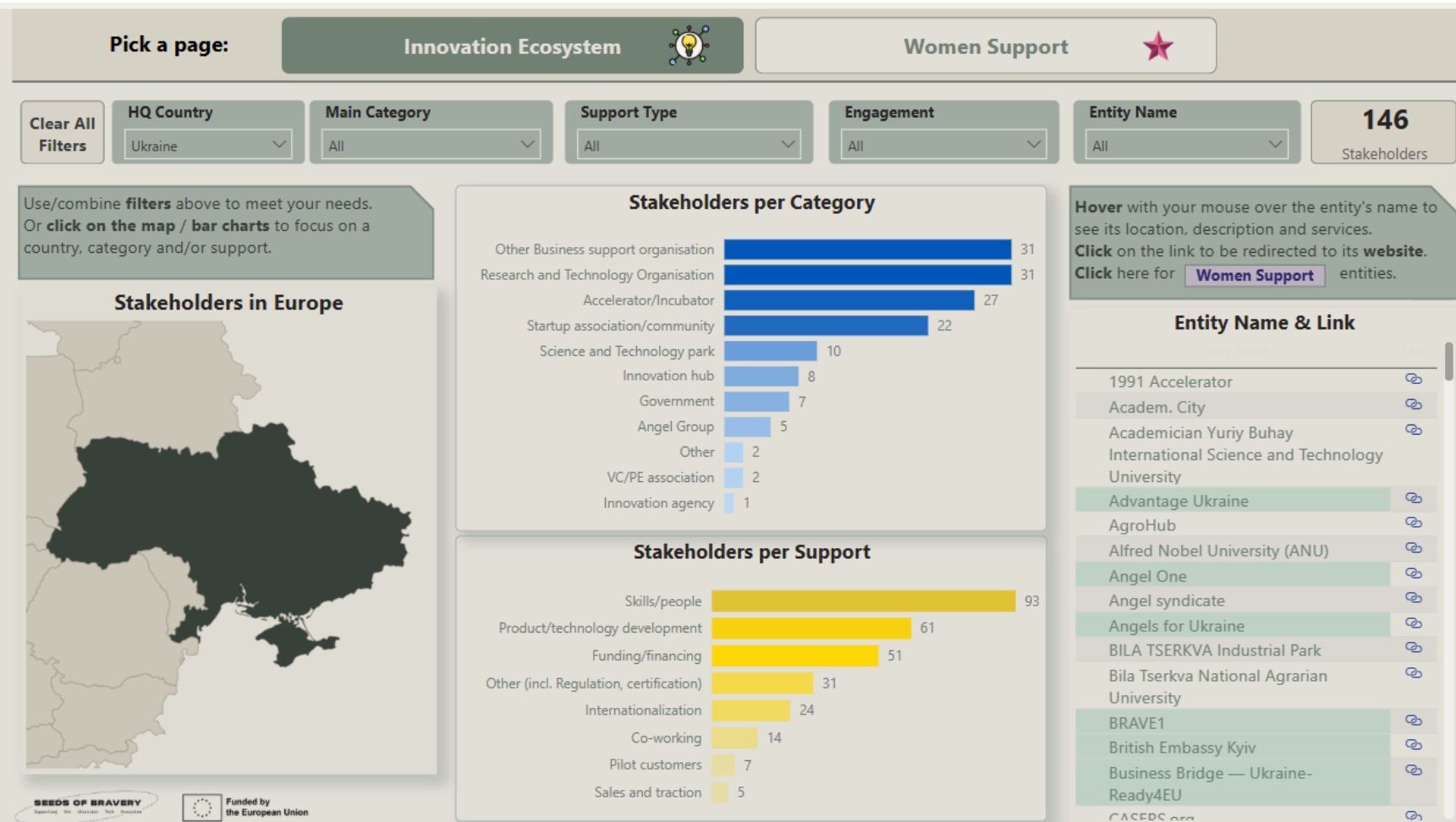
The mapping was implemented under the 'Seeds of Bravery' project with support by MESU, the Ministry of Digital Transformation of Ukraine, the Ukrainian Startup Fund, and the Diia.City project office.
See: https://seedsofbravery.eu/innovation-ecosystem/

18

Innovation funding is a separate source and comes from the Ministry of Economy and the Ministry of Digital Transformation

Innovation Funding

donor or industry funding (e.g., GIZ, USAID, EU, UMAEF, GIST)

Innovation vouchers
(10k per voucher)

Pre-seed and seed financing
(10k and 50k per project)

Acceleration programme
(10k per voucher; by 500 Startups and StartupWise)

Ukrainian Startup Fund (USF)
(state budget of 50mn UAH covering operational costs only)

Corporate innovations programme with EIT Hub
(e.g., "IronHeroes" – prosthetic solutions for veterans)

Defence and dual use programmes
(e.g., Brave1, coop. with specific ministries)

Conclusions

Support to Ukraine on Research Infrastructures Policy

Final report

PSF COUNTRY

HORIZON EUROPE
POLICY SUPPORT FACILITY

Independent
Expert
Report

https://op.europa.eu/en/publication-detail/-/publication/2cd5cc93-2faa-11f0-8a44-01aa75ed71a1/language-en

Ganna TOLSTANOVA, PhD, Dr.Sc
Vice-rector for research TSNUK

☎ **+38 044 239-32-40**

✉ **ganna.tolstanova@knu.ua**

in **www.linkedin.com/in/ganna-tolstanova**

🌐 **knu.ua/en/geninf/adm/Tolstanova**

Taras Shevchenko National University of Kyiv, 2023