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LIMITE

RECH

WORKING PAPER

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**MEETING DOCUMENT**

<table>
<thead>
<tr>
<th>From:</th>
<th>General Secretariat of the Council</th>
</tr>
</thead>
<tbody>
<tr>
<td>To:</td>
<td>Working Party on Research</td>
</tr>
<tr>
<td>Subject:</td>
<td>Research and Innovation in Estonia - Powerpoint presentation by the Estonian Presidency of the Council of the EU</td>
</tr>
</tbody>
</table>

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Estonian specific characteristics

Small country – population 1,3 M
- Still having its own language based culture and higher education
- R&D needs to balance between specialisation and cultural/educational coverage

Strong education
- OECD PISA 2015: Estonia's basic school students rank among the best in the world while being at the top in Europe.
- The share of graduates in the fields of natural and technical sciences is 27% (one of the highest in OECD).

Dynamic economy
- Unfavoured starting point, but catching up.
- Number of startups and seed stage investments per capita are one of the best in Europe

Lean government
- Very simple tax structure (incl. no tax incentives for R&D)
- Easy to start a company, easy to declare taxes (e-services)

e-Estonia – Digital Society
- First e-ballots in the world (parliamentary election – 24% votes)
- First e-residency in the world (22 300 e-residents → 2000 new companies established)
Estonian RDI system

PARLIAMENT

FORESIGHT CENTRE

GOVERNMENT

RESEARCH AND DEVELOPMENT COUNCIL

RESEARCH POLICY COMMITTEE

MINISTRY OF EDUCATION AND RESEARCH

OTHER MINISTRIES

MINISTRY OF ECONOMIC AFFAIRS AND COMMUNICATIONS

INNOVATION POLICY COMMITTEE

ARCHIMEDES FOUNDATION

ESTONIAN RESEARCH COUNCIL

ENTERPRISE ESTONIA

ESTONIAN ACADEMY OF SCIENCES

UNIVERSITIES and PUBLIC R&D INSTITUTIONS

PRIVATE R&D INSTITUTIONS and COMPANIES
Research institutions in Estonia

- 6 Public Universities, including:
  
  University of Tartu
  - Among the top 2% of world's best universities
  - #314 in the QS World University Rankings 2018
  - #6 in the QS University Rankings: Emerging Europe and Central Asia (EECA).
  - #301-350 in the Times Higher Education (THE) World University Rankings 2018

  Tallinn University of Technology
  - #601-650 in the QS World University Rankings 2018
  - #33 in the QS University Rankings: Emerging Europe and Central Asia (EECA).
  - #601-800 in the Times Higher Education (THE) World University Rankings 2018

- 8 Public Research Institutes

- 6 Technology Competence Centres
Building of Research Excellence has been a long process

- 1990 - Estonian Science Foundation created - the first Western-style funding agency in the Central and Eastern Europe.  
   *Nature* | Vol 461 | 1 October 2009

- 1991 – Start of competitive funding - Estonian Science Foundation grants (started from 4.6% and reached to 31.4% of R&D funding in 1996)


- 1994 – Legislation. Reorganisation of the Academy of Sciences. Most institutes were merged with universities or became state-owned research institutes


- Since 2005 – Institutional baseline funding (fully performance-based)


- Since 2007 – Support for human resources, mobility, infrastructure, internationalisation

- The share of competitive funding in Estonia is one of the highest in EU and OECD countries (80-90% is competitive)

**Basic elements:** Quality; International evaluation and peer-review; competitive and performance-based funding; institutional and legislative reforms
R&D expenditure and intensity 2005-2015
Source: Statistics Estonia


Internationalisation in research and higher education

**Share of foreign researchers in Estonian public R&D institutions.** Source: Statistics Estonia

- **2016**
  - Researchers: **5063**
  - Foreign researchers: **402**
  - Total: **57 countries**
  - **TOP 5:** DE, RU, IT, FI, LV

**Share of foreign students**
Source: Ministry of Education and Research

- **2016/2017**
  - Students total: **47 794**
  - Foreign students: **3 917**
  - Total: **122 countries**
  - **TOP 5:** FI, RU, LV, CN, UA
The share of publications reaching the top 10% of the most cited articles. Source: OECD and SCImago Research Group (CSIC) (2016)

Strongest research fields in Estonia:
- Clinical Medicine
- Environment/Ecology
- Plant & Animal Science
- Molecular Biology & Genetics
- Physics

Source: Web of Science, Essential Science Indicators, calculations by prof Jüri Allik.

“Small but strong. Estonia, with only 1.3 million people, punches above its weight in science”. NATURE | Vol 522 | 18 June 2015
Estonian participation in Horizon2020

http://h2020viz.vinnova.se/#/country?countryNames=%5B%22Estonia%22%5D
EE participation:
- 114 Organizations
- 216 Projects
- 64 Collaborating countries
- 30% SME participation

Estonian success rates:
- Applications: EE=12,7% EU28=14,4%
- Financial contribution: EE=8,7% EU28=13,3%

PRIORITIES
1. Excellence and diversity
2. Increasing socio-economic impact of R&D
3. Changing the economic structure through Smart Specialisation
4. International cooperation

*Smart Specialisation areas:*
- **ICT**
  horizontally through other sectors
- **Healthcare**
  Biotechnology
  E-health
- **Resource valorisation**
  Chemical industry (shale oil)
  Innovative construction (wood)
  Functional food
  Innovative materials
International evaluation of research institutions 2017
Preliminary conclusions

- Estonian research is internationally **competitive**
- Estonian research is **oriented to the future**
- Estonian research **serves society** in many different ways
- Research **infrastructure** is at very good international level
- Main bottleneck in the Estonian Research System is the **instability of financing** and dependence on EU structural funds
- Also, duration of **doctoral studies** is **too long** due to **low financing** and rigid graduation requirements

- **Held by international team of experts. self-evaluation reports, peer review, site-visits, adequacy to internationally recognized criteria**
- **Assessment criteria: scientific impact, sustainability and potential, societal importance.**
Hot topics in R&I policy

- Reshaping the Estonian **R&D funding** system
  - *Broad discussion in media, Task Force for R&D and HEI funding by Government, active position of Research Council*
  - *Finding the right balance between stable institutional funding and project-based funding*

- Building up the **career model**, *tenure track.* Harmonising higher education and research legislation, funding and activities

- Cooperation between **business and academia**

- Raising the visibility and **impact of R&D** in society and economy
  - *Inc. Regular seminars at the Parliament*

- **Mergers** of research institutes with universities
Thank you

More information:
Estonian Ministry of Education and Research
Estonian Research 2016 (analytical overview)
EU2017.EE

Estonian Presidency of the Council of the European Union