Forest and Nature Conservation

**Faculty of Agricultural and
Environmental Sciences,
Wageningen University**

CONTENTS

This report was finalized on 6 November 2012

Report on the bachelor programme in Bos- en Natuurbeheer and the master programme in Forest and Nature Conservation of Wageningen University

This report takes the NVAO's Assessment framework for limited programme assessments as a starting point.

Administrative data regarding the programmes

Bachelor programme in Bos- en Natuurbeheer (Forest and Nature Conservation)

Name of the programme: Bos- en Natuurbeheer
CROHO number: 56219
Level of the programme: bachelor
Orientation of the programme: academic
Number of credits: 180 EC
Specializations or tracks: Ecology and Conservation
                             Policy and Society
Location(s):   Wageningen
Mode(s) of study: full time
Expiration of accreditation: 31-12-2013

Master programme in Forest and Nature Conservation

Name of the programme: Forest and Nature Conservation
CROHO number: 66219
Level of the programme: master
Orientation of the programme: academic
Number of credits: 120 EC
Specializations or tracks: Ecology
                             Management
                             Policy and Society
Location(s):   Wageningen
Mode(s) of study: full time
Expiration of accreditation: 31-12-2013

The visit of the assessment committee to the Faculty of Agricultural and Environmental Sciences of Wageningen University took place on 10 and 11 April 2012.

Administrative data regarding the institution

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

Quantitative data regarding the programmes

The required quantitative data regarding the programmes are included in Appendix 5.

Composition of the assessment committee

The committee that assessed the bachelor programme in Bos- en Natuurbeheer and the master programme in Forest and Nature Conservation consisted of:

- Prof. F. Zwarts (chair), professor at University of Groningen and professor and manager at University Campus Fryslân;
- Mrs. R.L. Prenen, MSc., independent educational adviser;
- Prof. P.J. Driessen, professor of Environmental Studies, Utrecht University;
- Prof. P. Klinkhamer, professor in Plant Ecology and Phytochemistry at the Institute of Biology Leiden, Leiden University;
- Prof. T. Lundmark, professor in Forest Management at the Swedish University of Agricultural Sciences, Umeå, Sweden;
- T. De Mil, MSc, recently graduated the master programme in Bioscience Engineering: Forest and Nature Management at Ghent University, Belgium.

The committee was supported by Mrs. M. Maarleveld, MSc. who acted as secretary.

Appendix 1 contains the curricula vitae of the members of the committee.

General information regarding Wageningen University

Educational programme assessments in Life Sciences at Wageningen University
A total of 31 educational programmes of Wageningen University which could not be included in a national disciplinary assessment had to be assessed in 2012 in order to apply for reaccreditation. In consultation with QANU, Wageningen University decided to divide the work among fourteen committees in the period between March and July 2012. For each site visit different expert committee members were invited to assess the programmes. In addition to the expert committee members, two non-expert committee members were involved as core members in all site visits and programme assessments. These non-expert committee members were the chairman, Prof. F. Zwarts, and the educational expert, Mrs R.L. Prenen, MSc. This construction was chosen to guarantee consistency between the fourteen assessments as well as to respect the diversity between the programmes. Prior to the site visits an extended kick-off meeting was held in February 2012, during which subjects applicable to all programmes were discussed (for the programme, see Appendix 6). In addition to the core members of the committee, an expert member (Prof. E. Van Damme), a student member (Mrs T.I.E. Veldkamp, BSc) and both secretaries to the committees (Dr M.J.V. Van Bogaert and Mrs M. Maarleveld, MSc) were present. During the kick-off meeting, interviews were held with representatives of the Education Institute, Programme committees, study advisers, Examining Boards and alumni. The findings of the kick-off meeting were used as input for the fourteen site visits and are incorporated in the committee reports on the 31 educational programmes. Based on the information received in the first five site visits, the core committee members held another interview with the Examining Boards and a selection of study advisers. This meeting was held on 6 June 2012 and provided additional insight into the functioning of and relation between the Examining Boards and study advisers.

Wageningen University
Wageningen University is comprised of one faculty, the Faculty of Agricultural and Environmental Sciences. The Faculty consists of 80 chair groups, arranged in five

departments. All educational programmes, bachelor and master, are organized by the Education Institute (OWI). The Board of the OWI is responsible for the content, quality and finances of the educational programmes. Every programme has a programme director and a programme committee, consisting of equal numbers of students and academic staff. The programme committee is responsible for the content and quality of the programme, though in a formal sense this is subject to approval by the Board of the OWI. The programme director is responsible for the realization of the programme.

The courses are provided by staff of the chair groups, the 'supply side'. The programme committees are considered the 'demand side', with the programme director being the 'matchmaker'.

Wageningen has four Examining Boards, usually consisting of five to eight people from different disciplines. Before the site visit period, these boards were in the process of strengthening the quality management of assessment processes and procedures.
Each programme has one or more study advisers, who are tasked with supporting students throughout their study career. Study advisers provide information and invite students for progress evaluations and meetings to plan the student's individual curriculum. Each student needs the study adviser's approval for the elective parts of the programme s/he has chosen.

Internationalization
Wageningen University has an international reputation, in terms of both research qualities and the number of international master students. The committee especially considered the latter point since there are both possible drawbacks and advantages to having many international students. Extensive discussions during the site visits made it clear to the committee that despite the fact that it will always be difficult to assess the quality of enrolling international students, the programme managements are well aware of the imperfections of its procedures and have tightened the selection in the past few years. Overall the committee thinks that the advantages of having many international students outweigh the disadvantages.

Working method of the assessment committee

Preparation
After receiving the critical reflection, the project manager checked the quality and completeness of the information provided. After approval, the critical reflection was forwarded to the committee, in both printed form and digitally. In addition, the committee members selected and read a total of 15 theses for each programme that was assessed (see Appendix 7).

Before the site visit the project manager created a draft programme for the interviews (see Appendix 6). The draft programme was discussed with the chair of the committee and the coordinator of the Education Institute. As requested by QANU, the programme directors carefully composed a select and representative panel for all interviews.

Site visit
During the initial meeting at the start of each site visit, the committee members discussed among themselves their findings regarding the critical reflection and the theses. They also discussed their task and working methods and the proposed domain-specific requirements (see Appendix 2).

During the site visit, interviews were held with representatives of the programme, students, staff members, and Programme committee. The Examining Boards and a representation of the Wageningen University study advisers were interviewed in the extended kick-off meeting, as can be read on page 6. The committee also received additional information, for example, study books, course guides and reports from the meetings of the Programme committee. This information was examined during the site visit. When considered necessary, committee members could read additional theses during the site visit. A consultation hour was scheduled to give students and staff of the programmes the opportunity to talk to the committee. No requests were received for the consultation hour.

The committee used part of the final day of the site visit to discuss the assessment of the programmes and to prepare a preliminary presentation of the findings. The site visit concluded with an oral presentation by the chairman of the general assessment and several specific findings and impressions of the programme.

Report
After the site visit the project manager wrote a draft report based on the committee's findings. The draft was first commented upon by the committee members and then sent to the faculty to check for factual irregularities. All comments made by the faculty were discussed with the chair of the committee and, if necessary, with the other committee members. After revision, the report became official.

Decision rules
In accordance with the NVAO's Assessment Framework for Limited Programme Assessments (as of 22 November 2011), the committee used the following definitions for the assessment of each individual programme, both of the standards and the total programme.

Generic quality
The quality that can reasonably be expected in an international perspective from a higher education bachelor or master programme.

Unsatisfactory
The programme does not meet the current generic quality standards and shows serious shortcomings in several areas.

Satisfactory
The programme meets the current generic quality standards and shows an acceptable level across its entire spectrum.

Good
The programme systematically surpasses the current generic quality standards across its entire spectrum.

Excellent
The programme systematically well surpasses the current generic quality standards across its entire spectrum and is regarded as an (inter)national example.

Summary of judgement

This report documents the findings and considerations of the committee on the bachelor and master programme in Forest and Nature Conservation at Wageningen University. The assessment is based on information in the critical reflection, interviews held during the site visit, and a selection of theses.

Standard 1: Intended Learning Outcomes

Forest and Nature Conservation deals with the conservation, management, and sustainable use of forest and other (semi-)natural areas, for human individual and general well-being. Both programmes focus on the theories related to the ecology and biology of natural and semi-natural ecosystems and populations, and the social and political forces that guide decision-making in natural resources use and management.

The committee is impressed with the objectives and intended learning outcomes of both the bachelor and master programme. With respect to doing research, the learning outcomes are quite ambitious, especially for the bachelor programme. A minor remark was made that although the Dublin descriptors indicate that the programmes differ in level, the intended learning outcomes seem quite similar. The committee understands this is partly because both programmes refer to the same discipline of Forest and Nature Conservation, and because the bachelor programme is designed as a preparation for the master programme. Overall, the committee is of the opinion that the profile and objectives for both programmes are clear and meet international standards.

The committee agrees with the programme management that the expertise in the field of conservation in a densely populated area like the Dutch context is a big asset of the programmes. Along with focussing on the specific Dutch situation, the programmes also have an international perspective, in the subtropics, where the utilization of resources is an important subject. The committee appreciates that the development towards a resources perspective is also recognized and used in the programmes, although the name suggests a narrower view on the subject.

Standard 2: Teaching-Learning Environment

For both programmes the committee established that the curriculum and the courses are designed to achieve the intended learning outcomes and are well structured. The committee wondered if sufficient attention is paid to the fundamentals, given the ambitious learning outcomes in the research domain. It learned that the fundamentals are integrated in several courses, and recommends that the programme position them more explicitly throughout the curriculum.

The specializations in the master programme are well chosen. The committee appreciates that the master programme participates in the Erasmus Mundus European Forestry programme. It believes that expanding to a global level would be appropriate, also given the experience in tropical and subtropical areas. The high quality of the staff is beyond any doubt, both in research and in education. During the interviews lecturers displayed their involvement in the programme and a high level of awareness of the educational aspects.

The committee examined the teaching methods, improvements to the curriculum, student support, student intake and study load, and concludes that they are all good. In general, bachelor graduates continue on to a master programme, mainly in Forest and Nature

Conservation. Graduates of the master programme perform well, both in research and in governmental and non-profit organizations.

Standard 3: Assessment and achieved learning outcomes
The Examining Boards are in the process of strengthening their role in ensuring the quality of assessment and seem committed to formalizing the assessment system. Having only four Examining Boards is stimulating the consistency and equality of the procedures, at the same time these four Examining Boards are responsible for a total of 49 programmes. This might lead to a certain distance from the programmes, making it difficult for the Examining Boards to really be in control at the programme level.

The assessment strategies of the different courses are good, and there is sufficient variation in the examination methods. The committee is of the opinion that with the current pressure on graduating in time in the Netherlands, the number of possible resits at Wageningen University is outdated. The success rates of the bachelor students fluctuate around the Wageningen average. The success rates of master students match the Wageningen average.

Overall, the committee was impressed by the level of the theses, both bachelor and master. Regarding the master thesis, the committee appreciated how its structure resembled that of a scientific article, due to the specific attention paid to the process of conducting research. The additional format for thesis assessment that made use of extensive written feedback was applauded by the committee as a best practice.

General conclusion
The committee assesses the standards from the Assessment Framework for Limited Programme Assessments in the following way:

Bachelor programme in Bos- en Natuurbeheer
Standard 1: Intended learning outcomes	good
Standard 2: Teaching-learning environment	good
Standard 3: Assessment and achieved learning outcomes	good
General conclusion	good

Master programme in Forest and Nature Conservation
Standard 1: Intended learning outcomes	good
Standard 2: Teaching-learning environment	good
Standard 3: Assessment and achieved learning outcomes	good
General conclusion	good

The chair and the secretary of the committee hereby declare that all members of the committee have studied this report and that they agree with the judgements laid down in it. They confirm that the assessment has been conducted in accordance with the criteria relating to independence.

Date: 6 November 2012

Prof. Frans Zwarts   Marlous Maarleveld, MSc

Description of the standards from the Assessment Framework for Limited Programme Assessments

> **Standard 1: Intended learning outcomes**
>
> The intended learning outcomes of the programme have been concretised with regard to content, level and orientation; they meet international requirements.
>
> **Explanation**:
> As for level and orientation (bachelor's or master's; professional or academic), the intended learning outcomes fit into the Dutch qualifications framework. In addition, they tie in with the international perspective of the requirements currently set by the professional field and the discipline with regard to the contents of the programme.

1.1. Findings
In this standard the committee assesses the programme's objectives and profile, intended learning outcomes, and level and orientation. Furthermore, this standard describes the requirements of the professional field and discipline.

Programme objectives and profile
According to the critical reflection, Forest and Nature Conservation deals with the conservation, management, and sustainable use of forest and other (semi-)natural areas for human individual and general well-being. The domain includes issues related to policy and governance, and to ecological theory and the functioning of ecosystems and populations with the aim of ensuring that all potential benefits flow from ecosystems and populations to society while conserving the ecological integrity and sustainable future use. Both programmes focus on theories related to the ecology and biology of natural and semi-natural ecosystems and populations and the social and political forces that guide decision-making in natural resources use and management. Ecology and the social sciences are considered to be equally important.

The critical reflection explains that the focus has historically been on certain terrestrial ecosystems, since the university had expertise in regions like Indonesia, South America and Africa, as well as temperate Europe. The current orientation of both programmes is focused more on conservation than resource utilization. This led the committee to discuss the programme objectives and profile extensively in relation to the name of the programme in the interviews during the site visit. According to the committee, the name suggests a narrow focus on conservation while developments in the field put more emphasis on the resources aspect, and management issues are important, too. The programme management explained that the word 'management' would fit in the programme name, but would also cause confusion with regard to the Management specialization in the master programme in Forest and Nature Conservation. It acknowledged that resource utilization will grow in importance within the programmes in the near future. In order to connect the programmes to global developments and the accompanying requirements of the professional field, this may lead to a shift in their focus.

According to the programme management, the name of the programme was chosen carefully and reflects the programme rather well. In the Dutch situation the perspective on how land is used has mainly been in terms of recreation and nature conservation, which is very relevant in the context of a very densely populated area. The committee agrees with the programme management that the expertise in this area is a big asset of the programme. Along with focussing on the specific Dutch situation, the programme also has an international

perspective, in the subtropics, where the utilization of resources is an important subject. For international students this is also an important reason to choose Wageningen University, as the committee learned in the interviews with students.

Representatives of the professional field in the External Advisory Committee suggested focussing more on the European context. The programme believes that within the courses, the majority of the cases presented already concern European forests and natural areas, addressing the European context sufficiently. To the committee it is clear that the staff of the programs have a well-developed network with other European researchers and teachers, and the European context is addressed well in the courses. But the committee believes the programs could benefit from a stronger focus on natural resource management in a European context.

Bachelor programme
The bachelor programme provides a thorough academic training focussing on the theories related to both ecology and the social sciences. Students acquire a basic understanding of the characteristics and functioning of ecosystems and social systems. They develop the necessary knowledge and skills to prepare for the next stage in their academic career, the master programme. There are two majors in the bachelor programme: Ecology and Conservation, and Policy and Society. In both majors explicit attention is paid to multidisciplinarity.

Master programme
The master programme has an international academic and scientific setting. Its aim is that students acquire a broad understanding of the characteristics and functioning of ecosystems and/or social systems. There are three specializations in the master programme: Ecology, Management, and Policy and Society. The specializations are thesis-oriented, to prepare students for their role as academics in a professional environment or in a PhD programme. The multidisciplinary nature of the domain of Forest and Nature Conservation plays an important role in the programme.

Intended learning outcomes
The committee discussed the intended learning outcomes and concludes they are in line with international standards for both the bachelor and the master programme. They are academic and research-oriented. The committee believes the intended learning outcomes are quite ambitious in terms of doing research. According to the critical reflection, the bachelor programme is meant as a preparation for the master programme.

Both programmes refer to the same discipline of Forest and Nature Conservation. This is also reflected in the intended learning outcomes of both programmes. During the interviews the differences in level and scope between the bachelor and the master programme were discussed. According to the committee, the Dublin descriptors do differentiate in level between the bachelor and master programme, but it believes that the differences between the intended learning outcomes of the bachelor and the master could be more explicit. The Dublin descriptors are discussed under 'Level and orientation'.

Bachelor programme
After successful completion of the bachelor programme, graduates are expected to be able to explain the functioning of forests and natural areas as socio-ecological systems (learning outcome 1). They should be able to analyze ecosystems and identify their key components, investigate main actors and institutions, and be able to predict how actions and interventions will affect the functioning of ecosystems (outcomes 2-4). Graduates have been trained in data

collection and scientific analysis (outcomes 5-6) and are expected to be able to evaluate management decisions while incorporating all the relevant aspects (outcome 7). As part of the academic process, graduates are expected to be able to present scientific work to both experts and laypeople, and reflect on their role as academics while designing their own learning path (outcomes 8-10). The last two learning outcomes specify the additional content of the two majors. Graduates from the Policy and Society major are expected to be able to assess the key components of social systems (outcome 11a). Graduates of the Ecology and Conservation major are expected to be able to assess and apply ecological theories, with an understanding of plant and animal biology and environmental interactions (outcome 11b). The intended learning outcomes are described in Appendix 3.

Master programme
The intended learning outcomes resemble those of the bachelor programme, since they share the same domain. According to the critical reflection, the cognitive level and anticipated level of independence are higher in the master programme. After successful completion of the master programme, graduates are expected to be able to analyse the functioning of forest and natural areas as socio-ecological systems at different temporal and spatial scales (outcome 1). Learning outcomes 2, 3 and 4 relate to the three specialisations. Learning outcome 5 refers to the ability to formulate and execute research. Learning outcomes 6-11 refer to academic skills and attitudes. The intended learning outcomes of the master programme are described in Appendix 3.

Level and Orientation

Bachelor programme
According to the critical reflection, the bachelor programme is academic and primarily focusses on the development of academic skills to prepare students for the next level of higher education in the domain of Forest and Nature Conservation. Graduates have unconditional access to the Forest and Nature Conservation master programme and six other Wageningen University master programmes. The critical reflection states that the external advisory committee as well as several investigations of the NIBI (Dutch Institute for Biology) indicate that employers are not very interested in hiring bachelor graduates, as they prefer graduates with professional skills or with more research experience. Most students thus proceed on to a master programme after graduating from the bachelor programme. According to the critical reflection, students do not have the feeling that the bachelor programme is a good preparation for a job, and it is stated in the critical reflection that this is not the intention of the programme. The programme has introduced guest speakers in courses and a career evening, and students participate in general events. The committee feels the programme takes a realistic approach, as most students continue with a master programme. Organising career evenings and inviting guest speakers is nevertheless a good idea because it gives an idea of future career perspectives and it can help the students in choosing the most appropriate masters or the most appropriate subjects within their masters.

The learning outcomes correspond to the Dublin descriptors, and all Dublin descriptors are covered by one or more learning outcomes. Students acquire knowledge and understanding of the social and ecological domains of forest and nature conservation (outcome 1). They also learn to apply knowledge by analysing the major biotic and abiotic components of terrestrial ecosystems, the different actors and institutions, and the process of decision-making (outcomes 2-4). They apply this knowledge and understanding by conducting elementary research during courses and the thesis project (outcomes 5-6). In addition, students learn to judge scientific problems and management decisions in the field of forest and nature

conservation and to reflect on the role of science in society (outcomes 6, 7 and 9). They learn to communicate their results and work in multidisciplinary groups (outcome 8). They design and plan their own learning path under supervision (learning skills) by selecting a major and by freely choosing a minor or a number of well-selected courses (outcome 10). In the major they enhance their knowledge and understanding in the fields of policy and society or ecology and management (outcome 11).

Master programme
The master programme is academic, preparing students to perform responsibly as independent researchers and to function as academics in a professional environment. Students acquire knowledge, understanding, skills and attitudes at an advanced level. The learning outcomes correspond to the Dublin descriptors, and all Dublin descriptors are covered by one or more learning outcomes. Students acquire knowledge and understanding of the domain, the sciences involved and scientific methods. The programme intends to deepen their knowledge and understanding and stimulate them to apply it in concrete situations. The Dublin descriptor 'Applying knowledge and understanding' is reflected in learning outcomes 1-4 and 7. Students need a broad view and develop hypotheses or opinions to operate at the intersection of ecological and social processes. The Dublin descriptor 'Making judgements' is reflected in learning outcomes 2-4, 5, 8, 9 and 10. Students also need competencies in active scientific research and its philosophical elements and critical reflection.

The programme aims to train students to communicate with both specialists and laypeople. The Dublin descriptor 'Communication' is best reflected in learning outcome 6. In the programme an attitude of lifelong learning is stimulated by enabling students to study in a largely self-directed and autonomous way. The internship, academic consultancy training and modular skills training pay attention to self-reflection and career planning and designing an individual learning path. The Dublin descriptor 'Learning skills' is reflected in learning outcome 11.

Requirements of the professional field and discipline
The requirements of the professional field and discipline have been laid down in the subject-specific reference framework (see Appendix 2). To ensure compatibility with the professional field, the programme committee organizes annual meetings with its representatives, to discuss the content and quality of the curriculum, the intended learning outcomes and the level of graduates working in different organizations. This External Advisory Committee (EAC) consists of external professionals in the field of forest and nature conservation. They are regularly consulted about improvements to both programmes. According to the critical reflection, the EAC confirms that graduates working in the field of forest and nature conservation need not only a good understanding of how ecosystems function, but also how management and conservation issues are rooted in social and political systems. The EAC appreciates the balance between ecology, management and society in the curriculum of both programmes. Additionally, three professors from similar programmes abroad were asked to peer review the intended learning outcomes and the content of the programmes. This led to positive feedback and the confirmation that the standards for internationally recognized programmes in forest and nature conservation are met.

1.2. Considerations
Overall, the committee is of the opinion that both programmes have a clear profile and objectives that meet international standards. The committee questioned the name 'Forest and Nature Conservation' at first, since it suggests a narrow view on land use, and seems to leave out the resource and management perspective. A practical reason for not using the word

'management' in the programme's name is that it would cause confusion with regard to the *Management* specialization in the master programme. The committee learned that in the Dutch situation, the perspective on how land is used mainly covers recreation and nature conservation, which is very relevant in the context of a very densely populated area. It agrees with the programme management that the expertise in this area is a big asset of the programme. In that way the name of the programmes fits very well. Yet the programme management acknowledged that in the near future, resource utilization will grow in importance. It was explained that along with focusing on the specific Dutch situation, the programme also has an international perspective, in the subtropics, where the utilization of resources is an important subject.

The External Advisory Committee, which represents the professional field, confirms that graduates working in the field of Forest and Nature Conservation need not only a good understanding of how ecosystems function, but also how management and conservation issues are rooted in social and political systems. The committee appreciates that the development towards a resources perspective is also recognized and used in the programmes.

The committee is impressed with the objectives and the intended learning outcomes of both the bachelor and master programme. With respect to doing research, the learning outcomes are quite ambitious, especially for the bachelor programme. A minor remark was made that although the programmes differ in level, as indicated by the Dublin descriptors, the intended learning outcomes are quite similar. The committee understands that this is partly because both programmes refer to the same discipline of Forest and Nature Conservation, and because the bachelor programme is designed as preparation for the master programme. It agrees with the statements of the EAC and the comments made by professors in the field that both programmes meet international standards.

1.3. Conclusion
Bachelor programme in Bos- en Natuurbeheer: the committee assesses Standard 1 as **good.**
Master programme in Forest and Nature Conservation: the committee assesses Standard 1 as **good**.

Standard 2: Teaching-learning environment
The curriculum, staff and programme-specific services and facilities enable the incoming students to achieve the intended learning outcomes.
Explanation: The contents and structure of the curriculum enable the students admitted to achieve the intended learning outcomes. The quality of the staff and of the programme-specific services and facilities is essential to that end. Curriculum, staff, services and facilities constitute a coherent teaching-learning environment for the students.

2.1. Findings

Curriculum and coherency of the programmes

The academic year of Wageningen University consists of two semesters, each with 3 periods. In periods 1, 2 and 5 (six weeks each) two courses are taught, one in the morning and one in the afternoon. Periods 3 and 4 are short periods with 4 weeks of teaching and only one course each. Period 6 lasts nine weeks. Each year students can take one exam and two resits for each course. Currently, this system is being reviewed, concerning the number of resits and the timing of the exams. The curriculum and courses in both programmes have been developed to achieve the intended learning outcomes as given under Standard 1. In the critical reflection, matrices are presented which relate each course to the intended learning outcomes.

Bachelor programme

In the bachelor programme students follow common courses, a major, and 30 credits of free choice electives (minor). They complete their programme with an individual thesis project (Figure 1). An overview of the curriculum is provided in Appendix 4.

Common courses (87) Integrating common courses (21) Major-specific courses (30) Thesis (12) Free choice or minor (30)
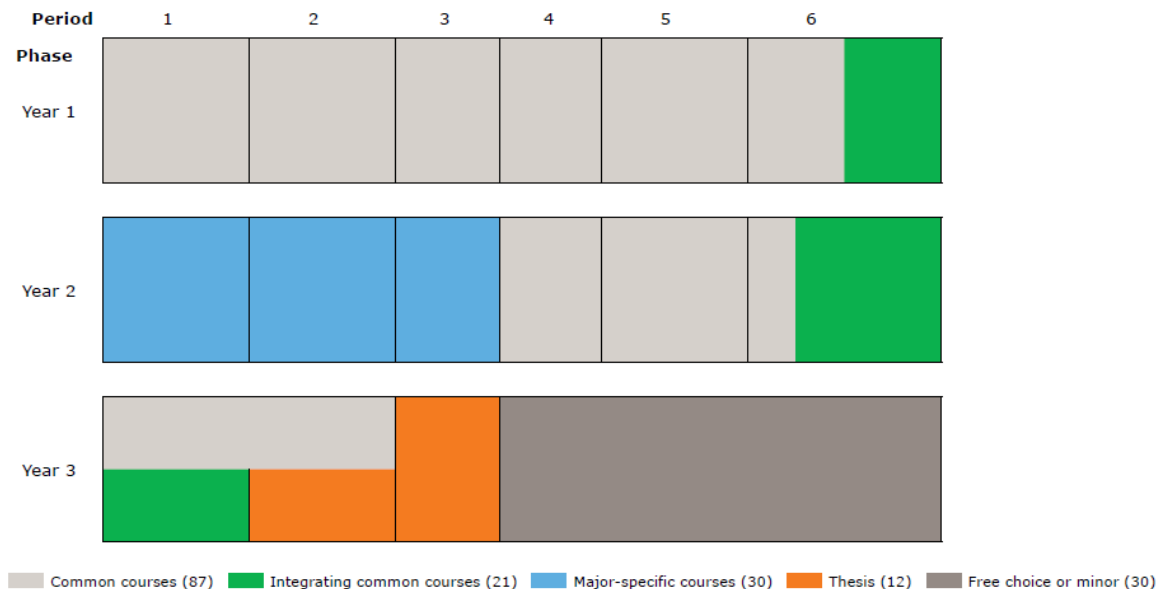
Figure 1. Schematic overview of the bachelor programme curriculum (credits between brackets)

The committee is of the opinion that the bachelor programme is well-structured. The curriculum is scheduled so that introductory courses precede advanced courses, and courses from the natural and social sciences are mixed throughout the programme. At the end of the first and second year, these building blocks are brought together in integrated field practicals. The training and development of academic skills are mostly integrated in the courses, hand in

hand with content learning. These skills include writing and presentation skills, data collection and analysis, or working in groups.

Master programme
The programme has 60 credits of courses (including the Academic Master Cluster) in the first year, and a thesis worth 36 credits and internship of 24 credits in year 2 (Figure 2).

Year 1	Introductory and methodological courses (12 credits)	Specialization and free choice electives (36 credits)	Academic Master Cluster (12 credits)
Year 2	Thesis (36 credits)		Internship (24 credits)

Figure 2. Schematic overview of master curriculum

The programme starts with an introductory course to create a common basis for all students that focusses on the multidisciplinary nature of the domain. Further courses are related to one of the three specializations: Policy and Society, Management or Ecology. The thesis project can be done at four different Chair Groups, depending on the specialization: Forest Ecology and Forest Management, Forest and Nature Policy, Nature Conservation and Plant Ecology, and Resource Ecology Group.

The specializations comprise a small set of mandatory courses which provide a common ground related to the domain-specific issues and the development of academic and professional skills. In addition to the common part, students may select sets of courses that prepare for a thesis with one of the four Chair Groups, complemented by courses related to personal interests. The scheduling enables students to select supporting courses needed for the more advanced courses, depending on their background. The specific choices are always discussed with the study adviser. An overview of the curriculum is given in Appendix 4. The committee is of the opinion that the master programme is well-structured.

The committee appreciates that the programme also participates in the Erasmus Mundus European Forestry programme, where students can follow a thesis-oriented curriculum at different European universities. Presently, the programme is discussing developing a track in the field of Sustainable Development Diplomacy in cooperation with the Fletcher School of Law and Diplomacy at Tufts University, Cambridge, Mass., USA. This track aims to provide academics with the theory and practice of international diplomacy and negotiations in the field of sustainable development, allowing them to tackle the world's most challenging, interconnected, global issues.

Multidisciplinarity
Wageningen University aims to offer programmes with a multidisciplinary and holistic approach. This is meant to stimulate students to develop a broad view and a wide range of interests. Most of the courses are attended by students from different programmes, creating a setting that favours multidisciplinary education. This could also lead to a possible friction between breadth and depth. The committee assessed whether students receive a multidisciplinary programme with sufficient depth, making them experts in a specific discipline.

Bachelor programme
During the interviews the committee discussed the level of integration and the balance between breadth and depth in the bachelor programme. The critical reflection and the

interviews made it clear to the committee that the programme explicitly chooses to combine ecological, management, and socio-economic and governance aspects. The committee sees that this is reflected rather well in the intended learning outcomes and in the curriculum. The programme management considers a broad approach crucial, given the challenges of the domain as explained in the domain-specific reference framework (Appendix 2). Students confirm the statement made in the critical reflection: the combination of ecology and social aspects is a strong point of the bachelor programme.

Depth is achieved in the majors, according to the critical reflection. The committee wondered if fundamental science and research design get sufficient attention, in order to meet the ambitious intended learning outcomes in the research domain. Interviews with the programme management made it clear that fundamentals are an important part of a number of courses. The committee notes that the programme management strives for an optimal balance between breadth and depth and manages it successfully. It believes that the programme offers a good combination of social science and ecology disciplines. It feels that sufficient depth is achieved, but it recommends the programme position the fundamentals more explicitly throughout the programme.

Master programme
The master programme starts with the introductory course *Trends in Forest and Nature Conservations*, to update students on current issues in the domain and how different Chair Groups contribute to these issues in their research projects. This course is the only one that all master students follow, and it has an integrative character. The programme is exploring the possibility of including a second compulsory integrative course to strengthen the multidisciplinary character of the programme. The committee is in favour of this change.

Teaching methods
Wageningen University strives to train its students to become academics with domain knowledge, a multidisciplinary attitude, interested in problem-solving, and an international orientation with a multicultural attitude. The programmes therefore work with small, diverse student groups to stimulate the interaction between students and lecturers. A variety of didactic and learning methods are offered, including lectures, tutorials, group work, practical training, excursion and individual papers. According to the critical reflection, the teaching methods prepare graduates to work in multidisciplinary teams as well as individually, and often in a global context.

In both programmes the committee established that a variety of teaching methods is used. They are offered to accommodate the different learning styles of students. The intended learning outcomes and course content are matched to the most suitable teaching methods. Both programmes have a relatively large number of field excursions and outdoor practical training to illustrate course theory in practical settings. The critical reflection states that the EAC values the practical skills and knowledge of the graduates.

Improvements to the curriculum
The individual programme committees are responsible for improving the curricula, although occasionally improvements are introduced for all programmes jointly. One example is the introduction of scheduling of electives in one semester, including minors.

Ideas for improvement usually come from online course evaluations. Detailed results are reported to the lecturers and Programme Committees. Summaries of the results are published on the intranet. In addition to the course evaluations, there are bachelor first-year evaluations,

bachelor and master graduate evaluations, career surveys among alumni, and the Education Monitor.

The Programme Committees regularly discuss the outcomes of the evaluations and take action, when considered necessary. In addition to the online evaluations, many programmes hold panel meetings with students to obtain oral feedback on the courses and the programmes. Since many of the programmes are small and the attitude between students and lecturers is informal, many issues are often dealt with informally rather than in a formal procedure.

For both the bachelor and the master programme, a section in the critical reflection explicitly deals with the recommendations made by the previous assessment panel and how the programme has acted upon them. The committee concludes that the comments have been taken seriously and changes have been implemented. The following improvements were made in the bachelor:

- the link to the professional field in first-year courses has been improved by increasing exposure to professionals during several teaching activities;
- to improve the knowledge base of ecological and societal aspects and increase the level of integration, the first year has been restructured;
- course scheduling and the content of courses have been revised to avoid non-functional overlap;
- A procedure has been set up with the study advisor to monitor study success and prevent drop-out. During the interviews students mention there is still overlap, but in a way that means the same problem is analysed from different perspectives. This is what the programme aims for, to broaden their knowledge and emphasize multidisciplinarity.

The bachelor programme has not yet succeeded in improving the link with career opportunities significantly, but the programme decided to focus mainly on the development of academic skills to prepare students for continuation into master's programmes. There are a large number of excursions and practical training, and the EAC is very positive about the practical skills and knowledge of the graduates.

The following improvements were made in the master:

- to maintain and nurture socio-economic and managerial aspects, three specializations were developed: Policy and Society, Management, and Ecology;
- the role of the study advisor has been enlarged;
- similar to the bachelor, course scheduling and the content of courses have been revised to avoid non-functional overlap.

The suggestion to use alumni more actively as ambassadors of the programme has not been taken up, and the need for increased exposure has been reduced, since student numbers have risen steadily.

Staff
Wageningen University staff generally teach in several programmes, making it difficult to provide exact student-staff ratios. The estimated student-staff ratio of the bachelor programme is 6.2 and for the master programme 7.6. Students appreciate the interaction with staff and their ready availability very much. In the bachelor programme, students are in direct

contact with staff for almost half of the time, and contact hours are spread over the three years. The contact hours in the master programme show an uneven balance over the first year (686) and the second year (30). In the second year, students do an internship and write a thesis, both of which require fewer contact hours than courses do. In the critical reflection it is explained that 30 hours represent the absolute minimum, and during the interviews it became clear that the staff is always available to answer questions.

Staff members are required to be both an expert in their discipline and a skilful lecturer. This combination allows them to make use of new scientific insights in their teaching. Most lecturers hold a PhD degree and are members of a graduate school. The committee is impressed with the high-quality research of the staff. They function in Chair Groups with high scientific ranking and regularly publish in top-ranking journals. Most lecturers are active in the field, publishing articles and books, editing journals, participating in and organizing international conferences and holding positions on boards of scientific, public or private institutions. The involvement of the staff in the programme is a big asset and valued by students.

Wageningen University introduced the University Teaching Qualification (Basis Kwalificatie Onderwijs, BKO) for new permanent staff and staff on tenured track positions. Quality of teaching is evaluated after each course, which also evaluates the course content, position of the course in the curriculum, presentation and examination. Results of these evaluations form input for the annual performance and development interviews of staff members. Tailor-made training courses are provided by the Educational Staff Development unit for those interested, or as a result of the course evaluation. Most staff members have completed or are following the didactic training programmes and are qualified lecturers.

The Wageningen 'Teacher of the Year' award has been won by staff teaching in Forest and Nature Conservation programmes in the past four years, and one of the new staff members was on the shortlist in 2011. The committee believes it is quite an accomplishment to be rewarded for teaching, in combination with having excellent research competencies.

Programme specific services and student support
Wageningen University has chosen to centralize all teaching facilities like lecture rooms, labs, rooms for group work and the university library on the new campus. The main education building is the Forum. The Orion education building is under construction and will add to the existing facilities in 2013. Education in the Social Sciences is concentrated in the Leeuwenborch building. Most Chair Groups are – or will be – located on the campus.

The programme has an agreement with the Dutch Forestry Commission to use two forest areas for field training, the Speulder and Sprielderbos (near Garderen) and Oostereng (near Wageningen). An experimental wet meadow site (Veenkampen near Wageningen) is used to demonstrate the effects of hydrology and vegetation management. The Chair Group laboratories are available for sample analyses in the context of practical courses or dendrochronological studies. There are special computer rooms with the relevant Geo-information Science facilities. Finally, working rooms are available for students preparing their thesis which are close to staff offices for swift consultation. The Chair Groups have a worldwide network of contacts, field sites and stations that are available to students for conducting their master thesis or internship project. According to the NSE 2011 score, the study facilities are in line with the university average (4.2 versus 4.3 on a 5-point scale), but high compared to other related programmes in the Netherlands. The committee is positive about the programme-specific services.

For each programme there is one study adviser. Bachelor and master students are very satisfied with the coaching by the study advisers and appreciate the information given to plan and select their study programme. In the bachelor, the study adviser introduces the programme and the main procedures, and demonstrates how to use web-based information sources like Studentnet and the Wageningen portal at the start of the first year. In the master, study advice starts during the annual introduction days in August. After a general introduction, the study adviser makes appointments with the new students before the start of the programme to discuss their specialization and choice of optional courses.

In both the bachelor and the master programme, the study advisers meet with students several times a year. Contact moments can be requested by students, but the study advisers also contacts students if there is evidence of a study delay. The advice to students is formalized in a protocol covering the entire programme, and discussed and approved by the Programme Committee. The committee established that the student support is well-organized.

Student intake, study load, output
Students for the bachelor programmes are admitted on the basis of their pre-university qualifications. Individual admission of students who do not meet the standard requirements is centralized. The general admission requirements of master students are published on the internet, including detailed information on admission procedures. These requirements include a relevant bachelor degree, a grade point average of 70%, fluency in English, good skills in mathematics and statistics, and basic computer skills. Master students are admitted following approval by the Admission Committee. In total, there are four Admission Committees, reflecting the four domains. These Admission Committees consist of the relevant Programme Directors, supported by central staff. The four Admission Committees participate in the joint Admission Policy Committee. In total, approximately 5,600 applications are handled each year.

Bachelor programme
Students from the pre-university secondary education (VWO) profiles Nature & Engineering and Nature & Health can be admitted to the bachelor programme. If students took the profile Economics & Society, they must have completed either biology or geography; and with the Culture & Society profile, they need either biology or geography and mathematics A or B. Most students have a Nature & Health or Economics & Society profile.

The enrolment of new students has varied over the last couple of years. Except for 2006 and 2007, the intake has been increasing slowly. The cohort size in 2011 is around 65. The programme has no clear explanations for the relatively low intake in 2006 and 2007. As a response to these low enrolment numbers, the contents of the open day and websites were reshaped and improved.

The difficulty level in the bachelor programme is perceived as adequate by students who finished the programme in 2010/2011. First-year students rate the number of contact hours, the number of hours for self-study and the study load as good (4.1, 3.6, 3.9, respectively, on a 5-point scale) according to the critical reflection.

The majority of the graduates continue with a master's programme. Almost 80% of them start in the Forest and Nature Conservation master programme. In the 2003-2007 cohorts, seven other Wageningen masters were chosen, with a majority selecting Geo-information

Science. Graduates perform well in the master programmes, according to the critical reflection.

Master programme
The programme follows the general admission policies of Wageningen University. Specifically, the study adviser is involved in assessing the academic background, competences and motivation of applicants, and to check the English proficiency requirements. The study adviser prepares a recommendation for the Admission Committee, which makes the final decision. Only students from the Forest and Nature Conservation bachelor programme have unconditional admission. Each year, around 60 students enter the programme, with higher numbers in 2009 and 2010. About one-third is of international origin, one-third has followed the bachelor programme in Forest and Nature Conservation, and one-third comes from other Dutch bachelor's programmes. The admission procedure works well, but for international students from certain countries, it had to be tightened to make sure that all students who enrol have sufficient academic skills and communicate adequately in English, even if they passed the formal criteria of the admission committee.

The programme has no exact quantitative data on the study load for the programme as a whole, but the critical reflection indicates that in about one-third of the internships and thesis, students report that the study load is higher than expected.

Most graduates occupy academic positions. Each year about 10% of the graduates start a PhD programme either in the Netherlands or abroad. In general, they are very successful in getting their doctorate. Graduates find employment at universities, research institutes, governmental and non-profit organizations. The EAC indicates that graduates perform well in their organizations.

2.2. Considerations
The committee has studied the various aspects of the teaching and learning environment of both programmes. Although differences exist between programmes, all Wageningen programmes provide a lot of freedom for the individual student, making the programmes student-centred. The Chair Groups and their research strongly influence the courses offered, making the programmes also course-oriented. This makes the position of the study advisor crucial and demands certain qualities of him/her. The committee thinks that the study advisor should be a member of the academic staff to be able to support students in their choice for certain courses.

For both programmes the committee established that the curriculum and the courses are designed to achieve the intended learning outcomes. It confirmed that tables in the critical reflections provide an adequate and convincing representation of the relation between the intended learning outcomes and the components of the curriculum.

Both programmes are structured very well. The committee especially appreciates the combination of ecology and social aspects throughout the programme, and the integration courses at the end of the first and second year of the bachelor programme. It wondered if the fundamentals get sufficient attention, in order to meet the ambitious learning outcomes in the research domain. In that respect, the integration in the bachelor programme seems to be both a strength and a weakness. The programme is aware of this and continually strives for an optimal balance between breadth and depth. The committee recommends that the programme not lose sight of the fundamentals and position them explicitly throughout the programme.

The specializations in the master programme are well chosen. The committee appreciates that the master programme participates in the Erasmus Mundus European Forestry programme. It believes that expanding to the global level would be appropriate, also given the experience in tropical and subtropical areas. It encourages the programme to explore these possibilities.

The committee assessed the teaching methods used and concluded that an appropriate mix is employed in both programmes. The recommendations of the previous assessment panels have been taken seriously and have been acted upon. The adjustments that were made improved the structure and coherence of the programme.

Wageningen University has an international reputation, in terms of both research qualities and the number of international master students. The committee especially considered the latter point since there are also possible drawbacks as well as advantages to having many international students.

The extremely high quality of the staff, both in research and in education, impressed the committee. The Chair Groups that participate in the programmes are internationally renowned for their research, and deliver education of high quality. In fact, they are award-winning in research, for their publications, and in education, as lecturers involved in the programme have won the Teacher of the year award four times in a row. During the interviews lecturers demonstrated their involvement in the programme and a high level of awareness of educational aspects. Along with the programme-specific services, students in these programmes can use the Chair Groups' worldwide network of contacts, field sites and stations, which is a big advantage.

The intake in the bachelor programme has fluctuated, and the programme did restructure the recruitment strategy. It is not clear if these measures have led to higher enrolment, but there has been a gradual increase in intake in the bachelor programme. The intake procedure for the master programme appears adequate to the committee, especially now that the admission criteria have been tightened. The committee agrees with the students that the study load can be quite heavy, but it is acceptable. Both programmes have a good output according to the committee. In general, bachelor graduates continue on with a master's programme, mainly in Forest and Nature Conservation, and graduates of the master programme perform well, both in research and in governmental and non-profit organizations.

2.3. Conclusion
Bachelor programme in Bos- en Natuurbeheeer: the committee assesses Standard 2 as **good**.
Master programme in Forest and Nature Conservation: the committee assesses Standard 2 as **good**.

Standard 3: Assessment and achieved learning outcomes

The programme has an adequate assessment system in place and demonstrates that the intended learning outcomes are achieved.

Explanation:
The level achieved is demonstrated by interim and final tests, final projects and the performance of graduates in actual practice or in post-graduate programmes. The tests and assessments are valid, reliable and transparent to the students.

3.1. Findings

Assessment system

For each course the lecturers have to formulate five to eight intended learning outcomes, which are published in the Study Handbook and course guides. The course guide is obligatory for each course and explains what a course is about, how it is organized, and how students are expected to participate. Part of the course guide covers the assessment strategy, for which requirements have recently been introduced. The assessment strategy clarifies how and when a learning outcome is assessed, who is involved in assessing students, and how the final mark will be determined. It also shows the transparency and validity of the assessment. To enhance the reliability of the assessment, examiners need to explain which elements in the student's answers lead to a certain mark. For multiple choice questions this is embodied in the answer key, and for open answer questions this is shown by model answers, assessment criteria or rubrics (for an example, see Appendix 9). The previous practice was similar to the new theory, but had a less formalized manner. Currently, all Wageningen programmes are in the transition phase from the previous practice to the new situation.

According to the critical reflection, feedback is an essential part of the learning process, especially in individual assignments. Feedback on the performance of students is provided by comments on the reports or assignments. Usually, students get written feedback, but sometimes it is given in person. Time constraints are the major problem related to feedback, because assignments are handed in at the end of a course, and by the time the lecturers have assessed and graded the assignments, both students and lecturers are involved in other courses. Then feedback is provided by email. The interviews with students confirmed that students can always get feedback if they want to, but scheduling makes it difficult. In the master programme more time is dedicated to individual face-to-face feedback in the Academic Master Cluster and during the thesis writing and internship.

With the changes in the Higher Education and Research Act, the position of the Examining Boards has changed. They are currently in the process of strengthening their role in assuring the quality assessment, both via interim course exams and the evaluation of internships and theses. The new role of the Examining Boards has two elements. The first is that each examiner will be made explicitly responsible for ensuring that an assessment of a course is valid, reliable and transparent. This was made a regular part of the University Teaching Qualification. Wageningen University produced documents to help examiners and lecturers achieve this, and meetings between the Examining Boards and examiners were held in the spring of 2011. The second element is that the Examining Boards will visit Chair Groups on a regular basis to verify the quality of assessment of courses provided by the groups. Additional visits will take place when required, for example when indicated by the results of course evaluations. During the interviews with lecturers, these visits, in which the assessment strategies were discussed, were referred to as inspiring and helpful in thinking about the levels of learning and the relation of learning outcomes and assessment strategies.

The committee learned during the site visit that students can do many resits for each course if they don't pass the first time. Each year three exam possibilities are offered for each course, and students can retake the exam as often as needed to pass. With the pressure nowadays on success rates, the committee thinks that the number of resits should be limited in order to stimulate students in their studies.

Quality and assessment of the thesis work
The thesis work is always graded by two assessors: the supervisor and the examiner. Both are present during the presentation and final discussion of the thesis. In the study year 2011-2012 the assessment procedure for the thesis will be further improved by developing a rubric. A rubric is an assessment tool based on a set of criteria and standards linked to learning outcomes that is used to assess or communicate about product, process and performance. The rubric provides guidelines for the thesis evaluation. In Appendix 9 an example of a rubric is provided.

Prior to the site visit, the committee members received a total of 15 recent theses for each programme, selected from a list in the critical reflection of all theses completed during the last two years. This selection was done by the project manager on behalf of the chairman of the committee. When selecting the theses, grading (the same number of high, middle and low scores) and graduation date were considered. The student numbers of the selected theses are provided in Appendix 7.

Bachelor programme
In 2010-2011 the inclusion of a thesis as the final part of the bachelor programme was initiated. For the assessment of a thesis, a standard form is used throughout Wageningen University. Criteria for the assessment of a bachelor thesis are: academic skills (20-50%), proposal and report (20-45%), self-reflection (10%), presentation (5%) and examination (5%). The weight of each criterion is determined after approval of the research/project proposal.

Students used to start and finish their thesis project at different moments throughout the year, depending on the electives they chose. This gave students flexibility, but many students did not finish their thesis in time. Starting in the 2011/2012 academic year, the procedures for the thesis have been tightened. An information session to present the overall procedure and the thesis topics is given at the start. The second session is about scheduling and contacts with the supervisor. A final presentation date is scheduled as well. This should give more structure to the process of the bachelor thesis.

The committee agreed with the marks given to the bachelor theses and is positive about their quality. It did notice that in a few cases the research question could have been better formulated. This led the committee to think that perhaps the preparation for the thesis in courses on designing research can be improved. This would be in line with the intended learning outcomes, with its focus on scientific research.

Master programmes
For master programmes, the thesis, internship and Academic Master Cluster (AMC) form important parts of the learning outcomes. There is an extensive assessment format for the AMC to evaluate each student's individual contribution to the final product and collaborative process. It aims at securing grading reliability across the large number of teams participating each year. For the internship an assessment form is used which is common to all programmes. An external and an internal supervisor are appointed for the internship: the

external supervisor advises on the quality of the student's performance, the internal supervisor grades the internship.

In the master programme the thesis procedure covers the entire process of proposal writing, hypothesis development, development of the theoretical framework, design of methodology, data gathering and analysis, discussion of results and drawing sound conclusions. This impressed the committee since these steps were clearly evident in the theses. The theses resemble scientific articles, making them very structured and scientifically sound.

The committee came across an evaluation form, in addition to the assessment form used throughout Wageningen University, in which the feedback that normally is given orally after the student's presentation was written down. The programme called this evaluation form a historic legacy of one of the Chair Groups. The committee liked seeing so much attention being paid to the feedback on the student's final stage of his/her study. Not only the student benefits from it, others – such as the examination board – gain insight into the motivation for the grades, too. The committee understands it is a time-consuming way of giving feedback and does not wish to discard the newly designed assessment form, but designates this particular type of written feedback a best practice.

Success rates

Bachelor programme
The number of diplomas after four years for students who passed the first year is above the university average (64% for 2006 versus 51%). The number of students graduating in nominal time (three years) is only about 30%. Between 2003 and 2009 the variation in drop-out was large: 8% in 2009 and 29% in 2008. The programme is not satisfied with the number of drop-outs and the average study success. The causes of first-year drop-out have been investigated for students who enrolled in 2006-2008 and are quite diverse. Additional research in 2009 confirms this finding. This makes it complicated to handle, but some measures have been taken. For example, certain courses cover both ecology and society, while some students are mainly focussed on one of those aspects. In the general information activities, all aspects of forest and nature are emphasized even more. Some courses are judged as relatively difficult, especially the mathematics courses and Soil and Water 1, but this is not a main issue for study delay, and their level should not be lowered. Lecturers urge students to keep on track with mathematics. For Soil and Water 1 the problem was mainly the number of formulas, which was discussed with the lecturers. In the 2010/2011 academic year, students performed well compared with earlier years and other programmes, according to the critical reflection. The programme regards study delay as more important than drop-out, and students who experience problems with the programme are advised to find another programme. The study advisor plays an important role in this. The committee agrees with the programme that a positive impact on study success can be expected from measures taken by the programme, Wageningen University and Dutch legislation.

Master programme
On average, more than half of the students finish their programme within two years. Within three years, 80-90% of the students have finished, and only a small fraction of students need more than three years to complete their programme. Quite a number of students (around 40%) take more time to finish than the nominal time (2 years). This may be related to additional activities and courses, either as part of the programme, extra-curricular courses, or because of additional time investment in the thesis or internship. The drop-out rates are low;

less than 10% of the students leave the university without a diploma, generally for reasons unrelated to the programme, according to the critical reflection.

3.2. Considerations
The committee is very positive with regard to the initiatives Wageningen University is currently implementing in the bachelor and master programmes. The Examining Boards are in the process of strengthening their role in ensuring the quality of assessment and seem committed to formalizing the assessment system. The committee agrees that having only four Examining Boards is stimulating the consistency and equality of the procedures. However, these four Examining Boards are responsible for a total of 49 programmes. The committee is worried that the limited number of Examining Boards leads to a certain distance from the programmes, making it difficult for the Examining Boards to really be in control at the programme level.

The assessment strategies of the different courses are good, and there is sufficient variation in the examination methods. In general, the feedback is organized very well, yet time constraints make more face-to-face feedback difficult to organize. Lecturers are willing to give feedback, and students appreciate this.

The committee is of the opinion that with the current pressure on graduating in time in the Netherlands, the number of possible resits at Wageningen University is outdated. If students don't feel the need to pass an exam, they might not take the exam seriously. Chances are that this will lead to study delays.

The drop-out rate in the bachelor programme is quite high. The programme is aware of this and is actively engaged in finding what causes the drop-out, and it has taken several measures to prevent increased drop-out in the future. The success rates of students in the bachelor and master programmes fluctuate around the Wageningen average, which seems quite good. Since students are still allowed to enter a master programme before graduating from the bachelor programme, the committee is not able to give a valid opinion on the success rates. The committee appreciates that the programme investigates the causes of poor performance and takes action to improve it.

Overall, the committee was impressed by the level of the theses, both bachelor and master. Regarding the bachelor programme, the committee remarks that the quality of the research questions could be improved by paying more attention to research design in the courses. Regarding the master thesis, the committee noticed how the structure of the thesis resembled that of a scientific article, due to the specific attention paid to the process of conducting research, and it values this feature very highly. The additional format for thesis assessment that made use of extensive written feedback was designated by the committee as a best practice as it considers written feedback to be beneficial for the student and for others as it gives insight into the motivation for the marks.

3.3. Conclusion
Bachelor programme Bos- en Natuurbeheer: the committee assesses Standard 3 as **good**.
Master programme Forest and Nature Conservation:: the committee assesses Standard 3 as **good**.

General conclusion
Based on the assessments given for the three standards, the committee is of the opinion that this programme more than fulfils the requirements for both programmes.

Conclusion
The committee assesses *Bachelor programme in Bos- en Natuurbeheer* as **good**.
The committee assesses *Master programme in Forest and Nature Conservation* as **good**.

APPENDICES

Appendix 1: Curricula vitae of the members of the assessment committee

Professor Frans Zwarts was Rector Magnificus of the University of Groningen between 2002 and 2011. He studied linguistics at the University of Amsterdam (1967-1973) and at the Massachusetts Institute of Technology (1974), and wrote a doctoral dissertation on Categorical Grammar and Algebraic Semantics (cum laude). He was appointed lecturer at the University of Groningen in 1975 and became Professor of Linguistics in 1987. He was the initiator of the European Summer School in Logic, Language and Information (ESSLLI) in 1989. In 1992, Zwarts was a visiting scholar at UCLA (University of California, Los Angeles). Between 1995 and 2002, he was chair of the Netherlands Steering Committee for Research on Developmental Dyslexia, initiated by the NWO as part of a multidisciplinary national research programme. In 1999, he became academic director of the Graduate School of Behavioural and Cognitive Neurosciences of the University of Groningen. In 2003, he and the Rector Magnificus of Uppsala University established a close partnership between Groningen and Uppsala. This was extended in 2006, when the Universities of Ghent, Göttingen, Groningen, and Uppsala decided to form the U4. In 2011 he was appointed professor and manager to realise the University Campus Fryslân.

Mrs. Renate Prenen, MSc is educational advisor and independent entrepreneur educational advice. She studied Applied Educational Sciences at Twente University. She worked at Randstad secretarial bureau as advisor and programme manager. Later, she worked at the Academic Medical Centre (AMC) of the University of Amsterdam, where she was educational advisor. One task was to participate in research on learning requirements, obstacles and motivation for evidence-based medicine for family doctor trainers, teachers and family doctors in training. In September 2009 she started as an independent educational advisor. She has been a committee member on other QANU assessment committees.

Professor Peter Driessen holds a MA in Urban and Regional Planning (1986) and a PhD in Policy Sciences (Nijmegen University, 1990). Currently he is Professor of Environmental Studies at Utrecht University, the Netherlands and chair of the research group 'Environmental Governance'. Furthermore, he is scientific director of the national research program 'Knowledge for Climate'. Most of his research is related to the analysis and evaluation of environmental policy and planning at the international, national and regional level. He is especially engaged in research on environmental governance. His research covers topics like spatial planning, water management, infrastructure policy, climate adaptation policy, environmental impact assessment, policy analysis, and science-policy interactions. Peter Driessen has a long-term experience in the design and implementation of educational programs on the bachelor level as well on the master level. From 2000 until 2003 he was Director of Education in the Department of Innovation and Environmental Sciences, Utrecht University. From 2003 until 2007, he was director of the master's program on Sustainable Development, a 'prestige master' of Utrecht University.

Prof. Peter Klinkhamer was director of education of biology at Leiden University from September 2008 onwards. He studied biology at Utrecht University (cum laude). He showed an early interest in teaching when, as part of this study he designed an ecology course. He wrote his dissertation on the population dynamics of biennial plants in 1986 (cum laude). He was appointed assistant professor at Leiden University in 1987 where he combined research and continued to show great interest in teaching. Currently he is section leader of Plant Ecology and Phytochemistry at the Institute of Biology Leiden (IBL). He wrote over 100 primary international refereed publications, 12 bookchapters and a book on Evolutionary

Ecology of Plant Reproductive Strategies (Cambridge University Press) (a textbook in cooperation with dr. T.J. de Jong).

Professor Tomas Lundmark is the dean of the Faculty of Forest Sciences at the Swedish University of Agricultural Sciences. He studied forestry at the Swedish University of Agricultural Sciences (SLU) (1978-1982) and wrote a doctoral dissertation on forestry 1996. He has extensive experience from managing field based forest research infrastructure and was appointed director of SLUs Unit of Field-based Forest Research 2004. He became Professor in Forest Management at SLU, Umeå in 1987. He was the initiator of the Future Forests research program in Sweden 2009, Swedens largest multidisciplinary forest research program. He is a member of MarcusWallenberg Prize selection committee and the Swedish Royal Academy of Forest and Agriculture.

Tom De Mil just finished his MSc in Bioscience Engineering: Forest and Nature Management (2010-2012) at Ghent University, Belgium. This program was followed after the BSc: Land and Forest management (2007-2010). For his master dissertation " Bio-energetical characterisation of tropical wood species", field work took place in Surinam. The situation in Surinam gave him a "snapshot" of what is going on in the tropical forest, so he definitely feels the urge to see and learn more, to be part of the scientific community and to explore and discover. Currently he is a PhD student at the Laboratory of Wood Technology (Ghent University), where he is working in the field of dendrochronology/dendroclimatology

Appendix 2: Domain-specific framework of reference

Introduction
Global biodiversity and natural resources are under threat. Species are becoming extinct at an unprecedented rate due to the increasing pressure on animal and plant populations worldwide: habitat loss and fragmentation, environmental pollution, climate change and overexploitation. These extinctions and environmental changes pose a potential threat to ecosystem functioning, which not only affects biodiversity, but also affects the provision of ecosystem services, and thus human wellbeing. To reverse these developments, the productivity of plant and animal production systems needs to be increased to relieve the pressure on forest, nature and aquatic spaces. Resource use within (semi)natural ecosystems should become sustainable and ecosystems need to be relieved from environmental pressures.

Forest and Nature Conservation deals with conservation, management, and sustainable use of forests and other (semi-)natural areas for human individual and general well-being. This may range from the conservation of ecosystems and populations, to the provision of goods and services like raw materials, regulation of water and climate, soil protection, as well as scenic value, nature experiences and place attachment. The domain includes issues related to policy and governance, and to ecological theory and functioning of ecosystems and populations, with the aim of ensuring that all potential benefits flow from ecosystems and populations to society, while conserving ecological integrity and sustainable future use.

A broad scope
The domain of forest and nature conservation covers the entire range of habitats and biomes, and borrows from many scientific disciplines. Essentially, it covers terrestrial and marine ecosystems, as well as all climatic zones and biomes. It includes wild, virtually undisturbed systems such as the deep sea and rain forests, as well as agricultural landscapes and road verges. Human population pressure also varies greatly, from the virtually uninhabited polar regions to the densely populated river basins in temperate and tropical regions. Resource use varies accordingly, from basic subsistence to intensive cultivation, from wilderness areas to intensely used recreational areas.

Issues in forest and nature conservation are addressed from a multitude of scientific fields. Population biology and autecology provide tools for the study of species populations. General ecology relates these populations to their environment, and assesses how environmental variation and dynamics affects populations. This is also rooted in related disciplines like soil science, remote sensing, chemistry and mathematical modelling. Most issues have a strong socio-economic component, since many conservation issues are fundamentally issues of human land-use. Disciplines such as economics, political sciences and public administration are crucial to designing potential solutions.

The challenge
The domain focuses on the remaining forest and (semi-) natural environments, but also on restoration areas and on nature in agricultural and urban areas, seeking new ways to develop and implement sustainable management options for natural resource use and conservation of biodiversity. The ultimate aim is to maintain biodiversity while enabling sustainable resource use and resource conservation at national and global scales. This asks for innovative policy design and governance mechanisms with multiple actors and at multiple levels, and for clear practical guidelines for techniques aimed at conservation, restoration, and sustainable use.

The main challenges for forest and nature conservation are to maintain and further improve the functioning of forest and nature areas by creating favourable conditions for ecological

diversity, conserving and restoring populations and habitats for animals and plants, and by decreasing adverse impacts from pollution, fragmentation and other human-induced disturbance. It is crucial to understand these underlying processes, and design new governance approaches and management strategies in land use to minimize biodiversity loss and to guarantee the continued provision of goods and services from (semi-)natural ecosystems to an ever-growing world population. This is the primary task within the domain of forest and nature conservation.

Present situation and developments
On a global scale, the expanding human population, continental inequalities in goods and demands, and global trade in resources lead to the intensification of land use, and competing claims between different forms of land use. Current trends are the decline of pristine habitats and ecosystems, and the increasing pressure on natural resources and biodiversity. Conservation issues have strong socio-economic drivers, and must largely be resolved in the political arena. Management strategies in forests and natural areas should therefore advocate the optimisation of ecosystem services in order to provide a socio-economic rationale for forest and nature conservation.

When focussing on Europe, by far the largest part of the land surface is covered by semi-wild nature with a high biodiversity that developed in relation to human activities, such as deforestation, mowing, pasture grazing, mostly without fertilization. These extensively managed (low input) ecosystems like peat areas, heath fields and shallow lakes, are a cultural heritage and provide beneficial services such as carbon sequestration and biodiversity conservation. There has been a strong decline in these ecosystems and are now under severe pressure from urbanisation, industrialisation, and agricultural intensification. The resulting eutrophication, acidification, desiccation and further fragmentation leads to a continuous decline in species and shifting biome boundaries under climate change. The preservation of these ecosystems is a challenge for which a combination of ecology, geo-based sciences and social sciences is needed, leading to evidence-based policy options, management objectives and strategies, and finally to options for intervention in the field.

Apart from preservation, nature conservation also focuses on restoration and development of more spontaneous and (near) wilderness types of nature areas. The potentials of spontaneous biotic and geomorphic processes, like year-round grazing with free roaming herds, erosion, sedimentation and flooding are being restored in large reserves. Insights in the relevant processes are necessary to better understand this spontaneous nature restoration by natural processes.

The management of forest and natural areas, especially in densely populated areas such as the Netherlands, largely focuses on integration of different functions and objectives, implying that management interventions need to explicitly consider a wide range of possible consequences for various ecosystem functions. This calls for reconciliation of different functions, and explicit consideration of trade-offs between conflicting use and values, and a deep understanding of the position of our natural environment and their products and services, in economics, policy and society.

In large parts of the world, forestry is an important economic activity, driving rural development, and providing important raw material for industry. Forests demand low labour- and energy inputs, hence are one of the few CO_2-neutral natural resources that can be used sustainably, in combination with biodiversity conservation in the same area. Plantation areas and the accompanying more intensive forest management have to be expanded to meet the

growing wood demands of the global population, while at the same time allowing large scale preservation of natural forest ecosystems. Maintaining or increasing wood production while preserving natural and cultural values and other ecosystem service is an important task for the near future. Increasing animal protein demands in emerging economies require increased domestic animal production systems, without further compromising natural rangelands and their associated fauna. However, emerging economies are putting increasing pressure on willing governments in cashstrapped countries to sell out their natural and mineral resources, leading to environmental and habitat damage. This demands new approaches to designing policy and management options.

Academic education
Conservation and sustainable use, as well as governance, policy development and decision-making require a greater understanding of ecological aspects, technical possibilities, socio-economic demands and constraints, people's wellbeing and preferences, and of policy options and scenarios.

Academic education in the domain should aim to deliver graduates that have a profound understanding of ecosystem functioning, on how human society and policy making interact with the (semi-)natural environment, and which measures can be taken to meet the challenge. This covers all levels of decision-making: international policy, national strategy, management units, and practical
management. Increasingly, technical aspects of forest and nature conservation are delegated to technical staff. Yet, on a higher level it remains important to have general knowledge of technical and social possibilities in order to understand realistic (technically and socially achievable) policy options, management objectives and the strategies required to achieve these, and finally, the options for intervention in the field.

Therefore, academic education in forest and nature conservation should focus on: (i) ecological understanding of ecosystems, including ecosystem structure and function, relationships with site conditions, the role of dynamics and disturbances in relation to resilience and persistence, and aspects of scale and spatial configuration; (ii) management options, including improving site conditions such as water and nutrients, interventions for transformation towards sustainable use, and wildlife utilisation systems; and (iii) social, economic and governance aspects, focussing on optimization of use by society, provisioning of goods and services as incentives for the preservation of biodiversity, relevance for local livelihoods, interaction of individual and organised citizens with their natural environment, and use of forests and rangelands as renewable natural resources.

Appendix 3: Intended Learning Outcomes

After successful completion of the bachelor programme graduates are expected to be able to:		
Domain-specific learning outcomes.	1	Explain the functioning of forests and natural areas as social-ecological systems at different temporal and spatial scales.
	2	Analyse the major biotic and abiotic components of terrestrial ecosystems and identify the most important dominant and indicator species from North-Western Europe.
	3	Analyse the different actors and institutions related to forests and natural areas.
	4	Analyse the process of decision-making and the effects of actions and interventions on the main ecosystem processes and components.
	5	Analyse concepts, approaches and methods and reflect upon scientific literature, with special reference to the resource use of natural and semi-natural ecosystems.
	6	Analyse a problem in the field of forest and nature conservation by applying elementary skills in research planning, collecting, processing and interpreting data and scientific literature, and placing results in a wider context.
	7	Evaluate management decisions incorporating ecological, economic and social aspects in resource use.
General learning outcomes	8	Present results of scientific analyses to experts and non-experts both orally and in writing, and demonstrate the ability to work in a multidisciplinary team.
	9	Explain the relationships between science and practice and reflect on the role of science in society, including a reflection upon own thinking and work.
	10	Design and plan their own learning path (under supervision).
Major-specific parts	11a	(Policy and Society) Assess the key components of social systems in relation to forests and natural areas.
	11b	(Ecology and Conservation) Assess and apply ecological theories, using understanding of plant and animal biology, and environmental interactions.

After successful completion of the master programme graduates are expected to be able to:		
Domain specific learning outcomes	1	Analyse the functioning of forests and natural areas within their social-ecological context at different temporal and spatial scales.
	2	Evaluate social and policy practices with regard to the use, management and conservation of forest and natural areas. (specialization policy and society).
	3	Design and asses realistic and feasible management options for forests and natural areas, based on specific knowledge and understanding of wildlife management, management of forests or other terrestrial vegetation (specialization management).
	4	Create and asses new contributions to the knowledge of ecological processes and functioning in terrestrial ecosystems (specialization ecology).
	5	Formulate and execute research in the field of forest and nature conservation in accordance with academic standards.
General learning outcomes	6	Communicate clearly - both orally and in writing - the project outcomes and discuss these with specialists and non-specialists.
	7	Function effectively in international multidisciplinary teams and contribute from their expertise towards multidisciplinary or interdisciplinary issues.
	8	Recognise, understand and apply new concepts and approaches in the field of forest and nature conservation as they emerge.
	9	Demonstrate understanding of the moral and ethical dimensions of scientific research and its applications, and the importance of intellectual integrity.
	10	Critically reflect on their own performance and results, as well as on those of colleagues.
	11	Design a learning path, and develop personal competences, with a balance between domain knowledge and preparation for career opportunities.

Appendix 4: Overview of the curricula

Bachelor programme in Bos- en Natuurbeheer

Course code	Course name	Specialization	Credits	CS or RO	Year	Period	Lectures	Tutorials	Practical	Field excursions	Group work	Individual paper	Thesis
Common part	With VWO Mathematics B choose RO1, with VWO Mathematics A choose RO2 Choose 1 course from RO3 in consultation with your study adviser												
NCP-10503	Ecology I		3	CS	B1	1	14		14	10			
NCP-20503	Ecology II		3	CS	B1	1			24		5		
YEI-10306	Introduction Environmental Sciences		6	CS	B1	1	4	43	21		5		
MAT-15303	Statistics 1		3	RO1	B1	2	25	12					
MAT-14803	Mathematics 1		3	RO2	B1	2	35						
MAT-15403	Statistics 2		3	CS	B1	2	25	12					
SAL-10306	Human Geography		6	CS	B1	2	24	25				1	
LAD-10806	Soil and Water I		6	CS	B1	3	32	12	16	4			
FEM-10306	Ecology of Forests		6	CS	B1	4	28		28	24		1	
LAD-22803	Soils and Landscapes of the Netherlands		3	CS	B1	5	14			32			
MAT-14903	Mathematics 2		3	CS	B1	5		32	6				
FNP-11806	Forest, Nature, Society		6	CS	B1	5	16		17	28	7		
BIS-10306	Flora and Fauna of the Netherlands		6	CS	B1	6	12		68	28			
NCP-10806	Forest and Nature Conservation I: Introductory Field Course		6	CS	B1	6				130	10		
GRS-10306	Introduction Geo-information Science		6	CS	B2	2	16		52		8		
FNP-21306	Management of Forest and Nature Organisations		6	CS	B2	4	40	36		8	2		
FNP-23303	Planning in Forest and Nature Conservation		3	CS	B2	5	12		37				
NCP-21803	Ecology of Communities, Ecosystems and Landscapes: Theory		3	CS	B2	5	12	12					
NCP-22303	Ecology of Communities, Ecosystems and Landscapes: Field Excursions		3	CS	B2	6	6			60			
FEM-20909	Forest and Nature Conservation II - Management Planning and Tools		9	CS	B2	6	8		127	42			
REG-31806	Ecological Methods I		6	RO3	B3	1	6	20	60				
YRM-21306	Research Methodology for Human Environment Interactions		6	RO3	B3	1	14	24				1	
FNP-30306	Strategic Planning in Forest and Nature Conservation		6	CS	B3	1	18		25	40	25		
FNP-32806	Science and Expertise in Nature and Environment		6	CS	B3	2	26	30					
NCP-80812	BSc Thesis Forest and Nature Conservation		12	CS	B3	2							10
Major A – Policy and Society	Choose 1 course from RO1												
PAP-20806	Public Administration and Environmental Law	A	6	CS	B2	1	24	12			15		
FNP-23806	People and Forest and Nature Conservation	A	6	CS	B2	1	24	25		8		1	
COM-20806	Environmental Communication and Innovation	A	6	RO1	B2	2	16		14		10		
LAW-20306	International Policies and Institutions	A	6	RO1	B2	2	24				10		
ENR-20306	Environmental Economics and Policy	A	6	CS	B2	3	24	16			8		
FNP-24306	Governance for Forest, Nature and Biodiversity	A	6	CS	B2	5	24	12		20		2	
Major B – Ecology and Conservation													
FEM-22306	Forest Resources and Sustainable Management Systems	B	6	CS	B2	1	24		38	20		1	
LAD-21806	Habitat Analysis for Ecologists	B	6	CS	B2	1	16		95				
EZO-21803	Basic Principles of Vertebrate Zoology	B	3	CS	B2	2	20		10				
REG-20803	Applied Animal Ecology	B	3	CS	B2	2	22			4			
PPH-10306	Biology of Plants	B	6	CS	B2	3	36		32	6			
REG-20306	Resource Ecology	B	6	CS	B2	5	12				12		

Master programme in Forest and Nature Conservation

Course code	Course name	Specialization	Credits	CS or RO	Year	Period	Lectures	Tutorials	Practical	Field excursions	Group work	Individual paper	Internship	Thesis
Common part														
Choose 0 - 3 courses from RO0 in consultation with your study adviser.														
Choose 1 course from RO1 in consultation and agreement with the study adviser, depending on prior training or relevant working experience.														
Choose an internship from RO2 or choose a 2nd thesis. Replacement of internship by a 2nd thesis is subject to approval by the study adviser.														
Note: There is a special track MSc European Forestry, ask your study adviser for information.														
REG-31306	Trends in Forest and Nature Conservation		6	RO0	M1	1	28	17				2		
REG-31806	Ecological Methods I		6	RO0	M1	1	6	20	60					
YRM-20306	Research Methods in Environmental Science		6	RO0	M1	1		48						
YMC-60303	Modular Skills Training (MOS)		3	CS	M1/2				30					
YMC-60809	Academic Consultancy Training		9	RO1	M1/2				20		22			
YMC-61303	Scientific Skills Training		3	RO1	M1	2								
FEM-70424	MSc Internship Forest Ecology and Forest Management		24	RO2	M2								5	
FNP-70424	MSc Internship Forest and Nature Conservation Policy		24	RO2	M2								5	
NCP-70424	MSc Internship Nature Conservation and Plant Ecology		24	RO2	M2								5	
REG-70424	MSc Internship Resource Ecology		24	RO2	M2								5	
Specialization A – Policy and Society														
Choose 1 course from RO1														
Choose 1 course from RO2														
Choose 1 course from RO3														
FNP-31806	Forest and Nature Policy: Theoretical Perspectives	A	6	CS	M1	5	8	34				3		
FNP-31306	Communities, Conservation and Development	A	6	RO1	M1	3	24				5			
FNP-32306	Economic Aspects of Forest and Nature Conservation	A	6	RO1	M1	5	26	29			19			
ENP-30306	International Environmental Policy	A	6	RO2	M1	4	24					15		
DEC-31806	Economics and Governance	A	6	RO2	M1	6	16				14	1		
ECS-31806	Applied Environmental Education and Communication	A	6	RO2	M1	6	16	17		7	7			
MAT-22306	Quantitative Research Methodology and Statistics	A	6	RO3	M1	3		56	24					
RDS-33306	Methodology for Field Research in the Social Sciences	A	6	RO3	M1	6	24				16			
FNP-80436	MSc Thesis Forest and Nature Conservation Policy	A	36	CS	M1/2									25

Specialization B – Management

Choose at least 1 course from RO1
Choose at least 1 course from RO2
Choose at least 1 course from RO3
Choose at least 1 course from RO4
Choose 1 thesis from RO5

Code	Title	Spec	Cr	RO	M								
REG-32806	Wildlife Resource Management	B	6	RO1	M1	2	4	60					
NCP-30806	Restoration Ecology	B	6	RO1	M1	4	24	42		16			
FEM-30306	Advanced Forest Ecology and Forest Management	B	6	RO1	M1	5	32		20	35			
FNP-31306	Communities, Conservation and Development	B	6	RO2	M1	3	24				5		
FNP-31806	Forest and Nature Policy: Theoretical Perspectives	B	6	RO2	M1	5	8	34				3	
FNP-32306	Economic Aspects of Forest and Nature Conservation	B	6	RO2	M1	5	26	29			19		
INF-31806	Models for Ecological Systems	B	6	RO3	M1	3	15	12	64		10		
MAT-22306	Quantitative Research Methodology and Statistics	B	6	RO3	M1	3		56	24				
RDS-33306	Methodology for Field Research in the Social Sciences	B	6	RO3	M1	6	24				16		
FEM-22803	Agroforestry	B	3	RO4	M1	2	12				10		
MST-21306	Advanced Management and Marketing	B	6	RO4	M1	3	30	12			5		
NCP-30306	Plant, Vegetation and Systems Ecology	B	6	RO4	M1	6	12	20		80			
REG-30306	Animal Ecology	B	6	RO4	M1	6	12	40	40				
FEM-80436	MSc Thesis Forest Ecology and Forest Management	B	36	RO5	M1/2								25
FNP-80436	MSc Thesis Forest and Nature Conservation Policy	B	36	RO5	M1/2								25
NCP-80436	MSc Thesis Nature Conservation and Plant Ecology	B	36	RO5	M1/2								25
REG-80436	MSc Thesis Resource Ecology	B	36	RO5	M1/2								25

Specialization C – Ecology

Choose 2 courses from RO1
Choose 1 thesis from RO2

Code	Title	Spec	Cr	RO	M						
INF-31806	Models for Ecological Systems	C	6	CS	M1	3	15	12	64	10	
FEM-30306	Advanced Forest Ecology and Forest Management	C	6	RO1	M1	5	32		20	35	
NCP-30306	Plant, Vegetation and Systems Ecology	C	6	RO1	M1	6	12	20		80	
REG-30306	Animal Ecology	C	6	RO1	M1	6	12	40	40		
REG-32306	Ecological Methods II	C	6	RO1	M1	6		17	108		
FEM-80436	MSc Thesis Forest Ecology and Forest Management	C	36	RO2	M1/2						25
NCP-80436	MSc Thesis Nature Conservation and Plant Ecology	C	36	RO2	M1/2						25
REG-80436	MSc Thesis Resource Ecology	C	36	RO2	M1/2						25

Appendix 5: Quantitative data regarding the programmes

Data on intake, transfers and graduation

Success rates for the bachelor programme in Bos- en Natuurbeheer

Cohort	2003	2004	2005	2006	2007	2008	2009	2010
Size at the outset	37	44	49	33	20	52	60	48
Size of re-enrolment T+1	*30*	*35*	*38*	*25*	*16*	*37*	*55*	
Diploma after 3 years (%)	43	31	13	24	31			
Diploma after 4 years (%)	57	51	47	64				
Diploma after 5 years (%)	73	57	63					
Diploma after 6 years (%)	80	71						
Diploma after 7 years (%)	87							
Drop-outs 1 October 2010 (%)	*10*	*9*	*18*	*12*	*19*	*3*		

Success rates for the master programme in Forest and Nature Conservation

Cohort	2003	2004	2005	2006	2007	2008	2009	2010
Size at the outset	33	58	54	66	58	58	68	88
Diploma after 2 years (%)	45	55	52	59	60	59		
Diploma after 3 years (%)	79	84	78	91	88			
Diploma after 4 years (%)	94	90	91	97				
Diploma after 5 years (%)	97	91	91					
Drop-outs 1 October 2010 (%)	*0*	*7*	*7*	*2*	*5*	*5*	*1*	

Teacher-student ratio achieved

For Wageningen University the average student/staff ratio lies between 5.5 and 12.5 for bachelor programmes, and between 5.5 and 10 for master programmes.

For the bachelor programme in Bos- en Natuurbeheer the student/staff ratio is 6.21. For the master programme in Forest and Nature Conservation the student/staff ratio is 7.6.

Average amount of face-to-face instruction per stage of the study programme

Number of programmed contact hours

Year	Contact hours	Contact hours (% of 1680)
B1	808	48
B2	792	47
B3	790	47
M1	686	41
M2	30	1.8

Appendix 6: Programme of the site visit

10 April 2012

17.30 – 19.30   **Preparatory Meeting committee and secretary**

11 April 2012

10.30 – 11.30   **Management (responsible for content of the programme)**
Dr.ir. J. (Jan) den Ouden (Chairman Programme Committee BBN MFN)
Dr. G.F. (Gerrit) Epema (Programme Director BBN MFN)
Prof.dr. B.J.M. (Bas) Arts (Chairholder Forest and Nature Conservation Policy)
S.M. (Susanne) Vogel (Student Member Programme Committee)

11.30 – 11.45   **Break**

11.45 – 12.45   **Students BBN/MFN**
S. (Sanne) Mees (BBN)
S.K. (Simone) Loohuizen (BBN)
H. (Hielke) Alsemgeest (MFN)
S.C. (Sarah) Günther (MFN)
A.G. (Alex) Engel (BBN)
C. (Carla) Gómez (MFN)
J. (Joyce) Penninkhof (MFN)
M. (Miila) Kauppinen (MFN)

12.30 – 13.00   **Lunch**

13.00 – 14.00   **Lecturers BBN/MFN**
Prof.dr.ir. G.M.J. (Frits) Mohren (Chairholder Forest Ecology and Forest Management)
Prof.dr. F. (Frank) Berendse (Chairholder Nature Conservation and Plant Ecology)
Dr.ir. M. (Martijn) Duineveld (Lecturer Human Geography)
Dr.ir. I.M.A. Heitkonig (Lecturer Resource Ecology Group)
Dr. U.G.W. (Ute) Sass Klaassen (Lecturer Forest Ecology and Forest Management)
Dr. I.J. (Ingrid) Visseren (Lecturer Forest and Nature Conservation Policy)
Dr. W.G Braakhekke (Lecturer Nature Conservation and Plant Ecology)

14.00 – 14.30   **Programme Committee**
Dr. W.F. (Fred) de Boer (Member Programme Committee)
Dr. J. (Juul) Limpens (Member Programme Committee)
Dr.ir. M.A. (Marjanke) Hoogstra (Member Programme Committee)
M.R. (Max) Simmelink (Student member Programme Committee)
A.M. (Guus) Bos (Student member Programme Committee)
V.D. (Vesko) Valverde (Student member Programme Committee

15.00 – 16.00   **Final meeting with management (final responsibility for programme)**
Dr.ir. J. (Jan) den Ouden (Chairman Programme Committee BBN MFN)
Dr. G.F. (Gerrit) Epema (Programme Director BBN MFN)
Prof.dr. B.J.M. (Bas) Arts (Chairholder Forest and Nature Conservation Policy)
S.M. (Susanne) Vogel (Student Member Programme Committee)

Programme for Kick-off meeting, 21 February: Common part of critical reflections

09.00 09.15	**Welcome by the Rector and the Director of the EI**[1]
09.15-11.00	**Preparatory meeting of assessment panel**
11.00-12.15	**General management programmes**:

P. (Paulien) Poelarends (member, Board of the EI)
R.A. (Rosella) Koning (member, Board of the EI)
Prof. T.W.M. (Thom) Kuyper (member, Board of the EI)
Prof. L.E. (Leontine) Visser (member, Board of the EI)
Prof. E.W. (Pim)Brascamp (Director of the EI)
J.J. (Jan) Steen (Quality assurance and enhancement officer)

12.15-12.45	Lunch
12.45-13.30	**Study Advisers:**

Dr. A.E.M. (Anja) Janssen (BSc and MSc Food Technology, Food Safety, Food Quality Management)
C.M. (Neeltje) van Hulten (BSc and MSc Agriculture and Bioresource Engineering)
C.Q.J.M. (Stijn) Heukels (BSc and MSc Landscape Architecture and Planning)
W.T. (Willy) ten Haaf (MSc Geo-Information Science)
Dr. W. (Wouter) Hazeleger (MSc Animal Sciences) [not present]
R.N.M. (Gineke) Boven (BSc Management and Consumer Studies)

13.30-14.30	**Examining boards**:

Dr. P.B.M. (Paul) Berentsen (secretary, EB[2] Social Sciences)
Dr. M.C.R. (Maurice) Franssen (secretary, EB Technology and Nutrition)
C.P.G.M. (Lisette) de Groot (chair, EB Technology and Nutrition)
Dr. D. (Dick) van der Hoek (secretary, EB Environment and Landscape)
Dr. K. (Klaas) Swart (secretary, EB Life Sciences)
Prof. W (Willem) Takken (chair, EB Life Sciences)

14.30-14.45	Break
14.45-15.45	**Lecturers of Programme Committees:**

Dr. A.J.B. (Ton) van Boxtel (Biotechnology and Bioinformatics)
Dr. J. (Jan) den Ouden (Forest and Nature Conservation)
Dr. K.B.M. (Karin) Peters (Leisure, Tourism and Environment)
Dr. W.A.H. (Walter) Rossing (Organic Agriculture)
Dr. R. (Rico) Lie (International Development Studies)
Dr. W.T. (Wilma) Steegenga (Nutrition and Health)

15.45-17.15	**Meeting of assessment panel**: evaluation and first findings
17.15-18.00	**Graduates**:

Francesco Cecchi, MSc (MSc International Development Studies)
Prof. Charlotte de Fraiture (MSc International Land and Water Management)
Dr. Dinand Ekkel (MSc Animal Sciences)
Loes Mertens (MSc Organic Agriculture)
M. Visser (MSc Forest and Nature Conservation)

---

[1] EI = Education Institute

[2] EB = Examining Board

Appendix 7: Theses and documents studied by the committee

Prior to the site visit, the committee studied the theses of the students with the following student numbers:

Bachelor in Bos- en Natuurbeheer	Master in Forest and Nature Conservation
880206017080	860208773060
870409398040	810817679100
830723838100	830216515050
861101313020	700610061060
860801451120	730924156040
870524902130	861227404050
880505133040	850504658120
820313507130	840503387100
871016638050	840219824080
850430681100	860704316030
86709650060	860202785130
870507245010	870710070100
870126576020	840920384070
880118441020	791113617060
870829668020	850501727010

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

- Reports of consultations with relevant committees / organs (programme committee and examinations committee, relevant ad-hoc committees);
- Examination tasks with associated evaluation criteria and standard (answer keys) and a representative selection of completed examinations (presentations, internship and/or research reports, portfolios, etc.) and their evaluations;
- List of required literature;
- Summary and analysis of recent evaluation results and relevant management information;
- Thesis regulations and guidelines for preparing projects;
- Internship regulations/handbooks;
- Course, staff and curriculum evaluations, student satisfaction survey(s), etc.;
- Alumni/exit questionnaires;
- Material about the student associations;
- Documentation on teaching staff satisfaction.

Appendix 8: Declarations of independence

nvao
nederlands - vlaamse accreditatieorganisatie

DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: FRANS ZWARTS

HOME ADDRESS: PETRUS CAMPERSINGEL 253
9713 AP GRONINGEN

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / SECRETARY:

LIFE SCIENCES, SEE ATTACHMENT

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

WAGENINGEN UNIVERSITY

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;

1

nvao
nederlands - vlaamse accreditatieorganisatie

HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: Wageningen   DATE: March 30, 2012

SIGNATURE:

2

Bijlage bij onafhankelijkheidsverklaring

Visitatiebezoek	Opleiding (CROHO-nummer):	Variant:
A. Food Technology	B Levensmiddelentechnologie (BLT; 56973)	Voltijd
	M Food Safety (MFS; 60112)	Voltijd
	M Food Technology (MLT; 66973)	Voltijd
	M Food Quality Management (MQ; 60109)	Voltijd
B. Biotechnology en Bio-Informatics	B Biotechnologie (BBT; 56841)	Voltijd
	M Biotechnology (MBT; 66841)	Voltijd
	M Bioinformatics (MBF; 60106)	Voltijd
C. Agricultural and Bioresource Engineering	B Agrotechnologie (BAT; 56831)	Voltijd
	M Agricultural and Bioresource Engineering (MAB; 66831)	Voltijd
D. Forest and Nature conservation	B Bos- en Natuurbeheer (BBN; 56219)	Voltijd
	M Forest and Nature Conservation (MFN; 66219)	Voltijd
E. International Land and Water Management	B Internationaal Land- en Waterbeheer (BIL; 50100)	Voltijd
	M International Land and Water Management (MIL; 60104)	Voltijd
F. Landscape, Architecture and Planning	B Landschapsarchitectuur en ruim. Planning (BLP; 56848)	Voltijd
	M Landscape, Architecture and Planning (MLP; 66848)	Voltijd
G. Leisure, Tourism and Environment	M Leisure, Tourism and Environment (MLE; 60111)	Voltijd
H. Geo-Information Science	M Geo-Information Science (MGI; 60108)	Voltijd
I. Plant Sciences	B Plantenwetenschappen (BPW; 56835)	Voltijd
	M Plant Sciences (MPS; 66835)	Voltijd
	M Organic Agriculture (MOA; 69300)	Voltijd
	M Plant Biotechnology (MPB; 60105)	Voltijd
J. Animal Sciences	B Dierwetenschappen (BDW; 56849)	Voltijd
	M Animal Sciences (MAS; 66849)	Voltijd
K. Climate Studies	M Climate Studies (MCL; 60107)	Voltijd
L. International Development Studies	B Internationale Ontwikkelingsstudies (BIN; 56837)	Voltijd
	M International Development Studies (MID; 66837)	Voltijd
	M Development and Rural Innovation (MDR; 60103)	Voltijd
M. Management, Economics and Consumer Studies	B Bedrijfs- en Consumentenwetenschappen (BBC; 56836)	Voltijd
	M Management, Economics and Consumer Studies (MME; 66836)	Voltijd
N. Nutrition and Health	B Voeding en Gezondheid (BVG; 56868)	Voltijd
	M Nutrition and Health (MNH; 66868)	Voltijd

DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: *RENATE PRENEN*

HOME ADDRESS: *Simon Stevinweg 21*
1401 TB Bussum

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / ~~SECRETARY~~:

LIFE SCIENCES - SEE ATTACHMENT

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

WAGENINGEN UNIVERSITY

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;

1

HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: *Wageningen*   DATE: *29-03-'12*

SIGNATURE:

2

Bijlage bij onafhankelijkheidsverklaring

Visitatiebezoek	Opleiding (CROHO-nummer):	Variant:
A. Food Technology	B Levensmiddelentechnologie (BLT; 56973)	Voltijd
	M Food Safety (MFS; 60112)	Voltijd
	M Food Technology (MLT; 66973)	Voltijd
	M Food Quality Management (MQ; 60109)	Voltijd
B. Biotechnology en Bio-Informatics	B Biotechnologie (BBT; 56841)	Voltijd
	M Biotechnology (MBT; 66841)	Voltijd
	M Bioinformatics (MBF; 60106)	Voltijd
C. Agricultural and Bioresource Engineering	B Agrotechnologie (BAT; 56831)	Voltijd
	M Agricultural and Bioresource Engineering (MAB; 66831)	Voltijd
D. Forest and Nature conservation	B Bos- en Natuurbeheer (BBN; 56219)	Voltijd
	M Forest and Nature Conservation (MFN; 66219)	Voltijd
E. International Land and Water Management	B Internationaal Land- en Waterbeheer (BIL; 50100)	Voltijd
	M International Land and Water Management (MIL; 60104)	Voltijd
F. Landscape, Architecture and Planning	B Landschapsarchitectuur en ruim. Planning (BLP; 56848)	Voltijd
	M Landscape, Architecture and Planning (MLP; 66848)	Voltijd
G. Leisure, Tourism and Environment	M Leisure, Tourism and Environment (MLE; 60111)	Voltijd
H. Geo-Information Science	M Geo-Information Science (MGI; 60108)	Voltijd
I. Plant Sciences	B Plantenwetenschappen (BPW; 56835)	Voltijd
	M Plant Sciences (MPS; 66835)	Voltijd
	M Organic Agriculture (MOA; 69300)	Voltijd
	M Plant Biotechnology (MPB; 60105)	Voltijd
J. Animal Sciences	B Dierwetenschappen (BDW; 56849)	Voltijd
	M Animal Sciences (MAS; 66849)	Voltijd
K. Climate Studies	M Climate Studies (MCL; 60107)	Voltijd
L. International Development Studies	B Internationale Ontwikkelingsstudies (BIN; 56837)	Voltijd
	M International Development Studies (MID; 66837)	Voltijd
	M Development and Rural Innovation (MDR; 60103)	Voltijd
M. Management, Economics and Consumer Studies	B Bedrijfs- en Consumentenwetenschappen (BBC; 56836)	Voltijd
	M Management, Economics and Consumer Studies (MME; 66836)	Voltijd
N. Nutrition and Health	B Voeding en Gezondheid (BVG; 56868)	Voltijd
	M Nutrition and Health (MNH; 66868)	Voltijd

DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: TOMAS LUNDMARK

HOME ADDRESS:

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / ~~SECRETARY~~:

LIFE SCIENCES - FOREST AND NATURE CONSERVATION

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

WAGENINGEN UNIVERSITY

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;

1

HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: DATE:

SIGNATURE:

2

DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: Prof. dr. Peter Driessen

HOME ADDRESS: Van Renesselaan 66
3703 AK Zeist

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / SECRETARY:

Forest and Nature Conservation BSc + MSc
Climate Studies MSc

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

Wageningen University

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;

1

HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: Zeist   DATE: October 18th

SIGNATURE:

2

nvao
nederlands - vlaamse accreditatieorganisatie

DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: _PETER KLINKHAMER_

HOME ADDRESS: _Universteit Leiden_
Instituut Biologie
Sylvius weg Leiden

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT / ~~SECRETARY~~:

LIFE SCIENCES - FOREST AND NATURE CONSERVATION

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

WAGENINGEN UNIVERSITY

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN EITHER A POSITIVE OR A NEGATIVE SENSE;

1

nvao
nederlands - vlaamse accreditatieorganisatie

HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF CONDUCT.

PLACE: _Wageningen_   DATE: _10-04-2012_

SIGNATURE:

2

.nvao
nederlands - vlaamse accreditatieorganisatie

DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: TOM DE MIL

HOME ADDRESS: BROEKKOUTER 8
9420 ERPE-MERE
BELGIUM

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT /
SECRETARY:

THE ASSESSMENT OF TWO PROGRAMMES IN
THE DISCIPLINES OF FOREST AND NATURE CONSER-
VATION AT WAGENINGEN UNIVERSITY
APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

QANU (QUALITY ASSURANCE NETHERLANDS UNIVERSITIES)

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES
OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR
CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY
INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN
EITHER A POSITIVE OR A NEGATIVE SENSE;

1

.nvao
nederlands - vlaamse accreditatieorganisatie

HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES
WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL
THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH
THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE
CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF
CONDUCT.

PLACE: GENT   DATE: 25/11/2011

SIGNATURE:

2

.nvao
nederlands - vlaamse accreditatieorganisatie

DECLARATION OF INDEPENDENCE AND CONFIDENTIALITY

TO BE SUBMITTED PRIOR TO THE ASSESSMENT OF THE PROGRAMME

THE UNDERSIGNED

NAME: MARLOUS MAARLEVELD

HOME ADDRESS:
BMC.
Smalle pad 34
3811 MG AMERSFOORT

HAS BEEN ASKED TO ASSESS THE FOLLOWING PROGRAMME AS AN EXPERT /
SECRETARY:

SEE ATTACHMENT

APPLICATION SUBMITTED BY THE FOLLOWING INSTITUTION:

WAGENINGEN UNIVERSITY

HEREBY CERTIFIES TO NOT MAINTAINING ANY (FAMILY) CONNECTIONS OR TIES
OF A PERSONAL NATURE OR AS A RESEARCHER / TEACHER, PROFESSIONAL OR
CONSULTANT WITH THE ABOVE INSTITUTION, WHICH COULD AFFECT A FULLY
INDEPENDENT JUDGEMENT REGARDING THE QUALITY OF THE PROGRAMME IN
EITHER A POSITIVE OR A NEGATIVE SENSE;

1

.nvao
nederlands - vlaamse accreditatieorganisatie

HEREBY CERTIFIES TO NOT HAVING MAINTAINED SUCH CONNECTIONS OR TIES
WITH THE INSTITUTION DURING THE PAST FIVE YEARS;

CERTIFIES TO OBSERVING STRICT CONFIDENTIALITY WITH REGARD TO ALL
THAT HAS COME AND WILL COME TO HIS/HER NOTICE IN CONNECTION WITH
THE ASSESSMENT, INSOFAR AS SUCH CONFIDENTIALITY CAN REASONABLY BE
CLAIMED BY THE PROGRAMME, THE INSTITUTION OR NVAO;

HEREBY CERTIFIES TO BEING ACQUAINTED WITH THE NVAO CODE OF
CONDUCT.

PLACE: WAGENINGEN   DATE: 29 - 03 - 2012

SIGNATURE:

2

Bijlage bij onafhankelijkheidsverklaring

Visitatiebezoek	Opleiding (CROHO-nummer):	Variant:
A. Food Technology	B Levensmiddelentechnologie (BLT; 56973)	Voltijd
	M Food Safety (MFS; 60112)	Voltijd
	M Food Technology (MLT; 66973)	Voltijd
	M Food Quality Management (MQ; 60109)	Voltijd
B. Biotechnology en Bio-informatics	B Biotechnologie (BBT; 56841)	Voltijd
	M Biotechnology (MBT; 56841)	Voltijd
	M Bioinformatics (MBF; 60108)	Voltijd
C. Agricultural and Bioresource Engineering	B Agrotechnologie (BAT; 56831)	Voltijd
	M Agricultural and Bioresource Engineering (MAB; 66831)	Voltijd
D. Forest and Nature conservation	B Bos- en Natuurbeheer (BBN; 56219)	Voltijd
	M Forest and Nature Conservation (MFN; 66219)	Voltijd
E. International Land and Water Management	B Internationaal Land- en Waterbeheer (BIL; 50100)	Voltijd
	M International Land and Water Management (MIL; 60104)	Voltijd
F. Landscape, Architecture and Planning	B Landschapsarchitectuur en ruim. Planning (BLP; 56848)	Voltijd
	M Landscape, Architecture and Planning (MLP; 66848)	Voltijd
G. Leisure, Tourism and Environment	M Leisure, Tourism and Environment (MLE; 60111)	Voltijd
H. Geo-Information Science	M Geo-Information Science (MGI; 60108)	Voltijd
I. Plant Sciences	B Plantenwetenschappen (BPW; 56835)	Voltijd
	M Plant Sciences (MPS; 66835)	Voltijd
	M Organic Agriculture (MOA; 66300)	Voltijd
	M Plant Biotechnology (MPB; 60105)	Voltijd
J. Animal Sciences	B Dierwetenschappen (BDW; 56849)	Voltijd
	M Animal Sciences (MAS; 66849)	Voltijd
K. Climate Studies	M Climate Studies (MCL; 60107)	Voltijd
L. International Development Studies	B Internationale Ontwikkelingsstudies (BIN; 56837)	Voltijd
	M International Development Studies (MID; 66837)	Voltijd
	M Development and Rural Innovation (MDR; 60103)	Voltijd
M. Management, Economics and Consumer Studies	B Bedrijfs- en Consumentenwetenschappen (BBC; 56836)	Voltijd
	M Management, Economics and Consumer Studies (MME; 66836)	Voltijd
N. Nutrition and Health	B Voeding en Gezondheid (BVG; 56868)	Voltijd
	M Nutrition and Health (MNH; 66868)	Voltijd

Appendix 9: Rubric for the assessment of a MSc-thesis

Author: Arnold F. Moene, Meteorology and Air Quality Group, Wageningen University
Version: 1.1 (December 15, 2010)
This document is released under the Creative Commons Attribution-Noncommercial-Share Alike 3.0 Netherlands License

Item	Mark for item					
	2-3	**4-5**	**6**	**7**	**8**	**9-10**
1. Research competence (30-60%) *						
1.1. Commitment and perseverance	Student is not motivated. Student escapes work and gives up regularly	Student has little motivation. Tends to be distracted easily. Has given up once or twice	Student is motivated at times, but often, sees the work as a compulsory task. Is distracted from thesis work now and then.	The student is motivated. Overcomes an occasional setback with help of the supervisor.	The student is motivated and/or overcomes an occasional setback on his own and considers the work as his "own" project.	The student is very motivated, goes at length to get the most out of the project. Takes complete control of his own project. Considers setbacks as an extra motivation.
1.2. Initiative and creativity	Student shows no initiative or new ideas at all.	Student picks up some initiatives and/or new ideas suggested by others (e.g. supervisor), but the selection is not motivated.	Student shows some initiative and/or together with the supervisor develops one or two new ideas on minor parts of the research.	Student initiates discussions on new ideas with supervisor and develops one or two own ideas on minor parts of the research.	Student has his own creative ideas on hypothesis formulation, design or data processing.	Innovative research methods and/or data-analysis methods developed. Possibly the scientific problem has been formulated by the student.
1.3. Independence	The student can only perform the project properly after repeated detailed instructions and with direct help from the supervisor.	The student needs frequent instructions and well-defined tasks from the supervisor and the supervisor needs careful checks to see if all tasks have been performed.	The supervisor is the main responsible for setting out the tasks, but the student is able to perform them mostly independently	Student selects and plans the tasks together with the supervisor and performs these tasks on his own	Student plans and performs tasks mostly independently, asks for help from the supervisor when needed.	Student plans and performs tasks independently and organizes his sources of help independently.
	No critical self-reflection at all.	No critical self-reflection at all.	Student is able to reflect on his functioning with the help of the supervisor only.	The student occasionally shows critical self-reflection.	Student actively performs critical self-reflection on some aspects of his functioning	Student actively performs critical self-reflection on various aspects of his own functioning and performance.
1.4. Efficiency in working with data Note: depending on the characteristics of the thesis work, not all three aspects	**Experimental work** Student is not able to setup and/or execute an experiment.	Student is able to execute detailed instructions to some extent, but errors are made often, invalidating (part of) the experiment.	Student is able to execute an experiment that has been designed by someone else (without critical assessment of sources of error and uncertainty).	Student is able to execute an experiment that has been designed by someone else. Takes sources of error and uncertainty into account in a qualitative sense.	Student is able to judge the setup of an existing experiment and to include modifications if needed. Takes into account sources of error and uncertainty quantitatively.	Student is able to setup or modify an experiment exactly tailored to answering the research questions. Quantitative consideration of sources of error and uncertainty. Execution of the experiment is flawless.

Item	Mark for item					
	2-3	**4-5**	**6**	**7**	**8**	**9-10**
(experimental work, data analysis and model development) may be relevant and some may be omitted	**Data analysis** Student is lost when using data. Is not able to use a spreadsheet program or any other appropriate data-processing program.	Student is able to organize the data, but is not able to perform checks and/or simple analyses	Student is able to organize data and perform some simple checks; but the way the data are used does not clearly contribute to answering of the research questions and/or he is unable to analyze the data independently.	Student is able to organize the data, perform some basic checks and perform basic analyses that contribute to the research question	Student is able to organize the data, perform commonly used checks and perform some advanced analyses on the data	Student is able to organize the data, perform thorough checks and perform advanced and original analyses on the data.
	Model development Student is not able to make any modification/addition to an existing model.	Student modifies an existing model, but errors occur and persist. No validation.	Student is able to make minor modifications (say a single formula) to an existing model. Superficial validation or no validation at all.	Student is able to make major modifications to an existing model, based on literature. Validation using some basic measures of quality.	Student is able to make major modifications to an existing model, based on literature or own analyses. Validation using appropriate statistical measures.	Student is able to develop a model from scratch, or add an important new part to an existing model. Excellent theoretical basis for modelling as well as use of advanced validation methods.
1.5. Handling supervisor's comments and development of research skills	Student does not pick up suggestions and ideas of the supervisor	The supervisor needs to act as an instructor and/or supervisor needs to suggest solutions for problems	Student incorporates some of the comments of the supervisor, but ignores others without arguments	Student incorporates most or all of the supervisor's comments.	Supervisor's comments are weighed by the student and asked for when needed.	Supervisor's comments are critically weighed by the student and asked for when needed, also from other staff members or students.
	Knowledge and insight of the student (in relation to the prerequisites) is insufficient and the student is not able to take appropriate action to remedy this	There is some progress in the research skills of the student, but suggestions of the supervisor are also ignored occasionally.	The student is able to adopt some skills as they are presented during supervision	The student is able to adopt skills as they are presented during supervision and develops some skills independently as well	The student is able to adopt new skills mostly independently, and asks for assistance from the supervisor if needed.	The student has knowledge and insight on a scientific level, i.e. he explores solutions on his own, increases skills and knowledge where necessary.
1.6. Keeping to the time schedule	Final version of thesis or colloquium more than 50% of the nominal period overdue without a valid reason (force majeure)	Final version of thesis or colloquium at most 50% of the nominal period overdue (without a valid reason).	Final version of thesis or colloquium at most 25% of nominal period overdue (without valid reason)	Final version of thesis or colloquium at most 10% of nominal period overdue (without valid reasons)	Final version of thesis or colloquium at most 5% of nominal period overdue (without good reasons)	Final version of thesis and colloquium finished within planned period (or overdue but with good reason).
	No time schedule made.	No realistic time schedule.	Mostly realistic time schedule, but no timely adjustment of time schedule.	Realistic time schedule, with some adjustments (but not enough or not all in time) in times only.	Realistic time schedule, with timely adjustments. of times only.	Realistic time schedule, with timely adjustments of both time and tasks.

Item	Mark for item					
	2-3	**4-5**	**6**	**7**	**8**	**9-10**

2. Thesis report (30-60%) *

Item	2-3	4-5	6	7	8	9-10
2.1. Relevance research, clearness goals, delineation research	No link is made to existing research on the topic. No research context is described.	The context of the topic at hand is described in broad terms but there is no link between what is known and what will be researched.	The link between the thesis research and existing research does not go beyond the information provided by the supervisor.	Context of the research is defined well, with input from the student. There is a link between the context and research questions.	Context of the research is defined sharply and to-the-point. Research questions emerge directly from the described context.	Thesis research is positioned sharply in the relevant scientific field. Novelty and innovation of the research are indicated.
	There is no researchable research question and the delineation of the research is absent	Most research questions are unclear, or not researchable and the delineation of the research is weak	At least either the research questions or the delineation of the research are clear	The research questions and the delineation are mostly clear but could have been defined sharper at some points	The research questions are clear and researchable and delineation is clear.	The research questions are clear and formulated to-the-point and limits of the research are well-defined.
2.2. Theoretical underpinning, use of literature	No discussion of underlying theory.	There is some discussion of underlying theory, but the description shows serious errors.	The relevant theory is used, but the description has not been tailored to the research at hand or shows occasional errors.	The relevant theory is used, and the description has been tailored partially successful to the research at hand. Few errors occur.	The relevant theory is used, it is nicely synthesized, and it is successfully tailored to the research at hand.	Clear, complete and coherent overview of relevant theory on the level of an up-to-date review paper. Exactly tailored to the research at hand.
	No peer-reviewed/primary scientific papers in reference list except for those already suggested by the supervisor	Only a couple of peer-reviewed papers in reference list.	Some peer-reviewed papers in reference list but also a significant body of grey literature.	Relevant peer-reviewed papers in reference list but also some grey literature or text books. Some included references less relevant.	Mostly peer-reviewed papers or specialized monographs in reference list. An occasional reference may be less relevant.	Almost exclusively peer-reviewed papers in reference list or specialized monographs (not text books). All papers included are relevant.
2.3. Use of methods and data	No description of methods and/or data.	Research is not reproducible due to insufficient information on data (collection and/or treatment) and analysis methods	Some aspects of the research regarding data-collection, data-treatment, models or the analysis methods are described insufficiently so that that particular aspect of the research is not reproducible.	Description of the data (collection, treatment) or models as well as the analysis methods used is lacking in a number of places so that at most a more or less similar research could be performed.	Description of the data (collection, treatment) or models as well as the analysis methods used is mostly complete, but exact reproduction of the research is not possible due to lack of some details.	Description of the data (collection, treatment) or models as well as the analysis methods is complete and clear so that exact reproduction of the research is possible.
2.4. Critical reflection on the research performed (discussion)	No discussion and/or reflection on the research. Discussion only touches trivial or very general points of criticism.	Only some possible weaknesses and/or weaknesses which are in reality irrelevant or non-existent have been identified.	Most weaknesses in the research are indicated, but impacts on the main results are not weighed relative to each other.	Most weaknesses in the research are indicated and impacts on the main results are weighed relative to each other.	All weaknesses in the research are indicated and weighed relative to each other. Furthermore, (better) alternatives for the methods used are indicated.	Not only all possible weaknesses in the research are indicated, but also it is indicated which weaknesses affect the conclusions most.

Item	Mark for item					
	2-3	**4-5**	**6**	**7**	**8**	**9-10**
	No confrontation with existing literature.	Confrontation with irrelevant existing literature.	Only trivial reflection vis-a-vis existing literature.	Only most obvious conflicts and correspondences with existing literature are identified. The value of the study is described, but it is not related to existing research.	Minor and major conflicts and correspondences with literature are shown. The added value of the research relative to existing literature is identified.	Results are critically confronted with existing literature. In case of conflicts, the relative weight of own results and existing literature is assessed. The contribution of his work to the development of scientific concepts is identified.
2.5. Clarity of conclusions and recommendations	No link between research questions, results and conclusions.	Conclusions are drawn, but in many cases these are only partial answers to the research question. Conclusions merely repeat results.	Conclusions are linked to the research questions, but not all questions are addressed. Some conclusions are not substantiated by results or merely repeat results.	Most conclusions well-linked to research questions and substantiated by results. Conclusions are mostly formulated clearly but with some vagueness in wording.	Clear link between research questions and conclusions. All conclusions substantiated by results. Conclusions are formulated exact.	Clear link between research questions and conclusions. Conclusions substantiated by results. Conclusions are formulated exact and concise. Conclusions are grouped/ordered in a logical way.
	No recommendations given.	Recommendations are absent or trivial.	Some recommendations are given, but the link of those to the conclusions is not always clear.	Recommendations are well-linked to the conclusions.	Recommendations are to-the-point, well-linked to the conclusions and original.	Recommendations are to-the-point, well-linked to the conclusions, original and are extensive enough to serve as project description for a new thesis project.
2.6. Writing skills	Thesis is badly structured. In many cases information appears in wrong locations. Level of detail is inappropriate throughout.	Main structure incorrect in some places, and placement of material in different chapters illogical in many places. Level of detail varies widely (information missing, or irrelevant information given).	Main structure is correct, but lower level hierarchy of sections is not logical in places. Some sections have overlapping functions leading to ambiguity in placement of information. Level of detail varies widely (information missing, or irrelevant information given).	Main structure correct, but placement of material in different chapters illogical in places. Level of detail inappropriate in a number of places (irrelevant information given).	Most sections have a clear and unique function. Hierarchy of sections is mostly correct. Ordering of sections is mostly logical. All information occurs at the correct place, with few exceptions. In most places level of detail is appropriate.	Well-structured: each section has a clear and unique function. Hierarchy of sections is correct. Ordering of sections is logical. All information occurs at the correct place. Level of detail is appropriate throughout.
	Formulations in the text are often incorrect/inexact inhibiting a correct interpretation of the text.	Vagueness and/or inexactness in wording occur regularly and it affects the interpretation of the text.	The text is ambiguous in some places but this does not always inhibit a correct interpretation of the text.	Formulations in text are predominantly clear and exact. Thesis could have been written more concisely.	Formulations in text are clear and exact, as well as concise.	*Textual* quality of thesis (or manuscript in the form of a journal paper) is such that it could be acceptable for a pear-reviewed journal.

Item	Mark for item					
	2-3	**4-5**	**6**	**7**	**8**	**9-10**

3. Colloquium (5%) *

Item	2-3	4-5	6	7	8	9-10
3.1. Graphical presentation	Presentation has no structure.	Presentation has unclear structure.	Presentation is structured, though the audience gets lost in some places.	Presentation has a clear structure with only few exceptions.	Presentation has a clear structure. Mostly a good separation between the main message and side-steps.	Presentation clearly structured, concise and to-the-point. Good separation between the main message and side-steps.
	Unclear lay-out. Unbalanced use of text, graphs, tables or graphics throughout. Too small font size, too many or too few slides.	Lay-out in many places insufficient: too much text and too few graphics (or graphs, tables) or vice verse.	Quality of the layout of the slides is mixed. Inappropriate use of text, tables, graphs and graphics in some places.	Lay-out is mostly clear, with unbalanced use of text, tables, graphs and graphics in few places only.	Lay-out is clear. Appropriate use of text, tables, graphs and graphics.	Lay-out is functional and clear. Clever use of graphs and graphics.
3.2. Verbal presentation and defense	Spoken in such a way that majority of audience could not follow the presentation.	Presentation is uninspired and/or monotonous and/or student reads from slides: attention of audience not captured	Quality of presentation is mixed: sometimes clear, sometimes hard to follow.	Mostly clearly spoken. Perhaps monotonous in some places.	Clearly spoken.	Relaxed and lively though concentrated presentation. Clearly spoken.
	Level of audience not taken into consideration at all.	Level of audience hardly taken intro consideration.	Presentation not at appropriate level of audience.	Level of presentation mostly targeted at audience.	Level of presentation well-targeted at audience. Student is able to adjust to some extent to signals from audience that certain parts are not understood.	Clear take-home message. Level well-targeted at audience. Student is able to adjust to signals from audience that certain parts are not understood.
	Bad timing (way too short or too long).	Timing not well kept (at most 30% deviation from planned time).	Timing not well kept (at most 20% deviation from planned time).	Timing is OK (at most 10% deviation from planned time).	Timing is OK.	Presentation finished well in time.
	Student is not able to answer questions.	Student is able to answer only the simplest questions	Student answers at least half of the questions appropriately.	Student is able to answer nearly all questions in an appropriate way.	Student is able to answer all questions in an appropriate way, although not to-the-point in some cases.	Student is able to give appropriate, clear and to-the-point answers to all questions.

Item	Mark for item					
	2-3	**4-5**	**6**	**7**	**8**	**9-10**

4. Examination (5%) *

Item	2-3	4-5	6	7	8	9-10
4.1. Defense of the thesis	Student is not able to defend/discuss his thesis. He does not master the contents	The student has difficulty to explain the subject matter of the thesis.	Student is able to defend his thesis. He mostly masters the contents of what he wrote, but for a limited number of items he is not able to explain what he did, or why.	Student is able to defend his thesis. He masters the contents of what he wrote, but not beyond that. Is not able to place thesis in scientific or practical context.	Student is able to defend his thesis, including indications where the work could have been done better. Student is able to place thesis in either scientific or practical context.	Student is able to freely discuss the contents of the thesis and to place the thesis in the context of current scientific literature and practical contexts.
4.2. Knowledge of study domain	Student does not master the most basic knowledge (even below the starting level for the thesis).	The student does not understand all of the subject matter discussed in the thesis.	The student understands the subject matter of the thesis on a textbook level.	The student understands the subject matter of the thesis including the literature used in the thesis.	Student is well on top of subjects discussed in thesis: not only does he understand but he is also aware of current discussions in the literature related to the thesis topic.	Student is well on top of subjects discussed in thesis: not only does he understand but he is also aware of discussions in the literature beyond the topic (but related to) of the thesis.

Manual for use of the thesis evaluation form and the MSc-thesis assessment rubric (version 1.1) of Wageningen University

User instructions

- Grading the thesis work is generally done by two persons, the daily supervisor and the second reviewer/examiner. For the sake of grading uniformity, it is highly recommended by the Exam Boards that the second reviewer within a chair group is always the same person. Preferably it is the head of the group.

- The thesis evaluation form has four categories. The research competence category can only be filled in by the daily supervisor as this person has worked with the student. The Thesis report category can most objectively be filled in by the second reviewer who was not involved in the thesis process, as grading the thesis report should not be biased by positive or negative experiences with the student. The daily supervisor who has these experiences can take these into account when grading the research competence.

- Use of the comment fields on the thesis evaluation form is highly recommended. It is an extra feedback for the student.

- The assessment rubric has the form of an analytic rubric (see e.g. Andrade (2005), Reynolds *et al.* (2009), URL1, URL2). Each line discusses one **criterion** for assessment. Each column gives a **level** for the grading. Each cell contains the **descriptor** of the level for that criterion.

- The criteria in the rubric exactly follow the items presented in the Excel worksheet "Thesis evaluation Wageningen University" constructed by the Exam Boards. In a few cases the criteria in the original thesis evaluation document were split into two or more parts because the description of the criteria clearly covered different subjects.

- Since the final mark is composed of so many criteria, the scores on individual criteria should be discriminative. Not all levels are equally broad in marks. Since the final marks of theses usually range between 6 and 9, in the rubric individual levels have been established for the marks of 6, 7 and 8. When performance is at the 9-10 level, decide whether the student is on the low edge (9) or high edge (10) of this level. Descriptions at the 9-10 level tend to describe the ultimate performance (10). Hence, if a student performs well above 8, but below the description at the 9-10 level, a 9 would be the appropriate mark.

- Keep in mind that each line in the rubric should be read independently: it could be that a student scores a 2-3 on one criterion and a 9-10 on another.

- Always start at the lowest mark in the rubric, and test if the student should be awarded the next higher mark. In some cases achievements of a next lower level are not repeated at the higher level (i.e. the lower level achievements are implicit in the higher levels). Furthermore, if a level has a range of marks, choose the most appropriate one (consider the description of the level of performance as a continuum, rather than a discrete description).

- Wherever the student is indicated as 'he', one can also read 'she'.

Remarks

- This rubric has been validated by a number of supervisors by comparing the original grade of a number of theses to the grade resulting from this rubric.

- The main intention of using a rubric is enhance homogeneity of assessments and the ability to communicate about assessments both with students and with colleagues. Furthermore, it clarifies to students the expectations of the supervisor and helps the supervisor to structure feedback during the process of thesis research. Although the intention is to homogenize the process of assessment, it should be noted that even with the use of a rubric some arbitrariness will remain.

- The two main categories on the thesis evaluation form (research competence and thesis report) should have an assessment of 'sufficient' (i.e. ≥ 5.5) before the total thesis work can be considered as sufficient. So, no compensation between these main categories is possible to obtain the lowest final mark of 6.0.

- Please report any positive or negative experiences with and suggestions for the rubric to arnold.moene@wur.nl.

- Author of the rubric: Arnold F. Moene (Meteorology and Air Quality Group, Wageningen University), with valuable contributions from Ellis Hofland, Edwin Peeters, Tamar Nieuwenhuizen, Maarten Holtslag, George Bier, Gerard Ros, Lijbert Brussaard, Judith Gulikers and Paul Berentsen.

References

Andrade, H.G, 2005. Teaching With Rubrics: The Good, the Bad, and the Ugly. *College Teaching* **53**, p. 27-31.

Reynolds, J., R. Smith, C. Moskovitz and A. Sayle, 2009. BioTAP: A Systematic Approach to Teaching Scientific Writing and Evaluating Undergraduate Theses. *Bioscience* **59**, p. 896-903.

URL1: http://jonathan.mueller.faculty.noctrl.edu/toolbox/rubrics.htm (last visited November 17, 2009).

URL2: http://en.wikipedia.org/wiki/Rubric_(academic) (last visited November 17, 2009).