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International Evaluation of Scientific Institution Activity, Latvia

METHODOLOGY

Technopolis Group
Riga, 3 December 2019

Documents regulating the evaluation

- Regulation on International Evaluation of Scientific Institution Activity (Republic of Latvia Cabinet Regulation No. 619, 2018). The Regulation defines the procedures by which the Ministry of Education and Science should organise evaluation once every six years

- Cabinet of Ministers of Republic of Latvia decision (Protocol number 45 23.§, 2 October, 2018) stating that The Ministry of Education and Science should in six months after completion of the evaluation prepare informative report on how the public funding for research will be tied to the results of the evaluation

Objectives of the evaluation

- The **overall objective** of the evaluation is
  - *Improvement of the quality of research performed by research institutions in Latvia, improvement of international competitiveness of research institutions, better integration in the European Research Area, increased competitiveness of the country as well as implementation of effective and evidence based research, technology development and innovation policy*

- The evaluation will produce analytical material that will describe the scientific excellence and competitiveness of Latvian science, its socioeconomic impact and development potential of its scientific institutions. This material will

  - Provide evidence for science policy making and funding allocations
  - Enable the scientific institutions involved in the process to gain a significant impetus for improving their operations

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Scope of the evaluation

Institutional Coverage

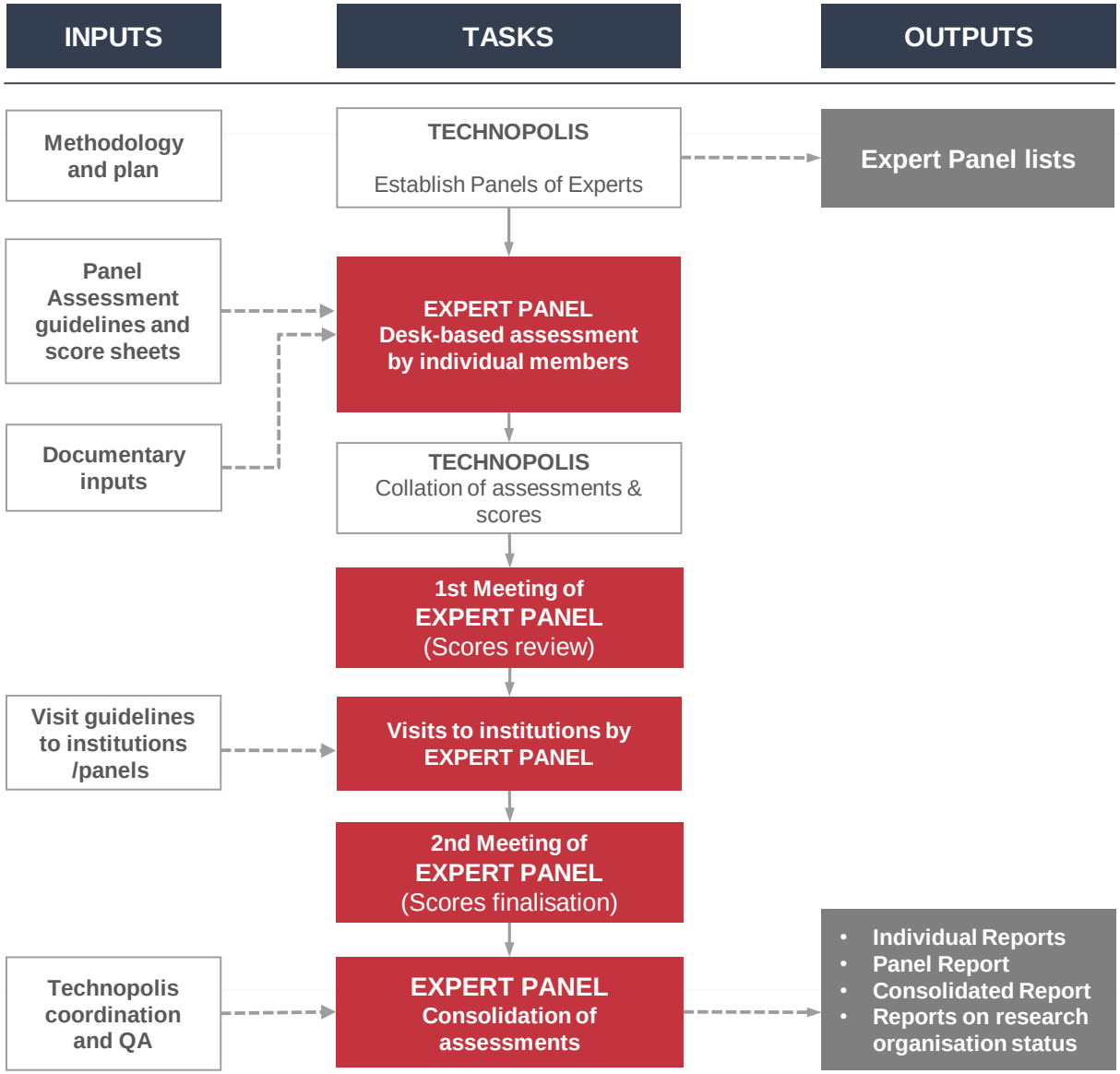
- The evaluation will cover 38 institutions. Several institutions consist of multiple research units. The assessment will cover 64 research units

Field	Number of units
Natural Sciences	8
Medical and Health Sciences	8
Agriculture, Forestry and Veterinary Sciences	5
Social Sciences	17
Humanities	11
Engineering and Technology	15

Timescale

- Research activities of Latvian institutions from 1 January 2013 to 31 December 2018

Process of the evaluation



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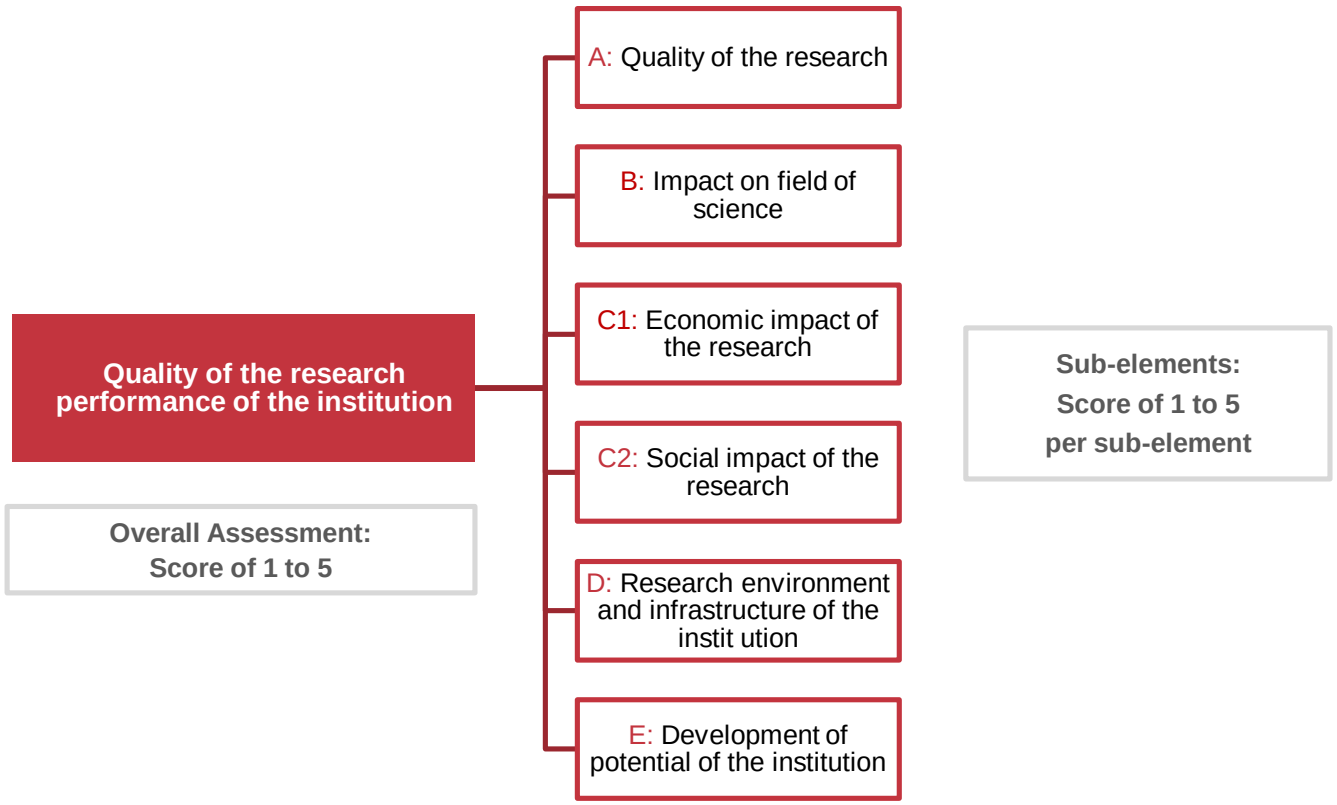
Assessment criteria



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Assessment criteria: overall performance

QUALITY OF THE RESEARCH PERFORMANCE OF THE INSTITUTION	
SCORE	**DEFINTION**
5	Outstanding level of research
4	Very good level of research
3	Good level of research
2	Adequate level of research
1	Poor level of research

The overall final assessment of each institute will include the Panel's qualitative assessment of the institutes' alignment with the objectives of the State scientific and technological development.

The Panels will also provide an assessment of each institute's potential to offer doctoral training

Criterion A Quality of the Research

A: QUALITY OF RESEARCH

Particular factors to take into account

- Fundamental and applied research shall be evaluated as being of equal significance

SCORE	DEFINTION	DESCRIPTION
5	**Outstanding**	**The institution is a Global Leader.** In terms of the quality, the research output of an institution is comparable with the best work internationally in the same area of research. The research possesses the requisite quality to meet highest standard in terms of originality, significance and accuracy. Work at this level should be the primary point of reference in the respective area.
4	**Very good**	**The institution is a strong international player**. Research by the institution possesses a very good standard of quality in terms of originality and importance. Work at this level can arouse serious interest in the international academic community, and international publishers or journals with the most rigorous standards of publication (irrespective of the place or language of publication) could publish work of this level.
3	**Good**	**The institution is a strong national player with some international recognition**. The importance of research by the institution is unquestionable in the experts' assessment. Internationally recognized publishers or journals could publish work of this level.
2	**Adequate**	**The institution is satisfactory national player.** The international academic community deems the significance of the research by the institution to be acceptable. Nationally recognized publishers or journals could publish work of this level.
1	**Poor**	**The institution is a poor national player**. Research by the institution contains new scientific discoveries only sporadically. The profile of the research by the institution is expressly national, i.e., the institution is not involved in international debates of the scientific community. It focuses mainly on introducing international research trends in Latvia.

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Criterion B Impact on Field of Science

B: IMPACT ON FIELD OF SCIENCE		
Particular factors to take into account	• The impact of the research on the development of the scientific discipline and related fields	
SCORE	DEFINTION	DESCRIPTION
5	**Outstanding**	**The institutions is a Global Leader.** The research outputs of the institution are published in the leading forums of the respective discipline, and they have a considerable impact on the development of the discipline; the institution is highly valued as a partner in international research projects.
4	**Very good**	**The institution is a strong international player**. The institution is internationally recognised in its discipline and is highly regarded as a partner in international research projects and networks.
3	**Good**	**The institution is a strong national player with some international recognition**. The institution occupies a stable position in the international scientific community, is considered a respected and recognized centre of competence, and possibly hosts national research centres.
2	**Adequate**	**The institution is satisfactory national player**. The institution occupies a stable position in the national scientific community. The position of the institution within the international scientific community is still evolving; it still has to vie for its status as a recognised member of the discipline; its impact on the international scientific community is undetermined.
1	**Poor**	**The institution is poor national player**. The publishing strategy and scientific impact of the institution are predominantly geared towards the national scientific community and has limited impact also at national level.

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Criterion C Economic (c1) and Social (c2) Impact

C: ECONOMIC AND SOCIAL IMPACT		
Particular factors to take into account		• Economic impact scoring will consider relevance to, and cooperation with, economic actors (with a particular focus on the national economy) • Social impact will consider development of the social and cultural spheres, the promotion of higher education, social equality, integration and welfare, public health, national security, public understanding of the significance of scientific activity
SCORE	DEFINTION	DESCRIPTION
5	**Outstanding**	**Highly Important Research and Highly Sought-after R&D Partner by Non-academics.** Research of the institution is highly important for the economy /society, which renders the institution a highly esteemed partner in research and development projects outside the academic environment. Staff members of the institution are in high demand as experts in the private / public sector /the public, and the institution is an important driver of societal development.
4	**Very good**	**Very Important Research and Sought-after R&D Partner by Non-academics**. Research of the institution is very important for the economy /society. The institution's interactions with the private /public sector/the public stand out in terms of their extensive and dynamic nature.
3	**Good**	**Important Research and Satisfactory Level of Interaction with Non-academics.** Research of the institution is important for the economy /society. The institution's interactions with the private /public sector/the public are at a level that is expected of recognised academic institutions.
2	**Adequate**	**Important Research but Low Level of Interaction with Non-academics**. Research of the institution is important for the economy /society. The research activities of the institution are characterised by a low level of interaction with the private /public sectors/ the public. .
1	**Poor**	**Important Research but no Interaction with Non-academics**. Research of the institution is important for the economy /society. The interaction by the institution with the private /public sectors / the public is yet to be established.

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Criterion D Research Environment and Infrastructure of the Institution

D: RESEARCH ENVIRONMENT AND INFRASTRUCTURE OF THE INSTITUTION	
Particular factors to take into account	• Organisation of the management of research at the institution • The long-term strategic and financial resource planning, including the human resource development strategy • The goal orientation of the research work • The availability and quality of support services, research infrastructure, databases, technical staff, staff teaching and training workload, the ratio of students involved in research to the overall number of staff members, etc. • The conformity with the institutional management, ensuring Open Access, long-term development, and resource planning

SCORE	DEFINTION	DESCRIPTION
5	**Outstanding**	**The institution is a global leader.** The institution's research environment is fully comparable to the best international institutions in the discipline, in terms of the organisation, strategy and infrastructure of research work. It can attract the highest quality international researchers.
4	**Very good**	**The institution is a strong international player.** The institution is able to provide an internationally comparable excellent research environment to high-level international scientists in the given discipline.
3	**Good**	**The institution is strong national player.** The institution is able to provide a research environment that is comparable with globally recognised academic institutions in its discipline.
2	**Adequate**	**The institution is satisfactory national player.** The institution's research environment is still evolving to achieve a level that is expected in the international scientific community of a respected institution in the given discipline.
1	**Poor**	**The institution is poor national player**. The institution is still only in the process of creating an internationally comparable research environment.

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Criterion E Development Potential of the Institution (1/2)

E: **DEVELOPMENT POTENTIAL OF THE INSTITUTION**	
Particular factors to take into account	The development potential of an institution comprises: • The ability of researchers to participate in international competition • The capability of the scientific environment to support the chosen research • The capability of the selected scientific objectives and research themes to impact the international scientific community and society at large • The ability to initiate new research directions The assessment will take into account: • The institution's future vision and plans • How realistically the institution assesses its strengths and weaknesses, opportunities and threat, and whether the institution has a carefully considered plan to manage such factors • The future vision of the scientific institution, including to what extent the evaluation of the strengths, weaknesses, opportunities and threats of the scientific institutions is justified • The age and career progression of the active scientific staff • The ability to attract students, doctoral candidates, and foreign researchers • Ability to raise funding that is awarded competitively • Its orientation towards topical issues in the selection of research themes • Involvement in promising international collaboration projects and networks, etc.

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Criterion E Development Potential of the Institution (2/2)

SCORE	DEFINTION	DESCRIPTION
5	**Outstanding**	**High potential to become global leader.** The institution is able to assume scientific leadership in the given scientific discipline. It is expected that over the next 5-10 years it will achieve a significant international breakthrough in the particular scientific discipline, and it will attract leading researchers and promising doctoral students. Within the foreseeable future, the institution is able to achieve a level of excellence that is comparable with the most outstanding institutions in the world within their discipline.
4	**Very good**	**Potential to become strong international player**. The institution is able to establish itself as a recognized and respected player in the international scientific community within the given scientific discipline. It is expected that over the next 5-10 years it will achieve an excellent level of scientific quality and influence and will become a highly regarded partner in international collaboration projects and networks.
3	**Good**	**Potential to become international player**. Over the next 5-10 years the institution will be able to strengthen its position in the international scientific community as a convincing actor and a trustworthy partner within international collaboration networks.
2	**Adequate**	**Potential to become strong national player**. The institution is capable of being a visible local player in its area of research, which from time to time can be expected to contribute to the activities of the international scientific community.
1	**Poor**	**Very limited scope for developing its research quality and reputation**. The institution has to work hard to establish itself as an internationally notable institution in its discipline within the foreseeable future.

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Expert Panels

- The assessment will be conducted by **independent international experts**, supported by a panel coordinator from Technopolis Group
- The experts will be grouped into **six Panels** covering six broad disciplines
- Each Panel will have **six experts**, with one expert assigned the role of Panel Chair
- Panel members are currently being selected based on the following criteria

As individuals

- Doctoral degree
- Experience in conducting international research and development systems or scientific institutions evaluation in various countries
- At least 10 years of scientific work experience and original scientific publications in journals indexed in WoS or SCOPUS with citation index at least at the average of sector average index (does not apply to industry expert)
- Does not represent research institutions to be assessed and is not in conflict of interest

As a group – balanced composition in terms of

- Experience from range of different national research systems
- Disciplinary coverage in alignment with the Latvian institutions being assessed
- Gender balance

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Expert Panels: Panel Coverage (1/3)

Panel Title	Coverage
Natural Sciences	Mathematics Computer and information sciences Physical sciences Chemical sciences Earth and related environmental sciences Biological sciences Other natural sciences

Panel Title	Coverage
Medical and Health Sciences	Basic medicine Clinical medicine Health sciences Health biotechnology Other medical sciences
Agriculture, Forestry and Veterinary Sciences	Agriculture, forestry, and fisheries Animal and dairy science Veterinary science Agricultural biotechnology Other agricultural sciences

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Expert Panels: Panel Coverage (2/3)

Panel Title	Coverage
Social Sciences	Psychology Economics and business Educational sciences Sociology Law Political Science Social and economic geography Media and communications Other social sciences

Panel Title	Coverage
Humanities	History and archaeology Languages and literature Philosophy, ethics and religion Art (arts, history of arts, performing arts, music) Other humanities

Expert Panels: Panel Coverage (3/3)

Panel Title	Coverage
Engineering and Technology	Civil engineering
	Electrical engineering, electronic engineering, information engineering
	Mechanical engineering
	Chemical engineering
	Materials engineering
	Medical engineering
	Environmental engineering
	Environmental biotechnology
	Industrial Biotechnology
	Nano-technology
	Other engineering and technologies

Panel tasks

1. Panel Members (individually) review the documentary inputs and provide initial assessments (that is, a score from 1 to 5 and an explanation of the score) 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 in Latvia
5. Panel Members attend a 2nd Panel Meeting to review scores in light of the visits and agree the final score
6. Panel Chair writes a Panel Report presenting the Panel's assessment (i.e. that of the of Panel as a whole) for each institution plus a summary of the research performance across the disciplines covered by the Panel

Documentary inputs

The institutional assessments will make use of the following documentary inputs:

- Self-assessment reports submitted by institutions
- Selected research publications per institution
- Bibliometric indicators
- General background information, for example, EU and national regulations, policy planning documents, development strategies of research institutions and other material will be used to provide background information to Panel Members

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Selection of research outputs

- The research publications to be reviewed will be selected from the ranked list provided in section 3.3 of the institutional self-assessment reports, with the number of publications based on the size of the institution (in staff numbers)
- The number of research outputs to be assessed for each institution is based on the number of academic/ research staff. The number is calculated as follows
- The minimum number of papers for review is 5 (whatever the size of the institution)
- The maximum number of papers for review per institution or unit is one paper per 10 academic/research staff as defined in section 2.1 in the self-assessment report (except where this would fall below a minimum of **5 papers**) i.e. the maximum number of papers to be reviewed is one-tenth of the number of academic/research staff, **but not more than 15 papers** . Academic/research staff are defined based on section 2.1 in the self-assessment. It includes the total number of academic staff (excluding PhD students) and the total number of research staff (excluding PhD students) in the table in section 2.1. The max
- Papers must be made available for the assessment

Bibliometrics

- Bibliometric data will be collected from the Scopus and Web of Science databases based on the name of each institution

- Following key bibliometric indicators will be used:
  - Total number of publications
  - Total number of citations
  - Average number of citations per publication
  - A normalised citation impact score (FWCI, CNIC)
  - Research collaboration intensity
  - A normalised research collaboration intensity score
  - Quality of journals where publications are published

Institutional visits

- Panel Members will visit all institutions in Latvia
- The visits will enable the Panel to
  - *See the research environment directly*
  - *Meet with researchers and research managers /senior staff*
  - *This will provide additional input to the moderation of the assessments*
- Visits will take place in February, March and May 2020

Panel report

Panel reports will include

1. *An assessment of each institution*
2. *A overview of research performance across all disciplines covered by the Panel*

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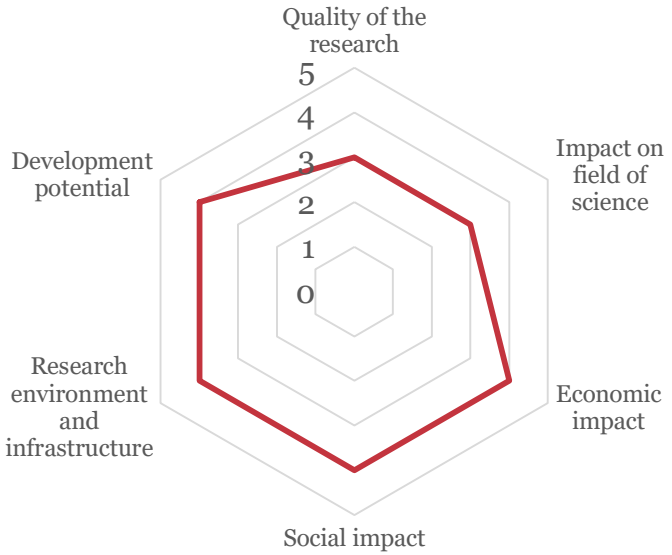
Panel report – Institution level (1/2)



Criteria	Scores
Quality of the Research	3
Impact on Field of Science	3
Economic Impact	4
Social Impact	4
Research Environment and Infrastructure	4
Development Potential	4
Overall Score	**4**

Qualitative description of the overall score the institute

The over-arching assessment of each institute the Panel Members based on:

- Documentary review
- Bibliometric analysis
- Institutional visits
- Final scores / Final overall score

This will include

An assessment of each institute will include the Panel's qualitative assessment of the institutes' alignment with the objectives of the State scientific and technological development.

The Panels will also provide an assessment of each institute's potential to offer doctoral training

Panel report – Institution level (2/2)

Descriptive text for each of the six criteria

A *Quality of the research*

B *Impact on field on science*

C1 *Economic Impact*

C2 *Social Impact*

D Research environment and infrastructure of the institution

E Development Potential

Recommendations

Conclusions and recommendations for improvement of scientific performance and development in next period of 2021-2025. Recommendations will focus on improvement of the quality and impact of the research undertaken (where necessary), and on the research environment and infrastructure needed to support improved quality and impact.

Panel report – panel level

An overview of the research performance across the Panel coverage, highlighting

- *The range of performance*
- *Identifying specific areas of high and low performance*
- *Identifying the potential for improved performance*

BREAK

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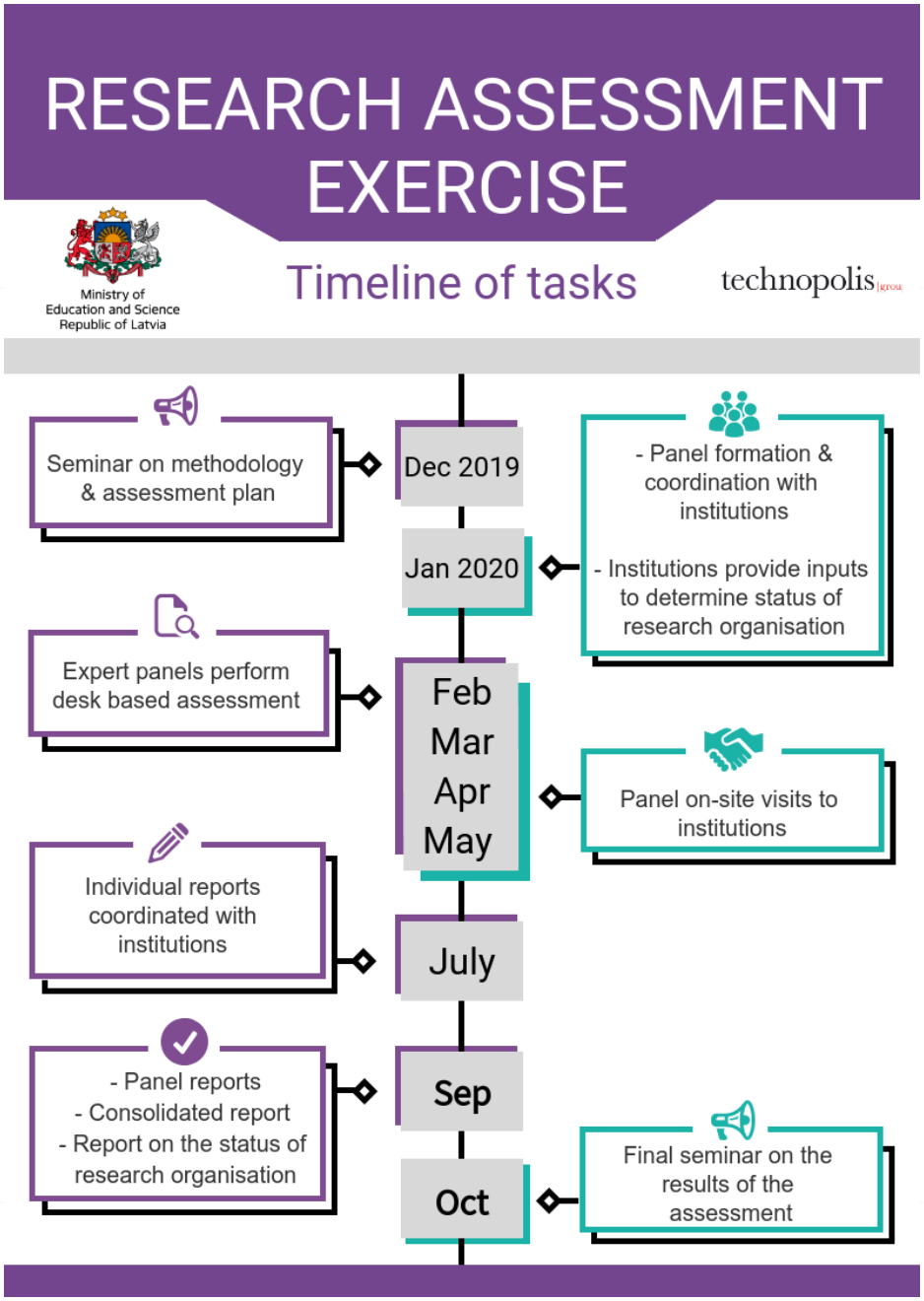
Timeline of Tasks



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Schedule - all panels

	2019	2020									
	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
Preparation											
Panel formation											
Analyse self-assessment reports											
Bibliometrics											
Expert Review											
Panel: Humanities			Visit 24-28 Feb								
Panel: Engineering and Technology			Visit 2-6 March								
Panel: Medicine and Health Science			Visit 9-13 March								
Panel: Social Sciences			Visit 16-20 March								
Panel: Agriculture, Fishery and Veterinary Sciences					Visit 11-15 May						
Panel: Natural Science						Visit 25-29 May					
Support to panels											
Consolidated report											

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Panel Visits

Panel	Visit Dates
Humanities	24 Feb 2020 – 28 Feb 2020
Engineering and Technology	02 Mar 2020 – 06 Mar 2020
Medicine and Health Sciences	09 Mar 2020 – 13 Mar 2020
Social Sciences	16 Mar 2020 – 20 Mar 2020
Agriculture, Fishery and Veterinary Sciences	11 May 2020 – 15 May 2020
Natural Sciences	25 May 2020 – 29 May 2020

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Schedule for one panel

	By week														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Panel 1															
Brief Panel members, distribute documentation															
Panel Members: desk-based review															
Collate Panel Members scores															
Panel in Latvia (1st meeting, visits, 2nd meeting)															
Panel provides individual reports															
Institutions review individual reports															
Panel prepares panel report															

Technopolis tasks

Panel tasks

Panel visit in Latvia

Panel in Latvia (1 week)

1st Panel meeting: review, moderate and provide initial score (1 day)

Panel visits to research institutions (3 days)

2nd Panel meeting: review initial scores, agree final scores (1 day)

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What you need to do…

Key	Timescales
Ensure your publications are available	These should have been provided already
Put the Panel visit date in your diaries!	Please set aside the whole week Visits most likely to be Tues-Thurs
Lists of Expert Panel Members shared	Jan 2020
Individual institutions' data sheets shared	Jan/ Feb 2020
Prepare for visits (next slide)	Start thinking about it now..
Individual institutions' Panel assessments available	A month after the visits

Institutional visits

- **3 hour visit**
- Aim is to see research environment directly and meet with senior staff/ research leaders and researchers
- The institutional visits will entail:
  - Interviews / group discussion with senior institution/university staff, faculty staff and leaders, where appropriate (max 45-50 mins). This should include the head of the particular institution/group being visited
  - A tour of the facilities (30-45 mins)
  - Interviews with researchers and doctoral students of the research institution and if applicable representatives of sectoral ministry or industry representatives (1-1.5 hours)
- Panel interviews/ discussions will be led by the Panel Members
- Detailed guidelines for the visits will be provided in advance

Preparation

- Think about who you want the Panel Experts to meet, this should include:
  - Institute /faculty senior staff
  - Research leaders /
  - Researchers, Phd students
- You may include relevant sectoral ministries and /or industry representatives
- Make sure the dates are in their diaries
- Plan to provide meeting space for the interviews/ discussions with staff
- Which facilities would you like them to see on the tour – this is particularly relevant for institutes with research laboratories/ equipment
- Consider combining tours with meeting staff and ensure staff are willing and able to speak freely
- Be familiar with your self-assessment and the papers you provided

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- Be familiar with your self-assessment and the papers you provided

Any questions?

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