



wo-master Governance of
Sustainability
Leiden University

2 November 2018

NVAO limited initial accreditation

Panel report

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1 Executive summary

The Accreditation Organisation of the Netherlands and Flanders (NVAO) received a request for an initial accreditation procedure regarding a proposed wo-master Governance of Sustainability at Leiden University. NVAO convened an expert panel, which studied the information available and discussed the proposed programme with representatives of the institution and the programme during a site visit.

According to the panel, the Master's programme in Governance of Sustainability (GofS) is an interesting new programme that could help to improve the quality of governance solutions to crucial sustainability challenges. The programme aims to provide students with a thorough basis in natural sciences and governance necessary to improve the quality of governance solutions to sustainability challenges. Students will learn how to analyse these challenges from both technical and governance perspectives.

The panel agrees with the learning outcomes, that can be summarized with the term 'knowledge broker'. The graduates from the programme should be able to bridge the gap between the experts in the field of sustainability and the policy makers from the governance field. However, the panel feels that a number of central concepts need clarifying: these include the concepts sustainability (since the focus of the proposed master is on environmental issues), governance and transdisciplinarity.

The Master's programme GofS is a 120 EC two year programme. The first year is built up around four courses of 12 EC each. In each course, a sustainability theme is connected to a governance theme. The first year also contains two skills courses, both of 6 EC. In the second year the students do another skills course (6 EC), followed by the Sustainability Challenge (12 EC) and one or more electives (12 EC). The last semester is focused on the thesis: the Thesis Preparation Course (6 EC) and the Thesis Research Project (24 EC). According to the panel, the emphasis on transdisciplinarity is a strong point within the curriculum, especially in the Integrated Group Assignments and the Sustainability Challenge.

Skills training is an important part of the curriculum. The panel feels that the skills training could be developed further, especially when it comes to the skills students need to develop meaningful interaction with stakeholders from outside the academic community. The panel advises the programme developers to focus on the development of these skills and to develop training tools to improve them. Also rubrics should be developed to assess if students have acquired these skills.

The panel has gained a favourable impression of the teaching staff, that is strongly committed to the new programme. The ideas on co-teaching are promising. An improvement can be made in the employment of guest lecturers. The panel advises the programme to develop and monitor a policy for the employment of these lecturers.

The panel has studied the assessment policy of the new Master's programme and finds it to be satisfactory. Strong points are the variety of assessment forms, the use of at least two types of assessment per course, and the employment of two supervisors for the assessment of the master thesis. The panel advises to strengthen the cooperation between these supervisors by developing a type of peer supervision.

The panel comes to the conclusion that the programme meets all assessments standards. Given these considerations, the panel advises NVAO to take a positive decision regarding the quality of the proposed programme wo-master Governance of Sustainability at Leiden University.

The Hague, 2 November 2018

On behalf of the assessment panel convened for the initial limited accreditation assessment of the wo-master Governance of Sustainability at Leiden University,

Prof. dr. Wim Hafkamp
(chair)

drs. Erik van der Spek
(secretary)

2 Introduction

2.1 The procedure

NVAO received a request for an initial accreditation procedure including programme documents regarding a proposed wo-master Governance of Sustainability. The request was received on 24 May 2018 from Leiden University.

An initial accreditation procedure is required when a recognised institution wants to award a recognised bachelor's or master's degree after the successful completion of a study programme. The procedure for initial accreditation is slightly different as compared to the approach for programmes that have already been accredited. Initial accreditation is in fact an *ex ante* assessment of a programme. The programme becomes subject to the normal accreditation procedures once initial accreditation has been granted.

To assess the program, the NVAO convened an international panel of experts (see also Annex 1: Composition of the panel). The panel consisted of:

Chair:

- Prof. dr. W.A. (Wim) Hafkamp

Panel members:

- Prof. dr. Leen Hordijk, emeritus Professor of Environmental Systems Analysis, Wageningen University
- Dr. Agni Kalfagianni, Associate Professor of Transnational Sustainability Governance at the Copernicus Institute of Sustainable Development.

Student member:

- Abush Derks

On behalf of the NVAO, drs. Irma Franssen and drs. Erik van der Spek were responsible for the process-coordination and the drafting of the experts' report.

This composition reflects the expertise deemed necessary by NVAO (Annex 1: Composition of the panel). All the panel members signed a statement of independence and confidentiality.

The panel has based its assessment on the standards and criteria described in the NVAO Assessment framework for the higher education accreditation system of the Netherlands (Stcrt. 2016, nr 69458).

The following procedure was undertaken. The panel members prepared the assessment by analysing the documents provided by the institution (Annex 3: Documents reviewed). The panel organised a preparatory meeting on 27 September April 2018, i.e. the day before the site visit. During this meeting, the panel members shared their first impressions and formulated questions for the site visit.

The site visit took place on 28 September 2018 at Leiden University (Campus The Hague). During this visit, the panel was able to discuss the formulated questions and to gather additional information during several sessions (Annex 2: Schedule of the site visit). Afterwards, the panel discussed the findings and considerations and pronounced its

preliminary assessments per theme and standard. At the end of the site visit, the initial findings were presented to the institution.

Based on the findings, considerations and conclusions the secretary wrote a draft advisory report that was first presented to the panel members. After the panel members had commented on the draft report, the chair endorsed the report. On 16 October 2018, the advisory report was sent to the institution, which was given the opportunity to respond to any factual inaccuracies in the report. The institution replied on 19 October 2018. All suggested corrections were adopted. Subsequently the final report was endorsed by the panel chair. The panel composed its advice fully independently and offered it to NVAO on 2 November 2018.

2.2 Panel report

The first chapter of this report is the executive summary of the report, while the current chapter is the introduction.

The third chapter gives a description of the programme including its position within the institution, Leiden University and within the higher education system of the Netherlands.

The panel presents its assessments in the fourth chapter. The programme has been assessed by assessing the themes and standards in the Initial Accreditation Framework. For each standard the panel presents an outline of its findings, considerations and a conclusion.

The outline of the findings are the objective facts as found by the panel in the programme documents, in the additional documents and during the site visit. The panel's considerations consist of the panel's judgments and subjective evaluations regarding these findings and their relative importance. The considerations presented by the panel are at the basis of a concluding overall assessment.

The panel concludes the report with a table containing an overview of its assessments per standard.

3 Description of the programme

3.1 General

Country	: The Netherlands
Institution	: Leiden University
Programme	: Governance of Sustainability
Level	: master
Orientation	: academic, wo
Degree	: Master of Science (MSc)
Location	: The Hague
Study Load (EC)	: 120 EC
Croho onderdeel	: Natuur; subsector: Multidisciplinaire natuurwetenschappen

3.2 Profile of the institution

Leiden University was founded in 1575 and is, according to the website, one of Europe's leading international research universities. It has seven faculties in the arts, humanities and sciences, spread over locations in Leiden and The Hague. The University has over 6,700 staff members and more than 28,000 students. Leiden University offers more than 50 Bachelor's programmes (14 in English) and almost 50 Master's programmes (almost all in English).

Leiden University has formulated the following mission: As a prestigious European research university, Leiden University plays a foremost role in academic research and teaching. High-quality academic research and teaching are crucial to a safe, healthy, sustainable, prosperous and just world. The University is committed to developing, disseminating and applying academic knowledge and is a trusted figure in societal and political debates in the national and international arena.

The proposed master Governance of Sustainability will be located at the Campus The Hague, which has started in the late 1990s. Six of the University's seven faculties are now active at Campus The Hague. The new Master's programme is co-ordinated by the Faculty of Science (FWN). The other co-ordinating faculty, Governance and Global Affairs (FGGA), is located fully in The Hague. The same goes for the Leiden University College. .

3.3 Profile of the programme

The new interdisciplinary Master's programme in Governance of Sustainability of the Leiden University is an initial Master's programme aimed at improving the quality of governance solutions to crucial sustainability challenges, such as climate change, loss of biodiversity and the development of a circular economy. The duration of the programme is two years (120 EC) and the teaching language is English. Students of the Master's programme need to acquire in-depth knowledge of the natural sciences related to sustainability issues, combined with knowledge about governance, the decision-making processes needed to solve the sustainability challenges.

The main part of the first year is based on four sustainability themes, that are connected to four governance themes. The sustainability themes are (1) Materials and circular economy, (2) Biodiversity and ecosystems, (3) Climate and energy, and (4) Water and toxicity. The governance themes are 1. Institutions and policy cycles 2. Decision making and governance networks, 3. Global governance and multi-level analysis 4. Policy framing. In addition, the students are offered a number of skills courses, such as qualitative research skills and transdisciplinary skills. In the second year, the students follow, quantitative research skills, a number of electives (12 EC) and an integrative project: the Sustainability Challenge (12 EC). The Thesis Preparation Course (6 EC) and the Thesis Research Project (24 EC).

The programme is necessary, according to the information file, because over the past three decades, the concepts of sustainability and sustainable development have evolved into major areas in policy development and decision making. At every level of public governance, issues related to sustainability and the transition to a circular economy are part and parcel of the decision making process. These issues demand a transdisciplinary approach, bringing together knowledge of natural and social sciences.

The Master in Governance of Sustainability is a new programme in the Netherlands and therefore also for the Leiden University.

4 Assessment per standard

This chapter presents the evaluation of the standards by the assessment panel. The panel has reproduced the criteria for each standard. For each standard the panel presents (1) a brief outline of its findings based on the programme documents and on documents provided by the institution and the site visit, (2) the considerations the panel has taken into account and (3) the panel's conclusion. The panel presents a conclusion for each of the standards, as well as a final conclusion.

The assessment is based on the standards and criteria described in the NVAO Assessment framework for the higher education accreditation system of the Netherlands (Stcrt. 2016, nr 69458). Fundamental to the assessment is a discussion with peers regarding the content and quality of the new programme.

Regarding each of the standards, the assessment panel gives a substantiated judgement on a three-point scale: meets, does not meet or partially meets the standard. The panel subsequently gives a substantiated final conclusion regarding the quality of the programme, also on a three-point scale: positive, conditionally positive or negative.

4.1 Standard 1: Intended learning outcomes

The intended learning outcomes tie in with the level and orientation of the programme; they are geared to the expectations of the professional field, the discipline, and international requirements.

Outline of findings

The Master in Governance of Sustainability (GofS) aims to provide students with a thorough basis in natural and social sciences necessary to deal with sustainability issues. Students will learn how to analyse these issues from both technical and governance perspectives. Moreover, they will learn to integrate these perspectives in order to come up with governance solutions needed to achieve a sustainable society. This will allow graduates to perform a broker function to work toward sustainable development and to develop new transdisciplinary scientific knowledge and concepts.

From these overall programme goals, the intended learning outcomes have been derived. Below we present a short summary of these learning outcomes. A graduate in Governance of Sustainability:

1. is able to describe and explain the technical and scientific aspects of the key sustainability issues (*knowledge*);
2. is able to design and carry out in-depth research on sustainability issues (*knowledge and understanding*);
3. is able to make judgements about sustainability issues; to compare different policy approaches and apply the most suitable one; to formulate and implement integrated and innovative solutions; to critically reflect on governance of sustainability issues and to act according to the different positions of all actors involved (*judgment*);
4. is able to convincingly communicate results from scientific research about sustainability; to argue for a well-considered stance on the governance of sustainability issues; to be a governance broker and demonstrates leadership; to recognize, respect and use individual and cultural differences within a team (*communication*);

5. has a positive attitude towards life-long learning; is able to design and plan their own learning processes; and to explore new areas of interest regarding the governance of sustainability issues (*learning skills*).

All learning outcomes are closely connected to and derived from the Dublin descriptors (in *italics* above). Therefore, according to the programme's developers, the academic orientation of the programme is safeguarded.

Considerations

The panel recognizes in this programme an impressive attempt to achieve an integration between beta and gamma sciences. The programme combines natural and social sciences and aims to integrate transdisciplinary perspectives in understanding and addressing sustainability challenges. It has a clear focus on four important sustainability challenges and associated governance issues therein.

During the discussions with representatives of the programme, the panel has established that the current setup is the result of a bottom-up process. Researchers and teaching staff from both participating faculties, who already cooperate in the University College and in the minor Sustainability, initiated the new programme. An important factor is the contribution of the municipality of The Hague; The Hague has approached the Institute of Environmental Sciences (CML) to develop a new programme on sustainability that would be relevant to the city. This approach has led to a financial contribution for the development of the programme. In developing this programme, stakeholders from the professional field have been involved as well.

The overall learning outcome can be summarized with the term 'knowledge broker'; during the discussions, 'boundary worker' has also been used. The graduates from the programme should be able to bridge the gap between the experts in the field of sustainability and the policy makers from the governance field. This implies a thorough knowledge in both areas: the representatives of the programme emphasize that the graduates have to be specialists in both fields. A thorough basis in the natural sciences is needed to perform this function. The panel agrees with this view.

The panel has discussed a number of central concepts with the representatives of the programme. An important one is governance: during these discussions, it has become clear that the focus is on 'public governance'. However, the programme emphasizes the cooperation between the government and other stakeholders, such as private companies, NGO's and citizens. The governance approach can vary according to the themes that are covered.

The panel has established that the concept of sustainability is focused on environmental issues; other sustainability themes, such as health, poverty and education, are mostly not being dealt with. The representatives of the programme acknowledge this focus. The choice for environmental issues is partly due to the expertise of the staff involved, and partly necessary to achieve a certain degree of specialization. The panel agrees with this view, but feels that the central concepts should be explained more clearly, especially in communicating with prospective students.

This is also true for a third important concept: transdisciplinarity. According to the representative of the programme, to operate as knowledge brokers the students have to

develop new transdisciplinary scientific knowledge and concepts. Transdisciplinarity transcends interdisciplinarity in that it contains an aspect of participation, more specific participation: by citizens, NGO's, the business world and other actors. The panel feels that this concept should be defined and explained as well, since it is central to the programme.

Conclusion

The programme meets standard 1.

4.2 Standard 2: Teaching-learning environment

The curriculum, the teaching-learning environment and the quality of the teaching staff enable the incoming students to achieve the intended learning outcomes.

Outline of findings

The Master in Governance of Sustainability is a 120 EC two year programme. See the following schedule for the contents:

	Transdisciplinary skills (6 EC)		Thematic course 2 (12 EC) Governance of Biodiversity & Ecosystems
	Thematic course 1 (12 EC) Governance of Materials & Circular Economy		
2	Thematic course 3 (12 EC) Governance of Climate change and Energy Transition	Qualitative Research skills (6 EC)	Thematic course 4 (12 EC) Governance of Water & Toxicity
3	Quantitative Research skills (6 EC)	Sustainability Challenge (12 EC)	Electives (12 EC)
4	Thesis Preparation Course (6 EC)	Thesis Research Project (24 EC)	

The first year is built up around four thematic courses of 12 EC each. In each course, a sustainability theme is connected to a governance theme. The four sustainability themes were chosen to represent the most urgent sustainability challenges. Each one is connected to a governance theme that plays a key role within that sustainability theme. Each course consists of three equivalent components: a) natural scientific knowledge with regard to the sustainability theme; b) social scientific knowledge with regard to the governance theme and c) an Integrated Group Assignment (IGA). The first year also contains two skills courses, both of 6 EC: Transdisciplinary skills and Qualitative Research skills.

The second year is more research-oriented. In the third semester the students have another skills course (Quantitative skills, 6 EC), followed by the so-called Sustainability Challenge (12 EC). This is a group assignment, based on a real-life problem issued by an external party (company, government agency or NGO). This challenge serves to link the knowledge and skills from the previous courses and prepares the students for their thesis. The last part

in the third semester are the electives (12 EC), that will allow students to specialize in a specific area. Students may choose to deepen their knowledge and understanding of specific sustainability themes (for example ecosystem services) or specific governance themes (for example Data-driven policy).

The fourth semester is entirely focused on the thesis: the Thesis Preparation Course (6 EC) and the Thesis Research Project (24 EC). In the Thesis Preparation Course, students formulate a research question and research proposal including problem definition, aim of the project, methodology and time schedule for their Thesis Research Project. In the Thesis Research Project, the students will conduct the proposed research individually and write their master thesis.

Didactic concept

The transdisciplinary approach of the programme calls for an integrated approach of teaching as well. Therefore, co-teaching is a corner stone of the programme. The majority of courses will be coordinated and co-taught by one lecturer of each faculty (FWN and FGGA).

The students come from different backgrounds and all students will find they have knowledge gaps. Therefore learning from each other is an important principle as well. The first year will be used to create a shared language and to bridge the differences between students. However, basic knowledge on subjects related to governance and sustainability is required for all students. Therefore the programme has developed an almanac of concepts, approaches and terms, in which students can find articles, knowledge clips and other items to find the necessary knowledge.

To be a knowledge broker, a student not only needs relevant knowledge of both governance and sustainability, but also skills to communicate and collaborate with different groups and audiences. The programme contains three skills courses: transdisciplinary skills (such as social skills, communication skills and intercultural skills) and two courses on research skills (both quantitative and qualitative). The panel applauds the choice to incorporate qualitative skills in the programme as well. In the thematic courses, moreover, non-transferable skills and tools are taught.

Admission

The admission requirements are strict. Although the programme is open to all students with an academic BSc or a Dutch hbo bachelor, the programme poses a substantial number of additional requirements. These include a grade point average of 7.5 for Dutch hbo bachelors, substantial knowledge of sustainability issues (for instance acquired in a minor or an elective), experience with inter- or transdisciplinary education and research, and a course (or courses) in quantitative methods of at least 8 EC. However, the programme representatives have established that graduates of the Dutch University colleges meet these requirements, forming a large pool of 1.000 – 2.000 graduates each year. Also a number of interdisciplinary bachelor programmes from Amsterdam and Leiden University meet the requirements. The programme expects to attract at least 50 students in the first year.

Staff

The programme has been developed by a core team of six lecturers, three from each faculty. Four new teachers (at the level of Assistant Professor) will be hired in the near future. All core teachers are active researchers and embedded in one of the research groups at Leiden University. All core teachers hold a PhD degree and have at least completed the

University Teaching Qualification (UTQ) training. As mentioned before, most courses will be taught by two lecturers, one from each participating faculty.

Considerations

The panel has discussed the contents and the structure of the curriculum with the programme representatives. The panel understands the way the programme developers have structured the curriculum around the four sustainability issues, connected to four governance themes. Other choices would have been possible, but the panel agrees with the focus on environmental issues, in line with the available expertise. The emphasis on transdisciplinarity is a strong point within the curriculum, especially in the Integrated Group Assignments and the Sustainability Challenge. In both cases, moreover, a real-life case is used that requires students to combine their skills.

Skills training is an important part of the curriculum. The panel, as mentioned before, is positive about the fact that qualitative skills are incorporated into the curriculum. However, the panel feels that the skills training could be developed further, especially when it comes to the skills students need to develop meaningful interaction with stakeholders from outside the academic community: for instance citizens, private companies and government employees. This should be trained especially in the Sustainability Challenge. The panel advises the programme developers to focus on the development of these skills and to develop training tools to improve them. Also rubrics should be developed to assess if students have acquired these skills (see also standard 3).

The panel is of the opinion that the programme is based on a balanced didactic concept. Key to this concept is the transdisciplinarity that arises from the interaction between the two perspectives, the sustainability perspective and the governance perspective. The panel strongly agrees with the focus on creating a common language in the first year, based on the need to learn from each other. The almanac of concepts and terms helps to create this common language. Another strong point is the use of real-life cases in the IGA and the Sustainability Challenges, where students need to work with problems that are supplied by external parties. The panel has noted that the representatives of the field of work would be happy to supply issues, problems or assignments from their own practice.

The panel has met a number of lecturers assigned to the new programme and gained a favourable impression from this meeting. The panel has found that the staff is well equipped for this challenge and is strongly committed to the new programme. The panel has seen a lot of cooperation and communication between the staff of the two faculties – much more than the bi-annual meetings mentioned in the information file suggest. The ideas on co-teaching are promising. An improvement can possibly be made in the use of guest lecturers. The panel has found that the ideas about guest lectures have not yet been fully developed. The panel advises the programme to develop and monitor a policy for the use of guest lecturers.

Finally, the panel has established that the programme applies strict entry requirements, which are necessary to secure high-level students with sufficient knowledge of sustainability and experience with a transdisciplinary approach. The programme representatives have convinced the panel that a sufficient amount of incoming students can be found among the graduates of the Dutch University Colleges. The panel agrees with the entry requirements and advises the programme to apply these in full, monitor the influx of students and revise the requirements if necessary.

Conclusion

The programme meets standard 2.

4.3 Standard 3: Assessment

The programme has an adequate system of student assessment in place.

Outline of findings

The Master's programme Governance of Sustainability uses a variety of assessments, such as examinations, individual and group assignments, written essays and oral presentations. Each course coordinator will compose an assessment plan and hand in the separate tests that determine the final grade of the course, including an assessment matrix. All written exams are composed by the examiner and checked by one colleague. Written examinations are assessed by two examiners (four-eyes principle).

The examiners are appointed by the Board of Examiners (BoE). The BoE for the Master's programme Governance of Sustainability will be appointed by the two faculty boards. The BoE will consist of five members, two from each faculty plus one external member. The BoE will establish regulations and guidelines for the assessment of examinations; moreover, the Board will perform random checks of thesis reports.

In writing the master thesis, each student will be supervised by two examiners, one from each faculty. The two supervisors and the student meet at least three times: during the kick-off meeting (in which the outline of the thesis and the first chapters will be evaluated), during the 'green light' meeting (to determine whether the final draft is sufficient) and during the defence meeting.

Considerations

The panel has studied the assessment policy of the new Master's programme and finds it to be satisfactory. Strong points are the variety of assessment forms that are envisaged, the fact that at least two types of assessment per course will be used, and the four-eyes principle both in developing and assessing the examinations. The panel also agrees with the assessment method of the master thesis, in which two supervisors from both faculties are employed. The panel advises to strengthen the cooperation between these supervisors by developing a type of peer supervision. Peer supervision can help to clarify the criteria used in assessing the master thesis and to improve the consistency of the assessments.

The panel has spoken with representatives of the Board of Examiners and finds them to be well equipped for their tasks. Strong points are the presence of an external member in the BoE and the random thesis checks. The panel has found that the BoE is well aware of the transdisciplinary character of this particular Master's programme and of the challenges this programme poses. One of these challenges concerns the rubrics for the assessment of skills; these rubrics still need to be developed.

A formal point of attention is the presence of the programme coordinator, who is also the intended secretary of the BoE. In general, it is advisable not to appoint staff with a managerial responsibility in the Board of Examiners. The panel follows this advice and suggests the programme to appoint another secretary to the BoE. In other programmes, a

faculty specialist often fulfils this task; this may be a solution for the current Master's programme as well.

Conclusion

The programme meets standard 3.

4.4 Qualification and field of study (CROHO)

The panel advises to award the degree 'Master of Science'(MSc) to the wo-master Governance of Sustainability. The panel supports the program's preference for the CROHO: Natuur; subsector: Multidisciplinaire natuurwetenschappen

4.5 Conclusion

According to the panel, the Master's programme in Governance of Sustainability is an interesting new programme that could help to improve the quality of governance solutions to crucial sustainability challenges. Strong points include the transdisciplinary approach, the combination of the various sustainability challenges and governance perspectives and the cooperation between the two participating faculties. Some attention is needed to clarify the central concepts, to expand the skills training and to develop the necessary rubrics, but the panel is confident that the programme developers will deal with these issues in a competent manner. All in all, the panel assesses the quality of the programme as positive.

4.6 Recommendations

- The panel advises the programme developers to clarify the central concepts (such as governance, sustainability and transdisciplinarity), especially in communicating with prospective students.
- The panel advises the programme developers to strengthen the skills training and to develop rubrics to assess if students have acquired the relevant skills.
- The panel advises the programme to develop and monitor a policy for the use of guest lecturers.
- The panel advises the programme to apply the entry requirements in full, monitor the influx of students and revise the requirements if necessary.
- The panel advises to strengthen the cooperation between the supervisors of the master thesis by developing a type of peer supervision.
- The panel advises against appointing staff with a managerial responsibility in the GoS program in the Board of Examiners and suggests to appoint another secretary to the BoE.

5 Overview of the assessments

Standard	Assessment
Intended Learning outcomes <i>Standard 1 : The intended learning outcomes tie in with the level and orientation of the programme; they are geared to the expectations of the professional field, the discipline, and international requirements</i>	Meets the standard
Teaching-learning environment <i>Standard 2 : The curriculum, the teaching-learning environment and the quality of the teaching staff enable the incoming students to achieve the intended learning outcomes.</i>	Meets the standard
Student assessment <i>Standard 3: The programme has an adequate system of student assessment in place.</i>	Meets the standard
Conclusion	Positive

Annex 1: Composition of the panel

The panel consists of the following members:

Prof. dr. W.A. (Wim) Hafkamp (chairman) Professor in environmental sciences Erasmus University

- Prof. dr. W.A. (Wim) Hafkamp (chairman) Professor in environmental sciences Erasmus University
- Prof. dr. Leen Hordijk, emeritus professor of Environmental Systems Analysis, Wageningen University
- Dr. Agni Kalfagianni, Associate Professor of Transnational Sustainability Governance at the Copernicus Institute of Sustainable Development.
- Abush Derks (student member)

All members have signed a declaration of independence.

Prof. dr. Leen Hordijk (panel member)

Prof. Dr. Leen Hordijk started at the JRC as the Director of the Institute for Environment and Sustainability in Ispra (Italy) in May 2008 and was appointed Principal Adviser to the Director-General of the JRC and Head of the Task Force on Modelling in September 2011. Before joining the European Commission, Professor Hordijk was from 2002-2008 the Director-General of the International Institute for Applied Systems Analysis (IIASA), in Laxenburg, Austria. Prior to joining IIASA, he was Director of the Wageningen Institute for Environment and Climate Research (WIMEK) in the Netherlands and from 1991 until September 2011 professor in Environmental Systems Analysis at Wageningen University. He was also Chairman of the Social Science Division of the Netherlands Organisation for Scientific Research (NWO). Leen Hordijk received his Ph.D. in economics from Vrije Universiteit, Amsterdam. Beginning in 1984, he pioneered the development of methods for linking environmental science and economics for integrated assessments of air pollution Austria, were widely used. His approaches are recognised as among the most effective ever developed for linking science and policy in international environmental affairs. He has also been engaged in regular short term stays for teaching in universities in the USA, China and Vietnam.

Dr. Agni Kalfagianni (panel member)

Dr. Agni Kalfagianni is Associate Professor of Transnational Sustainability Governance at the Copernicus Institute of Sustainable Development at Utrecht University. She specializes in the effectiveness, legitimacy, and ethical and justice considerations of private and transnational forms of governance in the sustainability domain. She is coordinating lead author of the 2018-2028 science plan of the Earth System Governance project and co-founder of the international Planetary Justice Taskforce. Agni is (co)Editor-in-Chief of the Global Environmental Governance book series by Routledge, and member of the Editorial Board of International Environmental Agreements: Politics, Law and Economics and Agriculture and Human Values journals. Her work has appeared in numerous international peer-reviewed journals including Global Environmental Change, Journal of Business Ethics, Globalizations, and edited volumes with major university presses, such as the MIT Press.

Abush Derks (student member)

Abush Derks is a student Bestuurs- en organisatiewetenschap at Utrecht University. He is also attached to the ISO (Inter-city Student Consultation) and has been a member of the curriculum committee.

On behalf of the NVAO, drs. Irma Franssen and drs. Erik van der Spek were responsible for the process-coordination and the drafting of the experts' report.

Annex 2: Schedule of the site visit

The panel visited Leiden University on 28 September 2018 as part of the external assessment procedure regarding the wo-master Governance of Sustainability.

The visit took place at the The Hague Campus, Schouburgstraat 2, Den Haag. Room A001

09:00 – 09:30 **Arrival and meeting of panel** (*confidential*)

09:30 – 10:00 **Representatives Faculties**

- prof. mr. dr. E.R. Muller (Dean FGGA)
- drs. J.D. Riel QC (Director of Operational Management FGGA)
- prof. dr. G.R. de Snoo (Dean FWN)
- prof. dr. J.H. de Winde (former vice-dean FWN)

10:00 – 11:00 **Programme management**

- prof. dr. ir. P.M. van Bodegom (FWN)
- K. Boomgaard, MA (intended programme coordinator and study advisor)
- dr. G.E. Breeman (FGGA)

11:15 – 11:45 **Representatives future field of work**

- Eveline Buter (Witteveen+Bos)
- Jasper Dalhuisen (Ministry of Economic Affairs and Climate Policy, on personal title)
- Robbert Duin (Recycling Netwerk)
- Rob Hendriks (IPBES)
- Patrick Huntjens (HHCW)
- Socrates Schouten (Waag)

11:45 – 12:15 **Board of Examiners**

- dr. A.K.O. Ahmadov (FGGA, LUC)
- K. Boomgaard MA (intended secretary)
- Dr. B.J. Carroll (FGGA)
- dr. A.P.E. van Oudenhoven (FWN)

12:15 – 13:00 **Lunch and panel meeting** (*confidential*)

13:00 – 14:00 **Lecturers**

- dr. ir. T. Bosker (FGGA, LUC)
- dr. E.G.M. Kleijn (FWN)
- prof. dr. J. Mesman (FGGA, LUC)
- dr. G.E. Breeman (FGGA) dr. J. Schalk (FGGA)
- dr. M.J.J. Schrama (FWN)

- 14:00 – 14:30** **Prospective students**
- Martijn van Engelenburg (Political Science)
 - Mike Sloomweg (Astronomy)
 - Marnix Verhagen (Public Administration)
 - Freija Vermeer (Leiden University College)
- 14:45 – 15:45** **Panel meeting** (*confidential*)
- 16:00** **Presentation of initial findings**

Annex 3: Documents reviewed

Programme documents presented by the institution

- Information dossier initial accreditation MSc Governance of Sustainability
- Appendices to the information dossier:
 1. Appendix 1: Argumentation for a two-year programme
 2. Appendix 2: Intended learning outcomes MSc Governance of Sustainability
 3. Appendix 3: Competences described in the Dutch referential framework for
 4. academic programmes in Environment and Sustainability
 5. Appendix 4: Summary results survey among employees
 6. Appendix 5: Overview received support letters and quotations from these letters
 7. Appendix 6: Meeting representatives of the professional field
 8. Appendix 7 Distinction between multi-, inter-, and transdisciplinarity
 9. Appendix 8: Online preparation courses
 10. Appendix 9: Relation intended learning outcomes and the courses
 11. Appendix 10: Description courses first year
 12. Appendix 11: Electives
 13. Appendix 12: Academic Staff
 14. Appendix 13: University Quality Assurance Cycle
 15. Appendix 14: Faculty of Science Course and Examination Regulations Master's Programmes
 16. Appendix 15: Assessment plan first year
 17. Appendix 16: Decision CDHO
- Documents made available during the site visit
 1. Appendix OER MSc Governance of Sustainability
 2. Assessment form Thesis Research Project MSc Governance of Sustainability
 3. Syllabus Circular Economy
 4. Syllabus Climate Change and Energy Transitions
 5. Syllabus Qualitative Research Skills
 6. Syllabus Transdisciplinary Skills
 7. Syllabus Water and Toxicity

Annex 4: List of abbreviations

ba	bachelor
BoE	Board of Examiners
CML	Institute of Environmental Sciences
EC	European Credit
FGGA	Faculty of Governance and Global Affairs
FWN	Faculty of Science
GofS	Governance of Sustainability
hbo	hoger beroepsonderwijs
IGA	Integrated Group Assignment
ma	master
NVAO	Accreditation Organisation of the Netherlands and Flanders
TOEFL	Test of English as a Foreign Language
UTQ	University Teaching Qualification
wo	wetenschappelijk onderwijs

The panel report was ordered by NVAO for the initial accreditation of the programme wo-master Governance of Sustainability of Leiden University.

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