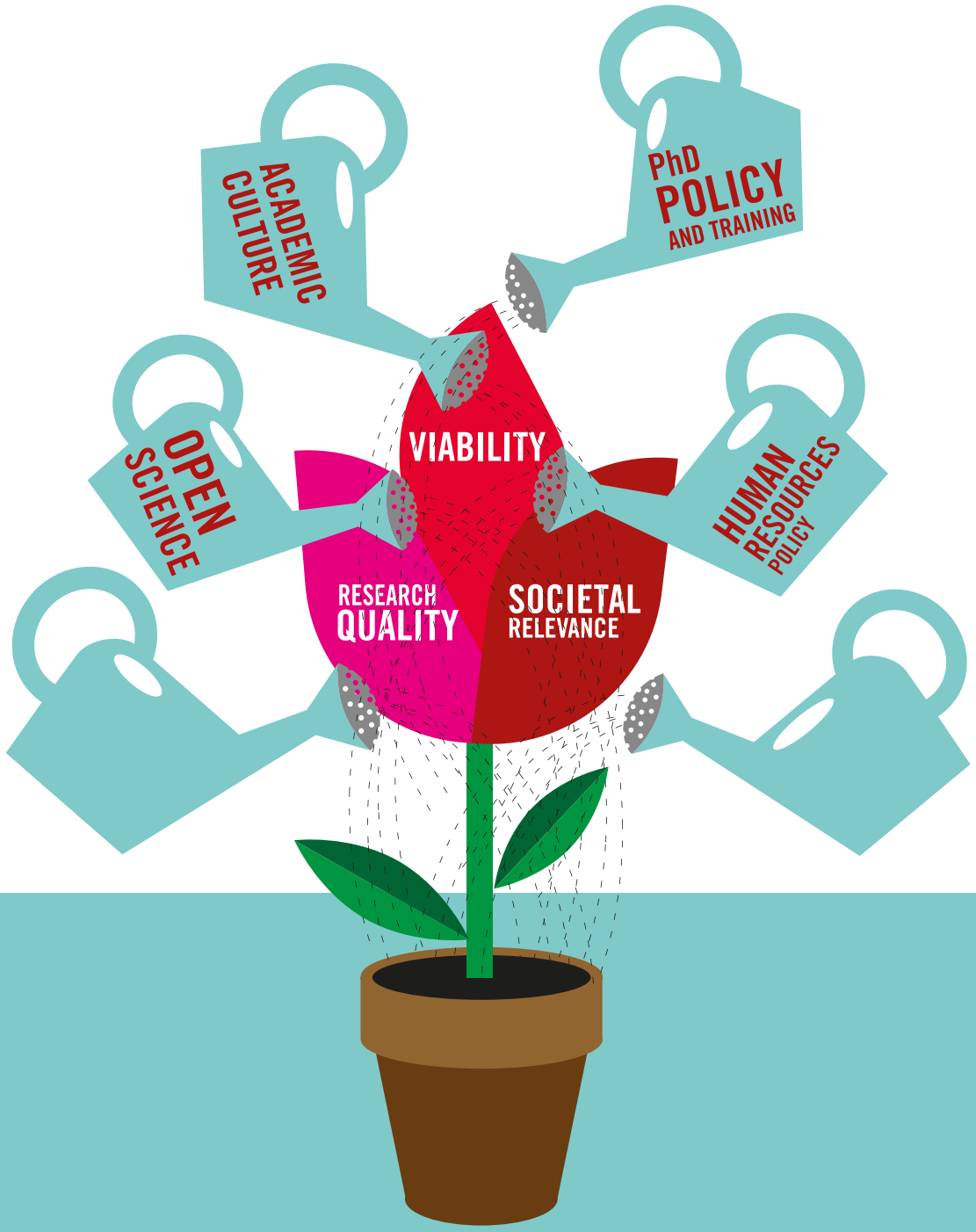

Strategy Evaluation Protocol

2021–2027

VSNU KNAW NWO

Colophon
The Strategy Evaluation Protocol 2021-2027 is
a publication of VSNU, KNAW and NWO.

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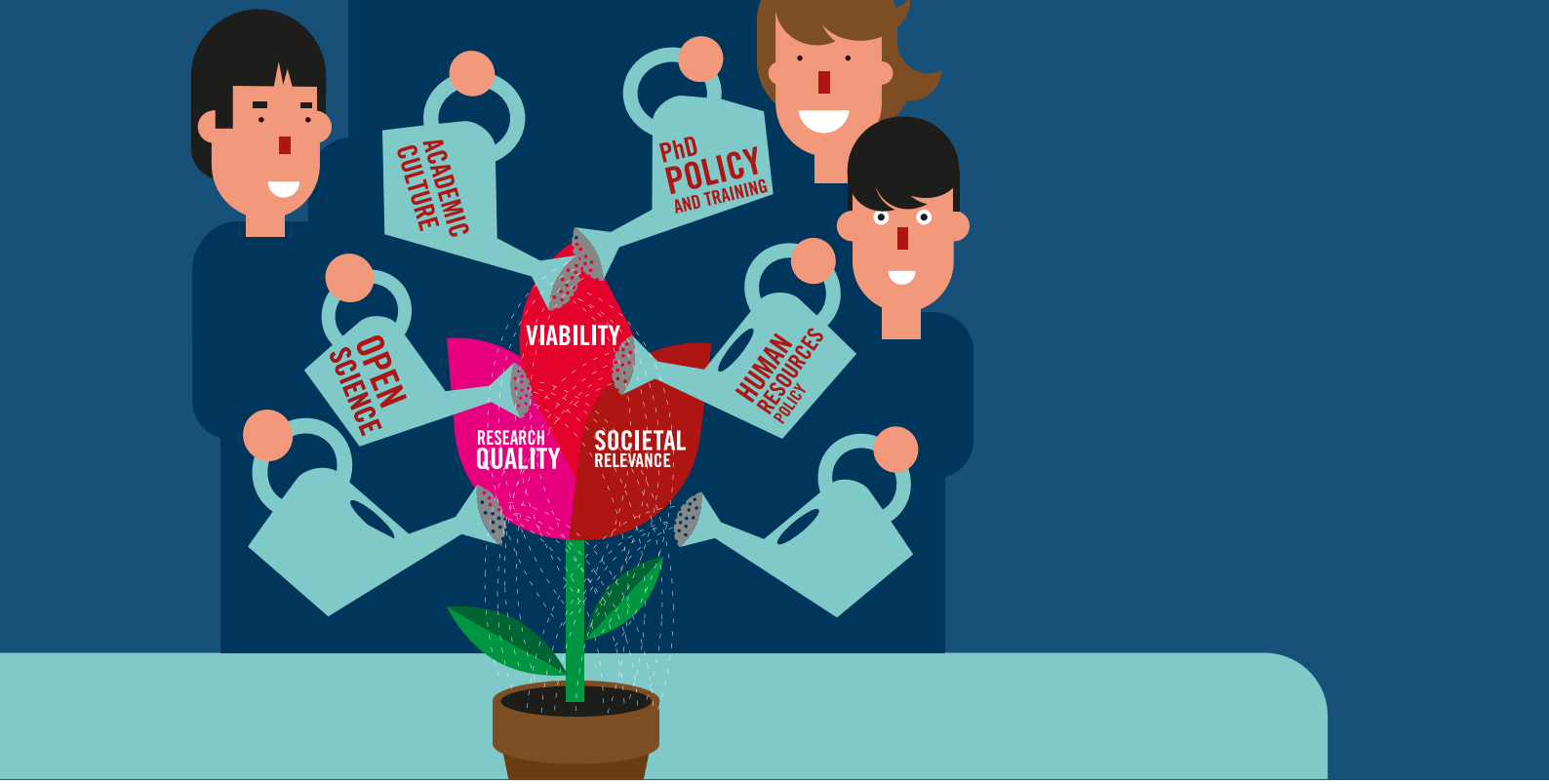
The Hague, March 2020

The Strategy Evaluation Protocol (SEP) describes the aims and methods used in order to assess research at Dutch universities as well as at NWO and KNAW institutes every six years[1]. As in the case of the previous SEPs, the present SEP was drawn up and adopted by the Association of Universities in the Netherlands (VSNU), the Netherlands Organisation for Scientific Research (NWO), and the Royal Netherlands Academy of Arts and Sciences (KNAW). These organisations have undertaken to assess all research within their organisations between 2021 and 2027 in accordance with this SEP.

The first version of the SEP covered the 2003-2009 period; the protocol was subsequently revised for the 2009-2015 and 2015-2021 periods. This document describes the protocol for the 2021-2027 period, taking into account developments in science and society, in particular with regard to Academic Culture, Open Science and national/international developments in the practice of research evaluation. This document was drafted by a dedicated committee, set up jointly by VSNU, NWO and KNAW, and supported by a preparatory working group.

1. As laid down in Article 1.18 of the Higher Education and Research Act.

Contents



Summary in Dutch

Het Strategy Evaluation Protocol (SEP) voor 2021-2027 is vastgesteld door VSNU, NWO en KNAW. Het wordt gebruikt om in een zesjarige cyclus de kwaliteit, relevantie en levensvatbaarheid van onderzoek in publieke instellingen in Nederland te evalueren. De zelfgestelde doelen en strategie van een onderzoekseenheid zijn daarbij leidend. Het SEP is een flexibel instrument, bedoeld om met minimale inspanning maximale winst uit onderzoeksevaluaties te halen. De onderzoekseenheden kunnen zelf bepalen welke indicatoren ze geschikt achten voor het evalueren van het onderzoek van hun eenheid.

De basis van de evaluatie vormt een zelfevaluatierapport van maximaal 20 pagina's

De SEP-evaluaties geven besturen en onderzoekseenheden de gelegenheid de kwaliteit van het onderzoek te volgen en te verbeteren in het kader van de voortgaande institutionele kwaliteitszorgcyclus. Met het periodiek evalueren van onderzoek ten aanzien van kwaliteit en maatschappelijke relevantie wordt verantwoording afgelegd aan de overheid en de maatschappij.

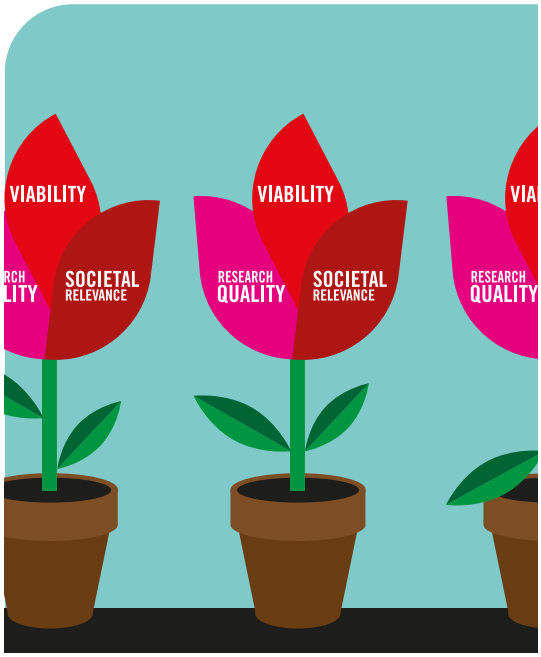
Het evaluatieproces

Het bestuur waaronder een eenheid valt – universiteit, NWO of KNAW – bepaalt wanneer de zesjaarlijkse evaluatie van elke onderzoekseenheid plaatsvindt. In overleg met de eenheid stelt het bestuur een geschikte visitatiecommissie samen en geeft deze de opdracht tot evaluatie.

De basis van de evaluatie vormt een zelfevaluatierapport, te schrijven als een samenhangend betoog van maximaal 20 pagina's, exclusief bijlagen en casestudies. In het rapport evalueert de eenheid, met gebruikmaking van robuuste data, de behaalde resultaten tijdens de afgelopen periode, in het licht van de eigen doelen en strategie. Het zelfevaluatierapport gaat in op resultaten van de afgelopen zes jaar en op ambities voor de komende jaren toegespitst op de drie criteria:

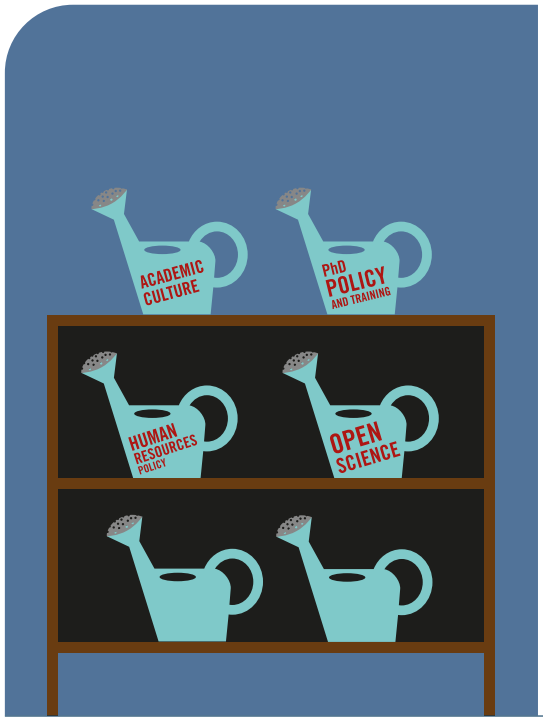
- Kwaliteit van het onderzoek;
- Maatschappelijke relevantie van het onderzoek;
- Toekomstbestendigheid van de eenheid.

Daarbij beschrijft de eenheid tevens hoe het onderzoek wordt georganiseerd en uitgevoerd om deze ambities te realiseren,



waarbij in ieder geval vier specifieke aspecten aan bod moeten komen:

- Open Science, zoals betrokkenheid van stakeholders, datagebruik, openbaarheid van publicaties en andere producten van het onderzoek;
- Promovendibeleid en -opleiding, zoals programma-inhoud, kwaliteitswaarborg, selectie, supervisie en uitval;
- Academische cultuur, in termen van openheid, veiligheid en inclusiviteit en in termen van wetenschappelijke integriteit;
- Talentbeleid en diversiteit (gender, leeftijd, etnische en culturele achtergrond).



Het zelfevaluatierapport bevat een beschrijving van de positie van de eenheid in het wetenschappelijke veld, relevante maatschappelijke ontwikkelingen, een SWOT-analyse voor de toekomst en een of meerdere casestudies (meer over casestudies in Appendix E3). De eenheid onderbouwt de observaties van de zelfevaluatie door het gebruik van specifieke indicatoren naar keuze; voorbeelden staan in Appendix E. Een suggestie voor de inhoudsopgave van het rapport staat in Appendix D.

Het zelfevaluatierapport wordt beoordeeld door de evaluatiecommissie, waarbij zowel de ontwikkelingen en resultaten van de eenheid in de afgelopen zes jaar, als de onderzoeksplannen voor de komende jaren worden bekeken. De commissie bezoekt tevens de eenheid en schrijft een concept-beoordeling met aanbevelingen voor toekomstige verbeteringen, onder meer met betrekking tot de zelf geformuleerde doelstellingen en strategie van de eenheid.

De eenheid corrigeert eventuele feitelijke onjuistheden in de concept-beoordeling, daarna volgt de definitieve beoordeling met aanbevelingen. Het bestuur bespreekt het rapport met de eenheid en schrijft een reflectie waarin ook aan de orde komt wat er met de uitkomsten gebeurt. Het bestuur is verplicht binnen zes maanden na het bezoek van de evaluatiecommissie de volgende documenten openbaar te maken: de samenvatting van het zelfevaluatierapport inclusief casestudies, de beoordeling van de evaluatiecommissie en de reflectie van het bestuur daarop, het positiedocument. In het jaarverslag van de universiteit, NWO of KNAW staat welke eenheden zijn geëvalueerd, wat de hoofdconclusies en aanbevelingen waren en welke actie is ondernomen voor de opvolging daarvan.

Het tijdpad en wie wat doet binnen de evaluatie staat in Appendix A.

Wat elke actor binnen het evaluatieproces moet doen, wanneer, op welke manier en onder welke voorwaarden, staat gedetailleerd beschreven in de hoofdstukken 3 (bestuur), 4 (onderzoekseenheid) en 5 (evaluatiecommissie).

Introduction

The main goal of a Strategy Evaluation Protocol (SEP) evaluation is to evaluate a research unit in light of its own aims and strategy. An assessment committee of independent experts assesses the performance of the unit based on the self-evaluation and a site visit.

The main goal of the SEP is to maintain and improve the quality and societal relevance of research as well as to facilitate continuous dialogue about research quality, societal relevance and viability in the context of research quality assurance. This goal is accomplished by assessing a research unit in light of its own aims and strategy. The main document that forms the basis for the evaluation is a self-evaluation written by the unit, in which it reflects on its aims, strategy and achievements during the previous six years as well as its aims and strategy for the future. The unit presents these elements in a coherent, narrative argument and supports this narrative, wherever possible, with factual evidence derived from well-substantiated indicators. The narrative is further illustrated by one or more case studies.

The evaluation is performed by an assessment committee, consisting of independent academic peers as well as optionally non-academic experts. This committee is appointed by the relevant board, which also determines the Terms of Reference for the assessment. Starting from the questions in the Terms of Reference, the assessment committee evaluates the unit based on the self-evaluation report and a site visit, during which it interviews delegates from the unit and other relevant persons. The committee evaluates the unit's developments and results over the past six years as well as its research plans for the years to come. The committee provides recommendations with an eye to future improvements, including with regard to the unit's self-formulated aims and strategy.

The executive board of the university, the board of NWO or the board of KNAW commissions the SEP assessment. The board then responds to the report of the assessment committee. The board and the research unit will use the report as part of their quality assurance cycle. The assessment report and the board's response will be made publicly available within six months of the site visit.

How to read the SEP 2021-2027

This document is intended for all who work with the SEP: researchers, heads of research units, policy officers, board members, members of assessment committees and secretaries to these committees. It offers the information required to organise and carry out research assessments.

> *The SEP is a flexible instrument that stands in the service of a productive conversation*

The SEP 2021-2027 is structured in the following way:

1. The first chapter describes **the main goals, elements and principles** of the SEP protocol;
2. The second chapter describes the **assessment process**;
3. The third chapter details the assessment process from the perspective of **the executive board of a university, the KNAW board and the NWO board**;
4. The fourth chapter is written from the perspective of a **research unit**;
5. The fifth chapter is written from the perspective of an **assessment committee**.

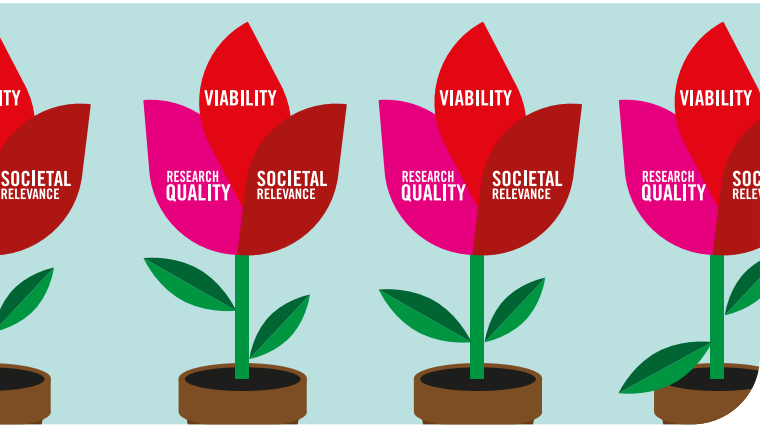
The **appendices** provide checklists for the procedure and suggested formats for the documents to be produced during the assessment process.

The SEP is a flexible instrument that is at the service of a productive conversation on the quality and societal relevance of the research and the viability of research units in light of their own aims and strategy. The protocol leaves room for plurality with respect to the application and interpretation of the different elements, depending e.g. on the institutional context, the discipline of the research and the nature of the unit. It is strongly recommended to take advantage of this flexibility in order to optimise the returns of the evaluation and to minimise the work involved in doing so.

1. Overview of the SEP

Main goals, elements and principles of the SEP evaluation

Academic research in the Netherlands is evaluated every six years on a rolling basis. The executive board of the relevant university, the board of NWO or the board of KNAW is responsible for these assessments. The board decides which research units are to be evaluated in which year. 'Research units' refer to institutes, departments, research groups or multidisciplinary clusters with their own research strategy, or other relevant units as defined by the board that commissions the evaluation. The main goal of a SEP evaluation is to evaluate a research unit in light of its own aims and strategy, including the sufficiency or appropriateness of the aims and strategy.



The SEP assessments help boards and units alike to monitor and improve the quality of research conducted by the research unit as part of the ongoing quality assurance cycle. Additionally, the assessments of the research quality and societal relevance of research contribute to fulfil the duty of accountability towards government and society.

The relevant board appoints the assessment committee and determines the Terms of Reference for the assessment. The main document that forms the basis for its evaluation is a self-evaluation written by the research unit. The unit also organises a site visit for the assessment committee. Based on the self-evaluation and the site visit, the assessment committee assesses the performance of the unit. It does so according to ***three main assessment criteria***, which constitute the central part of the Terms of Reference: 1) **research quality**, 2) **societal relevance** and 3) **viability**.

The main goal of a SEP evaluation is to evaluate a research unit in light of its own aims and strategy

Assessment criteria

Research quality: the quality of the unit's research over the past six-year period is assessed in its international, national or – where appropriate – regional context. The assessment committee does so by assessing a research unit in light of its own aims and strategy. Central in this assessment are the contributions to the body of scientific knowledge. The assessment committee reflects on the quality and scientific relevance of the research. Moreover, the academic reputation and leadership within the field is assessed. The committee's assessment is grounded in a narrative argument and supported by evidence of the scientific achievements of the unit in the context of the national or international research field, as appropriate to the specific claims made in the narrative. The protocol explicitly follows the guidelines of the San Francisco Declaration on Research Assessment (DORA)[2] adopted by KNAW, VSNU and NWO.

2. https://sfdora.org/read

Societal relevance: the societal relevance of the unit's research in terms of impact, public engagement and uptake of the unit's research is assessed in economic, social, cultural, educational or any other terms that may be relevant. Societal impact may often take longer to become apparent. Societal impact that became evident in the past six years may therefore well be due to research done by the unit long before. The assessment committee reflects on societal relevance by assessing a research unit's accomplishments in light of its own aims and strategy. The assessment committee also reflects, where applicable, on the teaching-research nexus. The assessment is grounded in a narrative argument that describes the key research findings and their implications, while it also includes evidence for the societal relevance in terms of impact and engagement of the research unit.

Viability: the extent to which the research unit's goals for the coming six-year period remain scientifically and societally relevant is assessed. It is also assessed whether its aims and strategy as well as the foresight of its leadership and its overall management are optimal to attain these goals. Finally, it is assessed whether the plans and resources are adequate to implement this strategy. The assessment committee also reflects on the viability of the research unit in relation to the expected developments in the field and societal developments as well as on the wider institutional context of the research unit.

Specific aspects

The three main assessment criteria 1) research quality, 2) societal relevance and 3) viability are central in the assessment of the research unit. These three criteria include several aspects depending on the aims and strategy of the research unit. Among all relevant aspects, the research unit addresses at least the following ***four specific aspects***: 1) **Open Science**, 2) **PhD Policy and Training**, 3) **Academic Culture** and 4) **Human Resources Policy** in concert with the main assessment criteria. The assessment committee should also take these into account. These four aspects relate to how the unit organises and actually performs its research, how it is composed in terms of leadership and personnel, and how the unit is being run on a daily basis. The aspects are outlined in the text boxes below. Though possibly to varying degrees, they are integral aspects of each of the three major assessment criteria. For example, through its different practices (Open Access publishing, FAIR data and code, public engagement), Open Science is an integral part of how research quality and societal relevance can be achieved. It may also be judged critical for the viability of the research unit in general. This fact goes for all the specific aspects: they are not to be dealt with separately from the main assessment criteria.

Assessment committees are invited to assess how the daily practice of the research unit with respect to the specific aspects fosters or hinders the attainment of its strategic aims.

Again, not every aspect needs to be relevant for each criterion; it is up to the assessment committee to make relevant connections. Research units are encouraged to outline these connections in the self-evaluation. For example: *a research unit invested in creating an open and inclusive research environment during the last six years. The unit organises lunch lectures every week, in which research designs are presented at an early stage. Speakers are encouraged to share dilemmas while their colleagues ask questions, give compliments and provide constructive feedback. This environment has made a clear contribution to the methodology of the research designs and therefore to the research quality of the unit's work.*

Open Science[3]:
The assessment committee considers the extent to which the research unit involves stakeholders, if possible and relevant, in the preparation and execution of the aims and strategy. It also considers to which extent the research unit opens up its work to other researchers and societal stakeholders in the context of its strategy and policy. Furthermore, the committee considers whether the research unit reuses data where possible; how it stores the research data according to the FAIR[4] principles; how it makes its research data, methods and materials available; and when publications are available through open access. Even if Open Science was not yet considered by the research unit for the past period, the assessment committee evaluates the unit's considerations and plans for the future with regard to Open Science.

In the self-evaluation, the research unit reflects on how it involves stakeholders, to which extent the research unit opens up its work to other researchers and societal stakeholders, how it pays attention to other aspects of open science and what its future plans are in this respect.

PhD Policy and Training:
The assessment committee considers the supervision and instruction of PhD candidates, including PhD education at relevant institutional graduate school(s) and (national) research school(s)[5], in light of their aims, strategy and policy. Furthermore, the committee considers whether the quality assurance system is functioning properly. Here, too, the goals that the research unit has set for itself are important. PhD training, mentoring and coaching deserves attention given the special position of the large numbers of PhD candidates in the different research institutions.

In the self-evaluation, the research unit reflects on the institutional context of the PhD programmes, the PhD programme content and structure, quality assurance, the selection and admission procedures for PhD candidates, as well as the position of PhD candidates and PhD training in the unit's research. Furthermore, the research unit reflects on the supervision of PhD candidates, the effectiveness of the Training and Supervision Plans, the guidance of PhD candidates towards the job market, duration, success rate, exit numbers and career prospects for PhD candidates.

3. https://www.openscience.nl/
4. https://www.go-fair.org/fair-principles/
5. The national research school is assessed within the context of the research units' SEP assessments. As a rule, this research unit is the one that acts as the coordinator for the research school. A similar arrangement is made when the PhD candidates of multiple research units are enrolled in a single graduate school.

Academic Culture:

Openness, (social) safety and inclusivity: The assessment committee considers the openness, (social) safety and inclusivity of the research environment.

In the self-evaluation, the research unit reflects on its culture in terms of appreciating the multiplicity of perspectives and identities in the workplace; on which measures are taken to ensure openness, safety and inclusivity; and on how responsibility is taken by leaders of and within the research unit in order to contribute to such an academic culture.

Research integrity: The assessment committee considers the research unit's policy on research integrity as well as the way that the unit facilitates the relevant actions and requirements formulated in the Netherlands Code of Conduct for Research Integrity[6].

In the self-evaluation, the research unit reflects on data integrity as well as the extent to which an independent and critical pursuit of science is made possible within the unit. Furthermore, the research unit reflects on the degree of attention given to integrity and ethics, on the prevailing research culture and mode of interaction, as well as on relevant dilemmas (for example, of an ethical nature) that have arisen and on how the research unit has dealt with them. These dilemmas could include issues related to authorship, ethical considerations regarding privacy or collaborations with stakeholders.

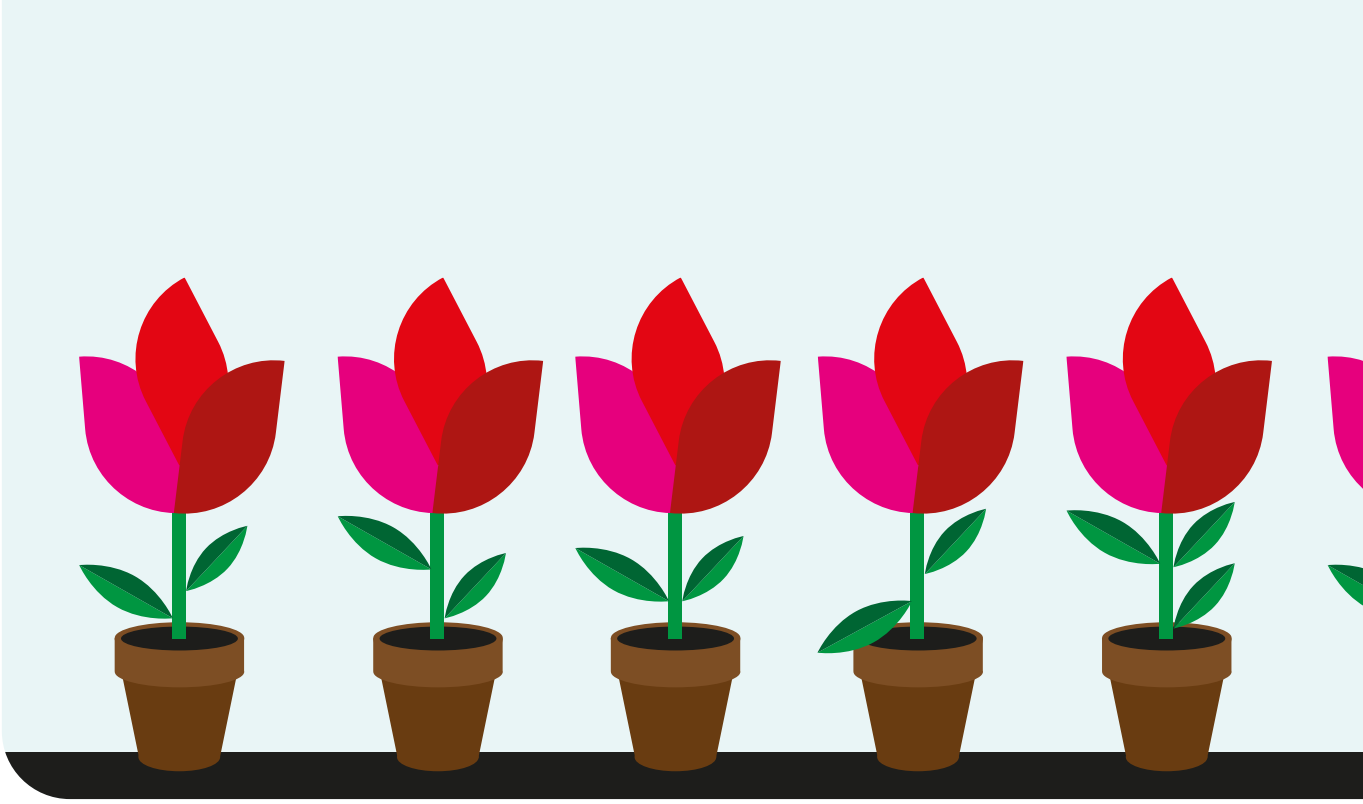
Human Resources Policy:

Diversity: The assessment committee considers to which extent diversity (including gender, age, ethnic and cultural background and disciplines) is a concern, while it also evaluates the actions and plans for the future of the research unit.

In the self-evaluation, the research unit reflects on where the research unit stands at present with respect to diversity in relation to its aims, strategy and policy. Furthermore, the research unit reflects on how it guarantees diversity-promoting HR practices such as inclusive selection and appraisal procedures.

Talent Management: The assessment committee considers the research unit's policies on talent selection and development in relation to its aims and strategy. More specifically, it evaluates the unit's recruitment policies, opportunities for training and development, coaching and mentoring, as well as career perspectives for researchers and research support staff in difference phases of their career. In the self-evaluation, the research unit reflects on its selection, training, promotion and retention policy, as well as on the way that it offers opportunities for diverse career paths. This reflection includes a consideration of how the research unit ensures that researchers are properly evaluated, rewarded and incentivised.

6. The Netherlands Code of Conduct for Research Integrity



Report and follow-up

The assessment report of the assessment committee is submitted to the executive board of the relevant university, the board of NWO or the board of KNAW. This board subsequently issues a position document on the report. After the completion of the SEP assessment, a summary of the unit's self-evaluation – including the case studies[7] –, the committee's assessment report, and the position document of the board will be made publicly available as part of the quality assurance cycle. This step in the process is mandatory. The follow-up to the assessment report and position document is discussed at least annually by the executive board and the research unit as part of the quality assurance cycle. A mid-term review is not mandatory and should only be conducted in exceptional circumstances.

7. This stems from a recommendation of the Royal Netherlands Academy of Arts and Sciences: KNAW (2018). Tracking Impact [Maatschappelijke impact in kaart]:
'Make the narratives produced within the framework of the SEP, the TO2 evaluations, and the BKO easily accessible to a wide audience. Consider whether the assessment committees' societal relevance assessment can also be linked to those narratives.'
The case studies (which were called 'narratives' in SEP 2015-2021) can only be clearly understood by the general public if it has an idea of the type of research that is illustrated by the case study. For that reason, all research groups are asked to make a public summary of the self-evaluation, a short summary (about one page) with a description of the research area, and a concise version of the aims and strategy of the unit. Examples of such public summaries can be found in the 'Nulmeting 2016 | Portfolio-evaluatie van de NWO- en KNAW-instituten'.

2. The assessment process

A. The board of the institution

1) The executive board of the relevant university, the board of NWO or the board of KNAW ('the board') is responsible for ensuring that all the research conducted within their institutions is assessed once every six years. These assessments should be seen as part of the institution's quality assurance cycle and can accordingly be prepared as well as followed up during meetings that are conducted as part of this cycle.

2) The board **determines the units to be assessed** within the following boundary conditions: the research unit should be known as an entity in its own right both within and outside of the institution, with its own clearly defined aims and strategy. It should be sufficiently large; i.e. at least ten research FTEs among its permanent academic staff, including staff with tenure-track positions, but excluding PhD candidates and postdocs. This condition merely indicates the minimum number; larger units are preferable. The research unit should have been established at least three years previously. If units of a more recent date are to be assessed, their self-evaluation should indicate their stage of development so the assessment committee can take this fact into account.

3) The board discusses the research unit's self-formulated aims and strategy in a series of **strategic planning discussions**. In these discussions, the research unit shares its aspirations and ambitions as well as the strategy to attain them with the board.

4) The board **specifies the Terms of Reference** for each assessment. The Terms of Reference contain at least the following elements:
   - The nature of this Strategy Evaluation Protocol, for which the aims and strategy of the research unit serve as the main terms of reference for the evaluation process, which also implies that the research unit is free to choose the most relevant indicators for these aims and this strategy;
   - An explanation of the public nature of the final assessment report;
   - Specific information about the research unit to be assessed and/or about elements that the assessment committee must consider;
   - Strategic recommendations for the entire discipline at the national level, in case of a nation-wide assessment covering a discipline;
   - The three assessment criteria and the four specific aspects.

In addition, the board may request the committee to pay attention to a number of additional questions about the research unit; e.g. the sufficiency or appropriateness of its aims and strategy, or any other aspects the board deems relevant to get a clear picture of the past and anticipated future performance of the research unit.

5) The board **appoints an impartial expert assessment committee**, of which the members should jointly be capable of:
   - Assessing the research quality and societal relevance of the unit's research and the viability of the unit in its current international context, taking into account the Dutch research environment as well as the unit's Open Science policy, PhD Policy and Training, Academic Culture and Human Resources Policy.

The committee shall be appropriately diverse and, wherever possible, have an international composition. The diverse composition of the committee should be understood in a broad sense, focusing on relevant dimensions of diversity such as gender as well as cultural, national and disciplinary background, etc.

The committee has at least one PhD candidate and one early-/mid-career researcher as its members. The committee may also include a non-academic expert. The committee shall have a chairperson. The committee shall be supported by an independent secretary, who is not considered to be a member of the assessment committee. See Appendix G for a list of requirements for the assessment committee.

B. The research unit

6) The point of departure for the evaluation is the aims and strategy of the research unit, which were discussed as well as formulated in previous years within the unit and with the board.

7) The research unit that is subject to the assessment **provides a narrative self-evaluation not exceeding 20 pages**, excluding appendices and one or more case studies. This self-evaluation describes the aims of the research unit and the strategy to achieve these goals, both for the past six years and for the next six-year period. It elaborates on the strategic discussions which the unit has had with the relevant board as part of the institution's quality assurance cycle.

8) For the **past six-year period**, the achievements are documented in the shape of a narrative argument, wherever possible supported with factual evidence (where appropriate, the unit can use quantitative indicators). The unit should choose indicators that are justified in the narrative argument to underpin the scientific achievements of the unit properly, in the context of the national or international research field, its societal relevance in terms of impact and engagement, as well as the way in which these scientific and societal achievements are related. The narrative argument is further illustrated by one or more case studies (see Appendix E3).

9) For the **coming six-year period**, the research unit reflects on the strategy to achieve its aims by describing its position in the field, by anticipating relevant scientific and societal as well as institutional developments and by performing a SWOT analysis.

10) In addition to writing a self-evaluation, the research unit organises a **site visit**. During this visit, the assessment committee can interview delegates from the unit and other relevant persons, who may include non-academic stakeholders and partners. The visit should also be used, where appropriate, to present the local research infrastructure of the research unit. The purpose of these interviews is to verify and supplement the information provided in the self-evaluation.

C. The assessment committee

11) The assessment committee **formulates in a written report** a well-argued assessment of the criteria *research quality, societal relevance* and *viability* of the research unit in light of its aims and strategy, based on the self-evaluation and the site visit.

12) The assessment committee **addresses its report** to the executive board of the relevant university, the board of NWO or the board of KNAW in response to the Terms of Reference which the board has formulated.

13) The result of the assessment must be a **text that outlines in clear language and in a robust manner the reflections of the committee** both on positive issues and – very distinctly, yet constructively – on weaknesses. The comments could well convey suggestions as to where and how improvements are envisaged. The report must consist of sharp, fair, but discerning texts providing clear arguments. The executive board as well as the general public should, as non-peers, be able to understand from the conclusions in the text how well the research unit is performing in its international, national or – where appropriate – regional context.

14) The assessment committee evaluates **the aims and strategy that the research unit has set for itself** in the context of international trends as well as developments in the relevant scientific area and in society.

15) The assessment committee **assesses the research quality of the unit's research** in light of its own aims and strategy over the past six-year period in its international, national or – where appropriate – regional context.

16) The assessment committee **assesses the societal relevance** of the unit's research impact and engagement over the past six years in economic, social, cultural,

educational or any other terms that may be relevant in light of its own aims and strategy.

17) The assessment committee **assesses the viability** of the unit as the extent to which the research unit's aims for the coming six-year period remain scientifically and societally relevant, its strategy being optimal to attain these aims as well as the plans and resources adequate to implement this strategy.

18) The assessment committee **reflects on the four *specific aspects*** of 1) **Open Science**, 2) **PhD Policy and Training**, 3) **Academic Culture** and 4) **Human Resources Policy** as integral aspects of how the unit organises, manages and performs its research in the context of the three main assessment criteria.

19) The assessment committee addresses the **additional questions** which the board has asked about the research unit (see Chapter 2A, point 4).

20) The assessment committee evaluates research quality, societal relevance and viability **in qualitative terms**, and provides an assessment on the research unit as a whole in qualitative terms.

21) The assessment committee **makes recommendations** for the unit's future developments.

22) The assessment committee composes an **executive summary** with straightforward qualifications and key arguments, as part of the assessment report.

23) The assessment committee sends a **final draft** of the assessment report to the research unit for the correction of factual inaccuracies. The final version is sent to the board.

D. The board and the research unit

24) The research unit may submit a **written response to the assessment report** to the board.

25) The board receives the assessment report and, if available, the research unit's response to the report. The board then **produces a position document**, in which it reflects on the assessment and states how it will follow up on the outcome of the assessment.

26) The board and the research unit **discuss the assessment outcome and potential actions** as part of the quality assurance cycle.

27) Because the assessment contributes to fulfil the duty of accountability, the report will be made **publicly available** by the board. Within six months of the site visit, a summary of the unit's self-evaluation – including the case studies, the committee's assessment report and the position document of the board – will be made publicly available as part of the monitoring of the quality assurance cycle. This step in the process is mandatory.

3. Actions by the board of the institution

This chapter explains the role of the executive boards of the universities, the board of NWO or the board of KNAW. The main responsibilities of the board are: integrating the assessment in the quality assurance cycle of its institution; scheduling the assessments; composing the assessment committees; determining the Terms of Reference for the assessments; and following up on the reports of the assessment committees. The schedule for the assessment process can be found in Appendix A.

Strategic choices

As part of the quality assurance cycle of its institution in the years preceding the evaluation, the SEP assessment prompts the board and the research unit to identify as well as discuss the unit's aims, strategy and performance. The results of this process should be reflected in the Terms of Reference, are central during the writing of the self-evaluation and should be evaluated after receiving the recommendations of the assessment committee. For example, the board may include issues from previous quality assurance meetings in the Terms of Reference, discuss the outlines of the self-evaluation as well as the selected indicators with the research unit and return to the recommendations of the assessment committee during quality assurance meetings to come.

Aggregate level of assessment within an institution

The board decides which research units will be assessed by a single assessment committee. For example, a board may decide that the assessment will concern a research group, a research institute, a research cluster or the research carried out within a faculty, or choose to have a multi-layered assessment of various units under a thematic umbrella organisation. The research unit could be either a disciplinary or a multi-disciplinary cluster. The following conditions apply:

- The research unit must have its own clearly defined strategy and be sufficiently large; i.e. at least ten research FTEs among its permanent academic staff, including staff with tenure-track positions but excluding PhD candidates and postdocs. This condition merely indicates the minimum number; larger units are preferable.
- The research unit that is subject to assessment should have been established at least three years previously. If units of a more recent date are to be assessed, their self-evaluation should indicate their stage of development so the assessment committee can take this fact into account. This condition should be included in the Terms of Reference. The research unit should be known as an entity in its own right both within and outside of the institution.

The board determines whether the research unit has met the above conditions. Wherever desirable, this assessment is organised jointly as nation-wide assessments of research fields[8].

Terms of Reference

The board of the institution specifies the Terms of Reference for the assessment committee for each separate assessment. A format for the Terms of Reference can be found in Appendix C.

The Terms of Reference briefly explain the nature of the SEP, with its three assessment criteria and its four specific aspects. This explanation includes the importance of the aims and strategy of the research unit in the evaluation process as well as the freedom of each research unit to choose the most relevant indicators for this strategy. Furthermore, the Terms of Reference contain specific information about the research unit to be assessed and/or additional questions that the assessment committee is asked to consider. These questions may be related to the unit's aims and strategy or to the unit's specific tasks, for instance.

If the assessment covers a discipline, the assessment committee may be asked also to make strategic recommendations for the entire discipline at the national level.

The board makes sure that the assessment committee receives a fact sheet about the relevant scientific landscape in the Netherlands. Additionally, the Terms of Reference explain the public nature of the final assessment report.

Procedure for assembling an assessment committee

The board of the institution is responsible for setting up the procedure to assemble the assessment committee. Setting up an appropriate committee is crucial to the entire evaluation cycle. The board and the research unit ensure that the assessment committee's overall profile matches the research unit's research and societal aims.

There are several ways to arrive at the composition of the assessment committee. The research unit can for instance be asked to nominate both a candidate chairperson and candidate members for approval by the board. Another way is first to appoint the chairperson and subsequently consult with the chairperson about further members of the committee.

Conditions for the composition of an assessment committee

The board verifies that the committee is well equipped to assess the research quality, societal relevance and viability of the research unit in its international context. In addition to the aspects which the committee deems relevant, the board also takes into account the four specific aspects (Open Science, PhD Policy and Training, Academic Culture and Human Resources Policy). The board ensures as well that the committee is appropriately diverse, including a PhD representative, a early-/mid-career researcher and – if appropriate – a non-academic expert. A checklist of the criteria for the assessment committee can be found in Appendix G. It is stressed that the criteria are applicable to the joint committee and that no single member has to fulfil all criteria.

The board ensures that the committee is appropriately diverse

The board is responsible for appointing a secretary. This secretary, who should have experience with assessment processes within the context of scientific research in the Netherlands, assists the committee with interpreting and applying the SEP protocol as well as the Terms of Reference with regard to the research unit. The secretary should be independent of the board and the research unit. The secretary is not considered to be part of the assessment committee and will therefore not contribute to the content of the assessment itself.

Before appointing the committee members, the board submits the final composition of the

8. If an evaluation is organised in a national context, it may be useful to draw up a plan of action and/or a discipline protocol. The coordinating institution submits this plan of action or discipline protocol to the boards involved for approval.

committee to the research unit. The research unit indicates whether it agrees with the board that the suggested committee will be capable of adequately assessing the research quality of the research unit's work.

Scheduling the assessments

The board is responsible for the overall scheduling and the transparency of the assessment within its institution. It decides which research units will be assessed at what time. The board sets up a schedule for this purpose, makes it publicly available and monitors the schedule. It subsequently informs the research units of the assessments well in advance of the commencement of the assessment.

The board informs all those involved about the expectations and timeline of the assessment. After receiving the final version of the assessment report, the board discharges the committee from its tasks and makes sure that costs made for the site visit are reimbursed.

Statement of impartiality and installation

Prior to the site visit, the members of the assessment committee and the secretary sign a statement of impartiality (see Appendix H). They are then officially installed by the executive board of the institution. At least four weeks but preferably eight weeks prior to the site visit, the board of the institution sends out the relevant documents (the Strategy Evaluation Protocol, the Terms of Reference, the composition of the assessment committee and its secretary, the form for the statement of impartiality and the self-evaluation report) to the assessment committee.

Follow-up

The executive board of the relevant university, the board of NWO or the board of KNAW receives the assessment report and, if available, the research unit's response to the report. The board then produces a position document. In the position document, the board reflects on the assessment and states how it will follow up on the outcome of the assessment. These follow-up actions are monitored at regular intervals as part of the quality assurance cycle, according to the institution's own internal procedures. A mid-term review is therefore not mandatory and should only be conducted in exceptional circumstances. Indeed, in view of limiting the workload related to research assessments, mid-term reviews are explicitly advised against and should only be conducted in exceptional circumstances; e.g. in the case of a significant change in the aims or strategy of the research unit.

Public accountability

The assessment reports are published as a means of public accountability.The board is responsible for taking action with this regard in the following ways. The board ensures that a summary of the self-evaluation – including the case studies –, the assessment report, and its position document are publicly published (e.g. on the institution's website) within six months of the site visit. In its annual report, the board indicates which of the institution's research units have been assessed, what the most important conclusions and recommendations are, and what follow-up action has been taken on the recommendations. The board also reports which research units will be assessed in the year ahead.

The assessment reports are published as a means of public accountability


ACADEMIC CULTURE
PhD POLICY AND TRAINING
OPEN SCIENCE
VIABILITY
HUMAN RESOURCES POLICY
RESEARCH QUALITY
SOCIETAL RELEVANCE

4. Actions by the research unit

This chapter explains the role of the research units in the SEP and contains a description of the self-evaluation. The schedule for the assessment process can be found in Appendix A.

Strategic choices

The point of departure for the evaluation are the aims and strategy of the research unit with regard to the quality, relevance and viability of its research, as were discussed in the preceding years within the unit and in regular quality assurance meetings with the relevant board. The assessment allows the unit and the board to reflect on the strategic choices that the unit has made as well as the effects that these choices have had. During the quality assurance meetings, the unit and the board can for instance discuss the outlines of the self-evaluation, the selected indicators and the plan to follow up on the assessment outcome. In addition to these discussions with the board, the unit may choose to discuss strategic issues related to the assessment with other relevant persons or bodies such as societal stakeholders. Appendix B explains in more detail what is meant by the aims and strategy of a research unit.

The idea behind the self-evaluation

The self-evaluation takes the overall shape of a coherent narrative argument on the aims and strategy of the research unit as well as on the results of this strategy for the quality, relevance and viability of its research. This narrative argument is, wherever possible, supported by factual evidence (where appropriate, the unit can use quantitative indicators). The choice of indicators accordingly depends on the exact argument for which they should provide evidence[9]. The research unit selects its indicators based on the argument which it wants to develop. Other sources of robust data may include benchmarking against peer research units as well as case studies highlighting its most distinctive and societally relevant accomplishment(s). In the self-evaluation, the research unit explicitly reflects on its own research accomplishments and on its research discipline in general, as well as on the specific aspects (Open Science, PhD Policy and Training, Academic Culture and Human Resources Policy). After discussing its accomplishments during the past six years, the research unit reflects on the strategy needed for the future, with an emphasis on the next six years. It does so by describing its position in the field, by anticipating relevant scientific and societal as well as institutional developments and by performing a SWOT analysis. The self-evaluation should be **no more than 20 pages**, excluding appendices and case studies.

Self-evaluation starts with making the research unit's aims and strategy explicit

Writing the self-evaluation

The backbone of the self-evaluation is the strategy which the research unit has followed to achieve its main aims with regard to research quality, societal relevance and viability. Accordingly, the process of writing a self-evaluation starts with making the research unit's aims and strategy explicit. This goal can be achieved by updating previous strategy documents, by conducting strategic discussions with the relevant board and/or by conducting strategic sessions with all members of the research unit. These meetings can also be used in order to reflect on Open Science, PhD Policy and Training, Academic Culture and Human Resources Policy, with the added benefit of generating awareness for and a reflection on these topics among all members of the research unit. See Appendix B for more information on what a strategy can entail.

In the self-evaluation, the research unit subsequently shows to what extent the strategy

9. Several good practices of Quality and Relevance in the Humanities can be found on https://www.qrih.nl/en/.

followed has contributed to accomplishing its ambitions with regard to research quality and societal relevance. It does so by means of indicators which it chooses itself, and which logically follow from its aims and strategy. The unit reflects in a coherent, narrative argument on how it actually performs and organises its research to achieve its strategic aims, with a specific emphasis on 1) Open Science, 2) PhD Policy and Training, 3) Academic Culture and 4) Human Resources Policy as outlined above in the text box in Chapter 1. In the self-evaluation, the research unit gives a brief description of where the research unit stands at present and the strategic steps which it intends to take in the near future with respect to these four specific aspects. The research unit does so in relation to its own strategic goals as well as the way that it will employ the specific aspects which contribute to the unit's research quality, societal relevance and viability.

In the box below, two cases are described as examples of how policies on inclusion, diversity and talent management can be directly related to the execution of the research of the unit.

Inclusion, diversity and talent management

Case 1: Understanding inequality in study success

A unit has a long-standing research programme that aims to understand inequality in study success and broad personal development among students at the level of primary schools as well as dropout rates at secondary schools in large cities in the Netherlands. The focus is among other things on determinants such as household poverty, unemployment, immigrant background, composition of the family situation, level of education and proficiency in Dutch among parents or caretakers, social connectedness of students in secondary schools and to particular peer groups, as well as on the particular school type (culturally mixed, 'black' or 'white' school, amount of cultural and economic capital). The unit realises that the composition of the research team and staff is critical for this research, which is carried out in close collaboration with relevant school teachers, school psychologists and social workers. Since a lot of interviews and non-verbal interactions with students, parents as well as other participants are at stake, which are heavily socially and culturally laden, observers and researchers are required in the team who are able to recognise, 'read' as well as correctly interpret what is being said or what can read between the lines. By recruiting staff and by training Master's students and PhD candidates, both male and female, with diverse socio-economic and cultural backgrounds, this unit has achieved an excellent research output and a deep understanding of the social, psychological and educational determinants of inequality in school performance and of school dropout rates over the years. This expertise has led to designing and piloting early interventions in the schools involved. In that way, the unit provides talented young researchers with the most adequate background and professional experience for this important work.

Case 2: Risk factors for cardiovascular disease

A unit works on prevention and risk factors for cardiovascular disease (CVD), including myocardial infarction. Risk factors are strongly related to lifestyle, obesity, smoking, nutritional habits and mobility. It is now widely known that early symptoms and complaints of CVD can be different in male and females. The well-recognised symptoms of the typical left chest pain are predominantly the presentation in males. It was believed for a long time that CVD and myocardial infarction were mainly male diseases. Indeed, it took cardiologists very long to recognise a different set of diffuse and thus 'atypical' complaints in middle-aged females, which were predictive of cardiac problems in females. These complaints were misdiagnosed or diagnosed as hyperventilation caused by stress and anxiety, or thought to be associated with the menopause. Recently, especially female cardiologists realised the problem that most research had been performed in men, leading to knowledge gaps on heart disease in women. They interviewed many patients and started research specifically into heart diseases among women. It is relevant to note that cardiologists were predominantly male until 20 years or so ago (https://www.pnas.org/content/115/34/85690). Training and recruiting female GPs as well as medical specialists with diverse social and cultural backgrounds has been shown to be of great value for the delivery of inclusive health care as well as for impactful research on public health, health care and curing diseases.

The SEP does not prescribe a uniform measure of strategic success. Some examples of indicators that a research unit can use in order to demonstrate its accomplishments are given in Appendix E. The purpose of the indicators is to enable the research unit to offer relevant factual evidence in support of the strategy which the unit has followed to ensure the research quality and societal relevance of its research. The relevance of the indicators that are used should be well argued. Care should be taken not to omit indicators that are generally used in the relevant field or research and to provide good arguments why certain indicators that are widely used in the relevant research field have been omitted. The research unit should explicitly follow the guidelines of the San Francisco Declaration on Research Assessment (DORA) adopted by VSNU, KNAW and NWO.

The SEP protocol does not prescribe a uniform measure of strategic success

In addition to support for its strategic success by means of factual evidence (where appropriate, the unit can use quantitative indicators), the research unit should provide one or more case studies to highlight what it considers to be its most distinctive and societally relevant accomplishment(s). Case studies take the shape of a coherent narrative argument as well. Together with a summary of the self-evaluation, they will be made publicly available after the evaluation.

After discussing its accomplishments during the past six years, the research unit reflects on the strategy needed for the future, with an emphasis on the coming six years.

The relevance of the indicators that are used should be well argued

A suggested outline of the self-evaluation report in terms of a table of contents is given in Appendix D.

Procedure for assembling an assessment committee

The board of the institution is responsible for setting up the procedure to assemble the assessment committee. The board and the research unit ensure that the assessment committee's overall profile matches the research unit's research and societal impact. The research unit is asked to nominate a candidate chairperson and candidate members for approval by the board. Another way is first to appoint the chairperson in this way and subsequently to consult with the chairperson as well as the research unit about the further members of the committee.

Site visit

In addition to supplying the assessment committee with the self-evaluation, the research unit organises a site visit to give the committee a first-hand impression of its activities. In particular, the opportunity of a site visit should be seized to show the local research infrastructure to the assessment committee and to expose the committee to a diverse group of members of the research unit in an unsupervised setting. A suggested programme for the site visit can be found in Appendix F.

It is customary, but not mandatory, that the assessment committee gives a short impression of its findings to a representation of the unit at the end of the site visit. This presentation is only a first impression of the committee's assessment; the findings at this stage are not yet finalised. The research unit is strictly advised not to publish the provisional findings.

Finalisation of the report and follow-up

After the site visit, the assessment committee writes a draft assessment report detailing its findings and its recommendations for the future.

The assessment committee sends the draft version of the assessment report to the research unit in order to check the draft report for factual inaccuracies. If such inaccuracies are detected, the assessment committee ensures that they are corrected. The assessment committee subsequently sends the finalised assessment report to the executive board of the relevant university, the board of NWO or the board of KNAW. After receiving the finalised report, the research unit responds to the observations in the report. The board then produces a position document. In the position document, the board reflects on the assessment and states how it will follow up on the outcome of the assessment. These follow-up actions are monitored at regular intervals as part of the quality assurance cycle, according to the institution's internal procedures.

The assessment report and the position document are made publicly available within six months of the site visit. After the SEP assessment process has been finalised, the board and the research unit discuss the assessment outcome and potential actions as part of the quality assurance cycle.

5. Actions by the assessment committee

This chapter explains the role of the assessment committee in the SEP procedure, especially with regard to the site visit and the assessment report.

Terms of Reference for the assessment

The **executive board** of the relevant university, the board of NWO or the board of KNAW specifies the Terms of Reference for the assessment (for more information, see Chapter 3. Actions by the board of the institution and Appendix C: Terms of Reference). The Terms of Reference contain specific information about the research unit under assessment and about additional questions that the assessment committee is asked to take into consideration in its review. These questions could be related to strategic issues or the research unit's specific agenda. If the assessment concerns a nation-wide assessment of a research field, the assessment committee may be asked to make strategic recommendations for the entire discipline at a national level.

Composition of the assessment committee

The assessment committee is appointed by the executive board of the relevant university, the board of NWO or the board of KNAW. The committee as a whole should have a diverse composition so it can deliver its expert assessment of all the research unit's activities with regard to the three main assessment criteria (the *research quality*, the *societal relevance* and the *viability* of the unit) and the four *specific aspects* (Open Science, PhD Policy and Training, Academic Culture and Human Resources Policy).

The composition of the assessment committee is decided by the board, possibly based on a proposal by the research unit. The board also selects the chair of the committee. Another scenario is that the board first selects a chair on the proposal of the research unit and subsequently selects the other members of the committee in consultation with the chair as well as the research unit. The board verifies that the committee is well equipped to assess the research quality, societal relevance and viability of the research unit in an international context, taking into account the Dutch research context. The board also ensures that the committee is appropriately diverse. A checklist of the criteria for the assessment committee can be found in Appendix G. The members of the assessment committee will receive financial compensation for the travel and lodging expenses connected to the site visit, according to the applicable rules of the institution. They may also be offered a remuneration for part or all of the time which they spend on the assessment, according to the applicable rules of the institution.

The committee should be impartial and maintain confidentiality

The assessment committee will be assisted by an independent and qualified secretary. The secretary will be remunerated for the time spent on the assessment, including travel expenses and lodging compensation when appropriate, according to the applicable rules of the institution. The secretary should be demonstrably familiar with the details of the assessment processes within the context of scientific research in the Netherlands. The secretary should assist the committee in interpreting and applying the SEP protocol as well as the Terms of Reference with regard to the research unit. The secretary is not considered to be part of the assessment committee.

The committee should be impartial and maintain confidentiality. Their public statement will be the assessment report, after it is made public by the board. Prior to the site visit, the members of the assessment committee – including the secretary – sign a statement of impartiality, an example of which is presented in Appendix H. They are then officially appointed by the executive board of the relevant university, the board of NWO or the board of KNAW.

Self-evaluation and other documents

At least four weeks prior to the site visit, the assessment committee receives this Strategy Evaluation Protocol, the Terms of Reference, the composition of the assessment committee and its secretary, a draft or final schedule of the site visit, the form for the statement of impartiality and the self-evaluation report. The board of the institution is responsible for sending out these documents.

Site visit

A possible schedule of the site visit is given in Appendix F. The site visit shall be used in order to clarify any questions about the self-evaluation report. These questions can be communicated to the unit beforehand. It shall also be used in order to interview without supervision a diverse subset of the members of the research unit, including senior, mid-/early-career researchers, postdocs and PhD candidates. The site visit should also be used in order to assess the research infrastructure of the unit.

It is customary, but not mandatory, that the assessment committee gives a short impression of its findings to a representation of the unit at the end of the site visit. This presentation is only a first impression of the committee's assessment; the findings at this stage are not yet finalised. The research unit is therefore strictly advised not to publish the provisional findings.

Assessment report

In response to the Terms of Reference, the assessment committee addresses its assessment report to the executive board of the relevant university, the board of NWO or the board of KNAW. Because the assessment contributes to fulfil the duty of accountability, the report will be made publicly available after the evaluation.

The assessment committee formulates in a written report a well-argued assessment of the research unit according to the three main assessment criteria of research quality, societal relevance and viability of the research unit, in which the committee weighs the results and reflections of the research unit on the four specific aspects of how it organises as well as performs its research with special reference to Open Science, PhD Policy and Training, Academic Culture and Human Resources Policy. These four specific aspects are considered integral parts of the assessment criteria and each of the specific aspects should be dealt with accordingly in the evaluation. The assessment committee does so based on the self-evaluation and the site visit.

The report must consist of sharp, discerning texts and clear arguments. The executive board as well as the general public should, as non-peers, be able to understand from the conclusions in the text how well the research unit is performing in its international, national or – where appropriate – regional context. The result of the assessment must therefore be a text that outlines in clear language and in a robust manner the reflections of the committee both on positive issues and – very distinctly, but constructively – on weaknesses. The comments could well convey suggestions as to where and how improvements are envisaged. The text should give a clear evaluation of how the unit is doing in terms of research quality, societal relevance and viability, thereby incorporating at least the specific aspects of Open Science, PhD Policy and Training, Academic Culture and Human Resources Policy. In case other relevant aspects were addressed in the selfevaluation report, they may also be incorporated in the report by the assessment committee.

The report must consist of sharp, discerning texts and clear arguments

The **research quality** and **societal relevance** of the research over the past six-year period are judged relative to the aims and strategy that the research unit has set for itself, in the context of international trends as well as developments in the relevant scientific area and in society. Hence, it can provide important input for the quality assurence cycle in the discussion between research unit and board on the unit's strategy.

The committee assesses the **quality** of the unit's research over the past six-year period as assessed in its international, national or – where appropriate – regional context.

It does so in light of the research unit's own aims and strategy. Central in the assessment is the contribution to the body of scientific knowledge. The assessment is based on both a narrative argument and well-substantiated indicators that properly underpin the scientific achievements of the unit in the context of the national or international research field. The protocol explicitly follows the guidelines of the San Francisco Declaration on Research Assessment (DORA) adopted by VSNU, KNAW and NWO.

The committee assesses the **societal relevance** of the unit's research in terms of impact and engagement over the past six years in economic, social, cultural, educational or any other terms that may be relevant. Again, the assessment committee does so by assessing a research unit in light of its own aims and strategy. The assessment is based on both a narrative argument and well-substantiated indicators that properly underpin the societal relevance in terms of impact and engagement of the research unit.

For the **viability**, the committee assesses the extent to which the research unit's goals for the coming six-year period are scientifically and societally relevant, its aims and strategy being optimal to attain these goals as well as the plans and resources adequate to implement this strategy.

The report also contains a conclusion, in which the committee passes a qualitative judgement on the research unit as a whole. The assessment committee makes recommendations for the unit's future developments and writes an executive summary with straightforward qualifications as well as key arguments.

Examples of sharp, discerning texts and clear arguments

'This research institute, in line with the aims and strategy of the university, is performing within the broader multidisciplinary theme of Sustainability. It carries out strong work on specifically xxxxxxxxxx. This work is well recognised by peers in the field. The work, however, is still very monodisciplinary and the committee could find little evidence for daily interactions on the floor with scientists in other disciplines, which are needed because of the great importance to translate their research to the next phase of innovation.'

'This unit performs research on a major topic in health care and public health. Its impact is very high and nearly immediate, because it has succeeded in building a consortium of investigators who oversee the various critical biomedical, socioeconomical and political aspects related to the research problems. Given the field of research, a major weakness is that the connection with stakeholders outside academia is not being formalised in the detailed discussions of problem selection and the optimal execution of the research.'

'The university of xxxxxx has a clear policy regarding Diversity, Responsible Research Conduct and Talent Management in line with national protocols. From the written policies of the unit and from the very open discussion which the committee had with PhDs, postdocs as well as other personnel involved in research in the broader sense, it appeared that while the management of the unit is aware of university policies, they are still not daily practice in committees that advise or decide on academic promotions to professorships, in the hiring of staff and in the end-of-year discussions about individual performance.'

'This unit performs research on a major topic in health care and public health. Given the field of research, a clear strength is that the connection with stakeholders outside academia is very well organised and involves detailed discussions of problem selection as well as the optimal execution of the research. It has succeeded in building a consortium of investigators who oversee the various critical biomedical, socioeconomical and political aspects related to the research problems. Despite this fact, the committee feels that the quality of the work being done is not of sufficient research quality; questions are not well defined or focused and the works seems to lack the rigour to achieve convincing (reproducible?) results.'

Please note that these examples, too, are still very general. This list does not constitute an overview of necessary and sufficient elements to be included in an assessment report.

The assessment report is a self-contained document. Information provided in it should be clear and intelligible without prior knowledge of the research unit as well as the documentation provided to the committee. For this reason, every assessment report should include a short description (maximum of one page) of the research unit as well as its aims and strategy.

The committee writes its assessment report after or during the site visit. The committee chair has the coordinating role in the writing procedure but may delegate the writing of sections to members or groups of members of the committee. The secretary collects the sections and integrates them into the shape of a uniformly presented and self-contained final report. The secretary may also be asked to assist in drafting sections of the report based on the content elements that are provided by members of the committee. The committee as a whole, which is solely responsible for the content of the report, approves the information and assessments included. The committee should strive for a consensus on the content of the report, but when no consensus can be reached on certain aspects, this information is included in the report. The recommended contents and structure of the assessment report is provided in Appendix I. Adhering to this recommended format safeguards the quality and the comparability of such reports.

Check for factual inaccuracies and finalisation of the report

The assessment committee sends the draft version of the assessment report to the research unit in order to check the draft report for factual inaccuracies. If such inaccuracies are detected, the assessment committee ensures that they are corrected. The committee subsequently sends the finalised assessment report to the executive board of the relevant university, the board of NWO or the board of KNAW. After receiving the finalised report, the research unit may respond to the observations made in the report. The board then produces a position document.

Appendices

Appendix A: Schedule – actions for the research unit and assessment committee

Time	Action	By
The years preceding the evaluation	Regular discussions on aims and strategy within the research unit as well as between the research unit and the board	Research unit Board
1-2 years prior to site visit	Decision on aggregate level of assessment + decision on a national discipline-specific assessment or an assessment within the institution's scope	Board
1 year prior to site visit	Board specifies Terms of Reference	Board
12-10 months prior to site visit	Composition of assessment committee + secretary	Board
Informal check around 12-10 months prior to site visit; formal signing of statement 4-8 weeks prior to site visit	Assessment committee and secretary sign statement of impartiality	Assessment committee
Right after the decision on the composition of the assessment committee up to 4 weeks before the start of the site visit	Board installs committee and secretary	Board
12-6 months prior to site visit	If it is a national assessment, discipline-specific agreements on the planning of the assessment/format of the self-evaluation	Research unit
10-2 months prior to site visit	Writing of the self-evaluation	Research unit
4-8 weeks prior to site visit	Board provides assessment committee with self-evaluation	Board
More than 1 month prior to site visit	Logistical arrangements for site visit sent to the assessment committee	Board
Site visit		
8 weeks after site visit	Draft assessment report made available to the research unit	Assessment committee
10 weeks after site visit	Comments by research unit on factual inaccuracies made available to assessment committee	Research unit
20 weeks after site visit	Final version of assessment report made available to the board	Assessment committee
12 weeks after site visit	If deemed necessary, written response to the assessment report made available to the board	Research unit
20-22 weeks after site visit	Board determines its position in a position document	Board
No more than 6 months after site visit	Publication of assessment report + position document of the board on website	Board
Annually	Discussion of assessment outcome and potential actions in quality assurance cycle	Board

Appendix B: Strategy – aims, plan and process

This appendix outlines what is meant by aims and strategy, while it also provides examples of what may be identified as the strategic aims, the strategic plan and the strategic process of a research unit.

The main goal of a SEP assessment is to evaluate a research unit in light of its own aims and strategy. In its self-evaluation, a research unit lays out 1) its aims and ambitions as well as 2) the plan of action to achieve these aims. In short, a strategy details what a unit wants to achieve and how, both with regard to its contribution to the body of scientific knowledge and with regard to its contribution to society. It forms a coherent whole, in which the unit makes clear how its strategic plan follows from and stands in the service of its scientific as well as societal aims.

Hence, each research unit will have its own strategic aims and plan, depending on the disciplinary profile of the unit, its institutional context, the aggregation level, the recommendations of the previous assessment committee, etc. There is accordingly no such thing as a strategy in general, only a strategy specific of a research unit. Even so, a number of examples may illustrate the scientific and societal aims that a unit may have set for itself as well as the strategic choices that it may have included in its plan to achieve these aims.

1) Some examples of the scientific and/or societal aims that a research unit may pursue are as follows:
    - The unit aims to be a national and/or international hub for an interdisciplinary field in order to provide the mass and focus necessary in order to further this field.
    - The unit aims to combine different scientific approaches to its research topic so as to offer the most thorough study thereof, bringing together theoretical and descriptive perspectives, for example.
    - The unit aims to perform world-leading and cutting-edge research in its particular subfield.
    - The unit aims to specialise in specific techniques or methods for maximum impact on its scientific or technological goals.
    - The unit aims to combine fundamental with applied research to the benefit of a particular profession or industry.
    - The unit wants its research to contribute simultaneously to scholarly and societal debates.
    - The unit wants its research to inform policymaking.

Please note that these examples are still very general; in its strategy, a research unit describes its scientific and societal aims in more detail, tailored to its exact ambitions. Please note as well that other combinations of scientific and societal aims are also possible, depending again on the ambitions of the research unit.

2) After formulating its scientific and societal aims, the research unit describes its strategic plan to achieve these goals. This plan can encompass a number of the following elements (the list is not exhaustive):
    - how the unit is structured in terms of researchers/research groups/research meetings;
    - the choice of communication channels to publish its research results;
    - the choice of communication channels to create societal impact;
    - the type(s) of funding for which it encourages its members to apply;
    - whom it considers to be its scientific and/or societal partners;
    - how it interacts with these partners;
    - how it integrates Open Science in its research cycles;
    - how it has organised its PhD Policy and Training;
    - the kind of Academic Culture which it fosters;
    - its Human Resources Policy to guide and select talent as well as create a diverse research unit.

Please note that these examples, too, are still very general and that a specific strategic plan will give more details as to the exact strategic choices made by the research unit. Please also note that this list does not constitute an overview of necessary and sufficient elements to be included in a research unit's strategy; other combinations of strategic choices are possible, depending once more on the exact ambitions of the unit.

3) In addition to describing the research unit's strategic aims and plan, its strategy ideally also addresses the process by means of which the unit has established as well as implemented its aims and plan. In this additional section, the unit goes into matters such as:
   - who was involved in establishing the strategy (e.g. which members of the unit and/or which societal stakeholders);
   - how it has monitored the implementation of its strategic plan;
   - whether it has adjusted its strategic aims or plan in the course of the implementation and why.

Appendix C: Terms of Reference

Introduction

Upon the appointment of the assessment committee, the executive board of the relevant university, the board of NWO or the board of KNAW sends the Terms of Reference (ToR) for the assessment of the research unit to the committee. The ToR specify the purpose and criteria of the assessment, the overall schedule of the assessment procedure and the responsibilities of the committee. The format and substance of the ToR will vary across research assessments; for instance, depending on whether assessments are carried out 'stand-alone' or organised jointly as national assessments of a research field. To assist in the research assessment process, samples of ToR are included in this appendix. Additionally, the board makes sure that the assessment committee receives a fact sheet about the Dutch scientific system.

Sample Terms of Reference

1. Introduction: Research assessments in the Netherlands

In the Netherlands, the boards of the universities, KNAW and NWO are responsible for the quality of the research at their institution. As part of their quality assurance cycle, all academic research in the Netherlands is evaluated every six years. The executive board of the relevant university, the board of NWO or the board of KNAW commissions the research assessment and determines which research units are to be evaluated each year. For the coordination of the assessment, all research organisations associated with VSNU, KNAW and NWO use the Strategy Evaluation Protocol. The main goal of a SEP evaluation is to evaluate a research unit in light of its own aims and strategy. In the self-evaluation, the unit reflects on its ambitions and strategy during the previous six years as well as for the future in a coherent, narrative argument, supported wherever possible with factual evidence. This fact means that there should be a direct relationship between the arguments with regard to the aims and strategy on the one hand and the type of robust data underpinning the self-evaluation on the other. The SEP assessments help to monitor and improve the quality of the research conducted by the research unit. Additionally, the

assessments of the research quality and societal relevance of research contribute to fulfil the duty of accountability towards government and society. The boards of the institutes may use the outcomes of the research evaluations for quality assurance purposes and institutional strategy development.
The protocol itself is reviewed every six years in order to move along with important developments in research.

2. Objectives of the research assessment of [research unit(s)]

The committee is requested to assess the quality of research conducted by [research unit] as well as to offer recommendations in order to improve the quality of research and the strategy of [research unit]. The committee is requested to carry out the assessment according to the guidelines specified in the Strategy Evaluation Protocol. The evaluation includes a backward-looking and a forward-looking component. Specifically, the committee is asked to judge the performance of the unit on the main assessment criteria and offer its written conclusions as well as recommendations based on considerations and arguments. The main assessment criteria are:

1) research quality;
2) societal relevance;
3) viability of the unit.

During the evaluation of these criteria, the assessment committee is asked to incorporate four specific aspects. These aspects are included, as they are becoming increasingly important in the current scientific context and help to shape the past as well as future quality of the research unit. These aspects are as follows:

1) **Open Science**: availability of research output, reuse of data, involvement of societal stakeholders;
2) **PhD Policy and Training**: supervision and instruction of PhD candidates;
3) **Academic Culture**: openness, (social) safety and inclusivity; and research integrity;
4) **Human Resources Policy**: diversity and talent management.

The main assessment criteria and the four specific aspects are described in detail within the Strategy Evaluation Protocol.

[Specific information about the research unit to be assessed]
In addition to these criteria specified in the Strategy Evaluation Protocol, the board requests the committee to pay attention to the following additional questions as well as to offer its assessment and recommendations:

1. ..
2. ..

3. Committee requirements: statement of impartiality

The members of the committee are requested to sign a statement of impartiality before they conduct their assessment work. In this statement, the members declare that they have no direct relationship or connection with [research unit(s)].

4. Schedule of the assessment and reporting

The self-evaluation and the site visit form the main sources of information for the committee, on which basis it draws up its report. The self-evaluation will be sent no less than [>=4] weeks prior to the site visit, together with the Strategy Evaluation Protocol and the programme for the site visit.

The site visit at [research unit] will take place on [date]. [The contact person on behalf of the relevant board] will contact you about logistical matters and other relevant issues related to the research assessment approximately two months prior to the site visit.

The committee is requested to report its findings in an assessment report drawn up in accordance with the SEP guidelines and format. The committee is asked to send the draft report to [research unit] no more than eight weeks after the site visit. [Research unit] will check the report for factual inaccuracies; if such inaccuracies are detected, the committee will ensure that they are corrected. The committee will then send the final version of the assessment report to the board. The board publishes the final version of the assessment report.

Appendix: Fact sheet about the relevant scientific landscape in the Netherlands

Appendix D: Suggested table of contents of the self-evaluation

The research unit writes a self-evaluation of no more than 20 pages (excluding appendices and one or more case studies), supplemented with appendices and a summary. The goal, form and content of the self-evaluation report are described in Chapter 4. Actions by the research unit. The self-evaluation takes the overall shape of a coherent narrative argument on the aims and strategy of the research unit as well as its results, supported by robust data. The appendices of the self-evaluation document, i.e. the tables presenting staff and finance figures, and the case studies are presented in Appendix E3: Case studies. The unit chooses indicators for products, use and marks of recognition for the assessment criteria (research quality, relevance, and viability) which logically follow from its ambitions. The relevance of the indicators that are used should be well argued in the self-evaluation document. The summary is presented at the end of this appendix.

The strategy of the unit with regard to the quality, relevance and viability of its research is a central element in the self-evaluation. For more information, see Appendix B: Strategy – aims, plan and process. This appendix explains the strategy and provides examples of the strategic aims, strategic plans as well as strategic processes of a research unit.

Table of contents of the self-evaluation:

1. **Introduction**
   The self-evaluation starts with a brief presentation of the research unit. Main characteristics, important organisational features or changes over the past years are presented.

2. **Mission and strategic aims of the past six years**
   The research unit then describes its mission and the main strategic aims of the past six years. This description regards its contribution to the body of scientific knowledge, as well as its contribution to society.
   The strategic aims depend on the context of the unit as well, such as its discipline, its institutional context, the aggregation level or the recommendations of the previous assessment committee. Relevant contextual information and developments should be mentioned, since these aspects influence the strategic aims of the unit.
   One or more of the four specific aspects 1) Open Science, 2) PhD Policy and Training, 3) Academic Culture and 4) Human Resources Policy can be part of the strategic aims.

3. **Strategy (including the strategic process)**
   The research unit then describes what it has done in order to achieve the strategic aims. This description relates to choices, activities, intended partners or audiences, collaborations, etc.
   One or more of the four aspects 1) Open Science, 2) PhD Policy and Training, 3) Academic Culture and 4) Human Resources Policy can be part of the strategic plan.

4. **Evidence**
   The unit presents and explains the factual evidence. Where appropriate, the unit can use quantitative indicators. The unit presents and explains the indicators for products, use and marks of recognition for both quality domains (research quality and relevance to society) which it has chosen. The choice of indicators depends on the aims and strategy of the unit as well as on common practice in certain disciplines.
   If the unit chooses not to use a common indicator, it should provide a good argumentation[10]. Appendix E2 presents a list of possible indicators and their use; by way of example, since units may choose other forms of data and indicators. Instructions for setting up a case study can be found in Appendix E3.
   Finally, some quantitative material should be included in all self-evaluation reports (or their appendices), with quantitative information on the Input of research staff (Table E2), Funding (Table E3) and PhD candidates (Table E4). The exact shape of these tables may vary, as long as they present the data clearly and orderly.

5. **Accomplishments during the past six years – research quality and societal relevance**
   Next, the unit describes the results that it achieved in the past six years. Again, this description should be in a narrative shape, supported with appropriate evidence (in the shape of figures, in a table or figure) and one or more case studies. This

process allows the assessment committee to understand the accomplishments and results in relation to the strategy. The results relate to research quality as well as societal relevance and include a reflection on the teaching-research nexus, where applicable. The narrative can be substantiated by indicators and by referring to the case studies.
Accomplishments should include results on the four aspects 1) Open Science, 2) PhD Policy and Training, 3) Academic Culture and 4) Human Resources Policy.

6. **Strategy for the next six years**
Finally, the research unit reflects on the strategy needed for the future. The unit presents a SWOT analysis, in which it analyses strengths, weaknesses, opportunities and threats. The strengths and weaknesses relate to the properties as well as the characteristics of the research unit and can be influenced by the unit; the opportunities and threats relate to external developments, scientific, societal or otherwise. The SWOT analysis forms the basis of the strategic plans for the six years to come.
The strategy for the next six years must include the four aspects 1) Open Science, 2) PhD Policy and Training, 3) Academic Culture and 4) Human Resources Policy.

7. **Summary**
The self-evaluation document is complemented with a one-page summary. This summary will be made publicly available along with the case studies, the assessment report of the committee and the position document of the board.

8. **Appendices**
The appendices include tables with figures on composition, funding and case studies.

10. The research unit should take into account that the use of the Journal Impact Factor is not allowed. The use of individual bibliometric indicators such as the h-index is strongly discouraged.

Appendix E: Merit and metrics

The SEP is a flexible instrument that stands in the service of a valuable conversation on the research quality, societal relevance as well as viability of research units in light of their own aims and strategy. The protocol leaves room for plurality with respect to the application and interpretation of the different elements, depending on the institutional context, the discipline or field of the research and the nature of the unit, among other things.

Appendix E1: Indicators, quality domains and assessment dimensions

In the self-evaluation, the unit reflects on its ambitions and strategy during the previous six years as well as for the future in a coherent, narrative argument, supported wherever possible with factual evidence. This fact means that there should be a direct relationship between the arguments with regard to the aims and strategy on the one hand and the type of robust data underpinning the self-evaluation on the other. Where appropriate, the unit can use quantitative indicators of research activity, progress and impact. Some indicators may also be useful to underpin the case studies. The research unit should take into account that it is not allowed to use the Journal Impact Factor in a SEP evaluation. The Journal Impact Factor was not created as a measure of the scientific quality of research in an article. It has a number a number of well-documented deficiencies as a tool for research assessment[11]. The use of the h-index is advised against because 1) it is sensitive to age and experience (so young scholars always have low h-index values), 2) it is not field-normalised, which makes comparison across fields – sometimes even within fields – based on the h-index impossible and 3) it is an author-level metric, while SEP assessments evaluate research units.

The categories of evidence are classified according to three assessment dimensions in the domain of both research quality and relevance to society. This classification results in the following table.

Table E1: Categories of evidence for the quality domains of research quality and relevance to society

		Quality domains	
		Research quality	**Relevance to society**
Assessment dimensions	**Demonstrable products**	1. Research products for peers	4. Research products for societal target groups
	Demonstrable use of products	2. Use of research products by peers	5. Use of research products by societal target groups
	Demonstrable marks of recognition	3. Marks of recognition from peers	6. Marks of recognition by societal target groups

Below, a few types of evidence for each of the six cells are defined and described; **by way of example, since units may choose other forms of data and indicators.**

In selecting the data and indicators, its definitions and registration methods, the research unit has to adhere to the internal agreements within its institution and/or within the research fields. This requirement means the following:

- University units adhere to the internal agreements at their university (and within their research field).
- KNAW and NWO institutes adhere to the internal agreements at KNAW and NWO, respectively (and within their research field).

As a result, the research unit selects one or more – but not too many – indicators per cell which are the most appropriate to highlight its profile as well as strategic decisions and which are compatible with the existing agreements. In the self-evaluation, research units explain the choice of the indicators as well as their link to the unit's aims and strategy.

In the narrative, the general results of the past six years – based on the selected evidence – should be described. Where applicable, the research unit presents quantitative evidence

11. San Francisco Declaration on Research Assessment: https://sfdora.org/read/

(in the shape of figures, in a table or figure) and one or more case studies. Appendix E2 presents a list of possible indicators and their use; by way of example, since units may choose other forms of data and indicators**.** Instructions for setting up a case study can be found in Appendix E3.

Finally, some quantitative material should be included in all self-evaluation reports (or their appendices), with quantitative information on the Input of research staff (Table E2), Funding (Table E3) and PhD candidates (Table E4). The exact shape of these tables may vary, as long as they present the data clearly and orderly.

Appendix E2: List of possible indicators and their use

1. Research products for peers

This category of indicators relates to products based on research and intended mainly for fellow researchers in one's own and/or another subject area, including an interdisciplinary research field.

The self-evaluation contains a short text highlighting the most relevant products, such as the most relevant publications (leading to a scientific breakthrough), the organisation of important conferences or other results. The argument may be supported by a case study (Appendix E3) and/or quantitative data.

Some examples

a. **(Open access) Journal articles and reviews (refereed/non-refereed)**
Description: an article written by one or more authors about a specific theme or idea and based on research, which appears in a journal that is regarded as very important for communication between researchers. This category includes reviews, defined here as critical appraisals that place what are often multiple research products such as books, edited volumes or exhibitions in a broader context while referencing other products.

b. **(Open access) Books, source publications and exhibition catalogues (refereed/non-refereed)**
Description: a monograph written by one or more authors about a specific theme or idea and based on research, or a critical source publication or catalogue, published by a publisher or museum that is regarded as very important for communication between researchers.

c. **(Open access) Book chapter (refereed/ non-refereed)**
Description: a text written by one or more authors about a specific theme or idea and based on research, which they have contributed to a book or edited volume published by a publisher that is regarded as very important for communication between researchers.

d. **Editorship of volumes and special issues (refereed/non-refereed)**
Description: the editorship of an edited volume published by a publisher that is regarded as very important for communication between researchers, or a theme or special issue of a journal that is regarded as very important for communication between researchers.

e. **Digital infrastructures and databases**
Description: a digital object arising in the context of research, produced by one or more researchers and regarded as important for communication between researchers. This category includes digital supplementary material for articles or books.

f. **Presentations and conference proceedings (refereed/non-refereed)**
Description: proceedings are collections of research papers presented at a conference, usually distributed in print or digitally, or published in connection with a conference, which are written by one or more authors about a specific theme or idea and based on research, the conference in question being regarded as important for the communication between researchers. Presentations at conferences, as well as at colloquia, seminars, topical schools, etc., are also a mechanism to disseminate knowledge.

g. **Designs**
Description: this indicator refers to designs conceived of as documented and scientifically argued propositions (in text, visuals or tangible objects, or in the form of

a simulation) that can be verified, criticised and refuted. The purpose of such a design is to conceive and develop solutions systematically in a wide variety of domains, from architecture to restoration and from educational theory to sociology, focusing on interventions and their effects.

h. **Data sets and software**
Description: the collected research data are organised and classified so they can be verified as well as reused. Making relevant data fully FAIR (Findable, Accessible, Interoperable and Reusable) as well as open wherever viable (duly respecting the constraints of privacy, sensitivity and intellectual property rights) is a way of opening up the research to other researchers and societal stakeholders. The adage 'as open as possible, as closed as necessary' is valid here. Sharing software and code that the unit has developed is an important element not only in making research verifiable but also in making it easy for others to reuse.

Other possible indicators: research materials, instruments, infrastructure, websites, lectures delivered at research conferences, organisation of scientific conferences, films, commissioned reports, annotations.

2. Use of research products by peers

The aim of the indicators in this cell is to make the use of the results of scientific research by other researchers visible. Such use commonly, but not always, becomes visible in the shape of references. It may overlap with the indicators in Cell 5, so it is necessary to make a choice.

In the main narrative, the most relevant use of research products is highlighted; for example, in terms of the most used data sets, the use of infrastructure, the most cited publication(s) or the most relevant collaborations. The text may be supported by a case study (Appendix E3) and/or quantitative data.

Some examples

a. **Reviews**
Description: reviews are independent expositions examining the key research outputs (e.g. books, edited volumes, exhibitions and other research outputs), published in the scientific/scholarly literature.

b. **Use of data sets, software and facilities**
Description: databases, software and physical research facilities are digital as well as physical collections and environments of importance to scientific/scholarly research.

c. **Citations of articles, books and other products**
Description: citations are explicit references in scientific/scholarly literature (books, edited volumes, journals, scientific forums) to research products or outputs.

3. Marks of recognition from peers

This category relates to the recognition of scientific quality, granted to individual members or to part or all of the research units, based on the opinion of fellow researchers.

The self-evaluation contains a short text highlighting the most relevant marks of recognition, such as important individual prices or awards, as well as important collaborative grants (with a value description, referencing Table E3) or positions of scientific importance held in research collaborations, for example. The text may be supported by a case study (Appendix E3).

Some examples

a. **Research grants awarded to individuals**
Description: this indicator pertains to grants awarded by research institutions to individual researchers in recognition of what peers consider outstanding achievement, such as the individual NWO and ERC grants, Spinoza, Marie Curie, Aspasia and Rubicon.

b. **Grants awarded to major collaborative research projects**
Description: this indicator pertains to funds awarded to research projects under the EU's Horizon 2020 programme, NWO's Gravitation programme and the NWO Large programme, in which researchers affiliated with the research unit act as principal applicant/investigator or as lead partner.

c. **Grants awarded to individuals or collaborative research projects**
Description: this indicator pertains to funds awarded to research projects by research funds and institutions other than grants under (a) and (b), in which researchers affiliated with the research unit act as principal applicant/investigator or lead partner.

d. **Prizes awarded to individuals or collaborative research projects**
Description: prestigious research prizes that are not connected to research grants, such as the Nobel Prize, Breakthrough Prize, Abel Prize, Fields Medal, research prizes by learned societies, etc.

e. **Secondary appointments and membership of prestigious scientific councils or committees**
Description: this indicator pertains to secondary, regular appointments at other research institutions and to membership of prestigious scientific councils or advisory committees.

4. Research products for societal target groups

The indicators in this cell relate to the results of scientific research which are primarily aimed at specific social target groups or a general public. These results, or products, fall into two main categories: professional products (for specific social target groups in the fields related to the research area) and popularising products (for a broader audience).

In the main narrative, the most relevant products are mentioned; for example, the most relevant publications (leading to policy change, guideline adjustment, etc.) or important public engagement activities. The text may be supported by a case study or quantitative data.

Some examples in the subcategory of professional products

a. **Books, source publications, guidelines, and catalogues for a professional readership**
Description: a monograph written by one or more authors about a specific theme or idea and based on research, medical guidelines, or a critical source publication or catalogue, which is intended for specific societal groups active in fields of work related to the research field (including educational books).

b. **Patents and licences**
Description: the first submission or priority application for the possible acquisition of the exclusive right granted by the government or competent authority to make or sell an industrial product.

c. **Films, documentaries and exhibitions for a professional audience**
Description: a film, documentary, exhibition or other audio-visual product focusing on a specific theme or idea and based on research, which is meant to be viewed by specific societal groups active in fields of work related to the research field and which is made by one or more researchers or to which one or more researchers have made a demonstrable contribution.

d. **Websites for professional visitors**
Description: professional websites are collections of interrelated web pages presenting data (for example, text, images or videos) based on research and created by one or more researchers, which are meant for specific societal groups active in fields of work related to the research field. Such websites may also provide supplementary material for articles or books.

Some examples in the subcategory of popularising products

e. **Book chapters in publications for a general readership**
Description: a text in printed or digital format, written by one or more authors and based on research, which is published in a popular science book or edited volume intended for a general readership.

f. **Software, digital media and serious games for general users**
Description: science software includes operating systems and applications, procedures as well as accompanying documentation based on scientific insights, which are meant for a group of general users.

g. **Lectures, masterclasses and conferences for a general audience**
Description: lectures, masterclasses or conferences based on scientific insights by one or more researchers, which are meant for a general audience.

h. **Blogs and forums for general readers**
Description: a digital, interactive publication channel run by one or more researchers, whether or not in cooperation with general organisations, which is meant for general users.

Other possible indicators: performance for TV, radio or in other public media and organisation of or contribution to an event.

5. Use of research products by societal target groups

The aim of the indicators in this cell is to make the use of the results of scientific research by social target groups visible. This category involves a wide variety of demonstrable uses of academic research products by social institutions, companies and governments, as well as by practitioners, teachers, media users and other social groups. It may overlap with the indicators in Cell 2, so it is necessary to make a choice.

The self-evaluation may point to the most relevant use of research products, such as the use of data sets and the use of patents/licences, or the most relevant national and international collaborations (with a clear description of their added value). The text may be supported by a case study (Appendix E3) and/or quantitative data.

Some examples

a. **Projects in cooperation with societal parties**
Description: this indicator pertains to interactions between the academic world and societal groups.

b. **Contract research**
Description: this indicator pertains to research funding and is associated with the indicators 'Projects in cooperation with societal parties' (see 5a. above) and 'Use of data sets, software and facilities' (see 2b. above).

c. **Use in education**
Description: this indicator group pertains to the teaching-research nexus (where applicable) as well as the use or impact of research in primary, secondary and tertiary education (outside the unit's own institution).

d. **References in professional and public domains**
Description: references are explicit references in professional and general books, edited volumes, magazines, forums, debates, on websites and other media, to research products or outputs.

6. Marks of recognition from societal target groups

This category of indicators refers to the evidence of recognition granted to researchers by private or public social institutions. This recognition can be provided for purely scientific achievements, but it will usually be for good scientific work that also has a recognisable social value.

In the main narrative, the most relevant marks of recognition from societal target groups are mentioned, highlighting important awards or means of support as well as important collaborative grants (with a value description); for example, with reference to Table E3. The argument may be supported by a case study (Appendix E3).

Some examples

a. **Financial and material support by society**
Description: this indicator pertains to funding and material resources allocated to research projects and researchers by civil-society funds, organisations as well as institutions.

b. **Membership of civil-society organisations**
Description: this indicator pertains to membership of prominent councils, boards and advisory committees which have a demonstrable relationship to the research performed, both in the professional and in the general societal domain.

c. **Secondary appointments within civil-society organisations**
   Description: this indicator pertains to part-time, externally funded appointments of researchers within organisations and institutions which have a demonstrable relationship to the research performed, in both the professional and the general societal domain.

d. **Public prizes**
   Description: this indicator pertains to non-academic marks of recognition for scientific achievements, in the shape of prizes.

Appendix E3: Case studies

Case studies are a part of the self-evaluation report (but may be presented in an appendix to the self-evaluation report). They may play a crucial role, since case studies are excellent instruments to function as both illustrations and robust supporting elements of the self-evaluation.

Case studies have a narrative form and may relate to particular projects or programmes of the research unit, as well as to certain aspects of the research activities, such as the interaction between research activities and society or between research and the PhD programmes. Case studies may therefore illustrate or highlight specific parts or aspects of the research, especially where it is considered important for the picture that assessors may form of the unit to be assessed.

Case studies can be carried out at various aggregation levels: project, programme or unit as a whole. Case studies are assumed to contain information about the academic as well as the societal aims and output, while they are pre-eminently suited to indicating the connection between the two, a connection that is seen as essential in many academic domains and disciplines. When relevant, the case studies may also address the 'pathways to impact', be it during the preparation of research projects or as part of long-term research policies.

Appendix E4: Presenting indicators in tables in the appendices to the self-evaluation report

The research unit presents tables with the chosen indicators in the appendices to the self-evaluation report. The research unit has chosen one or more – but not too many – indicators for each cell of Table E1, which are the most appropriate to highlight its profile and strategic decisions, and which are compatible with the existing agreements. The unit presents these indicators in six tables in the appendices to the self-evaluation report. Table E2 is an example of such a table. Similar tables could be drawn up for the other cells of Table E1.

The following tables (next page) are to be included in the self-evaluation.

Table E2: Input of research staff

	Year 5	Year 4	Year 3	Year 2	Year 1	Current year
Research unit						
Scientific staff (1)						
Assistant professor	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE
Associate professor	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE
Full professor	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE
Postdocs (2)	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE	# / FTE
PhD candidates (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: All PhD candidates. Figures may be broken down into different categories of PhD candidates. For this purpose, research units can use the types of PhD candidates according to the VSNU's categorisation of 2019 {link to English version of https://www.vsnu.nl/files/documenten/Nieuwsberichten/Een_gezonde_praktijk_in_het_Nederlandse_promotiestelsel.pdf}.

Table E3: Funding[12]

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

Note 1: Direct funding (basisfinanciering / lump-sum budget).
Note 2: Research grants obtained in national scientific competition (e.g. grants from NWO and KNAW).
Note 3: Research contracts for specific research projects obtained from external organisations, such as industry, government ministries, European organisations and charitable organisations.
Note 4: Funds that do not fit into the other categories.

12. Figures may be broken down into more detailed categories of funding.

Table E4: PhD candidates[13]

Enrolment				Success 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**	**#**	**# / %**	**-**	**-**	**-**	**# / %**	**# / %**

13. Figures may be broken down into different categories of PhD candidates. For this purpose, research units can use the types of PhD candidates according to the VSNU's categorisation of 2019 {link to English version of https://www.vsnu.nl/files/documenten/Nieuwsberichten/Een_gezonde_praktijk_in_het_Nederlandse_promotiestelsel.pdf.

Appendix F: Site visit

This appendix shows examples of what may be included in a site visit. Which elements are included, and which are not, is specific to each research unit and may differ across disciplines.

The assessment committee visits the site of the research unit. If the assessment involves multiple research units, the site visit can take place at a single central location. The schedule for the site visit is drafted by the research unit in consultation with the committee chair and secretary. The research unit and the board of the institution decide among themselves who is financially and/or logistically responsible for which elements of the site visit (e.g. travel and accommodation, catering). A site visit usually lasts one to two days, takes place at the premises of the research unit and can consist of the following elements[14]. It is possible to send the research unit questions before the site visit commences, in order to prepare the research unit for the visit.

Private kick-off meeting

The site visit can commence with a private kick-off meeting of the assessment committee, including the secretary. It is advised that this meeting is not attended by members of the board of the institution, the management of the research unit or other individuals working at the institution. The private kick-off meeting has three purposes:

- To allow the committee to be informed by the secretary about the SEP protocol, the assessment procedures and the context of scientific research in the Netherlands;
- To allow the committee members and the secretary to discuss the assessment procedure, the Terms of Reference and the procedure of writing the assessment report;
- To allow the committee members to discuss their preliminary findings based on the material that they received prior to the site visit (self-evaluation, other documents).

Interviews

During the site visit, the assessment committee can conduct interviews with delegates from the research unit and other relevant persons. The purpose of these interviews is to verify and supplement the information provided in the self-evaluation. The assessment committee interviews the following persons/bodies (if applicable):

- The management of the research unit;
- The heads of the research groups in the unit (if the research unit consists of multiple groups);
- A number of staff members (tenured and non-tenured);
- A number of PhD candidates;
- The board(s) responsible for the relevant graduate school(s)/research school(s);
- Delegates from the scientific and/or societal advisory council (if the research unit has one), and/or other stakeholders;
- If necessary, delegates from the board of the institution or any other party with which the assessment committee finds it necessary to speak in order to come to a fair assessment of the research unit;
- If possible and necessary, societal stakeholders and partners.

Private interim meeting

To safeguard the quality of the assessment, it is important to allow for sufficient discussion time for the committee. These meetings are listed in the programme schedule.

Private final meeting[15]

Before the end of the site visit programme, the assessment committee can meet once again in private. At this final meeting, it exchanges arguments, discusses its findings and arrives at a provisional judgement on the research unit with respect to the three assessment criteria as well as the four specific aspects. If the committee is assessing multiple research units, or if multiple institutions are participating in the assessment, the committee convenes a private

14. Please note that the site visit programme should be discussed with the committee chair and that the committee can always ask for adjustments.
15 See above.

kick-off and a private final meeting for each relevant research unit.

Tour (optional)

When deemed useful, a tour of the premises of the research unit can be organised during the site visit.

Presentation of provisional findings

At the end of the site visit, the committee chair can present a brief, general summary of the committee's findings to the research unit. This presentation is only a first impression of the committee's assessment; the findings at this stage are not yet finalised. The research unit is therefore strictly advised not to publish the provisional findings.

Appendix G: Requirements for the international assessment committee

An international assessment committee should:

- Be familiar with recent trends and developments in the relevant research fields as well as be capable of assessing the research in its current international context;
- Be capable of assessing the applicability of the research unit's research and its relevance to society;
- Cover the width of the research area;
- Have a strategic understanding of the relevant research field;
- Be capable of assessing the research unit's management;
- Have a good knowledge of and experience working with the Dutch research system, including the funding mechanisms and the PhD programmes. If this situation is not the case, a specific introduction to the Dutch system needs to be provided by the secretary of the assessment committee or the board of the institute;
- Be capable of commenting on Open Science, PhD Policy and Training, Academic Culture and Human Resources Policy;
- Be impartial and maintain confidentiality, stating that there is no direct relationship or connection with the institute (see the criteria in Appendix H: Statement of impartiality and confidentiality);
- Divide their tasks and make this division transparent;
- At least consist of one PhD candidate and one early-/mid-career researcher. It is recommended also to include a non-academic expert on the committee;
- Have the assistance of an independent and qualified secretary who is not associated with the research unit's wider institution and who is familiar with the details of the assessment processes within the context of scientific research in the Netherlands;
- Be appropriately diverse. The diverse composition of the committee should be understood in a broad sense, focusing on relevant dimensions of diversity such as gender as well as cultural, national and disciplinary background, etc.

Appendix H: Statement of impartiality and confidentiality

The Strategy Evaluation Protocol aims to ensure a transparent and independent assessment process. The members of the assessment committees should be experts who are well acquainted with the unit's research field. There is a strong possibility that an expert will have a working relationship with the unit to be assessed; that relationship should not, however, lead to bias in the assessment process.

We have confidence in the integrity of the assessment committee members. Committee members are kindly asked to reflect on any personal interest that could influence their ability to conduct an independent assessment. What is essential for committee members is to feel that they will be able to conduct an independent and impartial review. Committee members will be asked to sign a statement of impartiality and confidentiality. Three sample statements are included below.

Personal interests can be roughly classed as one of four categories: 1. Private, 2. Professional, 3. Ancillary positions and 4. Business. However, it is possible that a personal interest does not fit into any of these categories. More often than not, a personal interest falls into more than one category (a friendship at work, for instance). A personal interest can be an interest from the past, an interest in the present or a possible future interest.

A few examples of a personal interest are as follows (this list is not exhaustive):

Private:

1. A family relationship (up to and including the third degree of consanguinity);
2. A friendship;
3. A personal conflict.

Professional:

4. Supervising or having supervised doctoral or other work;
5. Collaborating on research projects and/or publications and/or applications, or having done so in the past three years, or planning to do so in the near future[16];
6. Being colleagues in the same section/ department or similar organisational unit, or planning to be in the foreseeable future;
7. Having a professional conflict;

Ancillary positions:

8. Having a hierarchical relationship with any member of staff, management or board, or planning to have such a relationship in the future;

Business:

9. Being in a position to derive any material advantage from the unit to be assessed.

16. An executive board of the relevant university, the board of NWO or the board of KNAW can decide to deviate from this requirement. Waiving this requirement should in particular be considered for involvement in large-scale research collaborations of hundreds or thousands of researchers.

Sample statements of impartiality and confidentiality

Example 1 (suggestion for universities)

The undersigned (first name, last name):
.....

Organisation:
.....

Participating in the assessment of (name of research unit to be assessed):
Declares as follows:

- I have read and understand the principles with regard to impartiality and confidentially as explained above.
- I declare that I will not use any information furnished to me during the assessment process for the benefit of myself or others.
- I declare that I fully understand the confidential nature of the assessment process and that I will not disclose or discuss the materials associated with the assessment, my own review or the assessment meeting with any other individual, either during the evaluation process or thereafter.
- I declare that, to the best of my knowledge, I have no affiliation or relationship to the entity to be assessed which could lead to a biased assessment.
- I declare that I have no conflict of interest regarding the research unit to be assessed. (If a conflict of interest arises during my term, I will have to declare this fact and inform my contact person on the board of the institution responsible for the assessment.)

Date:
.....

Place:
.....

Signature:
.....

Example 2 (used by NWO in combination with the NWO Code Strategy and Policy Advice)

Pursuant to Article 2.4 of the General Administrative Law Act, the assessment process and decision-making process must be free from bias. NWO and NWO-I are responsible for preventing personal interests of advisers from influencing advice on the decision-making process. The Code Strategy and Policy Advice describes the handling of personal interests during this process. In addition, the Code states how decisions about dealing with personal interests must be motivated and recorded.

By signing the declaration below, you declare that you have read the Code Strategy and Policy Advice as well as that you will act in accordance with the Code Strategy and Police Advice in your work for NWO.

I hereby declare that:

- I have read and understand the Code Strategy and Policy Advice, and will act in accordance with this Code;
- under Article 2.4 of the General Administrative Law Act, I am obliged to fulfil my duties without any bias or appearance of bias;
- I will immediately report a personal interest in the performance of my work, or any bias or the appearance of any bias, if and as soon as it arises;
- under Article of 2.5 of the General Administrative Law Act, I am obliged to maintain secrecy with regard to all confidential information which has been disclosed to me within the framework of my work, both during the performance of my duties and thereafter, except to the extent that any legal provision obliges me to notify this fact or my necessity to do so arises from my task.

Date:
.....

Place:
.....

Signature:
.....

Example 3 (used by KNAW)

Statement of impartiality and confidentiality for members of an assessment committee of a KNAW institute

1. I have read and understand the principles with regard to impartiality and confidentially for members of an assessment committee of a KNAW institute as explained above.
2. I declare that I will not use any information furnished to me during the assessment process for the benefit of myself or others.
3. I declare that I fully understand the confidential nature of the assessment process and that I will not disclose or discuss the materials associated with the assessment, my own review or the assessment meeting with any other individual, either during the evaluation process or thereafter.
4. I declare that, to the best of my knowledge, I have no affiliation or relationship to the entity to be assessed which could lead to a biased assessment.
5. I declare that I have no conflict of interest regarding the research unit to be assessed. (If a conflict of interest arises during my term, I will have to declare this fact and inform my contact person on the board of the institution responsible for the assessment.)

First name, last name:
.....

Organisation:
.....

Participating in the assessment of:
.....

Date:
.....

Place:
.....

Signature:
.....

Appendix I: Format of assessment committee report

1. General section on the procedures followed, the members of the assessment committee and the research unit or units assessed. More about the assessment committee report can be found in the main text.

2. Evaluation of the research unit (about five pages):
   a) Brief description of the research unit's aims and strategy;
   b) Qualitative evaluation and recommendations on the following criteria:
      - Research quality;
      - Societal relevance;
      - Viability.

The evaluation should be based on the research unit's ambitions and strategy of the previous six years as well as for the future six years. There should be a direct relationship between the arguments with regard to the aims and strategy on the one hand and the type of robust data underpinning the self-evaluation on the other. Where appropriate, the unit can use quantitative indicators of research activity, progress and impact. The evaluation should include specific recommendations for the future, with emphasis on the next six years.

In its evaluation of these three criteria, the committee should take care to include the following specific aspects in addition to the usual criteria that the assessment committee may deem relevant, as described in the SEP protocol:

- Open Science;
- PhD Policy and Training;
- Academic Culture;
- Human Resources Policy.

3. Summary (one page): a summary of the conclusions and recommendations.

4. Compulsory appendices:
   1. Site visit programme;
   2. Quantitative data on the research unit's composition and funding, as described in Appendix E.

Note: If the assessment concerns multiple research units within a specific research field which belong to different institutions, a supplementary section (General Remarks) may be included, in which the international position of the research field in the Netherlands is assessed.

VSNU KNAW NWO