



Wageningen School
of Social Sciences

Procedures, Principles and Good Practices for

SUPERVISING PHD CANDIDATES

at Wageningen School of Social Sciences (WASS)



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PREFACE

A PhD project involves mentoring and supervision between scientists in an academic hierarchy. It is a challenging combination of education and research. Considerable volumes of literature have been written on how to manage the complexities of such a project and successfully complete the project and obtain a PhD degree in a specific academic context (see references for some suggestions, e.g. www.phdcentre.eu).

Supervisors are experts by experience because they all went through the process themselves to obtain their PhD degrees. However, academic environments change rapidly and these changes influence the process of obtaining a doctoral degree for newcomers. For example, the increasing pressure to publish larger numbers of scientific papers as products of research, influences the format of the thesis [from monograph to article-based] and the role of supervisors and their contribution to the thesis. The shift to competences with regard to “employability” beyond universities is reflected in the training activities offered. Time has become a constraint as completion rates of PhD candidates and average duration of PhD trajectories are on the radar of university management and even ministries. Graduate schools meanwhile worry about the adequacy and quality of supervision.

- 4 Besides the changes in the process of doing a PhD, the candidates themselves have changed as well. The PhD degree is for some candidates a start of a career in academics, but for many others it is a next step in their education: another academic title needed for a career that may very well not be in science. For PhD candidates, the training component has become a crucial part of their PhD process. PhD candidates not only need a productive research environment. They also require a learning environment where they can develop their own academic profile, and the necessary skills and competences.

For universities, PhD research has become crucial for the advancement of science and for scientific output. WASS is booming because its senior researchers are, within their fields of expertise, very successful in acquiring PhD projects. The challenge is, however, not only to continue acquiring new projects, but also to successfully complete running projects; being on time, according to high academic standard and fulfilling the quality criteria. Fortunately, most WASS PhD candidates do successfully conclude their projects. For some PhD candidates, the way to success is more difficult.

For a successful PhD project, the relation between a PhD candidate and supervisors is a key issue. As a graduate school, WASS is responsible for safeguarding the quality of supervision. The WASS Committee on Scientific Integrity, together with the WASS community, has developed eight basic principles for effective interaction between PhD candi-

dates and their supervisors. In this Guide, we not only outline these principles but also describe the Wageningen University PhD procedures in more or less chronological order, especially for new supervisors in our Graduate School. Most importantly, and especially for this Guide, many WASS supervisors and PhD candidates have shared their experiences on the do's and don'ts of supervision with us.

*“Supervisor & PhD in key words:
Time, contact, commitment,
appreciation, trust”*

The Guide is not intended as a substitute of the official regulations such as the Doctoral Conferral Regulations or the Netherlands Code of Conduct for Scientific Practice. Furthermore, this text shall be regarded as a dynamic document being subject to constant change according to the changing environment of Wageningen University. In case you have any suggestions or amendments, please feel free to contact the WASS Office (wass@wur.nl).

1. THE CONTEXT: THE WAGENINGEN UNIVERSITY PHD PROGRAMME

All PhD projects are organised in a common framework, the Wageningen University PhD programme. The Academic Board of Wageningen University is responsible for the formal protocol for the PhD degree, the Doctorate Conferral Regulations (“promotiereglement” in Dutch). These regulations set the PhD degree requirements and the admission criteria. They elaborate on supervision, and on processes related to graduation such as thesis committee, thesis format and public defence. The Academic Board determines the quality standards for judging a PhD thesis and the public defence of the work. For supervisors and PhD candidates, it is crucial to familiarise themselves with these regulations.

Be aware that the Academic Board regularly amends the Doctorate Conferral Regulations, so make sure to use the most recent version that can be found at the following website:

www.wageningenur.nl/en/Education-Programmes/PhD-Programme/Regulations.htm

Learning targets for the PhD degree [doctorate]

The recipient of the doctorate is capable of:

1. functioning as an independent practitioner of science, as shown by:
 - a. formulating scientific questions, whether based on social issues or scientific progress;
 - b. conducting original scientific research;
 - c. publishing articles in leading journals, publishing books with leading publishers or making a technical design;
2. integrating his or her own research in, or placing it within the framework of, the corresponding scientific discipline and against the background of a broader scientific area;
3. placing the research aims and research results in a societal context;
4. postulating concisely worded propositions in scientific and societal areas, formulated in such a way that they are subject to opposition and defence.

The PhD degree requirements shape the structure of the PhD programme. A PhD at WU is not only about doing research and writing scientific papers. At the end of the project, the PhD candidate should not only be able to present his or her own research in a disciplinary field, but also to relate the work to a broader scientific domain and to the societal context.

“Tip for the supervisor and the candidate: Become familiar with the doctorate conferral regulations!”

Alongside the research component, the PhD programme therefore also has a training component. The research of PhD candidates is based in or across chair groups and mentored by senior scientists.

The training part is organised by the six Wageningen graduate schools. The graduate schools are responsible for monitoring the quality and feasibility of PhD projects; the quality of the supervision; and for organising the training of PhD candidates. PhD candidates have a tailor-made Training and Supervision Plan (TSP) in one of the six Wageningen graduate schools. In the training part of the project, PhD candidates acquire in-depth knowledge on their own domain, of related scientific fields, and develop competences needed to function as an independent scientist as outlined in the learning targets of the PhD programme.

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1.1. Administrative units

It is not our idea of fun, but supervising a PhD candidate means that you cannot avoid involvement with the university bureaucracy. However, if you know what to do, when and how, it is not too difficult and takes only a minimum amount of time.

There are different units within the university that play a crucial role in a PhD trajectory. It is important to know whom to address in case you need assistance.

- *Chair group deputy manager, Liaison Office (SSG) or Unit Management (ESG):* acquisition of projects, contracts of non-employed PhD candidates in the categories sandwich, guest and external
- *Human Resources SSG or ESG:* contract employed PhD candidates (AIO), staff PhD candidate
- *PhD Services:* entrance requirements master degree level and language test
- *Student Desk:* registration as student in case PhD candidate intends to take master level courses
- *Graduate School:* registration as PhD candidate, Training and Supervision Plan (TSP), research proposal assessment, course organisation, advice and counselling, monitoring of progress
- *Doctorate Secretariat:* graduation date, requirements thesis lay-out, procedures thesis committee, public defence, propositions

1.2. Categories of PhD candidates

PhD candidates enter the programme with an enormous variety of first (university), second (NWO/KNAW) or third (other funding) stream funding. The type of funding largely determines the specific category under which they become registered. In order to understand the required specific administrative arrangements when recruiting a PhD candidate, it is important to distinguish between the 5 different categories of PhD candidates at Wageningen University:

- Research assistant (AIO) – temporarily employed by WU [first, second or third stream funding]
- Sandwich PhD – can either be employed Sandwich-L [first stream] or grantee Sandwich-F [second or third stream]
- Guest PhD – grantee [third stream]
- External PhD - not employed, conducts research outside the university [funded by employer]
- Staff PhD- employed by WU [first, second or third stream]

Administrative procedures for *employed* PhD candidates are the responsibility of Human Resources, other categories PhD candidates may receive a contract through Liaison Office (SSG) or Unit Management (ESG). You may need advice on the suitable category for the PhD project, so timely contact the administrative divisions of your chair group, department or WASS.

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1.3. Selection process and registration

It may seem obvious, but take your time to select a PhD candidate. Do not hesitate to set strict criteria and stick to them, even if you think better equipped candidates do not seem to be readily available. In case programme stakeholders select the candidate for you, inform these stakeholders well about the university requirements and your quality criteria. A PhD candidate lacking academic qualities, with an unsuitable scholarly background for the project, with low motivation, or with insufficient writing skills, will take up a lot of your precious supervision time. A “no go” within 18 months means that you and others invested a lot of time, capital and effort in vain.

“Look carefully at previous study results and read the master thesis. You do not want to select candidates who have done something on a specific topic, but you want the smart ones among them”

Tips for selecting a PhD candidate:

- If you do not yet know the candidate, consider bringing in the candidate for a visit to the chair group, or do a Skype interview to test language skills and knowledge level
- Do not hesitate to contact the references given by the PhD candidate and ask for the master thesis or other publications
- If the right candidate is not available, consider other options such as hiring a postdoc

“In a selection interview, ask questions beyond the content of the research topic and address general issues such as organisational skills, career ambitions, dealing with deadlines, moving to Wageningen”

WASS is responsible for the registration of the PhD candidate. Supervisors should send a complete digital dossier of the PhD candidate to WASS Office. The following items are required:

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- Registration form WASS
- CV of the candidate
- Photo copy of passport: in case visa application is needed, this should include copy of all written and stamped pages
- In case of Wageningen University master degree: name of programme and date of graduation
- In case of a Dutch master degree: a scan of diploma
- In other cases: A certified scan of Bachelor and Master diplomas and related grades, including the Transcript of Academic Records (courses followed and grades obtained). In case the diploma is not in English, Dutch, French, German, Spanish or Afrikaans, an official translation is required
- For candidates from non-Anglophone countries and candidates who have not completed their higher education with English language instruction: document showing proficiency in English (TOEFL, IELTS, Cambridge) or proof stating that the master degree was in English

On behalf of the Academic Board, PhD Services assesses compliance with the WU entrance criteria (diploma, proficiency in English, see text box) before the start date. The contract received by the PhD candidate has to contain information on the content of the qualifying exam and the required result for a language test, if applicable, and the deadline for completion of these requirements

If applicable, the Dean WGS and the supervisors discuss and agree upon the content of a required qualifying exam.

The Academic Board prescribes two basic conditions for entrance to the Wageningen University PhD programme:

1. The candidate must have earned the degree of Master at an institute of academic education which is recognised by the Academic Board; If a PhD candidate does not hold a Master's degree or if the Master's degree does not allow admission to a PhD programme, the candidate must present other relevant higher education diplomas and/or proof of expertise. When diplomas are not accepted, the supervisor defines a qualifying exam which must be approved by the Academic Board
 2. All PhD candidates must have passed one of the English language tests mentioned above within the past two years, except:
 - Dutch candidates
 - Dutch speaking candidates from Belgium or Surinam, or descendants from Dutch emigrants
 - Native English speaking candidates from the UK, Ireland, USA, Canada (except Quebec), Australia or New Zealand
 - Candidates who can prove that the language of instruction in their MSc was completely in English.
- Required levels for Non-Dutch PhD candidates from non-Anglophone countries:
- TOEFL internet-based 90, with minimum sub-score 23 for speaking,
 - IELTS 6.5, with minimum sub-score 6.0 for speaking,
 - Cambridge Certificate of Advanced English (CAE) minimum grade B,
 - Cambridge Certificate of Proficiency in English (CPE) any grade.

The Academic Board will grant official admittance to the PhD programme when the candidate has complied with the two conditions mentioned, and has an approved Training and Supervision Plan, an approved research proposal, and a 'go' decision by the supervisors.

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The central registration system for PhD candidates is called PROMIS. WASS registers PhD candidates in PROMIS before the start of the project. The promotor can inspect the data of his or her PhD candidates and is able to perform certain actions such as booking the date for PhD defence. The promotor can delegate these tasks to another person. For initial registration, adding or changing data of a PhD candidate, you may contact the WASS Office (wass@wur.nl).

2. PHD CANDIDATES AND WASS

At the start of the project, WASS Office will welcome the PhD candidate and invite him or her to the Introduction Course and to an individual conversation with the WASS Education Coordinator. The WASS Office will also provide information on the assessment

“Don't wait too long, be open to changes and deal with issues that are not pleasant for PhD candidate and supervisor immediately”

of the research proposal. The Introduction Course is the only mandatory element of the Training and Supervision Plan (TSP) at WASS. We strongly recommend PhD candidates to attend the course as soon as possible after starting the project. The Introduction

Course provides PhD candidates with useful information on procedures, pitfalls, tips and tricks. An advantage of taking the course as early as possible is that it will immediately extend the network of peer support for your PhD candidate.

2.1. Training and Supervision Plan (TSP)

”Good planning and a time schedule in the beginning gives less pressure in the end phases of the PhD. Plan learning activities, target journals for publications, conferences”

A TSP is a document in which supervisors and PhD candidate agree on the individual education programme and on supervision arrangements. The TSP expresses the PhD candidate's right to training and contains a list of planned learning activities. The training elements can be PhD courses, but also all kinds of

other activities that aim at fulfilling the PhD programme's degree requirements. These learning activities can consist of presenting at conferences or seminars, writing the research proposal, or specific types of involvement in the academic community. A list of possible activities can be found in the TSP form.

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The TSP has separate parts for the development of three domains of competences (project-related, general academic, and personal), reflecting the learning targets of the PhD programme. A PhD candidate may plan training elements in all three categories, but this is not mandatory. The TSP has to be approved by WASS and once approved, the PhD candidate is entitled to an earmarked budget for training (the “backpack”) of at least €2500, to be paid by the chair group. This budget may be used for any learning activity listed in the TSP. The chair group will be reimbursed after the graduation of the PhD candidate. The education budget is part of the compensation that is paid by the university (in Dutch “promotievergoeding”).

There are several, though not many, rules for the TSP:

- The TSP contains a minimum of 30 and a maximum of 45 credits (ECTS)
- The WASS Introduction Course is the only mandatory element of a TSP
- The TSP may contain a maximum of three MSc-level courses. In case of three, at least one needs to be a research master course
- Courses that are part of a qualifying exam cannot be part of the TSP
- If deemed appropriate by WASS, accreditation of prior learning may be an option for a maximum of 12 credits.
- A variety of learning activities can be included in the TSP, such as seminars, conference presentations, teaching, etc. A list with possible learning activities can be found in the TSP
- The candidate needs to hand in copies of course certificates, information and other proofs of attendance when requesting a WASS education certificate

When you and the PhD candidate discuss the training part, take the disciplinary background of the candidate, the requirements of the project, and the development of broader academic skills into account. Supervisors and candidate may use a 'strengths-weaknesses' analysis to assess what knowledge and skills the candidate should further develop and how this should be done.

“Every PhD candidate is different! Be aware of your own and your PhD candidate’s weaknesses and set up a TSP that supports both of you. Adjust your supervision when needed”

Supervisors may start discussing future career plans of a candidate in an early stage of the project. They may advise the candidate on courses for developing particular skills. In case a candidate wants to pursue a career in academics, he or she may want to become involved in teaching or in supervising Bachelor or Master students.

A TSP also contains an agreement on supervision. Discussing the TSP is thus an excellent moment to discuss supervision styles and expectations of all parties involved in the project. Every PhD candidate is expected to have a TSP approved within 3-6 months after the starting date. The WASS Office provides the candidate with the TSP form, but you can also download the most recent version from the WASS team site (enter via WASS website www.wageningenur.nl/wass) at all times. In case of questions, please contact the WASS Education Coordinator.

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2.2. Research Proposal

Every PhD candidate submits a research proposal for review and approval between 6-12 months after starting the PhD project. The candidate receives a proposal form and instructions from WASS Office. The form is also available at the WASS team site. The proposal assessment procedure entails a review by at least two reviewers. The reviewers are explicitly requested to focus on improving the proposal and providing constructive input. The review form indicates the criteria reviewers should take into account: quality, relevance, feasibility and ethical issues. The reviewers may be from WASS but from a different chair group than the PhD candidate. The reviewers can also be from other graduate schools, or other universities. The result of the assessment procedure can have three possible outcomes:

- a. the proposal is approved without need for revisions;
- b. the candidate is requested to react to the reviewers' comments with minor revisions;
- c. the proposal requires major revisions and needs to be rewritten.

The assessment is not only focused on the proposed research questions, theory and methodology, but also looks at planning and feasibility, the adequacy and quality of the supervision team, data management and ethical issues. It normally takes two to three months to finalize the procedure.

The WASS Assessment Committee regularly evaluates the procedure and the quality of the reviews. If you experience problems during the procedure, or have suggestions on how to improve the procedure, please contact WASS Office.

2.3. Tips for carefully dealing with the go/no-go decision

The go/no-go decision is a formal assessment of the candidate by the supervisors. With a go-decision, the supervisor expresses the expectation that the PhD candidate will successfully finish the project. The assessment is scheduled between 12 and 15 months after the start of the PhD trajectory. The WASS Office notifies the supervisors when it is time for the go/no-go decision and also sends the required form. The form leads you through the formal criteria for evaluating the performance of the candidate. Before being able to take the go-decision, the candidate has to fulfil all conditions with regard to qualifying exam, language proficiency, TSP and project proposal approval. The form allows the candidate to react on the assessment.

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Be aware that in case of an employed PhD candidate with an initial 18 months contract, the go decision has to be taken not later than 15 months after the starting date, otherwise the contract of the candidate will not be renewed and continued. Without a go-decision, the PhD candidate will not be admitted to the Wageningen PhD programme.

In order to take the go-decision in a transparent way, supervisors are advised to take the following tips into account:

- Inform the candidate about the purpose and the date for the go/no-go decision right at the start of the project. Give information on the criteria you will be using. The go/no-go form entails the formal criteria, but many supervisors additionally develop tailor-made requirements for the PhD candidate. It is crucial to be transparent about the requirements. Therefore, clearly communicate which results you expect
- When the date for taking the go/no-go decision has been set, you may want to plan one or several meetings to discuss progress and performance before the actual go/no-go date. In this way you give the candidate the opportunity to improve on aspects of performance, if necessary, before taking a go or no-go decision
- Keep a complete dossier on all PhD candidates you supervise. Make sure that agreements, assignments, and comments are written on paper or sent by e-mail
- In case of a candidate going abroad, plan the go-decision before the candidate

leaves. Avoid a situation in which you need to announce a no-go decision via e-mail

- Do not hesitate to contact the WASS Office for advice in case you intend to take a no-go decision. Make sure that you timely inform WASS Office about a no-go decision
- In case the PhD candidate disagrees with the outcome of the go/no-go evaluation, he or she can contact the WASS Office. The WASS Scientific Director can mediate between supervisors and PhD candidate, if desired. The Academic Board has a formal procedure for mediation or complaint handling in case of a dispute that concerns the behaviours or decisions of promotors, co-promotors, the Academic Board itself, or individuals who are acting on behalf of the Academic Board.

A PhD candidate who complies with the conditions, and who received a go-decision is ready to be officially admitted to the WU PhD programme. The Academic Board will send a formal letter of admission to the candidate. This letter is important for the final part of the PhD programme, when a candidate requests admittance to the PhD defence.

Confidential advice in WASS

PhD candidates, postdocs and fellows may seek confidential advice on queries and issues within the mandate of a graduate school: research, publications, PhD process and supervision.

Activities:

- Counselling PhD candidates on issues of research, their learning process and supervision. Leading for all counselling activities are the wishes and possibilities of the PhDs.
- WASS invites all PhDs for an exit discussion. Whenever necessary, and only with the consent of the PhD candidate, will WASS take serious issues to the WASS Director, and/or Director SSG or ESG.
- Counsel to fellows and supervisors on confidential matters concerning research, publications or supervision of PhD candidates.

If problems or issues are outside the mandate of the graduate school, for instance (sexual) harassment, undesired behaviour or scientific integrity, WASS refers the PhD candidate, postdoc or fellow to the management, the company doctors, the relevant general advisory and/or confidential persons within Wageningen University.

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2.4. Annual monitoring of progress

At least once a year PhD candidate and supervisors discuss the progress of the PhD trajectory. Every year WASS sends a tailor-made monitoring form to supervisors and candidate for evaluation of the quality of the work, supervision, planning and any emerging problems. The supervisors and the candidate jointly complete the form after a monitoring conversation. The monitoring form already contains personal information and the agreed TSP. Any changes in the TSP can also be included in the monitoring form. For employed PhD candidates, Human Resources requires an 'R&O' conversation. The advice is to use the WASS monitoring form for this conversation and upload this form to the R&O tool.

WASS will contact a PhD candidate in case of unexplained delays or emerging problems. Moreover, WASS appreciates receiving relevant information with regard to the PhD candidate on issues such as prolonged illness, pregnancy leave, switch to part-time work, and parental leave.

2.5. Graduation

A PhD thesis can have three formats: a design, a monograph or a number of publishable (or published) scientific articles. Currently, the most common thesis consists of a set of articles added by an introduction and conclusion chapter. There are no strict regulations on the number of articles that have to be published, nor on the number of articles. “Common” at Wageningen University is four articles, of which usually one or more have been accepted for publication. The PhD candidate needs to be first author on all but one of the included articles (this is also the standard if the thesis consists of more than four articles). The articles can be co-authored with no limitation on the number of co-authors; but the introduction and conclusion cannot be co-authored and should be written by the PhD candidate. The introduction and conclusion chapters embed the articles in the wider literature, show the common theme/subject and how the articles are linked together, define the research questions/objectives and formulate the conclusions from the total PhD research by integrating the outcomes of four scientific chapters and showing how they contribute to the wider literature and research field. It is not permitted to use texts of a previous degree by the candidate, such as a master or bachelor thesis, as part of the doctoral thesis.

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When the finish is near, the supervisors and the candidate have to go through a number of administrative steps (see also Doctoral Conferral Regulations). Some of the administrative steps can be performed by the promotor in the central registration system PROMIS.

- PhD candidate applies for public defence and requests official appointment of promotor(s) and co-promotor(s) (letter via PROMIS)
- Supervisors approve thesis and propositions
- Supervisor books tentative date and proposes four opponents to the Academic Board (PROMIS)
- PhD candidate submits reading version of the thesis together with propositions
- PhD candidate requests an education certificate from WASS
- PhD candidate submits the cover and the first four pages of the thesis to the Doctorate Secretariat for approval
- Final date for public defence is set, thesis is printed (including a summary of training activities approved by WASS)

- Thesis is sent to the WASS office, the Doctorate Secretariat and to WUR Library
 - 15 copies of the thesis to the Doctorate Secretariat of PhD Services
 - 10 copies and 1 PDF file of the thesis and an abstract in Word to the library
- Exit conversation with WASS, on the PhD process and the quality of supervision

A full timetable with details on when and how can be found at www.wageningenur.nl/en/Education-Programmes/PhD-Programme/timetable.htm. Wageningen Graduate Schools regularly organises a workshop 'The Last Stretch of the PhD' in which the procedures for the public defence are explained and the do's and don'ts with regard to the propositions are discussed. We highly recommend to stimulate your candidate to attend this workshop when entering the final year of the project.

The Dean of Science has to approve the propositions of all PhD candidates. The supervisors should take care that the propositions meet the requirements of the Doctorate Conferral Regulations:

- The evaluation of the propositions takes place by reviewing them according to the requirements in Articles 12.3, 14.1 and 14.3, and according to general principles of morality and decency. (Article 9.4)
- At least six, and no more than eight, propositions are added to the thesis. Two of the propositions concern the topic of the thesis or the technological design, two to four propositions concern a different scientific field and two propositions concern a socially relevant topic. Propositions are concisely worded positions taken by the doctoral student that are formulated in such a way that they can be debated at a scientific level and consist of one sentence. (Article 12.3)
- The thesis is written in either Dutch or English. (Article 14.1) The propositions are formulated in the same language as that in which the thesis is written. (Article 14.3)

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Formulating a proposition well is not easy. Feedback from PhD candidates has shown that it is wise to start collecting ideas for potential propositions as early as possible. Experiences in the WGS workshop show that many PhD candidates particularly consider the required two propositions on a different scientific field very challenging. Be aware that in almost every public defence the thesis committee will request the candidate to defend one or more propositions.

The supervisors submit a request for appointment of a thesis committee and propose four opponents who will judge the PhD thesis (other than the promotor(s) and copromotor(s)). Members of the thesis committee should be scientists with a PhD degree working at a university or research institute. At least one of the four opponents in the thesis committee is a Wageningen University professor. None of the four opponents of

the thesis committee members can be a co-author of any of the chapters of the thesis. The opponents cannot have a relationship with the PhD candidate (work relations, family, etc.). The thesis committee is chaired by the Rector or his representative. PhD candidates are 'graded' for their thesis as well as for the defence of their thesis. The thesis committee grades the quality of the thesis and the public defence, using a scale running from unacceptable, via acceptable, satisfactory, good, very good, to excellent (or *cum laude*). For the grade *cum laude*, a special procedure has to be followed.

2.6. PhD Council

WASS is fortunate because it hosts a very active PhD Council. The PhD Council represents and monitors the interests of the WASS PhD candidates at various levels:

- Graduate school level: the WASS Board and the Education Committee of WASS
- University level: the plenary PhD-Council meetings of all Wageningen graduate schools
- Furthermore, members of the PhD Council advise, update and inform the WASS PhDs and the WASS committees on urgent and relevant matters. They also organise meetings and informal drinks such as the annual PhD Day and a career event.

Supervisors may want to stimulate active involvement of their PhD candidate in the WASS community. The PhD Council can be an excellent platform for networking and developing broader skills necessary for functioning in the academic world.

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3. EFFECTIVE INTERACTION: PRINCIPLES AND GOOD PRACTICES

The Netherlands Code of Conduct for Scientific Practice guides choices and practices of all individuals involved in scientific research and teaching at Wageningen University. It describes ethical guidelines and the societal role of the university to a proper execution of duties. Integrity is the corner stone of good scientific practice. An overarching principle is transparency: every scientific practitioner must be able to demonstrate how he or she puts these principles into practice. An important element in maintaining integrity standards is, for example, that WASS researchers work with a protocol for data management. Every chair group is required to have a data management plan with clear instructions on transparent storage of data that are analysed or used in publications.

The Code of Conduct outlines principles and best practices. The Code is divided into five parts: 1. Scrupulousness, 2. Reliability, 3. Verifiability, 4. Impartiality, 5. Independence.

Supervisors and PhD candidates are strongly recommended to download a copy and familiarise themselves with the content of this Code. The Code can be found at www.wageningenur.nl/en/Education-Programmes/PhD-Programme/Regulations.htm

3.1. Principles for effective interaction

In WASS, supervisors base their supervisory activities on a common framework for effective interaction between them and their PhD candidates.

8 Principles for effective interaction between supervisors and PhD candidates

1. Careful selection of a PhD candidate and composition of a supervision team

A supervision team includes at least two [and not more than three] supervisors. One of them is a WU professor; both are (senior) fellows of a Wageningen graduate school, and at least one of them in WASS. Other involved WU supervisors can be postdoc researchers; supervisors from outside WU should be esteemed researchers with a doctoral degree holding a research position at a university or research institute.

Supervisors selecting a PhD candidate pay attention to:

- Compliance with WU entry requirements for the PhD
- Motivation
- Suitable scientific background and good scholarly skills

A PhD candidate selecting supervisors pays attention to:

- Scientific field and reputation of the involved Chair Group(s)
- Expertise and experience of promotor(s) and co-promotor(s). A supervisor is required to be explicit about the limitations of his or her own expertise.

2. Appropriate time investment in supervision

Supervisors and PhD candidates agree on the time investment of each of the involved supervisors. They regularly evaluate the agreement and adapt it if necessary. A guideline is 8 hours of pure supervision time per month overall for the supervision team (excluding the time spent on co-authorship). Chair groups closely monitor that the number of PhD candidates per supervisor is limited so that the appropriate supervision time is guaranteed for all candidates.

3. Academic freedom

The Wageningen University Doctoral Degree Regulations assign overall responsibility for the supervision and the quality of the thesis to the promotor(s) and co-promotor(s). Supervisors safeguard that adaptation of the project to the interests of the PhD candidate is possible. PhD candidates may develop their research project in the desired direction, in co-operation with their supervisors, and within the given programmatic and financial constraints. PhD projects can thus be more or less flexible with regard to choice of theme, theory, and method.

4. Good mentorship	<ul style="list-style-type: none"> Supervisors and PhD candidates work within the framework of the 'Netherlands Code of Conduct for Scientific Practice' Supervision is focused on achieving the requirements of the Wageningen University PhD degree (see text box) WASS monitors the quality of supervision provided by supervisors. If necessary, supervisors improve their skills with regard to supervision, intercultural communication or English proficiency Supervisors act professionally by taking the unequal power balance into account in their interaction with the PhD candidate Supervisors are explicit in how and when they will assess the quality of the work of the PhD candidate Supervisors use a tailor-made supervision style. Supervisors and PhD candidate regularly evaluate the effectiveness of the supervision style Supervision is both substantial and focused on skills (e.g. presentation, writing) and process (e.g. planning, deliverables) Feedback on the work of the PhD candidate is constructive and concrete. Supervisors may expect that PhD candidates actively engage in requesting from the supervisors what they need and want. PhD candidates follow-up on the received feedback
5. Facilitation of education and training	Chair groups provide an education budget of at least €2500 to PhD candidates with an approved Training and Supervision Plan in WASS (not for external PhD candidates). The PhD candidate is responsible for completing the training programme.
6. Integrity of co-authorship	Supervisors and PhD candidates discuss co-authorships, if applicable, in the framework of the 'Wageningen University Recommendations for Co-authorships Scientific Publications'. Supervisors do not claim entitlement to co-authorship only on the basis of being supervisor, programme co-ordinator or fundraiser.
7. Career support and coaching	Supervisors coach a PhD candidate in career planning and support the candidate in building international networks.
8. Sensible resolution of tensions and conflicts	<ul style="list-style-type: none"> Supervisors and PhD candidate discuss tensions with the aim to resolve them Supervisors and PhD candidates timely seek advice from the graduate school, the management, or the relevant general or confidential advisory persons of WU

“Starting supervisors should not co-supervise more than one or two PhDs and only in combination with an experienced supervisor”

The eight principles make clear that supervisors bear overall responsibility for the project, but that this does not mean that they determine the content while the PhD candidate executes the research. A supervisor mentors a young researcher in becoming a

knowledgeable, competent and independent academic, who in the end may become an equally competent, or better, academic than the supervisor him- or herself.

Good supervisors give constructive feedback, share their experiences, and may be co-author of papers. They assist in planning, demarcation of the research, data management, and in developing a publication plan. They keep an eye on the background, personal development, and well-being of the PhD candidate. Though supervisors have a significant contribution to the content of the project, PhD candidates need space to take charge of their own research and academic development in order to comply with the learning targets. Good supervisors trust the PhD candidate and acknowledge that a certain degree of academic freedom is indispensable.

A PhD candidate/supervisor relation will necessarily change over time. It can be intense and time-consuming at the start, while the PhD candidate will gain more and more independence in the course of the project. Some phases in the trajectory may require intensive steering from the supervisor while at other moments the supervisor retreats and allows the candidate to do the work.

“Supervisors should not only raise questions, but also help to find answers”

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Wageningen Graduate Schools (WGS) offer courses for supervisors on styles of PhD supervision. Furthermore, peer support is a very important mechanism to exchange experience and best practices amongst supervisors. In case you are interested in participating in a peer support group (in Dutch: intervisie), please contact the WASS Office.

3.2. A note on co-authorship

Currently, most PhD theses in WASS are article-based. PhD candidates write a certain number of articles, often four, on their research. Such a format has advantages. The PhD candidate can conveniently split up the whole PhD project, with the respective arti-

“Supervision means balancing between facilitating and teaching, between being co-author and writing too much”

cles as separate sub-goals to achieve. Often the PhD candidate does not develop and write the articles on his or her own, but with one or more co-authors. The co-authors, who can be known experts in their domain, can make the work of a PhD candidate more visible and their contribution will most likely add to the quality of the work. Supervisors are often co-author of articles of PhD candidates.

- The supervisor is involved in training a young researcher towards becoming an independent scientist. A good supervisor avoids blending the roles of “supervisor” and “co-author”. He or she should first and foremost be supervisor.
- The supervisor has a direct interest in becoming co-author of the PhD candidate’s papers, because the publications add up to his or her own record. The PhD candidate is, however, first author and in charge of determining the content. Given the hierarchy between supervisor and PhD candidate, the supervisor must act responsibly with regard to his or her co-authorship.
- Supervisors are not automatically co-author of the papers of their PhD candidates. Co-authorship depends on the content of the paper and the actual contribution from the supervisor to the paper. A supervisor may very well be co-author of some of the papers, while not being involved as co-author in other papers. It is also well possible that experts are involved as co-authors, who are not part of the supervisory team.
- A researcher can only be co-author if he or she complies with the Recommendations for Co-authorship (see box)
- On behalf of the PhD candidate, supervisors must clearly condemn any attempt of other involved researchers to demand co-authorship on incorrect grounds
- Supervisors must be aware that for a thesis committee, it will become difficult to assess whether the work of the PhD candidate proves that he or she has qualified as an independent scientist, if the number of co-authors per paper is high.

“A single authored paper of a PhD candidate might help in her or his career pathway”

“Jointly develop a publication plan at the beginning and never avoid discussing the gloomy topic of co-authorship”

“The tenure track criteria should not be converted into a hidden agenda for dealing with PhD candidates and their publications”

Wageningen University Recommendations for Co-Authorship Scientific Publications (Wageningen Graduate Schools, based on a note written by Bart Koelmans)

All persons designated as authors must meet the criteria for authorship detailed in the following statement: We [or substitute "I"] certify that we have participated substantially in the conception and design of this work and the analysis of the data [when applicable] as well as the writing of the manuscript. We have reviewed the final version of the manuscript, approve it for publication, and take public responsibility for its content. Neither this manuscript nor one with substantially similar content under our authorship has been published or is being considered for publication elsewhere, except as described in an attachment.

The co-authors of a paper should be all those persons who have made significant scientific contributions to the work reported and who share responsibility and accountability for the results. Other contributions should be indicated in a footnote or an "acknowledgments" section. An administrative relationship to the investigation does not of itself qualify a person for co-authorship (but occasionally it may be appropriate to acknowledge major administrative assistance). The author who submits a manuscript for publication accepts the responsibility of having included as co-authors all persons appropriate and none inappropriate. The submitting author should have sent each living co-author a draft copy of the manuscript and have obtained the co-author's assent to co-authorship of it.

Author ranking

- A researcher could claim a legitimate co-authorship if he/she has made an integrating, overarching and substantial contribution to at least two of the following three scientific research activities: (i) design of the research; (ii) data collection / data analysis and (iii) writing of the manuscript.
- The 'first author' is always the person who has made the most important integrating contribution
- All other authors are ranked in accordance with the general rules or customs of the specific discipline. Authors may be ranked in order of decreasing importance of their integrating contribution, or a special position may be assigned to the 2nd author (direct supervisor) and last author (research leader), unless the editorial board of a scientific journal has determined other rules for author ranking explicitly. Please note, that all supervisors and research leaders mentioned as co-author should have made a substantial contribution to at least two of the research activities mentioned above too.
- Keep in mind the tasks and competences of the author in order to balance the importance of their "substantial individual contributions".

The publication process

- Make a specific agreement about the criteria for first authorship and the ranking of co-authors very early in the research process and also about the required tasks and activities to meet the criteria for author- and co-authorship.
- Decide on authorship and the ranking of the co-authors collectively.
- Your employer has the ownership of the author rights.
- In case of disagreement or unclarity about authorships or ranking of authorships, consult the director or the PhD confidant of your Research or Graduate School.

3.3. Effective interaction: Tips and good practices

People differ and so do relations between PhD candidates and their supervisors. This makes it impossible to present a fixed blueprint of how to act as supervisor. The tips and good practices below are based on experiences of supervisors and PhD candidates in WASS chair groups and of the WASS Office.

On training for supervisors

- Attend one of the available courses on supervision of PhD candidates offered by Wageningen Graduate Schools (WGS)
- Exchange experiences with your colleagues in the chair group or section, or participate in peer exchange groups for supervisors
- Having a good relation is an important basis of good supervision. E.g., develop the skills to adequately deal with cultural differences

On starting the project

- Assist the PhD candidate in composing the supervision team; know the limits of your expertise, give the PhD candidate ample opportunity to meet other experts in the field in and outside of your chair group
- Make sure that all supervisors get along well and that supervisors are open to new approaches and theories in interdisciplinary projects
- The candidate owns the project. It is detrimental to the motivation of the PhD candidate if supervisors take up the role of project owner
- The PhD candidate is also the project manager. The PhD candidate is responsible for the available research and education budget. The supervisor takes the role of overseer
- Discuss mutual expectations on e.g. responsibilities and communication. Both PhD candidates and supervisors should be clear about expectations towards each other both in the long and the short term. Supervisors can have expectations on results and work that has to be done, whereas PhD candidates can have expectations about help and feedback. Express these expectations and be transparent
- Discuss the roles of different supervisors. The promotor may be the person to watch the helicopter view, while daily supervisors dive into the details
- Showing enthusiasm about the research project is very important. Thereby you bring in a human component and show your commitment to the project
- Adhere to the principle that a candidate should have academic freedom, even if this leads the candidate beyond the specific expertise of the supervisor
- Every candidate is different, so adjust your supervision style to his or her specific needs
- Discuss co-authorship of involved researchers including yourself. Make sure that your co-authorship of the PhD candidate's papers is in line with the WU 'Recommendations for Co-Authorship Scientific Publications'

- Every chair group or section has a data management protocol, according to which data should be stored. Inform your candidate about the protocol and make sure that data are managed and stored according to the rules
- Discuss ethical and safety issues, and if appropriate, solve them. In case of doubts or of required ethical clearance, contact the Social Sciences Ethics Committee (SEC). In case of research in a country or region for which the Dutch Ministry of Foreign Affairs has issued a negative travel advice, contact HR or WASS. A safety protocol may be applicable.

On working together

- Be clear about what you expect, how you assess the work, and the type of comments and feedback to be expected
- Agree from the beginning on frequency, time and length of meetings
- Agree on the organisation and nature of meetings: schedule dates in advance, discuss practical arrangements for cancelling meetings, require that the PhD candidate composes an agenda and sends written minutes/ agreements after the meeting
- Make clear how much preparation time you require before the meeting. Handing in drafts early gives more room to the supervisors for reading and formulating comments on the piece and less possibility for saying that there was not enough time to read it
- Inform the PhD candidate when you will not be available during the year
- Demand regular updates on progress and if the candidate is abroad, call him or her for a conversation even if it is only for five minutes.
- Some PhD candidates benefit from tape-recording the discussions with the supervisors about the research
- Keep an eye on the original train of thought of the thesis in every discussion on a new part of the research or a new version of a paper
- Assist the candidate in making the best of reviewers' comments
- Don't go for 100%! The paper or chapter can always be improved, but supervisors should also keep a pragmatic eye on the time schedule
- There are different kinds of feedback: Give the right sort of feedback at the right moment
- As supervisor, develop a plan B in case the results of a study are not what you expected
- Celebrate achievements, such as the acceptance of a paper for publication
- Start thinking about the propositions one year before the defence.

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On broadening networks

- Chair groups or sections should create a platform for daily discussions and peer support for their PhDs
- Chair groups or sections could appoint a staff member as contact person for the PhD candidates of the group in case of problems.

- Organise reading or discussion sessions for groups of PhD candidates with similar interests
- Candidates should be sent to the world outside. Encourage your PhD candidate to discuss their research with peers, visit conferences, enlarge his or her networks and seek advice of other experts: a large support network eases your responsibility as supervisor and probably enhances the quality of the PhD
- Open your own international network for your PhD candidate
- Paper submissions at international conferences are an excellent way to provide the candidate with deadlines

On the role of the graduate school

- Encourage your PhD candidates to take the WASS Introduction Course. It helps you since you don't have to explain all the procedures yourself.
- PhD candidates have the right to autonomously and confidentially contact the graduate schools to discuss problems in the PhD process. The same holds for supervisors who would like to receive advice with regard to a PhD candidate or on supervision issues. WASS can advise and support PhD candidates and supervisors with regard to the PhD process, doing research and publishing. WASS refers candidates and supervisors to the management or to other experts for issues that are not specifically graduate school related.
- The Doctorate Conferral Regulations include the right of a PhD candidate to choose his or her supervisors. It is a key principle of the WU PhD programme, which makes it possible for a PhD candidate to add or remove supervisors from the team. In practice, switching supervisors is not easy for most candidates. Financial constructions of PhD projects differ and changes can have considerable financial implications. WASS can mediate between candidates and supervisors and advise on solutions for problems between candidates and supervisors.
- Stimulate the PhD candidate to take part in activities organised in WASS such as the PhD Day. Practice what you preach and demonstrate how *you* contribute to the academic atmosphere in the broader WASS community

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On issues beyond the PhD trajectory

- Encourage the PhD candidate to take part in social activities, and to enjoy proper breaks and holidays. Do not allow a PhD candidate to retreat and skip lunches and meetings to avoid contact
- PhD candidates should also be given the opportunity to get some rest and do other things besides their PhD
- Be a good example yourself as a supervisor and tell PhDs about your career, problems, challenges, etc.

- Support the candidate not only in terms of the research project but also in broader aspects such as future career perspectives

4. CONTACT

- WASS Office [general questions, registration, data management, schedule appointments, forms and procedures]
- WASS Education Co-ordinator [contact person PhD candidates, TSP, course co-ordination, confidential advice]
- WASS Secretary/Executive manager [general contact person WASS, research, publications, policy, grants, supervision, confidential advice]

Leeuwenborch, Hollandseweg 1, 6706 KN Wageningen, room 1052,
tel. 0317-484126/482923; email wass@wur.nl, internet: www.wageningenur.nl/wass

5. FURTHER READING

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NOTES

