CWTS
Meaningful metrics

Performing research evaluation in the Dutch higher education system

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Outline

1. Dutch higher education system
2. Funding flows in Dutch system
3. Dutch research evaluation system
4. Standard Evaluation Protocol
5. Important component: self-evaluation
    1. Content
    2. Quality domains
    3. Options for bibiometric performance analyses
    4. Narrative for societal relevance/impact
    5. Other elements, including PhD program and integrity

Dutch higher education system

- A binary system
  - Universities + institutions for higher vocational education
- Steering at a distance
- Guidance by government, intermediary organizations, stakeholders
- Requires ‘complete organization’ on receiving end (De Boer et al. 2007)
- University as organization: “The corporate actor”

3 funding flows

Dutch evaluation system

- A ‘weak’ evaluation system (cf. Whitley 2007)
- Emphasizes opportunities for organisational learning
- Interactive peer review formats over interim periods

- Structured by a main guiding document:

→ Standard Evaluation Protocol (SEP)

The Standard Evaluation Protocol (SEP)

Standard Evaluation Protocol (SEP)

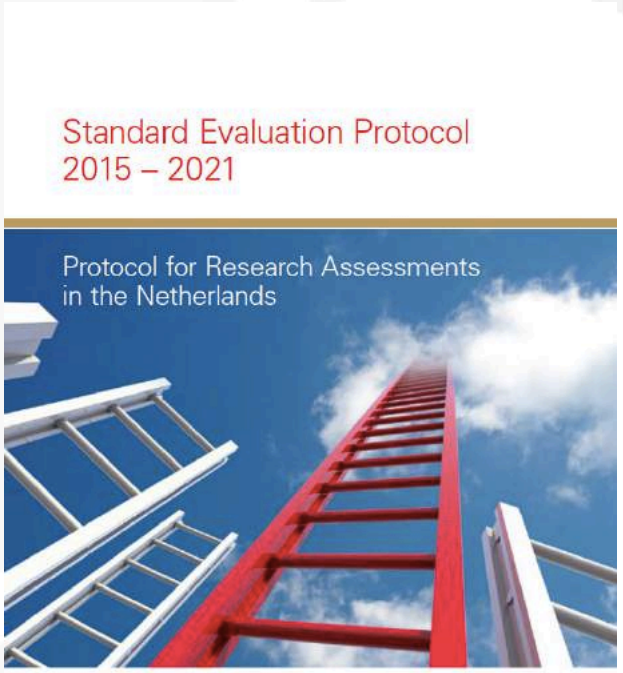
- 2015-2021 version: 5th iteration
- Describes the methods and aims research assessments at Dutch universities and NWO and Academy institutes

- In 1993 VSNU made responsible, introduced 4-year cycle
- 2000s: evaluation fatigue

  → 6-yearly cycle. New version of protocol
- Responsibility delegated to institutional level

Standard Evaluation Protocol (SEP)

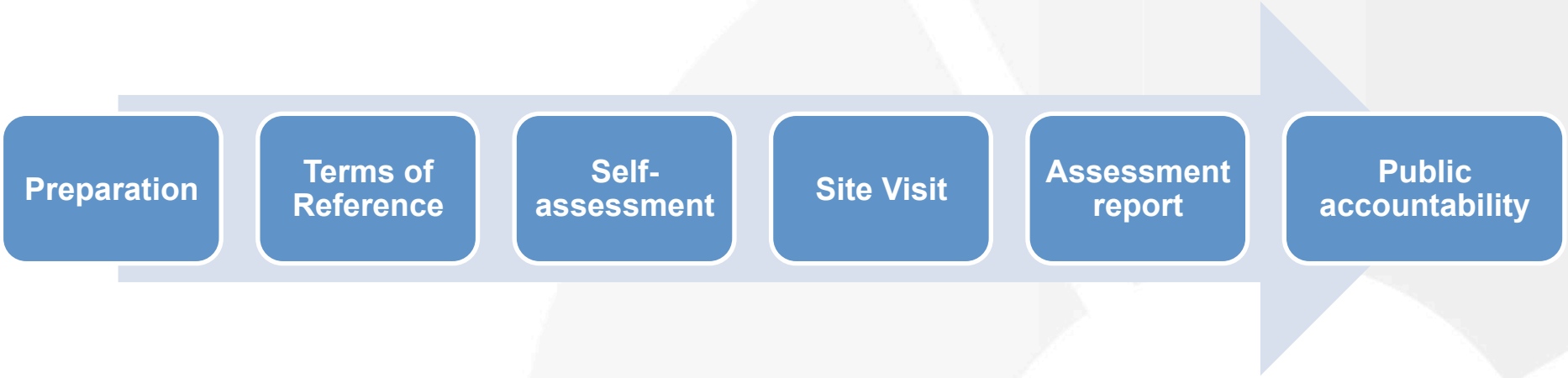
- Based on peer review, informed by bibliometrics
- Up until 2009 four assessment criteria:
  - *Quality*
  - *Productivity*
  - *Societal relevance*
  - *Vitality & feasibility*
- 2015-2021 protocol →→
  - *Research quality*
  - *Relevance to society*
  - *Viability*

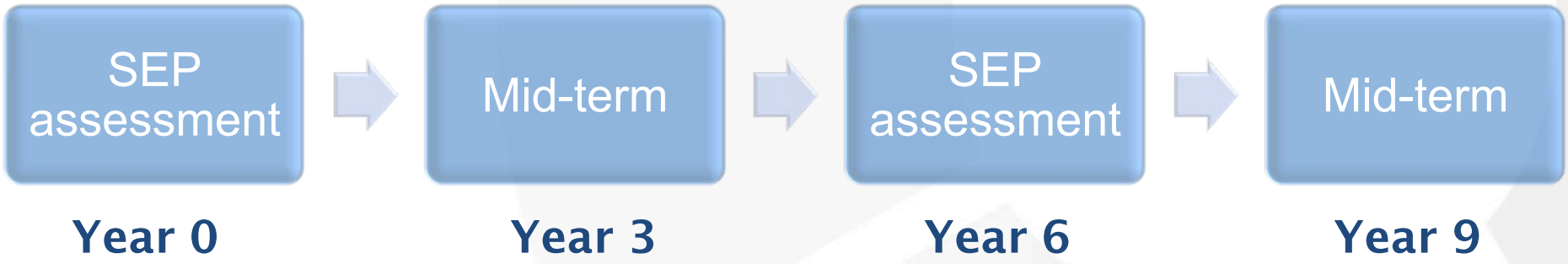


SEP in a nutshell

- All research conducted at universities, NWO and KNAW institutes – boards are responsible
- Conducted by external assessment committee
- Once every 6 years, rolling schedule
- Concerns all research past 6 years + strategy going forward
- Via a self-assessment + additional documents
- Judgement based on self-assessment + interviews site visit
- Taking into account international trends + own targets

Steps in the evaluation process





Category	Meaning	Research quality	Relevance to society	Viability
1	World leading/ excellent	The research unit has been shown to be one of the few most influential research groups in the world in its particular field.	The research unit makes an outstanding contribution to society.	The research unit is excellently equipped for the future.
2	Very good	The research unit conducts very good, internationally recognised research.	The research unit makes a very good contribution to society.	The research unit is very well equipped for the future.
3	Good	The research unit conducts good research.	The research unit makes a good contribution to society.	The research unit makes responsible strategic decisions and is therefore well equipped for the future.
4	Unsatisfactory	The research unit does not achieve satisfactory results in its field.	The research unit does not make a satisfactory contribution to society.	The research unit is not adequately equipped for the future.

The self-assessment

Content self-assessment report (i)

- Description of unit's organisational structure + financing
- Strategy past 6 years
- Targets past 6 years (research, societal relevance)
- Strategy and targets next 5-10 years
- Most important (and relevant) performance indicators
- Results research and societal relevance past 6 years (latter in a narrative)

+ link results to SEP criteria (quality, relevance, viability)

Content self-assessment report (ii)

- Relevant environmental factors/developments past six years
- Forecast of trends and developments in the coming years
- SWOT analysis and benchmarking
- PhD Program(s)
- Research Integrity

Quality domains

		Research quality	Relevance to society
Assessment dimensions	Demonstrable products	Research products for peers	Research products for societal target groups
	Demonstrable use of products	Use of research products by peers	Use of research products by societal target groups
	Demonstrable marks of recognition	Marks of recognition from peers	Marks of recognition by societal target groups

		Quality Domains	
		Research quality	**Relevance to society**
	Demonstrable products	1. Research products for peers Examples of indicators: - Research articles (refereed vs. non-refereed) - Scientific/scholarly books - Other research outputs (instruments, infrastructure, datasets, software tools or designs that the unit has developed) - Dissertations - … - …	4. Research products for societal target groups Examples of indicators: - Reports (for example for policymaking) - Articles in professional journals for non-academic readers - Other outputs (instruments, infrastructure, datasets, software tools or designs that the unit has developed) for societal target groups - Outreach activities, for example lectures for general audiences and exhibitions - … - …

Assessment Dimensions			
	Demonstrable use of products	2. Use of research products by peers Examples of indicators: - Citations - Use of datasets, software tools, etc. by peers - Use of research facilities by peers - Reviews in scientific/scholarly journals - ... - ...	5. Use of research products by societal groups Examples of indicators: - Patents/licences - Use of research facilities by societal parties - Projects in cooperation with societal parties - Contract research - ... - ...

Demonstrable marks of recognition	3. Marks of recognition from peers Examples of indicators: - Science awards/scholarly prizes - Research grants awarded to individuals - Invited lectures - Membership of scientific committees, editorial boards, etc. - … - …	6. Marks of recognition by societal groups Examples of indicators: - Public prizes - Valorisation funding - Number of appointments/positions paid for by societal parties - Membership of civil society advisory bodies - … - …

Bilbiometric analysis on institute A research performance

	P	C+sc	MCS	% not cited	MNCS/ MNJS *	MNCS *	MNJS *	% self cits
Institute A (2000-2005)	592	6,398	8,42	24%	1.20	2.16	1.80	22%
Institute A (2005-2010, *Past Performance)*	623	8,687	16,66	8%	1.59	2.64	1.66	18%
Institute A (2005-2010, *Research Potential)*	557	8,447	18,50	8%	1.66	2.83	1.70	18%

Various additional types of analysis focus on …

- **Research profiles**: a break down of the output over various fields of science
- **Scientific cooperation analysis:** a break down of the output over various types of scientific collaboration
- **Knowledge user analysis:** a break down of the 'responding' output into citing fields, countries or institutions
- **Highly cited paper analysis:** which publications are among the most highly cited output (top 10%, 5%, 1%) of the global literature in that same field(s)
- **Network analysis:** how is the network of partners composed, based on scientific cooperation?

Relevance to society - narrative

- 3-5 pages, supported by indicators in table
- At regional, national or international level
- Only most convincing examples

Describes:

- The precise work or research projects involved;
- The individuals involved and their roles;
- the nature of the research unit's relevance to, or impact on, society and the scope of that relevance or impact;
- how the unit achieved this; whether revenue has been generated.

Example of a SWOT analysis

Internal organisation	**Strengths**	**Weaknesses**
	Specific strengths: – good staff quality – innovative results – major awards and funding – own infrastructure, resources – contributions to shared infrastructure – financially sound – appeals to external parties (stakeholders, staff, students)	Specific weaknesses: – sub-optimal staff quality – sub-optimal management – financial deficits – difficulty recruiting qualified staff – basic infrastructure inadequate
External context	**Opportunities**	**Threats**
	Important changes to which you must respond: – in research – in technology or the economy – in government or other policy – in socio-cultural patterns, e.g. demographics, health, lifestyle, ethics	Uncertainties related to: – the direction of technological progress – major institutional changes – new legislation (including EU) – the changing demands of funding bodies – strong "competitors"

PhD programs

- context, supervision and quality assurance of PhD programmes and PhD research in the unit;
- participation in a graduate school or school and/or a research school or schools; where relevant, include an appendix providing the results of an assessment of national/interuniversity/ interdisciplinary research school/schools;
- the selection and admission procedures (where applicable);
- supervision of PhD candidates internally and guidance of PhDs to labour market;
- exit numbers in the following sectors: research, industry, government and nonprofit (where possible).

Research Integrity

- the degree of attention given to integrity, ethics, and self-reflection on actions (including in the supervision of PhD candidates);
- the prevailing research culture and manner of interaction;
- how the unit deals with and stores raw and processed data;
- the unit's policy on research results that deviate flagrantly from the prevailing scientific context;
- any dilemmas (for example of an ethical nature) that have arisen and how the unit has dealt with them.

Appendices (i)

Table D3a Research staff

	Year 5	Year 4	Year 3	Year 2	Year 1	Current year
Research unit						
Scientific staff(1)	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE
Post-docs (2)	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE
PhD students (3)	#	#	#	#	#	#
Total research staff	**# / FTE**	**# / FTE**	**# / FTE**	**# / FTE**	**# / FTE**	**# / FTE**
Support staff	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE
Visiting fellows	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE
Total staff	**# / FTE**	**# / FTE**	**# / FTE**	**# / FTE**	**# / FTE**	**# / FTE**

Note 1: Comparable with WOPI categories HGL, UHD and UD; tenured and non-tenured staff
Note 2: Comparable with WOPI category Onderzoeker
Note 3: Standard PhD (employed) and Contract PhDs (externally or internally funded but not employed)

Appendices (ii)

Table D3b Main categories of research output

Research unit						
Refereed articles	#	#	#	#	#	#
Non-refereed articles (1)	#	#	#	#	#	#
Books	#	#	#	#	#	#
Book chapters	#	#	#	#	#	#
PhD theses	#	#	#	#	#	#
Conference papers	#	#	#	#	#	#
Professional publications (2)	#	#	#	#	#	#
Publications aimed at the general public (3)	#	#	#	#	#	#
Other research output <specify> (4)	#	#	#	#	#	#
Total publications	**#**	**#**	**#**	**#**	**#**	**#**

Note 1: Articles in journals that are non-refereed, yet deemed important for the field

Appendices (iii)

Table D3c Funding

	Year 5	Year 4	Year 3	Year 2	Year 1	Current year
Research unit						
Funding:						
Direct funding (1)	FTE / %	FTE / %	FTE / %	FTE / %	FTE / %	FTE / %
Research grants (2)	FTE / %	FTE / %	FTE / %	FTE / %	FTE / %	FTE / %
Contract research (3)	FTE / %	FTE / %	FTE / %	FTE / %	FTE / %	FTE / %
Other (4)	FTE / %	FTE / %	FTE / %	FTE / %	FTE / %	FTE / %
Total funding	**FTE / %**	**FTE / %**	**FTE / %**	**FTE / %**	**FTE / %**	**FTE / %**
Expenditure:						
Personnel costs	€ / %	€ / %	€ / %	€ / %	€ / %	€ / %
Other costs	€ / %	€ / %	€ / %	€ / %	€ / %	€ / %
Total expenditure	**€ / %**	**€ / %**	**€ / %**	**€ / %**	**€ / %**	**€ / %**

Appendices (iv)

Table D3d PhD Candidates (1)

Enrolment				Succes rates					
Starting year	Enrolment (male / female)		Total (M+F)	Graduated in year 4 or earlier	Graduated in year 5 or earlier	Graduated in year 6 or earlier	Graduated in year 7 or earlier	Not yet finished	Discon-tinued
T-8	#M	#F	#	# / %	# / %	# / %	# / %	# / %	# / %
T-7	#M	#F	#	# / %	# / %	# / %	# / %	# / %	# / %
T-6	#M	#F	#	# / %	# / %	# / %	# / %	# / %	# / %
T-5	#M	#F	#	# / %	# / %	# / %	-	# / %	# / %
T-4	#M	#F	#	# / %	# / %	-	-	# / %	# / %
Total	**#M**	**#F**	**#**	**# / %**	-	-	-	**# / %**	**# / %**

Outlook tomorrow's talk

- New evaluative inquiry approach
- Innovative way to assist units in self-evaluations
- Mixed-methods, collaborative approach