

MASTER'S PROGRAMME
ENVIRONMENTAL AND
INFRASTRUCTURE PLANNING

FACULTY OF SPATIAL SCIENCES

UNIVERSITY OF GRONINGEN

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Project number: Q0726
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This report was finalised on 4 October 2019.

REPORT ON THE MASTER'S PROGRAMME ENVIRONMENTAL AND INFRASTRUCTURE PLANNING OF THE UNIVERSITY OF GRONINGEN

This report takes the NVAO's Assessment Framework for the Higher Education Accreditation System of the Netherlands for limited programme assessments as a starting point (September 2018).

ADMINISTRATIVE DATA REGARDING THE PROGRAMME

Master's programme Environmental and Infrastructure Planning

Name of the programme:	Environmental and Infrastructure Planning
International name of the programme:	Environmental and Infrastructure Planning
CROHO number:	66194
Level of the programme:	master's
Orientation of the programme:	academic
Number of credits:	60 EC
Specialisations or tracks:	-
Location(s):	Groningen
Mode(s) of study:	full time
Language of instruction:	English
Programme specific details:	Part of two double degree programmes: - Water & Coastal Management (with Carl von Ossietzky University, Germany) - Development Planning & Infrastructure Management (with Institut Teknologi Bandung, Indonesia)
Submission deadline NVAO:	01/11/2019

The visit of the assessment panel Human Geography and Urban Planning to the Faculty of Spatial Sciences of the University of Groningen took place on 16, 17 and 18 April 2019.

ADMINISTRATIVE DATA REGARDING THE INSTITUTION

Name of the institution:	University of Groningen
Status of the institution:	publicly funded institution
Result institutional quality assurance assessment:	positive

COMPOSITION OF THE ASSESSMENT PANEL

The NVAO has approved the composition of the panel on 11 February 2019. The panel that assessed the master's programme Environmental and Infrastructure Planning consisted of:

- Em. prof. dr. L.J. (Leo) de Haan, emeritus professor of Development Studies, at the International Institute of Social Studies (ISS) of Erasmus University Rotterdam [chair];
- Em. prof. dr. C. (Christian) Kesteloot, emeritus professor at the Division of Geography and Tourism of KU Leuven (Belgium);
- Prof. dr. E.M. (Ellen) van Bueren, professor of Urban Development Management at the Faculty of Architecture and the Built Environment of Delft University of Technology;
- Prof. dr. M.A. (Maria) Koelen, professor of Health and Society, Wageningen University;
- L. (Lars) Stevenson BSc, bachelor's student Political Science and master's student Comparative Politics, Administration & Society at Radboud University [student member];



- Prof. dr. ing. C.M. (Carola) Hein, professor of History of Architecture and Urban Planning at Delft University of Technology [referee].

The panel was supported by drs. Mariette Huisjes, who acted as secretary.

WORKING METHOD OF THE ASSESSMENT PANEL

The master's programme Environmental and Infrastructure Planning at the Faculty of Spatial Sciences of the University of Groningen was part of the cluster assessment Human Geography and Urban Planning. In April and May 2019 the panel assessed nineteen programmes at four universities. The following universities participated in this cluster assessment: University of Amsterdam, University of Groningen, Utrecht University and Radboud University.

Panel members

The panel consisted of the following members:

- Em. prof. dr. L.J. (Leo) de Haan, emeritus professor of Development Studies, at the International Institute of Social Studies (ISS) of Erasmus University Rotterdam [chair];
- Em. prof. dr. C. (Christian) Kesteloot, emeritus professor at the Division of Geography and Tourism of KU Leuven (Belgium);
- Prof. dr. E.M. (Ellen) van Bueren, professor of Urban Development Management at the Faculty of Architecture and the Built Environment of Delft University of Technology;
- Drs. J. (Judith) Borsboom-van Beurden, senior researcher Smart Sustainable Cities at Norwegian University of Science and Technology (NTNU, Norway);
- Dr. L.B.J. (Lianne) van Duinen, project manager at the Council for the Environment and Infrastructure (Rli);
- Dr. C.J. (Kees-Jan) van Klaveren, senior auditor and data protection officer at Rotterdam University of Applied Sciences;
- Prof. dr. M.A. (Maria) Koelen, professor of Health and Society at Wageningen University & Research;
- Prof. dr. F.J.A. (Frank) Witlox, professor of Economic Geography at the Department of Geography at Ghent University (Belgium);
- J. (Jim) Klooster BSc, master's student Economic Geography at the University of Groningen [student member];
- L. (Lars) Stevenson BSc, bachelor's student Political Science and master's student Comparative Politics, Administration & Society at Radboud University [student member];
- N.J.F. (Niek) Zijlstra, bachelor's student Human Geography and Urban and Regional Planning at the University of Amsterdam [student member];
- Prof. dr. ing. C.M. (Carola) Hein, professor of History of Architecture and Urban Planning at the Faculty of Architecture and the Built Environment of Delft University of Technology [referee assessment University of Groningen].

For each site visit, assessment panel members were selected based on their expertise, availability and independence.

The QANU project manager for the cluster assessment was dr. Irene Conradie. She also acted as secretary in the site visit of the University of Amsterdam. In order to assure the consistency of assessment within the cluster, the project manager was present at the panel discussion leading to the preliminary findings at all site visits. All draft reports were checked by QANU. Dr. Meg van Bogaert and drs. Mariette Huisjes, freelance secretaries for QANU, acted as secretaries in the site visit of the University of Groningen. Dr. Meg van Bogaert also acted as secretary in the site visits of Utrecht University and Radboud University. Dr. Marijn Hollestelle, employee of QANU, was present at the site visit of Utrecht University, specifically for the ECA assessment report of quality in internationalisation of the master's programme International Development Studies. The project manager and the secretaries regularly discussed the assessment process and outcomes.

Preparation

On 18 February 2019, the panel chair was briefed by the project manager on the tasks and working method of the assessment panel and more specifically his role, as well as use of the assessment framework.

A preparatory panel meeting was also organised on 18 February 2019. During this meeting, the panel members received instruction on the tasks and working method and the use of the assessment framework. The panel also discussed the domain specific framework.

A schedule for the site visit was composed. Prior to the site visit, representative partners for the various interviews were selected. See Appendix 4 for the final schedule.

Before the site visit, the programmes wrote self-evaluation reports of the programmes and sent these to the project manager. She checked these on quality and completeness, and sent them to the panel members. The panel members studied the self-evaluation reports and formulated initial questions and remarks, as well as positive aspects of the programmes.

The panel also studied a selection of theses and their assessment forms for the programmes. Because of the large number of programmes at the University of Groningen site visit, the selection consisted of ten theses per programme. This was in agreement with the additional conditions for an adjusted thesis selection (i.e. ascertainable overlap between the programmes and a shared Board of Examiners) set by the NVAO. The selection was based on a provided list of graduates between 2017-2018. A variety of topics and tracks and a diversity of examiners were included in the selection. The project manager and panel chair assured that the distribution of grades in the selection matched the distribution of grades of all available theses.

Site visit

The site visit to the University of Groningen took place on 16, 17 and 18 April 2019.

At the start of the site visit, the panel discussed its initial findings on the self-evaluation reports and the theses, as well as the division of tasks during the site visit.

During the site visit, the panel studied additional materials about the programmes and exams, as well as minutes of the Programme Committee and the Board of Examiners. An overview of these materials can be found in Appendix 5. The panel conducted interviews with representatives of the programmes: students and staff members, the programme's management, alumni and representatives of the Board of Examiners and the Programme Committee. It also offered students and staff members an opportunity for confidential discussion during a consultation hour. No requests for private consultation were received.

The panel used the final part of the site visit to discuss its findings in an internal meeting. Afterwards, the panel chair publicly presented the panel's preliminary findings and general observations.

Report

After the site visit, the secretary wrote a draft report based on the panel's findings and submitted it to QANU for peer assessment. Subsequently, the secretary sent the report to the panel. After processing the panel members' feedback, the project manager sent the draft report to the faculty in order to have it checked for factual inaccuracies. The project manager discussed the ensuing comments with the panel's chair and changes were implemented accordingly. The report was then finalised and sent to the Faculty of Spatial Sciences and University Board.

Definition of judgements standards

In accordance with the NVAO's framework for limited programme assessments, the panel used the following definitions for the assessment of the standards:



Generic quality

The quality that, from an international perspective, may reasonably be expected from a higher education Associate Degree, Bachelor's or Master's programme.

Meets the standard

The programme meets the generic quality standard.

Partially meets the standard

The programme meets the generic quality standard to a significant extent, but improvements are required in order to fully meet the standard.

Does not meet the standard

The programme does not meet the generic quality standard.

The panel used the following definitions for the assessment of the programme as a whole:

Positive

The programme meets all the standards.

Conditionally positive

The programme meets standard 1 and partially meets a maximum of two standards, with the imposition of conditions being recommended by the panel.

Negative

In the following situations:

- The programme fails to meet one or more standards;
- The programme partially meets standard 1;
- The programme partially meets one or two standards, without the imposition of conditions being recommended by the panel;
- The programme partially meets three or more standards.

SUMMARY JUDGEMENT

Standard 1: Intended learning outcomes

The panel compliments the programme on its concise yet detailed, concrete and inspiring intended learning outcomes. In its view, they set an example for other programmes in the faculty. It confirmed that the intended learning outcomes as formulated by the master's programme Environmental and Infrastructure Planning mirror the Domain-Specific Framework of Reference, even though they do not mention it explicitly. It found that the programme's level and orientation align with the international requirements set for an academic master's programme as laid down in the Dublin Descriptors.

The panel judges it necessary for the programme to clarify its identity and communicate this to its students. Taking the revised intended learning outcomes dating from 2018 as a starting point, this should not be too difficult. For maximum coherence between the master's programmes in the Faculty of Spatial Sciences, the panel recommends specifically demarcating the Environmental and Infrastructure programme from its 'sister' Socio-Spatial Planning. This can be done, for instance, in terms of thematic focus, level of analysis and intervention, and chosen methodology. A second recommendation is to position more clearly within the Domain Specific Framework of Reference and to benchmark the programme compared to other planning programmes in more detail than is presently done in the self-evaluation. Pinpointing such programmes, and unravelling where exactly the master's programme in Groningen differs from each of them, will help to clarify the programme's identity.

Standard 2: Teaching-learning environment

The panel established that the content and structure of the master's programme Environmental and Infrastructure Planning enables students to realise the intended learning outcomes. Students find the programme challenging and intense (particularly the first term), but are happy with the understanding, reflection and tools the curriculum offers them and the liberty to follow their own interests. The panel appreciates the 'mobility window' in the final term, which makes it easier for students to take an internship instead of an elective. It is also positive about the place of the methodology course at the start of the curriculum. Even though this contributes to the first term being overwhelming for students, it enables them to train their methodological skills during the rest of the curriculum.

The programme management announced that the workload issues for the first term will be addressed by reducing the number of assignments and the amount of literature that needs to be studied. Plus the links between the courses will be strengthened. To the panel, these measures seem appropriate and necessary interventions. It fully supports the programme's intention to intensify support and guidance for all students. It recommends giving the student academic, practical and social support.

The panel established that the teaching staff is well qualified and trusts that the programme management is sufficiently in control of the quantity and workload of the staff. It is satisfied with measures taken to improve the thesis process, which in the past suffered from a shortage of appropriate thesis supervisors.

The panel congratulates the programme on its successful realisation of the international classroom. Both students and alumni confirmed that the different perspectives in class contributed to their learning process. It recommends maximising the didactic potential of diversity and attracting more female students to improve the gender balance.

Standard 3: Student assessment

The panel confirmed that assessment throughout the courses in the Environmental and Infrastructure Planning programme is sufficiently valid, reliable and transparent. Extensive feedback and variety in assessment methods enable students to shape their own learning process. The panel thinks that the



faculty could gain even more by intensifying a shared faculty-wide assessment culture. This will become especially relevant as the staff diversifies and becomes more international.

The panel reviewed a sample of ten master's theses and found that they are validly and reliably assessed. The level of transparency of the assessment however differs, both between and within the programmes. The panel recommends one thesis assessment procedure in all master's programmes. This enhances transparency, enforces validity and makes it easier for students to know what to expect. In the panel's view, thesis assessment forms with recognisably independent feedback from both the first and second examiner can be seen as a good practice. The panel found that, since the 2014 evaluation, the Board of Examiners greatly improved its procedures. It has become very professional, with a clear view of its responsibilities, and works proactively and quickly. The panel encourages the Board of Examiners to continue its good work.

Standard 4: Achieved learning outcomes

Based on a selection of the master's theses, the alumni survey and interviews with alumni during the site visit, the panel concluded that the students realise the intended learning outcomes as formulated by the programme. Many of the theses contain original research questions and some good use of methods (mixed). A 2016 survey showed that 75% of the Environmental and Infrastructure Planning graduates found a relevant job within 5 months of completing the programme. All surveyed alumni had found a relevant job within 11 months. The panel considers this to be a good achievement, underscoring the added value of the programme to society. Alumni told the panel during the site visit that while they were looking for a job, employers liked the subject matter of their study programme, so this heightened their chances of success. Alumni profit from their study in their jobs and could in particular put the soft skills they acquired into good use.

The panel assesses the standards from the *Assessment framework for limited programme assessments* in the following way:

Master's programme Environmental and Infrastructure Planning

Standard 1: Intended learning outcomes	meets the standard
Standard 2: Teaching-learning environment	meets the standard
Standard 3: Student assessment	meets the standard
Standard 4: Achieved learning outcomes	meets the standard
General conclusion	positive

The chair, prof. dr. Leo de Haan, and the secretary, drs. Mariette Huisjes, of the panel hereby declare that all panel members have studied this report and that they agree with the judgements laid down in the report. They confirm that the assessment has been conducted in accordance with the demands relating to independence.

Date: 4 October 2019



DESCRIPTION OF THE STANDARDS FROM THE ASSESSMENT FRAMEWORK FOR LIMITED FRAMEWORK ASSESSMENTS

Context

The master's programme Environmental and Infrastructure Planning is one of nine programmes offered by the Faculty of Spatial Sciences at the University of Groningen. Within the faculty, four departments are responsible for research and teaching in a specific discipline: Demography (bachelor's programme Human Geography and Urban and Regional Planning, bachelor's programme Spatial Planning and Design, master's programme Population Studies), Economic Geography (bachelor's programme Human Geography and Urban and Regional Planning, bachelor's programme Spatial Planning and Design, master's programme Economic Geography, master's programme Real Estate Studies), Cultural Geography (bachelor's programme Human Geography and Urban and Regional Planning, bachelor's programme Spatial Planning and Design, master's programme Cultural Geography) and Spatial Planning (bachelor's programme Human Geography and Urban and Regional Planning, bachelor's programme Spatial Planning and Design, master's programme Socio-Spatial Planning, master's programme Environmental and Infrastructural Planning). The Faculty Board is responsible for all research and teaching at the faculty. It is chaired by the dean. The Economic Geography and Real Estate programmes share a Programme Committee, as well as the Socio-Spatial Planning and Environmental and Infrastructural Planning programmes. The other programmes all have their own Programme Committees. The Programme Committees advise the management as to how to safeguard the quality of each programme. The faculty has one Board of Examiners.

The programme can be followed either as a separate one year master's programme, or as part of two international double-degree programmes: Development Planning and Infrastructure Management (with the Institut Teknologi Bandung, Indonesia) and Water and Coastal Management (with the University of Oldenburg, Germany). Students registering for one of these programmes spend the first year of their study in Bandung or Oldenburg, and the second in Groningen. They run through two full master's programmes and then acquire a double master's degree. A third double-degree programme with Gadjah Mada University in Yogyakarta has recently been approved.

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.

Findings

Profile

The ambitious EIP programme aims to educate the next generation of professionals who will help cities and regions to become more resilient places. Present-day challenges in the field of the environment, water and infrastructure are its focal point. Students learn to understand and deal with complex planning issues regarding such challenges, as part of an increasingly connected and transformative world. Facing these challenges often requires institutional change. The programme provides its students with a toolkit filled with innovative ideas, methods and techniques to design such institutional change. While other planning programmes study more general urban and regional planning issues, the Groningen programme distinguishes itself by its focus on the environment, water and infrastructure. It can boast not only an international orientation, but also a truly international classroom. Here, students of different backgrounds and nationalities work and learn together, thus enabling each other to adopt different perspectives.

Talking with the programme management and lecturers, the panel could understand what the programme focusses on, i.e. an integrating perspective. Students however – while appreciating the liberty the programme offers them to choose from and study a broad range of topics and fill their own toolkit with an abundance of instruments – do not recognise the bigger picture. At least those



students interviewed by the panel could not explain it. The panel judges it necessary for the programme to clarify its identity and communicate this to students. If students are helped to put their study activities into perspective, this will make it easier for them to find their way through the curriculum. For maximum coherence between the master's programmes in the Faculty of Spatial Sciences, the panel recommends specifically demarcating the Environmental and Infrastructure programme from its 'sister' Socio-Spatial Planning. This can for instance be done in terms of thematic focus, level of analysis and intervention, and chosen methodology.

A second recommendation is to benchmark the programme and set it off from other planning programmes in more detail than is presently done in the self-evaluation report. No other related master's programmes have been mentioned by name. Pinpointing such programmes at an international level, and unravelling where exactly the master's programme in Groningen differs from each of them, will contribute to clarifying the programme's identity.

The Domain-Specific Framework of Reference for the human geography and urban and regional planning domain in the Netherlands was updated for this review by the four participating universities. The panel noticed, however, that although some programmes refer to the framework of the Association of European Schools of Planning, none makes explicit use of the Dutch framework to position itself. The panel is of the opinion that the Dutch framework could be a useful tool to position the eight programmes in relation to each other and the broader discipline.

Intended learning outcomes

Following a Programme Committee recommendation, the programme revised its intended learning outcomes in 2018, based on an internal mini-audit. The aim was to reduce the number and length of the intended learning outcomes, clarify them and make them more compact. The revised learning outcomes reflect the four main elements of the programme's profile. Firstly, graduates are meant to be up-to-date on theories and innovative ideas regarding spatial planning. Secondly, graduates have the capacity to analyse the processes underlying planning issues and propose complexity-sensitive policy solutions. Thirdly, graduates have a critical and reflexive attitude, and use a comparative view to develop an advanced understanding of planning issues. Fourthly, graduates are well-prepared for the labour market and can apply their knowledge to foster institutional design and policy innovation. These four elements are specified in five sets of individual intended learning outcomes, based on the Dublin Descriptors, and one extra set of intended attitudes (see Appendix 2). All of them are assigned to the aforementioned four main elements of the programme. One intended learning outcome is for instance: 'Acquire knowledge at the level of international academic debates on the theories, methodologies and techniques that enable the analysis of water, environmental and infrastructure planning problems, their possible solutions and socio-institutional consequences in specific spatial and temporal context.' Another example is: 'Scrutinize planning problems devising institutional and policy innovation through collaborative reflection.' The panel compliments the programme on its concise yet detailed, concrete and inspiring intended learning outcomes. In its view, they set an example for other programmes in the faculty. Based on the intended learning outcomes, it cannot be difficult to tighten the programme's profile as well.

Since 2012, the faculty has had an advisory board consisting of alumni from all master's programmes, which meets two to three times a year. Thus, the faculty management remains well informed on recent developments in the labour market and appropriate desirable changes in the intended learning outcomes. The panel finds this a good practice. In addition, the faculty has long-standing connections to partners from the professional field and numerous guest lecturers. This allows the programme to include the developments in, and wishes from, the professional field.

The panel confirms that the intended learning outcomes mirror the Domain-Specific Framework of Reference for the domain of human geography and urban and regional planning, even though the self-evaluation report does not mention it explicitly. It found that the programme's level and orientation align with the international requirements set for an academic master's programme as laid down in the Dublin Descriptors.

Considerations

The panel compliments the programme on its concise yet detailed, concrete and inspiring intended learning outcomes. In its view, they set an example for other programmes in the faculty. It confirmed that the intended learning outcomes as formulated by the master's programme Environmental and Infrastructure Planning mirror the Domain-Specific Framework of Reference, even though they do not mention it explicitly. It found that the programme's level and orientation align with the international requirements set for an academic master's programme as laid down in the Dublin Descriptors.

The panel judges it necessary for the programme to clarify its identity and communicate this to its students. Taking the revised intended learning outcomes dating from 2018 as a starting point, this should not be too difficult. For maximum coherence between the master's programmes in the Faculty of Spatial Sciences, the panel recommends specifically demarcating the Environmental and Infrastructure programme from its 'sister' Socio-Spatial Planning. This can be done, for instance, in terms of thematic focus, level of analysis and intervention, and chosen methodology. A second recommendation is to position more clearly within the Domain Specific Framework of Reference and to benchmark the programme compared to other planning programmes in more detail than is presently done in the self-evaluation. Pinpointing such programmes, and unravelling where exactly the master's programme in Groningen differs from each of them, will help to clarify the programme's identity.

Conclusion

Master's programme Environmental and Infrastructure Planning: the panel assesses standard 1 as 'meets the standard'.

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.

Findings

Student intake

Students with a bachelor's degree in Spatial Planning, Urban/Regional Planning, Urban/Regional Development, Environmental Management, Human Geography, Land Use Planning and Management or Public Administration are directly admissible to the programme. Others can take a dedicated 60 EC premaster's programme. Students entering the double-degree programmes are selected in Oldenburg or Bandung, since that is where they take their first year. A staff member of the University of Groningen takes part in the admission interviews via Skype. Over the past years, the programme has had a stable intake of 50 to 60 students each year. Thanks to the double-degree programmes, around a third of these students have an international background. In 2018 10 students came from within the EU and 5 from countries outside of the EU. Only a quarter of the students is female.

All master's programmes at the Faculty of Spatial Sciences allow students to enrol in either September or February. The panel understands that allowing students to enrol in February is the result of a university-wide policy. In its opinion, however, the structure of the curriculum for students enrolling in February is sub-optimal. In the Environmental and Infrastructure Planning curriculum, they miss out on the theoretical and methodological basis that is given at the start of the programme. This will make it hard for them to successfully take part in the second-term courses, where these theories are typically applied. Therefore, September should be the only enrolment date in the panel's view.

Curriculum content and structure

The one-year master's programme Environmental and Infrastructure Planning is identical for both regular and double-degree students. It consists of six compulsory courses and two electives (5 EC



each) and a 20 EC thesis. Students start out with the introductory 'Planning theory' course and the methodological 'Comparative research and planning practice' course. Three thematic courses follow: 'Reinventing in environment planning', 'Transitions in water management' and 'Dilemmas in infrastructure planning'. The 'EIP interactive workshop' fosters critical thinking by inviting students to study and discuss academic journal articles. Students can choose two electives, which can be taken inside or outside of the faculty, or replaced by an internship. They choose their own master's thesis topic, in a thesis writing course that is shared with the master's programme Socio-Spatial Planning. The starting point for this course is a master's thesis market, in which staff members and planning professionals pitch their research questions. While writing their master's thesis, the students show their scientific, explorative and critical attitude by collecting data, making inferences and constructing defensible conclusions, reflecting on method, theory and outcomes, and presenting conclusions in an argumentative way. The panel found they are happy with the tools the curriculum offers them. They also feel the curriculum leaves them a lot of freedom to follow their own interests.

The panel studied the courses and course material and found that they sufficiently facilitate students in realising the intended learning outcomes. It also finds the courses well structured. The first-term courses in planning theory and comparative research methods provide a theoretical and methodological basis. The curriculum derives its coherence from the fact that in the following courses, these methodological tools are applied again and again. Special attention is paid to professional skills such as analysing planning problems, producing an advisory report and discussing this with professionals. The panel appreciates that on the one hand advanced methodology is taught at an early stage, so that these methodologies can be applied and trained later on. On the other hand, the students argue that having the methodology course in the first term makes this term too overwhelming and intensive. Whatever choice is made for locating the methodology course in the curriculum, the panel disagrees with the students' suggestion in the self-evaluation that it should be degraded to an elective. It is convinced that the methodology course gives backbone to the curriculum and cannot be skipped. It should therefore remain a mandatory element of the curriculum. It also likes having a 'mobility window' in the final term, when no mandatory courses are offered. This makes it easier for students to take an internship instead of an elective. The downside of this is that one of the electives is scheduled in the final term, where there is limited choice on offer. But this is a price that may be paid, in the panel's view.

Teaching methods and feasibility

The programme's teaching methods align with the faculty's didactic vision, which emphasises learning rather than teaching. It aims for an active learning environment that focuses on knowledge development, experimentation, fieldwork and shared learning experiences. The curriculum offers various teaching forms, such as lectures, small interactive work groups, student-led sessions, meetings with planning professionals, excursions and case-based group assignments. For thesis subjects, internships, real-life case studies and guest lectures, the programme collaborates with potential future employers: the Directorate-General for Public Works and Water Management (*Rijkswaterstaat*), the municipality of Groningen and internationally operating consultancy firms such as Royal HaskoningDHV and Witteveen & Bos. Twice a year, the programme organises 'A day in planning practice': an in-house day at a potential future employer, to give students a better impression of the work field. Also twice a year, the faculty organises a Graduate Research Day, at which recent graduates of all master's programmes present their research in different ways (the best theses in plenary presentations, others in parallel meetings or poster presentations). The panel found that the students look forward to this day. It is a good way to showcase their final projects and also bring together the different programmes in the faculty. The students told the panel that they enjoy the variety of work forms and the many connections with the labour market that are offered. The panel judges the teaching methods to be varied and effective; they contribute to the students realising the intended learning outcomes.

Students find the workload in the Environmental and Infrastructure Planning programme to be quite high. Most problematic is the first term, which forms the introduction to theories and methodologies. This term intimidates students, particularly the ones with a background in science rather than social

sciences. Many of the double-degree students have such a science background. For students coming from abroad, the transition is challenging in multiple respects: academically, socially and practically. The panel fully supports the programme's intention to intensify support and guidance for all students. They are already offered an introductory kick-off meeting, a special training on the particulars of the Dutch assessment system, and individual monitoring and guidance, but more is needed. The panel recommends supporting students in each of the three following challenging aspects. The programme should aim to bridge the gap between the first and second master in the double-degree programmes and explain how the different elements in the curriculum are linked together; assist international students with practical matters such as housing; and facilitate the organisation of a range of social events at the start of the curriculum in order to facilitate community building. The programme management announced that the workload issues for the first term will be addressed by reducing the number of assignments and the amount of literature that needs to be studied. Also, the links between the courses will be strengthened. To the panel, these measures seem appropriate and necessary interventions.

Another point of improvement in the programme is the timely assignment of a master's thesis' supervisor. Students and alumni reported a shortage of suitable thesis supervisors in the past. Although the thesis process formally starts with the thesis market in November, in some cases it took months before students were assigned a final supervisor. The programme management told the panel that as of 2018, the thesis process has been improved. Now, with more staff and stricter procedures, a thesis proposal is reviewed within ten days, at which point students are assigned an interim supervisor. If necessary, the interim supervisor will later be replaced, but in most cases he or she will turn out to be the final supervisor. In both of these situations, students are not held back anymore by the lack of a thesis supervisor. Once they have one, the students highly appreciate the guidance that a thesis supervisor gives. Some students prefer to postpone choosing their thesis topic, since they know more later in the programme and are therefore better able to make an informed choice. This is fine, according to the panel, as long as the curriculum is feasible within a year for those who do not want to spend any more time on it. The panel concludes that this is the case, certainly after the measures the programme management announced to reduce the student workload.

Quite a few master's students felt the need to gain practical experience outside of the university. The panel found that the faculty is still finding its way in meeting this need. Two years ago, all master's programmes introduced the possibility to do a 5 EC internship (either replacing an elective or as an extracurricular activity). For this course, well-defined learning goals were developed, as well as a procedure to achieve these goals. But as the course guide itself warns students, 'only proactive students will be able to finish this course, because there is little facilitation from the faculty'. Most students choosing an internship now prefer a different route, namely combining research for an organisation with their master's thesis. For this route, there is no clearly outlined procedure. Some students told the panel that they had trouble fitting such an internship into their master's programme, because the curriculum leaves little space for it and because they feel the path has not yet been paved. Many of them decided to prolong their studies for this reason, and felt left to their own devices in bringing the internship to a successful conclusion. The panel acknowledges that the one-year master's programmes are already quite full, and appreciates the faculty's obvious intention to meet students' need in this respect, but recommends taking these efforts one step further, by giving students who wish to do an internship more support and guidance.

The Faculty of Spatial Sciences chooses to offer two bachelor's and six master's curricula that are substantively related as separate programmes, instead of tracks within one overarching bachelor's and one master's programme. The panel discussed the advantages and disadvantages of this decision with the faculty management. A positive consequence is that now each of the programmes is at liberty to establish its own profile and recruit students that match the profile in a goal-oriented way. A potential challenge resulting from the decision to offer separate programmes is that it may create a hurdle to communicate and collaborate across the boundaries of programmes and (particularly) departments. This is especially the case because many lecturers work within one programme. The



fact that there are clear boundaries may impede the sharing of best practices and learning from one another, thus moving all programmes forward. The panel is of the opinion that the faculty does not fall in this trap, mainly because of the enthusiastic teaching staff, who intuitively and informally maintain a cycle of innovation and evaluation across programmes. The faculty manages to attract staff members who fit well into this approach, that supports the quality and improvement culture. The panel would like to stimulate the synergy between programmes even further, to guarantee that opportunities to share best practices are fully explored. It recommends a framework that ensures a minimal level of formal embedding. For example, the six programme committees could structurally meet, which they do not do now.

The panel is very positive about the fact that the faculty publishes the results of student evaluations of all courses on Nestor. This clearly reflects a quality culture within the faculty, and shows the students that their input is taken seriously, valued and used to improve the quality of education. The panel thinks that this attitude and method add significantly to the high response rates to course evaluations (85%). If a course evaluation suggests a course is not up to scratch, then the programme management forms a student panel to discuss this with the lecturer. He or she subsequently writes a reflection report, which is also published on Nestor. The panel finds this a good practice.

Students in the Environmental and Infrastructure Planning Programme Committee commented that the quantitative evaluations form a solid basis, but do not serve to improve the courses. They think a face-to-face evaluation of a course with the lecturer will be more helpful in this respect and are satisfied with an experiment carried out in 2018. The panel encourages the programme to continue with the qualitative evaluations. This will help to further enhance the quality of the courses and make them more student-friendly wherever possible.

International classroom

Thanks to early international outreach (since 2004), the international classroom is a very attractive feature of the Environmental and Infrastructure Planning programme. The programme coordinator ensures that each working group consists of students from different backgrounds. Both students and alumni confirmed that the different perspectives in class contributed to their learning process. Some double-degree students, for instance, have already held jobs in Indonesia and can speak about dealing with a flood from their own experience. Working in small mixed groups teaches students to handle different world views and styles of communication, and still find shared definitions, analyses and solutions. The panel congratulates the programme on its success in realising an international classroom. It recommends looking out for dedicated work forms to maximise the didactic potential of diversity. It advises trying to attract more female students. They now make up only 25% of the programme's student population, which forms a threat to diversity.

Teaching staff

Students encounter both early-career and experienced teaching staff. All teaching staff has a PhD, and 75% has a university teaching qualification. The students are generally enthusiastic about their lecturers. They find them knowledgeable, passionate and approachable. The workload has been an issue, not only for students but for staff as well. The panel established that the programme management is well aware of this and has taken several measures to resolve the problem. It recently recruited two new staff members, while improving the balance between Dutch and non-Dutch and male and female staff at the same time. It also created two more vacancies, which had not yet been filled at the time of the site visit. Reducing the number of assignments in the first term should give some more relief. The panel established that the teaching staff is well qualified and trusts that the programme management is sufficiently in control of the quantity and workload of the staff.

Considerations

The panel established that the content and structure of the master's programme Environmental and Infrastructure Planning enables students to realise the intended learning outcomes. Students find the programme challenging and intense (particularly the first term), but are happy with the understanding, reflection and tools the curriculum offers them and the liberty to follow their own

interests. The panel appreciates the 'mobility window' in the final term, which makes it easier for students to take an internship instead of an elective. It is also positive about the place of the methodology course at the start of the curriculum. Even though this contributes to the first term being overwhelming for students, it enables them to train their methodological skills during the rest of the curriculum.

The programme management announced that the workload issues for the first term will be addressed by reducing the number of assignments and the amount of literature that needs to be studied. Plus the links between the courses will be strengthened. To the panel, these measures seem appropriate and necessary interventions. It fully supports the programme's intention to intensify support and guidance for all students.

The panel established that the teaching staff is well qualified and trusts that the programme management is sufficiently in control of the quantity and workload of the staff. It is satisfied with measures taken to improve the thesis process, which in the past suffered from a shortage of appropriate thesis supervisors.

The panel congratulates the programme on its successful realisation of the international classroom. Both students and alumni confirmed that the different perspectives in class contributed to their learning process. It recommends maximising the didactic potential of diversity and attracting more female students to improve the gender balance.

Conclusion

Master's programme Environmental and Infrastructure Planning: the panel assesses standard 2 as 'meets the standard'.

Standard 3: Student assessment

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

Findings

Assessment policy and practice

The Faculty of Spatial Sciences at the University of Groningen has a shared assessment policy, which is described in the *Faculty of Spatial Sciences Assessment Policy Memorandum*. This memorandum provides directives for the relation between assessment and learning goals, the demands that all assessment forms need to meet, the ways in which students have to be informed, etc. The memorandum sets the boundaries within which each of the programmes can choose its own assessment forms and criteria, and thus shape its own identity. Every programme has *Teaching and Examination Regulations*. Based on these, the programme management is asked to draft an assessment plan, which constitutes the intended learning outcomes and the modes of assessment of all courses in the programme, and a matrix clarifying the relationship between the two.

The panel concludes that quality control of assessment is in order. Beforehand, lecturers have the quality of their exams assessed through peer review by another member of staff. Afterwards, the quality is measured again as part of the course and programme evaluation. In this evaluation, students can indicate the extent to which the assessment ties in with the learning objectives of a course. The course coordinator and the relevant programme committee reflect upon this evaluation, and it is also made publicly available to students and to the members of the Board of Examiners. From these evaluations, it turns out that in general, students are satisfied with their exams.

The panel applauds that attention is paid to academic integrity at the start of the academic year, in the 'Comparative research and planning practice' course. It looked into a sample of the exams given by the programme and found a broad spectrum of assessment types: multiple-choice exams, open exams, essays, oral presentations and group assignments. It appreciates that the programme's staff



continually discusses grading with the partners in the double-degree programmes, and conducted research into possible differences in assessment cultures. Since the double-degree partners have different assessment systems while offering a shared programme, this has to be an ongoing discourse. During the site visit, the Environmental and Infrastructure Planning students proved in general to be satisfied with their exams. They found that the various ways in which their work is assessed make the courses engaging and challenging. They also appreciated that they acquire not only knowledge and insights, but soft skills as well, such as working together in a team, oral presentations and academic writing. They did object to the assessment in the 'Planning theory' course, however, because the questions are exclusively multiple choice. They said that at least part of the assessment of this course should be in the form of open questions. The panel agrees with them that at the master's level, a course assessment using solely multiple-choice questions is not fitting, since these are only suitable to test reproduction of knowledge, not reflection or application of it. The panel understands that the staff shortage may have necessitated this, but urges the programme management to find a solution now that new staff members have been recruited.

The panel found that course assignments are well described in general. Exams are well-designed and properly archived, with the appropriate answer key. The panel confirmed that the assessment procedures throughout the courses sufficiently aim at a valid, reliable and transparent assessment. It recommends improving the assessment even further by sharing successful innovations between the departments, such as the negotiation game in Brussels from the master's programme of Economic Geography, the two-stage exam from the 'Cultural Geography' course, the double peer-review system in the Bachelor (where part of the mark is determined by fellow-students' rating of an individual's contribution to the group work), the experimentation with two-step exams in the master Cultural Geography (an individual exam followed by a group exam on the same topic to stimulate reflective thinking) or the practice that all thesis marks of a 9 or higher should be validated by a senior staff member.

Thesis assessment

The panel studied a sample of the theses and found that they were validly and reliably assessed. The level of transparency in how the grades were reached differs, however, as does the amount of feedback that is given. The faculty management explained to the panel that each of the master's programmes at the faculty has its own procedure of assessing the master theses and its own standard assessment form, with slightly differing criteria or prioritisation of criteria. The panel finds this justifiable, as a way of underlining the specific identity of each of the programmes. This is particularly so in view of the fact that the forms play an important role not only in the assessment itself, but also in guiding the students through their writing process. 'Straightjacketing' would then be ill-advised. While endorsing some free rein on the assessment criteria for each individual programme, the panel does recommend harmonising the assessment processes (see below). This will enhance transparency, enforce validity, and make it easier for students to know what to expect.

In the panel's view, one thesis assessment procedure, which documents recognisably independent feedback from both the first and second examiner can be seen as a good practice. The role of the second examiner is to form his or her own judgement and add this to the first examiner's judgment on the assessment form, after which the first and second examiner compare notes and work towards a collective final mark. The assessment form should reflect the independent procedure. This procedure should be implemented consistently through all programmes, the panel recommends. Also, the assessment form should be consistently shared with the student, so that he or she can take advantage of the feedback that is given. The panel also suggests that while academic accuracy is well covered on the assessment forms, creativity, scientific depth and societal relevance could be evaluated more strongly and explicitly.

The Board of Examiners

The Faculty of Spatial Sciences has one Board of Examiners, responsible for the examination and assessment quality of all bachelor's and master's programmes, awarding degrees and handling requests by students regarding deviations from the regular curriculum. The Board consists of six

members, representing each of the departments. It also includes one external assessment expert. The Board itself meets six times a year, and besides that, it regularly meets with the university's central Board of Examiners, in order to deal with shared challenges and innovative solutions.

The panel found that, since the 2014 evaluation, the Board of Examiners has greatly improved its procedures. At the time, the previous panel considered the Board of Examiners to be only slowly moving towards a more professional attitude. Now this faculty's board is seen as a good example throughout the university. Its particular merit is that its members aim to work pro-actively and quickly, communicating directly with students who are unhappy with the assessment methods. In this manner they have been able to prevent appeal procedures, while at the same time retaining broad support from the work floor. As the 2014 evaluation panel recommended, the Board's time allocation was increased. The present panel is very happy with these developments.

The panel noticed that the Board of Examiners has a clear definition of its own responsibilities, as demarcated from those educational aspects that are primarily the management's responsibility. The latter develops the course and assessment methods, while the Board of Examiners safeguards the quality and sees to it that the programmes live up to their intended academic level. As soon as the Board spots an irregularity (relatively low average grades, complaints by students, evaluations that are below the mark), the secretary of the Board of Examiners discusses this with the lecturers involved. Every six months, the Board picks five courses for a systematic evaluation of its assessment methods. These may be courses that stand out in the course evaluations, in the proceedings of the Programme Committees, or in the day-to-day communications between Board members and their colleagues. The Board also makes a random and anonymous selection of ten bachelor's and ten master's theses, which are then re-assessed by one of its members. If there is a significant difference between the original mark and that given by the Board member, this difference is discussed with the examiners involved. All parties find this an instructive process. In 2018, the Board started a pilot project screening the assessment practices of two complete programmes, with the intention of repeating this exercise with two new programmes each year. The panel applauds this initiative. As well as being instrumental to further reinforcing quality assurance, it also contributes to a broadly shared awareness of how student assessment should be embedded in the bigger picture.

The panel encourages the Board of Examiners to continue its good work. The Board of Examiners, the Programme Committees and the programme management each take on their individual tasks well. In the panel's opinion, the faculty could gain even more by coordinating them toward a shared faculty-wide assessment culture, e.g. by discussing problems of mutual interest together and actively exchanging lessons learned and best practices. This will become especially relevant as the staff diversify and become more international. Part of such an exercise could be, for instance, to initiate a biannual assessment day.

Considerations

The panel confirmed that assessment throughout the courses in the Environmental and Infrastructure Planning programme is sufficiently valid, reliable and transparent. Extensive feedback and variety in assessment methods enable students to shape their own learning process. The panel thinks that the faculty could gain even more by intensifying a shared faculty-wide assessment culture. This will become especially relevant as the staff diversifies and becomes more international.

The panel reviewed a sample of ten master's theses and found that they are validly and reliably assessed. The level of transparency of the assessment however differs, both between and within the programmes. The panel recommends one thesis assessment procedure in all master's programmes. This enhances transparency, enforces validity and makes it easier for students to know what to expect. In the panel's view, thesis assessment forms with recognisably independent feedback from both the first and second examiner can be seen as a good practice. The panel found that, since the 2014 evaluation, the Board of Examiners greatly improved its procedures. It has become very professional, with a clear view of its responsibilities, and works proactively and quickly. The panel encourages the Board of Examiners to continue its good work.



Conclusion

Master's programme Environmental and Infrastructure Planning: the panel assesses standard 3 as 'meets the standard'.

Standard 4: Achieved learning outcomes

The programme demonstrates that the intended learning outcomes are achieved.

Findings

Prior to its site visit, the panel studied a sample of ten recent master's theses from the master's programme Environmental and Infrastructure Planning. In its view, they sufficiently demonstrate that the students realise the intended learning outcomes. Many of the theses contain original research questions, and some good use of (mixed) methods. Given the cultural diversity in the student population, one might expect more emphasis on the inclusion of transnational or cross-cultural perspectives as part of the instructional approach to the master's theses. This may need to be addressed at an institutional level, with the Faculty Board encouraging and possibly facilitating such an approach. Moreover, attention for spatial patterns could be more recognisable, while the amount and quality of maps leaves room for improvement.

That the intended learning outcomes are achieved can also be deduced from alumni's positions on the labour market. The faculty regularly performs alumni analyses, charting where its alumni work and how long it took them to find a job. The 2016 survey shows that 75% of the Environmental and Infrastructure Planning graduates found a relevant job within 5 months of completing the programme. All surveyed alumni had found a relevant job within 11 months. The panel considers this to be a good achievement, underscoring the added value of the programme to society. The majority of graduates are employed by national, regional or local government institutions, consultancy firms and engineering agencies. Alumni told the panel during the site visit that while they were looking for a job, employers liked the subject matter of their study programme, so this heightened their chances of success. They profit from their study in their jobs and could in particular put the soft skills they acquired into good use. The panel values the many different ways in which alumni remain in touch with the faculty: on the advisory board, as guest lecturers, as internship supervisors, or as data suppliers. The faculty's active alumni association (the Professor Keuning Vereniging, which organises a big alumni event every two years) is partly responsible for this. Involving alumni in the programme is done very well, in the panel's view, and contributes to the programme's quality.

Considerations

Based on a selection of the master's theses, the alumni survey and interviews with alumni during the site visit, the panel concluded that the students realise the intended learning outcomes as formulated by the programme. Many of the theses contain original research questions and some good use of methods (mixed). A 2016 survey showed that 75% of the Environmental and Infrastructure Planning graduates found a relevant job within 5 months of completing the programme. All surveyed alumni had found a relevant job within 11 months. The panel considers this to be a good achievement, underscoring the added value of the programme to society. Alumni told the panel during the site visit that while they were looking for a job, employers liked the subject matter of their study programme, so this heightened their chances of success. Alumni profit from their study in their jobs and could in particular put the soft skills they acquired into good use.

Conclusion

Master's programme Environmental and Infrastructure Planning: the panel assesses standard 4 as 'meets the standard'.

GENERAL CONCLUSION

The panel's judgement on standards 1, 2, 3 and 4 for the master's programme Environmental and Infrastructure Planning at the University of Groningen is 'meets the standard'. Therefore, according to the rules of the Accreditation Organisation of the Netherlands and Flanders, the general and final judgement is 'positive'.

Conclusion

The panel assesses the *master's programme Environmental and Infrastructure Planning* as 'positive'.

APPENDICES

APPENDIX 1: DOMAIN-SPECIFIC FRAMEWORK OF REFERENCE

The Human Geography and Urban and Regional Planning domain in the Netherlands

The current domain-specific reference framework confines itself to a substantive description of the two core disciplines, in combination with the general expectations regarding the competencies of graduates. Therefore, it is a more concise document than the previous (2012) one. The exit qualifications for bachelor and master programmes are no longer included, partly because the Dublin descriptors already provide an adequate general description of the desired scientific level, but also to give the programmes taking part in the reaccreditation ample opportunity to demonstrate their own specific profile in their self-studies.

The Human Geography and Urban and Regional Planning domain is very broad and diverse, and the different academic programmes within the Netherlands highlight different elements. They vary, for example, in the balance between scientific and professional training, degree of research intensity, degree of integration between the two core disciplines, opportunities to specialize, and types of specialization offered. This domain-specific reference framework emphasizes the common features applying to all programmes.

The Human Geography and Urban and Regional Planning domain revolves around the complex relationship between people (society) and their environment (space). There are five qualities that determine the mind set of geographers and planners. First of all, the ability to think from a time-space perspective, these being the two dimensions within which human action unfolds. Secondly, the ability to study the relation between people and environment in the context of intertwined spatial scale levels (local, regional, national, global). Insight into socio-spatial transformations is gained by studying the interaction between these scale levels (the multi-scalar perspective), without making prior assumptions about the dominance of any one level (e.g. the global level) over another (e.g. the local level). Thirdly, the mind set of geographers and planners is based on the idea that space and society closely interact and shape each other. Human actions, and the behavioural patterns that develop in the course of time (institutions), crystallize in space, while conversely, spatial structures and place-related features trigger and shape human actions. A fourth quality relates to the strong multidisciplinary orientation in the work of geographers and planners; relationships between humans and their environment are studied from a range of mutually supplementary disciplinary perspectives. The precise combinations chosen depend on the nature of the socio-spatial problems being studied and will vary per programme within the domain. Finally, the fifth quality is closely linked with all the above: the integrative character of the geographical and planning approach. This crux is an ambition to understand the mutual cohesion between economic, social, cultural and political phenomena and processes within their specific spatial contexts.

Key terms in the domain are space, place, location, scale, networks, linkages, spatial behaviour, place attachment, spatial quality, spatial design and spatial interventions. Within the domain socio-spatial problems are taken as starting points of scientific inquiry. These issues include spatial inequality, globalization, migration, segregation, diversity and identity, environmental burden, sustainable area development, mobility and governance. The aim is not only to make critical analyses of the issues concerned, but also to design plans and interventions that may solve or reduce socio-spatial dilemmas.

The international and comparative character of studying the relation between people and environment is inherent to the Human Geography and Urban and Regional Planning disciplines. Socio-spatial problems, and planned actions to deal with them, are marked by the specific national, regional and local context in which they arise. The significance of the embeddedness of socio-spatial phenomena is the key to Human Geography and Urban and Regional Planning. However, awareness of the importance of context does not imply that the disciplines are merely the sum of an endless series of case-studies. The ambition is to identify the international similarities and differences of socio-spatial processes and developments, in order to unravel both their unique and generic aspects. Both facets are typical of the quest of Human Geography and Urban and Regional Planning to



formulate theories (explanation in context). To emphasize this international, comparative character, teaching does not focus solely on the Netherlands. And when studying Dutch cases, the international importance and international suitability of the theoretical perspectives and research angles developed will always be considered. Continuing on from this, the composition of staff and students in all the Dutch programmes in the domain is becoming increasingly diverse (in many ways). The 'international classroom' being introduced in more and more programmes, facilitates and reinforces the international-comparative orientation of both disciplines.

The Human Geography and Urban and Regional Planning domain has evolved in close cohesion with the other social sciences. While it shares important qualities with the latter - such as attention for formulating theory and the need for rigid methodology - it is also distinct by emphasizing particular qualities. The strong empirical orientation, apparent in the importance attached to primary data collection and fieldwork, is a typical feature of our domain. Furthermore, 'learning by doing' has become an important part of all programmes, partly because it enhances sensitivity to the time and place (context)-bound character of social, cultural, political and economic phenomena and developments. Geographers and planners are constantly challenged to step outside the comfort zone of their own field. Finally, research within the domain has increasingly opened up for a wide spectrum of methods and techniques. This methodological pluralism corresponds with the choice to study socio-spatial problems at various scale levels, which precludes a standard method of analysis.

Human Geography and Urban and Regional Planning graduates are able to identify, analyse and explain socio-spatial problems, based on and contributing to the 'body of knowledge' adhering to the discipline. They are also fully conversant with general social-scientific methods and techniques, as well as more domain-specific research methods, such as GIS and spatial impact analysis. The Bachelor's programmes do this, in line with the basic level of the Dublin descriptors, by laying a broad scientific foundation in the two core disciplines, while the Master's programmes train students, again following the Dublin framework, at a theoretically and methodologically more advanced and specialist level.

The programmes under consideration prepare students for a variety of professions and sectors. Typical jobs include researcher, teacher/lecturer, consultant, policy official and project manager. A common characteristic of staff qualified in Human Geography and/or Urban and Regional Planning is their inclination for a comprehensive approach to problems, and their ability to create awareness on the spatial diversity of societal problems. Students with a specialist Master's degree often find themselves in professions directly connected with their specialism, such as spatial planning, area development, urban policy, construction and housing, regional policy, traffic and transport management or environmental policy. The self-studies of the individual degree programmes will inform more specifically on the professions and sectors in which graduates work.

The domain-specific framework of reference (DSFR) has been formulated by the national disciplinary meeting (Disciplineoverleg Geografie en Planologie). The former DSFR has been adjusted, i.e. updated and shortened by omitting the concrete exit qualifications for bachelor and master. The participating programmes have been able to comment on the draft. It has been laid down during the meeting on 6 September 2018.

APPENDIX 2: INTENDED LEARNING OUTCOMES

Master's programme Environmental and Infrastructure Planning

1. Knowledge and Understanding

A. Acquire knowledge at the level of international academic debates on the theories, methodologies and techniques that enable the analysis of water, environmental and infrastructure planning problems, their possible solutions and socio-institutional consequences in specific spatial and temporal context.

B. Develop advanced understandings of planning institutions, actor-networks and decision-making processes related to water, environmental and infrastructure issues so that they can be carried out innovative research and contribute to new ideas in the field.

C. Unravelling complexity: Recognize that processes underlying challenges in water, environmental and infrastructure planning are diverse, interconnected and changeable, and that understanding these challenges requires contextualizing them in a contemporary, ever-changing and complex reality.

D. Compare and reflect upon advanced theories, concepts and methods on governance and policy design for spatial change. Discern which to use to conduct research in specific contexts.

2. Applying Knowledge and Understanding

A. Analyse water, environmental and infrastructure planning problems, drawing on the latest academic debates on complex planning issues and considering their spatial, social and institutional consequences.

B. Employ (international) comparative analysis: Compare and reflect upon planning institutions, actor-networks and decision-making processes related to water, environmental and infrastructure issues across cities, regions and nation states.

C. Propose adaptive and responsive policy solutions that build on acquired knowledge and problem-solving abilities in relation to complex and dynamic planning issues.

D. Select appropriate theories and methods to use for policy transfer and the assessment of designed planning policy solutions.

E. Identify the specific strengths and limitations of different planning approaches. Debate and reflect these aspects both with regard to research and planning practice.

3. Forming Judgments

A. Critique how planning interventions and decision-making processes affect the interests, well-being and safety of people. Scrutinize ethical and normative aspects of spatial problems and potential solutions.

B. Judge and position your own work within the current international planning debate

C. Provide constructive and critical feedback on analyses and solutions proposed by others. Perceive different ways of reasoning, arguments and points of view.

4. Communication

A. Show sensitivity and respect for experiences and opinions in working with commissioners, respondents and informants. Handle conflicting statements while withholding personal judgment.

B. Acquire Intercultural communication skills: Ability to work in diversified teams with different views on water, environment and infrastructure developments and on societal issues.

C. Convincing and captivating presentation: Present clearly and straightforwardly ideas and findings to specialist and non-specialist audiences, both in oral and written form.

5. Learning Skills

A. Discern relevant information: Differentiate and classify arguments from both theoretical texts and policy documents within water, environmental and infrastructure planning.

B. Quickly acquire solid base-knowledge on specific domains of water, environmental and infrastructure planning, following the developments within the field in an independent and critical manner.



- C. Carry out largely self-directed research on global and local water, environmental and infrastructure planning issues, with the aim to formulate potential solutions.
- D. Scrutinize planning problems devising institutional and policy innovation through collaborative reflection.

6. *Attitudes*

- A. Engage with new ideas and new developments within the field of planning with an open and reflexive attitude.
- B. Work with a scientific attitude: use theoretical knowledge, critical thinking and comparative insight to work professionally in relevant social and academic positions and as a basis for leadership in the field.
- C. Sensitivity for socio-cultural diversity: Handle planning issues and underlying values, interests and opinions with sensitivity to personal and cultural differences.

APPENDIX 3: OVERVIEW OF THE CURRICULUM

Master's programme Environmental and Infrastructure Planning

Master Environment and Infrastructure Planning			
<i>Term 1A</i>	<i>Term 1B</i>	<i>Term 2A</i>	<i>Term 2B</i>
Comparative Research and Planning Practice (5 erts)	Dilemmas in Infrastructure Planning (5 erts)	Reinventing Environmental Planning (5 erts)	Optional Course (5 erts)
Planning Theory (5 erts)	Optional Course (5 erts)	Transitions in Water Management (5 erts)	
EIP Interactive Workshop (5 erts)	Thesis (20 erts)		

Compulsory

Thesis

Optional Course



APPENDIX 4: PROGRAMME OF THE SITE VISIT

DAY 0 Monday April 15th, 2019		
16.45	17.00	Arrival panel and reception at the hotel
17.00	21.00	Preparatory meeting panel
DAY 1 Tuesday April 16th, 2019		
08.45	09.00	Arrival panel
09.00	09.45	Meeting with programme coordinators of the study programmes of day 1
09.45	10.15	Break / Internal consultation assessment panel
10.15	11.00	Meeting with students BSc Human Geography and Planning
11.00	11.45	Meeting with lecturers BSc Human Geography and Planning
11.45	12.15	Virtual Reality Lab Tour
12.15	13.15	Lunch / Internal consultation assessment panel
13.15	14.00	Meeting with students MSc Economic Geography / MSc Real Estate Studies
14.00	14.45	Meeting with lecturers MSc Economic Geography / MSc Real Estate Studies
14.45	15.15	Break / Internal consultation assessment panel
15.15	15.45	Meeting with students MSc Cultural Geography
15.45	16.15	Meeting with lecturers MSc Cultural Geography
16.15	17.00	Break / Recording of first findings day 1 / walk-in consultation
17.00	17.45	Meeting with alumni MSc Economic Geography / MSc Real Estate Studies / MSc Cultural Geography
DAY 2 Wednesday April 17th, 2019		
08.45	09.00	Arrival panel and preparation for day 2
09.00	09.45	Meeting with programme coordinators of the study programmes of day 2
09.45	10.15	Break / Internal consultation assessment panel
10.15	11.00	Meeting with students BSc Spatial Planning and Design
11.00	11.45	Meeting with lecturers BSc Spatial Planning and Design
11.45	12.15	Design Course Tour
12.15	13.15	Lunch / Internal consultation assessment panel
13.15	14.00	Meeting with students MSc Socio-Spatial Planning / MSc Environmental and Infrastructure Planning
14.00	14.45	Meeting with lecturers MSc Socio-Spatial Planning / MSc Environmental and Infrastructure Planning
14.45	15.15	Break / Internal consultation assessment panel
15.15	15.45	Meeting with students MSc Population Studies
15.45	16.15	Meeting with lecturers MSc Population Studies
16.15	17.00	Break / Recording of first findings day 2 / walk-in consultation
17.00	17.45	Meeting with alumni MSc Socio-Spatial Planning / MSc Environmental and Infrastructure Planning / MSc Population Studies
DAY 3 Thursday April 18th, 2019		
08.45	09.00	Arrival panel and preparation for day 3
09.00	10.00	Meeting Board of Examiners
10.00	10.30	Internal consultation assessment panel, draw up provisional findings
10.30	11.30	Final meeting with programme management
11.30	14.00	Lunch / Internal consultation assessment panel / draw up provisional findings
14.00	14.30	Oral report provisional conclusion
14.30	14.45	Break
14.45	15.45	Development Dialogue
15.45	16.00	Closing site visit

APPENDIX 5: THESES AND DOCUMENTS STUDIED BY THE PANEL

Prior to the site visit, the panel studied 10 theses of the master's programme Environment and Infrastructure Planning. Information on the selected theses is available from QANU upon request.

During the site visit, the panel studied, among other things, the following documents (partly as hard copies, partly via the institute's electronic learning environment):

- Lecturer handbook
- Programme committee handbooks and regulations
- Task division model 2018-2019
- Faculty plans for quality agreements
- Vision on teaching and learning
- Strategic report for the Faculty of Spatial Sciences
- Alumni analyses 2010-2017
- FSS career newsletters
- Summary of all relevant courses
- Top 3 most valued courses of the 2018-2019 semester
- 'Richtlijnen interne evaluaties'
- Course guide format
- Minutes of all meetings by the Board of Examiners
- Annual reports of the Board of Examiners
- Assessment protocols
- Assessment plans

Of the following courses, the panel studied complete portfolios (course literature, assignments, tests and answer keys, fieldwork assignments, reports and assessment criteria if relevant, course evaluations):

- EIP Interactive Workshop
- Reinventing Environmental Planning