International Evaluation of Scientific Institutions' Activity

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Outline

- Summary of the process
- Summary of scores
- Summary of Panel's observations
- Policy recommendations

Summary of the process (1)

- The evaluation started in late 2019 and was completed in early 2021
- Covering research activities of Latvian institutions from 1 January 2013 to 31 December 2018
- The evaluation covered 37 institutions consisting of 63 research units

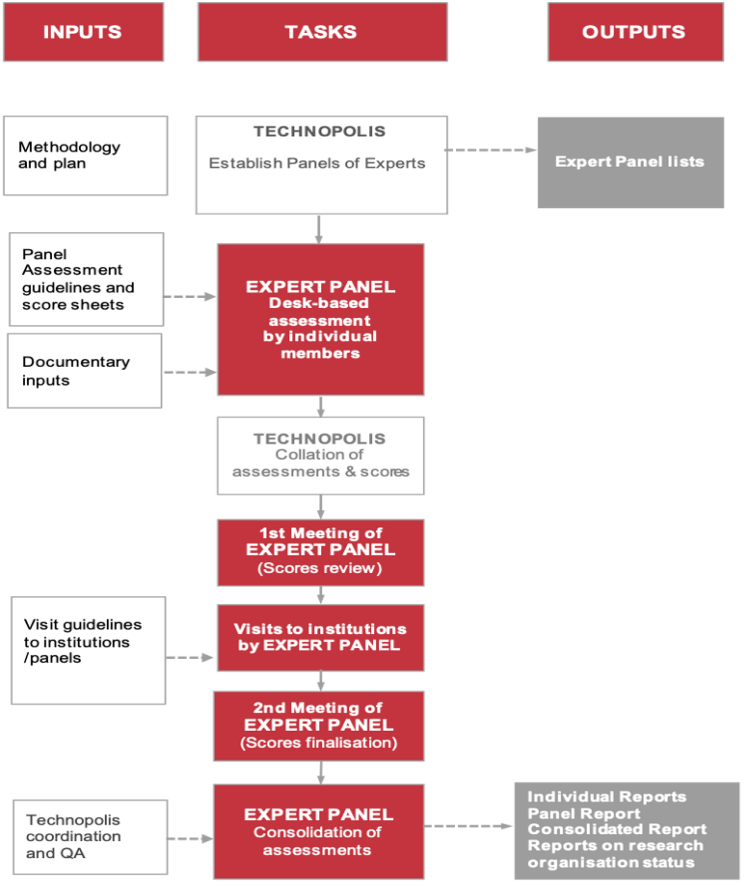
Number of research units in each science field

Field	Number of units
Natural Sciences	7
Medical and Health Sciences	8
Agriculture, Forestry and Veterinary Sciences	5
Social Sciences	16
Humanities and Arts	11
Engineering and Technology	16

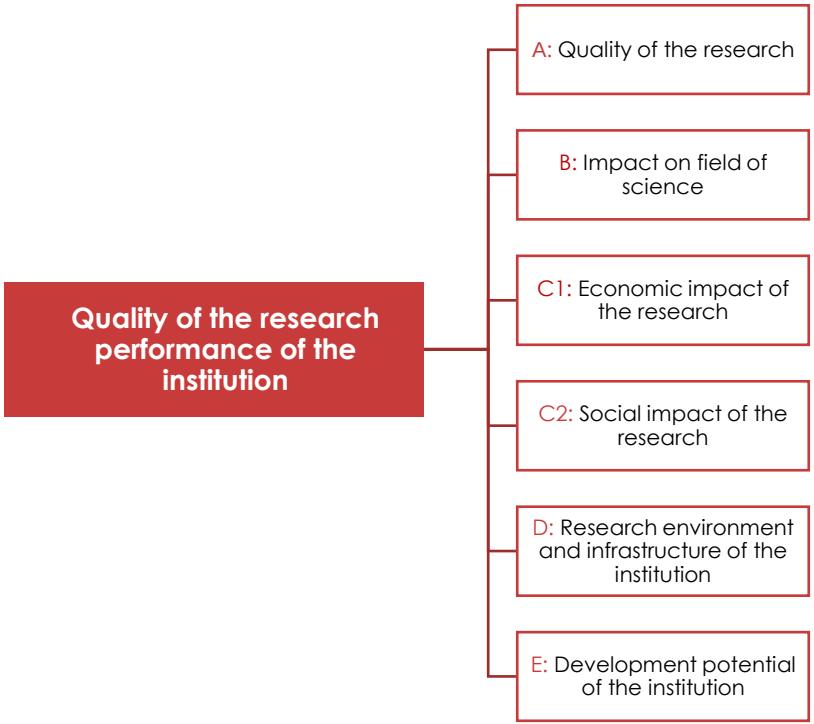
Summary of the process (2)

- The international evaluation method is informed peer review of Latvian research institutions by panels of international experts.
- The purpose of the international evaluation is to evaluate the Latvian institutions against international standards of scientific performance, impact and infrastructure.
- Peer assessment is based on documentary evidence, a review of selected research outputs and institutional visits.

Summary of the process (3)



Assessment criteria



Panel membership (1)

- 38 experts were selected and recruited
- All Panel Members were recruited according to the criteria defined in the *Regulation on Procedures for Organising the International Evaluation of Scientific Institutions Activity*
- We aimed to ensure diverse geographical representation as well as gender balance
- To ensure continuity and some comparability, four Panels were chaired by experts who acted as chairs in the Latvian Research Assessment Exercise in 2013 (RAE 2013)
- The other two Panels were chaired by experts who were Panel members in the 2013 assessment
- Besides the chair, all Panels had at least one other member from RAE 2013
- This helped Panels to perform some general assessment of the progress achieved

Panel membership (2)

- Evaluated units were informed about the Panel membership and approved the panellists
- Panel membership was adjusted few times due to the changes in the evaluation schedule caused by the Covid-19 pandemic
- All changes were approved by the units

Panel tasks

1. Panel Members (individually) review the documentary inputs and provide initial assessments for each institution against the assessment criteria

2. Panel coordinator (Technopolis) collates the scores

3. Panel Members attend a 1st Panel Meeting to review and moderate the scores and make any necessary adjustments

4. Panel Members visit institutions

5. Panel Members attend a 2nd Panel Meeting to review scores in light of the visits and agree the final score

6. Panel writes a Panel Report presenting the Panel's assessment for each institution plus a summary of the research performance across the disciplines covered by the Panel

7. After the visits, the Panel prepared Individual Reports that were sent to the units for feedback on any factual errors. After receiving feedback, the Panel prepared the final version of the Panel Report.

Site and virtual visits (1)

- The Panel Members visited all relevant units
- Due to the travel restrictions caused by the Covid-19 pandemic only the Medical and Health Sciences Panel physically visited the units in Latvia
- All other Panels held remote Panel meetings and institutional visits
- In both formats the Panels met with researchers and research managers/senior staff, cooperation partners and PhD students of the units
- In many cases units invited sectoral ministry, other governmental agencies and industries

Site and virtual visits (2)

- The institutional visits covered the following topics:
- Interviews/group discussion with senior institution/university staff, faculty staff and leaders
- Interviews with representatives of sectoral ministries or industry
- Interviews with doctoral students

Summary of scores

NB! The evaluation was performed in terms of international standards for research quality and the assigned scores should be interpreted in this light.

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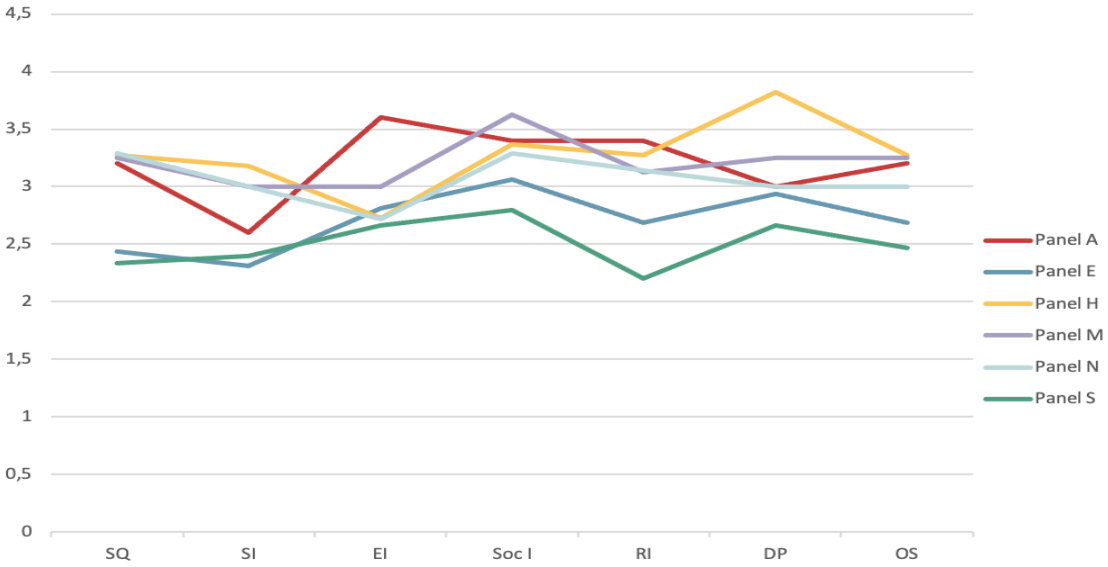
Mean scores per discipline



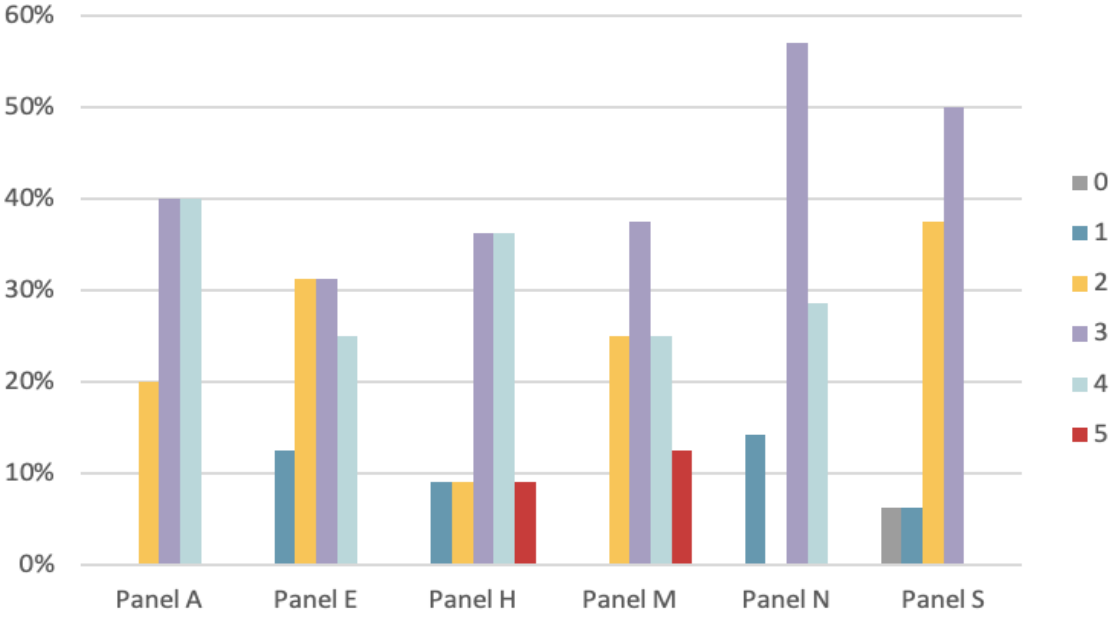
SQ - scientific quality
SI - scientific impact
EI - economic impact

Soc I - social impact
RI - research environment and infrastructure
DP - development potential

OS - overall score

Panel A – Agriculture, Forestry and Veterinary Sciences
Panel E – Engineering and Technology
Panel H – Humanities and Arts
Panel M – Medical and Health Sciences
Panel N – Natural Sciences
Panel S – Social Sciences

Distribution of overall scores



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Units with overall score 4 and 5

Panel	Institution
A	**Latvian State Forest Research Institute "Silava"**
A	Institute of Food Safety, Animal Health and Environment "BIOR"
E	**Riga Technical University, Faculty of Materials Science and Applied Chemistry**
E	**Riga Technical University Faculty of Power and Electrical Engineering**
E	Institute of Electronics and Computer Science
E	**Riga Technical University, Faculty of Computer Science and Information Technology**
H	**National Library of Latvia**
H	**Latvian Academy of Culture**
H	**Daugavpils University, Research programme "Regional studies, literature and arts"**
H	**Art Academy of Latvia**
H	Institute of Literature, Folklore and Art of the University of Latvia
M	Latvian Biomedical Research and Study Centre
M	Latvian Institute of Organic Synthesis
M	**Riga Stradins University Platform of Medicine**
N	Institute of Solid-State Physics
N	Latvian State Institute of Wood Chemistry

In bold units that are new to this group compared to scores in RAE 2013

Panel A – Agriculture, Forestry and Veterinary Sciences
Panel E – Engineering and Technology
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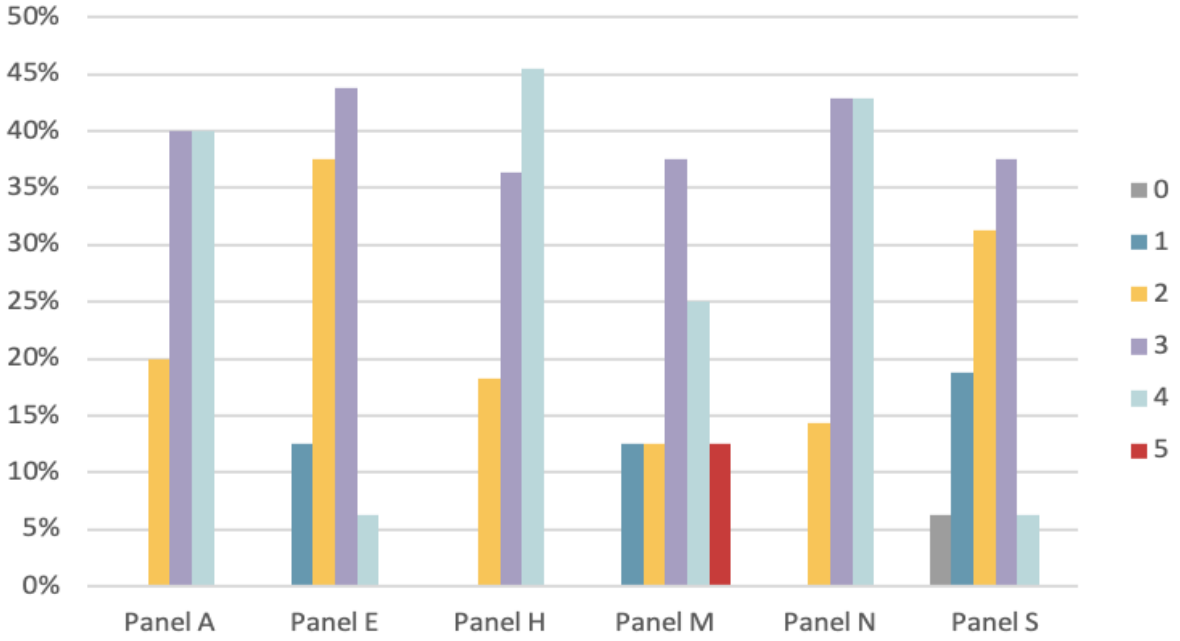
Units with overall score 4 and 5

Panel	Institution	Quality of research	Scientific Impact	Economic Impact	Social Impact	Research environment and infrastructure	Development Potential	Overall Score
A	Latvian State Forest Research Institute "Silava"	4	3	5	4	4	4	4
A	Institute of Food Safety, Animal Health and Environment "BIOR"	4	3	3	4	4	4	4
E	Riga Technical University, Faculty of Materials Science and Applied Chemistry	3	4	4	3	4	4	4
E	Riga Technical University Faculty of Power and Electrical Engineering	3	3	4	4	4	4	4
E	Institute of Electronics and Computer Science	4	3	4	4	4	5	4
E	Riga Technical University, Faculty of Computer Science and Information Technology	3	3	4	3	3	4	4
H	National Library of Latvia	4	4	3	4	4	5	4
H	Latvian Academy of Culture	4	4	4	4	5	4	4
H	Daugavpils University, Research programme "Regional studies, literature and arts"	4	4	2	4	4	5	4
H	Art Academy of Latvia	4	4	3	3	3	4	4
H	Institute of Literature, Folklore and Art of the University of Latvia	4	4	3	5	5	5	5
M	Latvian Biomedical Research and Study Centre	4	4	4	4	4	4	4
M	Latvian Institute of Organic Synthesis	5	5	5	5	5	5	5
M	Riga Stradins University Platform of Medicine	4	4	3	4	4	4	4
N	Institute of Solid State Physics	4	4	3	4	4	4	4
N	Latvian State Institute of Wood Chemistry	4	4	4	5	4	4	4

Distribution of scores: quality of research



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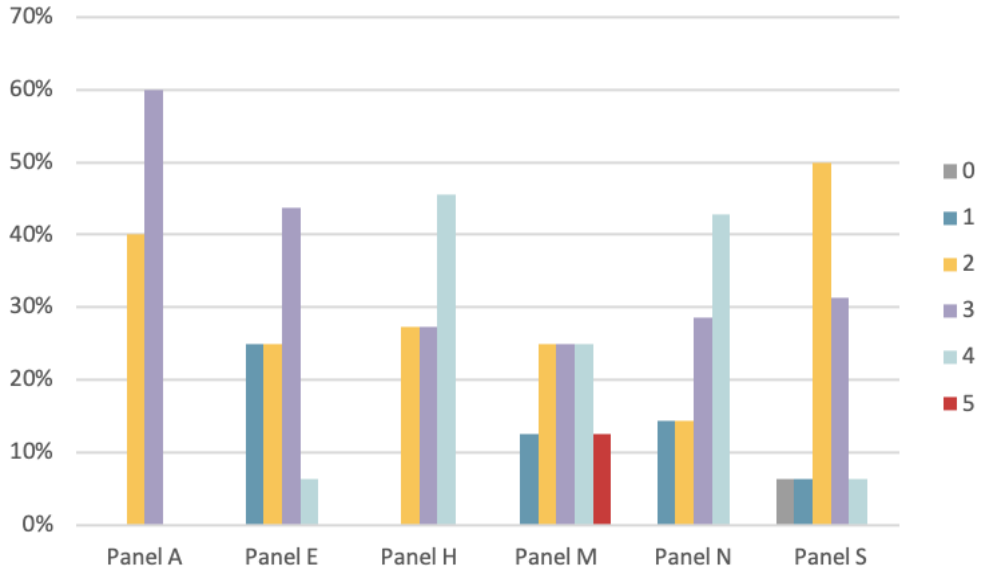
Distribution of scores: impact on the discipline



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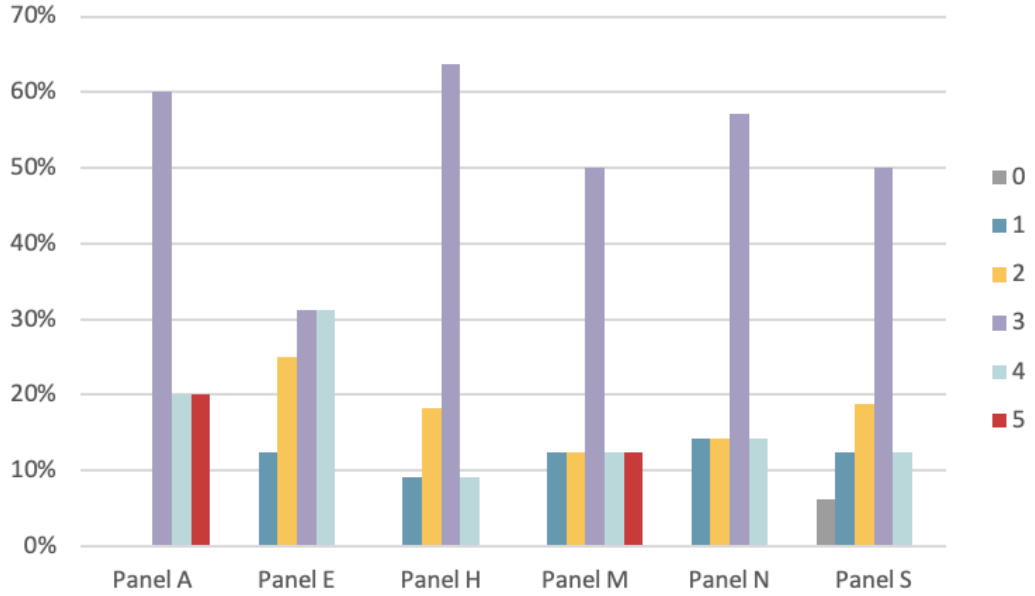
Distributions of scores: Economic impact



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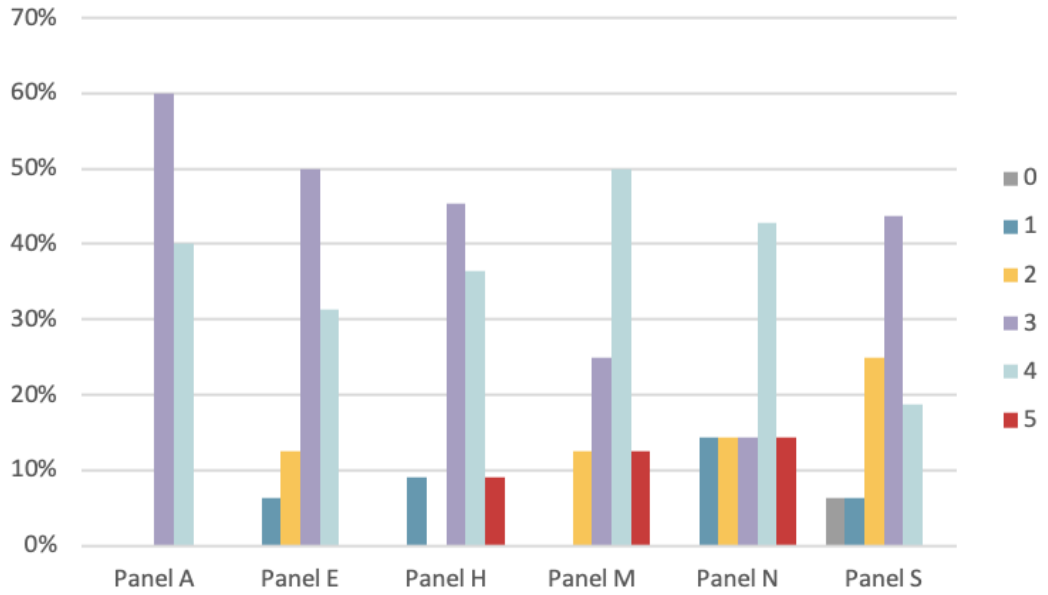
Distribution of scores: Social impact



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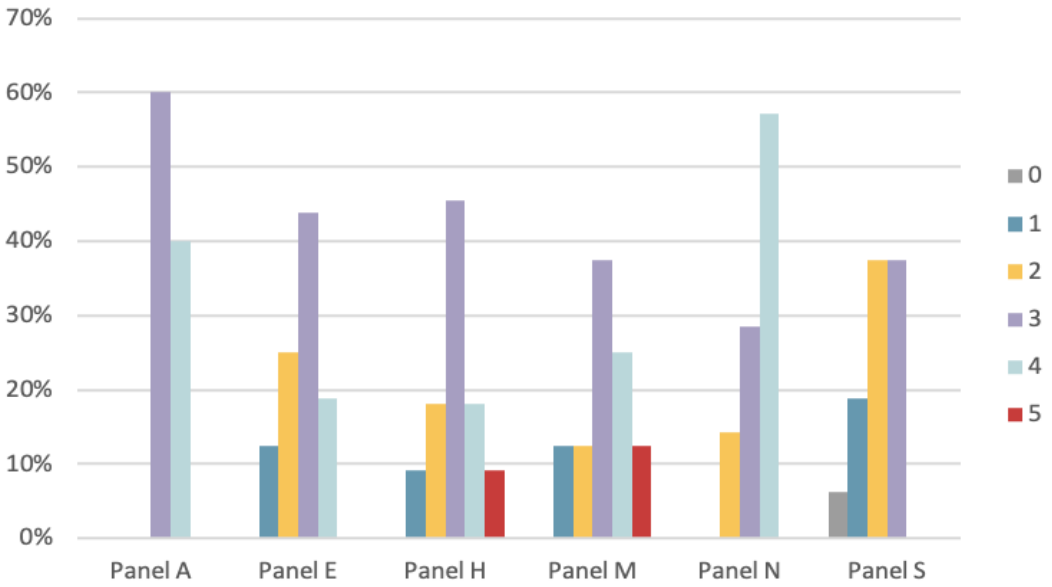
Distribution of scores: Research environment and infrastructure



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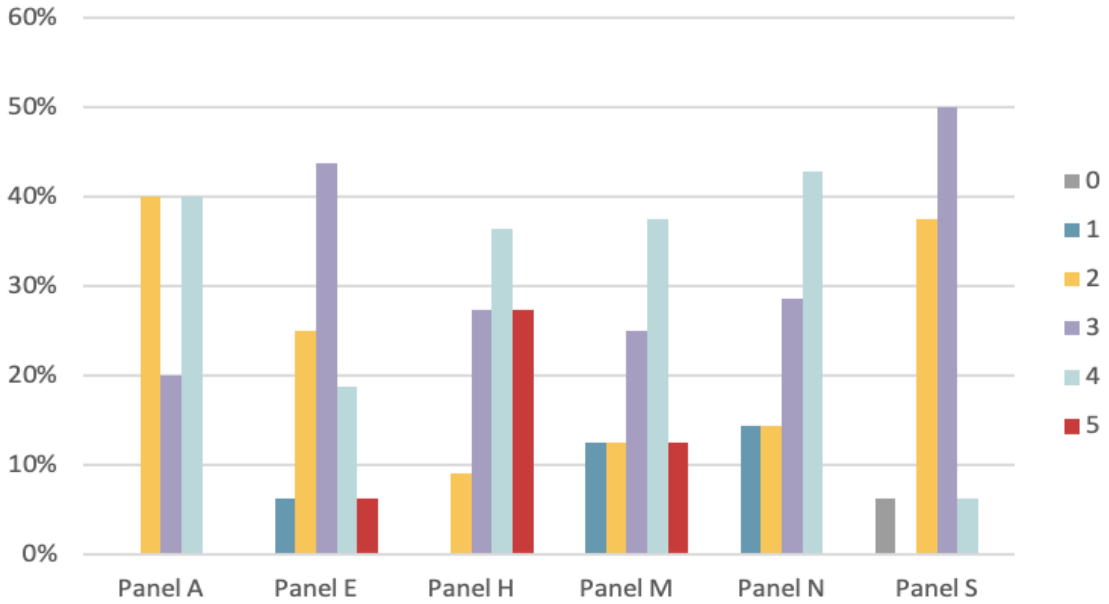
Distribution of scores: Development potential



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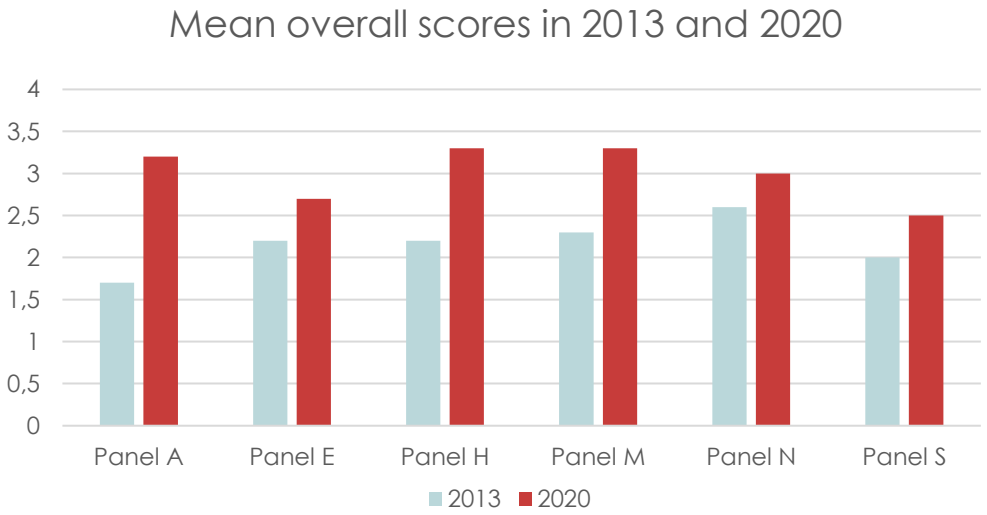
Summary of Panel's observations (across all Panels)

Progress since the Research Assessment Exercise in 2013 (1)

- The evaluation was largely performed following the same method and process as for the RAE 2013
- The key difference was the separation of the previously combined criterion for economic and social impact into two distinct criteria
- Due to Covid-19, a major difference to RAE 2013 was the use of virtual site visits for all Panels except one and, unlike in RAE 2013
- In response to feedback from units evaluated in 2013 all units were visited by all Panel Members

Progress since the Research Assessment Exercise in 2013 (2)



Number of units
2013: 150
2020: 63

Panel A – Agriculture, Forestry and Veterinary Sciences
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Progress since the Research Assessment Exercise in 2013 (3)

- Panel's concluded that there has been a clear overall improvement in performance
- The most common score across all evaluation criteria, as well as for the overall score, is 3 (it was 2 in RAE 2013)
- Many units had considered the recommendations of RAE 2013 and implemented specific actions to address them
- General improvement in the number of publications published in international scientific journals
- International collaboration networks have been extended
- Considerable investment in research infrastructure has been made

Progress since the Research Assessment Exercise in 2013 (4)

- Fragmentation of research activities has decreased as a result of institutional mergers
- The effects of mergers, requiring the alignment of different research cultures as well as operation, take time to become evident
- Changes in mindset and practice towards more internationally relevant research questions, building and sustaining international research partnerships take time and still require significant effort to bring the expected benefits

Insufficient base funding for research

- All Panels observed that the base funding for research is too low
- As a result, many units have become very good at attracting national and, to a lesser extent, international competitive research funding
- Dependence on competitive funding is insecure and makes research units reliant on the funding rules and themes supported
- This restricts research topics, does not allow sufficient discipline development and can make it hard to follow a robust long-term research strategy

Balance between basic and applied research

- The Social Science Panel noted that insufficient base funding not only contributes to the insecurity of the units, but also has a negative impact on the type of research that is performed and consequently on the development of the discipline
- The Engineering and Technology Panel similarly observed that many units concentrate on applied research in response to national strategies and funding requirements, and often theoretical research is neglected
- Both types of research are needed for the development of the units and to generate international impact

Fragmentation

- Most Panels observed that further reduction of fragmentation would be desirable
- In all Panels there were units that lack the critical mass to have significant impact and which would benefit from joining forces with other units in their field
- Fragmentation seems to be most evident in Social Sciences
  - According to the Panel, the size and shape of the sector is still far from ideal for a small country
  - There is still a significant number of very small research units
  - Many have only a very modest research profile and duplicate the research focus of other units

Publication strategy: quantity versus quality

- RAE 2013 observed that units publish too few of their research results in international peer-reviewed journals
- This has significantly improved across all disciplines
- However, quantity does not always mean quality
- There are still units that have set up their own journals in order to create a publication channel
- Conference proceedings are often targeted to increase the number of Web of Science and Scopus indexed publications
- Publication strategies could usefully focus on publishing better rather than more

Research environment and infrastructure (1)

- All Panels recognised and praised recent investments made in research infrastructure
- But there are units across all Panels where there are not enough trained staff or staff are not qualified to use the infrastructure fully

Research environment and infrastructure (2)

- More units have research strategies and many have improved their research management
- But Panels concluded that
  - Strategies often define overly broad research areas
  - Are insufficiently detailed and thought through to be effective
  - There are often too few human resources, and these are often fragmented into very small research groups unable to produce significant impact
- Often, strategies fail to analyse thematic advantages and opportunities
- There are still many units that simply do not have research strategies

Doctoral training, post-doctoral positions and human resources (1)

- Funding for human resource development is still obviously insufficient
- Doctoral students demonstrated that they had well-defined and relevant research topics, a good understanding of what constitutes scientific quality and general enthusiasm about their research work
- Nonetheless, doctoral programmes often lack structure and fail to provide an adequate level of interaction among students
- It is suboptimal that doctoral students have to combine funding from several research projects to support their studies
- The introduction of a new doctoral studies and funding model should help alleviate these problems

Doctoral training, post-doctoral positions and human resources (2)

- Post-doctoral support is now available and is well utilised by research units
- But there is a risk that this funding will end
- Units will then struggle with attraction, integration and funding for young and active scientists

Internationalisation (1)

- International exposure is insufficient
- Long-term visits by foreign researchers to Latvia are rare, and outward mobility is more evident among the young generation
- Panels often noted a lack of interest in going abroad to be exposed for a long period to other scientific communities
- The reasons for this are often institutional – insufficient funding to support mobility and insecurity associated with moving
- In some cases it seems that there is also a genuine lack of interest

Internationalisation (2)

- Units have managed to establish joint research with foreign partners in the EU Framework Programme or through other funding instruments
- But in many cases Latvian participants play minor roles in consortia and project participation does not result in publications
- New participants in the Framework Programme often find they are assigned minor roles in the first instance
- If they demonstrate their quality and ability to deliver, entrants can get more responsible roles as they win the trust of their partners

Research-industry cooperation

- Overall, the Panels conclude that research-industry links have improved
- Several policy measures contribute to this
- Joint research projects with industry are rather small and the industry contribution is limited
- This is not surprising given the structure of Latvian economy
- Panels repeatedly point to the need further to explore industry needs in Latvia and beyond
- In several cases recommendations were made to better institutionalise collaboration with industry

Performance of research institutes versus universities and higher education institutions

- A trend observed already in RAE 2013 is unequal research quality between research institutes and universities and higher education institutions
- Out of 16 units with an overall score of 4 or 5 only seven are units from universities (5) or higher education institutions (2)
- One obvious reason for that is the teaching-research time imbalance between universities and higher education institutions
- On a positive note, universities and higher education institutions have more or less well-established links with research institutes in providing PhD training and in doing joint research

Panel-specific observations

Humanities and Arts

- Several high scoring units in Humanities and Arts have made significant progress in reducing their over-focus on Latvian issues
- The Panel was impressed by the efforts to develop the study of Latvian culture into a topic of international interest
- The ability to position research questions in a way that is interesting for the international research community is one of the reasons for improved overall research quality and impact

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Agriculture, Forestry and Veterinary Sciences

- The Panel observed that units obtaining higher scores in the RAE 2013 made more progress in terms of research quality and impact than the units with lower scores
- The performance gap between the best and the rest has therefore widened
- The Panel concluded that institutional re-arrangements have been beneficial and brought the desired results
- But cultural differences between the merged units have not been fully bridged and more work needs to be done by senior leaders and management to make good use of the benefits and synergies that merging enabled

Medical and Health Science

- While problems in doctoral training were identified by all Panels, they were particularly emphasised in Medical and Health Sciences, especially concerning university hospitals
- The Panel was concerned that in the university hospitals PhD students do not have enough research time due to clinical care responsibilities and doctoral supervision is inadequate
- The Panel believes these problems in PhD training have a negative impact on the prospects of the relevant research units

Social Sciences

- The Panel was concerned about the great focus on publication metrics rather than on achieving real internationally recognised quality
- The focus on the volume of publications is holding back the development of the field
- Limited base funding and dependence on competitive funding has negative consequences for the development of disciplinary research
- The Panel was also concerned about the lack of reference to any national or regional (Baltic) organisations or learned societies that support social science research
- Such organisations could potentially play a role in raising the standards and quality of research

Natural Sciences

- There is a gap in the middle generation of researchers, threatening future succession in leadership positions
- Although recently a structural funds-supported postdoctoral support programme has been introduced and has provided support to young scientists, at the institutional level support for this career stage is often insufficiently addressed
- The Panel pointed to the low level of collaboration with industry and encouraged research units to consider foreign industry collaborators

Engineering and Technology

- In RAE 2013, many of the Engineering and Technology units lacked critical mass, and this limited their potential
- The Engineering and Technology Panel was pleased to note that the fragmentation in research has been reduced
- There is a slight concern that many units are concentrating on applied research so that theoretical research will be neglected
- In many subjects, both theoretical and applied research are required and both are essential

Observations on the evaluation process

Number, size and composition of units for assessment

- All the Panels welcomed the progress made in consolidating the units and creating a less fragmented landscape
- However, in some cases this resulted in units of assessment that were made up for the evaluation, represent a too-wide spectrum of research sub-fields with high variation in performance, and are not representative of real administrative units
- It was also clear that these units include some excellent research groups alongside groups with less impressive performance
- This made it difficult to assess the research management practices and research environment in general, because those vary across the administrative units that were brought together for evaluation

Quality of self-assessment reports

- In many cases contradictory information was presented in different sections of the self-assessment
- Some larger units failed to present a coherent and well-edited story, instead presenting diverse research areas
- The Panels found it difficult to obtain a precise picture of the categories and functions of academic staff in relation to their research obligations and their institutional affiliation (faculties, institutes, departments, centres)
- This was in all cases clarified during the institutional visit, but it should have been presented clearly from the beginning in the self-assessments

Types of submissions and language of outputs in Humanities and Arts

- In some cases a better understanding of the full picture of research performance could be obtained if more diverse types of outputs – especially non-textual outputs – were considered, in order fully to capture the research results
- Latvian speakers were not appointed to the Panel, because potential candidates did not meet the criteria defined in the Regulation
- The Panel had to make extra efforts to ensure fair evaluation of the units

Bibliometric analysis

- Bibliometric indicators in RAE 2020 were produced based on institution names instead of lists of researcher names
- Since many units represented a combination of departments and faculties, subject areas were used to identify units in bibliometric databases
- Thus, for these units bibliometric analysis produced results that adequately indicate general publication trends but are not very exact
- If very precise bibliometric indicators are expected, researcher names should be used to develop bibliometric indicators

Policy recommendations

Policy recommendations (1)

- To build a competitive economy and to be able to respond to its other challenges, the government needs to invest in research and innovation
- A greater proportion of national base funding is needed to ensure stability, continuity and to prepare the ground for development
- More investment is needed for human resource development
- Investment is needed to provide stable and long-term post-doctoral funding and long-term inward and outward staff mobility

Policy recommendations (2)

- Funding measures should not only use the quantity of Web of Science or Scopus publications as a performance indicator
- To increase research-industry collaboration and to diversify potential research careers as well as increase company RDI capabilities, industrial PhD schemes can be considered
- The fact that most units have tried to implement RAE 2013 recommendations indicates that, in general, research units in Latvia value the evaluation process and make efforts to address the criticisms and recommendations
- Evaluation scores would best be read in combination with the analyses and recommendations when making judgements about funding, allowing units with potential to be supported in making improvements based on the current evaluation

Recommendations for future evaluation process (1)

- The organiser of the evaluation should **perform some basic quality check for submitted self-assessments** to guarantee that robust evidence is delivered to the Panels
- **Future assessment exercises should break large organisational entities down into a small number of more homogenous units of assessment**
- If large units consisting of diverse research fields and administrative structures are presented for assessment, **more detailed documentation for each field should be requested in the self-assessment and individual scores should be assigned for the research quality of each sub-discipline**

Recommendations for future evaluation process (2)

- **In Humanities and Arts, more diverse types of outputs should be allowed for submission**
- **Some flexibility should be allowed when recruiting peers for the Humanities and Arts Panel to include Latvian speakers**
- Unless the number of evaluated units decreases, it is recommended to **organise institutional visits with participation of a minimum of three Panel members** who represent the scientific discipline of the unit visited

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Thank you!

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