

WELCOME TO SENSE



Research School for
Socio-Economic and
Natural Sciences of
the Environment

INFORMATION
FOR SENSE PHD
CANDIDATES

May 2016

Aim of this guide

Welcome!

If your PhD supervisor is a professor at one of the SENSE partner institutes, then you are also (linked as) part of the Netherlands Research School for the *Socio-Economic and Natural Sciences of the Environment* (SENSE) as a SENSE PhD candidate.

This guide provides information about the SENSE Research School and gives you an introduction to the SENSE PhD Programme. Specifically, it provides guidance for your PhD education, supervision, networking and finances.

The content of this information guide has to be adapted to your personal situation. All research projects and all PhD candidates are different, so you can take this opportunity to find your own preferred mix of relevant courses and activities. This way you can maximise the usefulness of the SENSE programme for your own research and personal development purposes. Of course, your supervisor(s) are always prepared to discuss any possible alternatives and help you make good choices.

We hope this guide will be useful to you in making your time as a PhD candidate a pleasant and a rewarding experience.

On behalf of the SENSE Board of Directors,

Ad van Dommelen, *SENSE Director of Education*

Johan Feenstra, *SENSE Research Coordinator*

Monique Gulickx, *SENSE PhD Education Coordinator*

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Table of Contents

1. INTRODUCTION TO SENSE	6
1.1 BACKGROUND	6
1.2 THE SCIENTIFIC MISSION OF SENSE	7
1.3 SENSE CORE THEMES AND RESEARCH CLUSTERS	8
1.4 THE SENSE WEBSITE AND YOUR OWN LOGIN	10
2. THE SENSE PHD PROGRAMME IN BRIEF	11
2.1 FROM RESEARCH PROPOSAL TO PUBLISHING YOUR THESIS	11
2.2 YOUR PHD THESIS OR DISSERTATION	12
2.3 PHD ROADMAP: FROM START TO GRADUATION	13
3. YOUR TRAINING AND SUPERVISION PLAN (TSP)	15
3.1 THE SENSE TRAINING PROGRAMME	15
3.2 GENERAL REQUIREMENTS FOR YOUR SENSE TSP	17
3.3 OVERVIEW OF PHD COURSES	19
3.4 OTHER PHD EDUCATION AND TRAINING COMPONENTS	21
3.5 SANDWICH AND OTHER INTERNATIONAL PHD CANDIDATES	24
3.6 APPLYING FOR THE SENSE DIPLOMA	26
4. PHD SUPERVISION	27
5. SOLVING PROBLEMS	29
6. FINANCIAL ARRANGEMENTS	32
7. INVOLVEMENT OF PHD CANDIDATES IN SENSE DEVELOPMENT	33
7.1 SENSE PHD COUNCIL	33
7.2 SENSE EDUCATION COMMITTEE	33
8. USEFUL NAMES AND ADDRESSES	34

1. Introduction to SENSE

1.1 Background

The Research School for Socio-Economic and Natural Sciences of the Environment (SENSE) provides a disciplinary and multidisciplinary research programme aimed at advanced understanding of environmental and sustainability problems and advanced training of PhD candidates in this field.

Established in 1994, SENSE has now been developed into a consortium of outstanding environmental research groups from eleven Dutch universities and institutes (Table 1).

Table 1. Overview of universities and institutes participating in SENSE

	University	Institute
	Wageningen University and Research Centre (WUR)	Wageningen Institute for Environment and Climate Research (WIMEK)
	VU University Amsterdam (VU)	Institute for Environmental Studies (IVM) Institute of Ecological Sciences (IES)
	Groningen University (RUG)	Center for Energy and Environmental Studies (IVEM)
	Leiden University (UL)	Institute of Environmental Sciences (CML)
	Radboud University Nijmegen (RU)	Department of Environmental Science
	University of Amsterdam (UvA)	Institute for Biodiversity and Ecosystem Dynamics (IBED)
	Utrecht University (UU)	Copernicus Institute for Sustainable Development and Innovation
	University of Twente (UT)	Faculty of Geo-information science and earth observation (ITC) Water Management Group
	Open University (OU)	School of Science
	UNESCO-IHE (Delft)	Institute for Water Education
		Netherlands Environmental Assessment Agency (PBL)

SENSE was formally accredited by the Royal Netherlands Academy of Arts and Sciences (KNAW) for the period 1997-2001 and was subsequently re-assessed and re-accredited in 2002 and 2008.

An External Review Committee confirmed in 2007 the importance and quality of the SENSE PhD education and training programme: *'The Review Committee considers the PhD Programme one of the great successes of SENSE. Through this programme SENSE makes a major contribution to the training of the next generation of environmental researchers and professionals in the Netherlands and internationally'*¹.

1.2 The Scientific Mission of SENSE

The SENSE Research School is dedicated to supporting the development and dissemination of cutting-edge disciplinary, interdisciplinary and transdisciplinary knowledge in the field of environmental and sustainability sciences, and to providing a stimulating and supportive context for PhD students and early-career researchers to develop their competencies towards professional leadership in science and society. We define our field as environmental and sustainability sciences, that is, research that advances knowledge for responding effectively to the risks and opportunities of local and global environmental change and for supporting a transformation towards global sustainability.

To fulfil this mission, the combined programmes of research and education within SENSE aim at the development and further improvement of scientific concepts and methods which are required for an effective disciplinary and multidisciplinary understanding of environmental change. Research and education in SENSE are dedicated to developing high quality scientific results which may be applied in practice, and critically inform sustainable environmental governance and decision-making.

Both the ecological and societal causes and effects of environmental change are relevant for the development of sustainable environmental management, nature conservation, and an ecological transformation of production and consumption. SENSE strives to be a high quality school for researchers, where disciplinary and multidisciplinary approaches are being developed and taught for the support of scientifically based and effective environmental policies.

¹ External Review Report "Assessment of Research Quality – Environmental Sciences", QANU December 2007, page 14.

SENSE has three fundamental goals in which it wishes to excel:

- **EDUCATION** for environmental researchers and professionals: Education and training of young researchers in disciplinary and multidisciplinary environmental and sustainability issues.
- **NETWORK** for disciplinary and multidisciplinary environmental and sustainability sciences: Scientific research of environmental and sustainability changes, with regard to both disciplinary understanding of the relevant issues and multidisciplinary understanding in the context of society.
- **BRIDGE** to society and sustainable governance: Reaching out to society, sustainability stakeholders, and policy makers in order to improve scientific understanding of sustainable and environmental development and to provide independent and scientifically based expert advice.

1.3 SENSE Core Themes and Research Clusters

The basis for excellence within SENSE lies in its extensive network of junior and senior researchers across the full scope of relevant environmental and sustainability sciences (structured in five Core Themes, see below). SENSE aims at performing scientifically innovative and societally effective environmental research, leading to the sustainable management of the environment. Each of the five SENSE Core Themes encompasses specifically focused Research Clusters, which reflect the main research efforts of SENSE in the field of environment and sustainability:

Core Theme 1: *Environmental contaminants and nutrients* with special Research Clusters on:

- Behaviour, exposure and effects of environmental contaminants and nutrients;
- Ecological genomics;
- Biotechnological and physico-chemical processes for sustainable use and reuse of water, energy, materials and minerals;
- NanoSENSE (research on nano particles).

Core Theme 2: *Environmental processes and ecosystem dynamics* with Research Clusters on:

- Ecosystem dynamics and adaptive capacity;
- Landscape ecology, restoration ecology and nature conservation;
- Processes in soil, water and atmosphere;
- Remote Sensing of land processes and water resources

Core Theme 3: *Global and regional environmental change* with Research Clusters on:

- Global environmental change: complex dynamics in human-environment systems;
- Managing global and climate change;
- Integrated assessment of global environmental change.

Core Theme 4: *Sustainable development and social change: actors, institutions and governance* with Research Clusters on:

- Governance for sustainable development;
- Industrial transformation / sustainable production and consumption / transitions to sustainability;
- Sustainable use and reuse of energy, material and resources
- Sustainable innovation and the transition to a green economy
- Water & Governance

Core Theme 5: *Spatial analysis* with Research Clusters on:

- Land use, spatial analysis and modelling / ecosystem and landscape services.
- Land and Water Resources Management
- Marine Research
- Spatial-temporal Geo-information Science for analysing environmental sustainability

Please note that our dynamic structure of research clusters reflects the current research themes and topics, which will naturally further develop over time.

When you have decided which specific research cluster(s) is/are of most interest to you, then please go to our online SENSE Portal to enroll yourself for the SENSE Research Cluster(s) of your choice (see also Section 1.4).

For this purpose, you can go directly to myportal.sense.nl and follow the instructions given there to create your own account as a SENSE PhD candidate. Please fill in your profile as complete as possible (include your full information, such as title of research, starting date - and add a nice photo of yourself). You can also use this account for the PhD Roadmap tool (see section 1.4), participating in SENSE courses and more. Have a look around!

1.4 The SENSE website and your own login

The SENSE website has two separate main parts:

1. Accessible to all without login: www.sense.nl
2. Accessible for SENSE members after login: myportal.sense.nl



www.sense.nl

1. **The 'accessible to all' part** provides information about SENSE in general, the partners institutes, upcoming events, scientific meetings, PhD courses and workshops, PhD graduations, grants, prizes, other news items, as well as network opportunities with researchers, policy makers and other stakeholders.
2. **The 'accessible after login' part** provides an interactive platform for your participation in courses and the Research Clusters (see pages 8-9) and also an online PhD Roadmap for SENSE PhD candidates. The PhD Roadmap guides you through your SENSE PhD programme. It provides tools: to assess your own current PhD competencies, to establish your Training and Supervision Plan (see also Chapter 3, page 16), to keep track of your progress, it gives guidance in writing your PhD proposal (if applicable to you), to get involved in one or more Research Clusters, to contact your colleague PhD candidates in the SENSE network, and many more facilities. The SENSE PhD Roadmap will be fully operational in Summer 2014.

The SENSE Research School functions as the Dutch network of environmental and sustainability sciences. To fully benefit from this network and to formally register to SENSE, all new SENSE PhD candidates are encouraged to create their own account at: <http://myportal.sense.nl/login>

A monthly electronic newsletter **SENSE e-News** is distributed to all SENSE members. The newsletter provides information on events, upcoming courses, upcoming PhD graduations, Post-doc events, calls for funding, and job vacancies. All PhD candidates are more than welcome to provide news items, research achievements, or other news for the **SENSE e-News**. It is a useful communication tool to keep updated and to promote your work!

We are continuously working to improve our website. Your opinion and suggestions are vital for making the website as useful and valuable as possible. If you have ideas for improvement, please let us know by sending an email to Monique Gulickx (monique.gulickx@wur.nl). **Our thanks in advance!**

2. The SENSE PhD Programme in Brief

2.1 From research proposal to publishing your thesis

Research proposal

SENSE PhD candidates begin their research on the basis of a well-defined research proposal. Following SENSE procedures, the scientific quality and feasibility of the PhD research proposals are reviewed by two external experts. In some cases this has already been done before you started your research, you may consult your supervisor(s) about this.

Supervising team

SENSE PhD candidates are generally supervised by one or more promotor(s) and one or more daily supervisors. The supervising team can be extended with other persons who have specific expertise relevant for the PhD research. It can also be valuable to have co-authors outside of your supervising team. You are encouraged to initiate new collaborations, on the condition that you involve your supervising team in the process.

Training and Supervision

The PhD candidate and the promotor discuss and define together a preliminary Training and Supervision Plan, the TSP (see Chapter 3, page 19). This is preferably done within six months after the appointment of the PhD candidate. The TSP can be adapted throughout the entire PhD programme, and is designed to ensure agreement regarding:

- the training the PhD candidate is planning to follow
- the teaching to be carried out by the PhD candidate
- the arrangements for the supervision by the promotor(s) and daily supervisor(s)

Each PhD candidate who has fulfilled the SENSE Diploma requirements (see page 16) and has an approved PhD thesis, will be granted a SENSE Diploma for specialised PhD training issued by the General Board of the SENSE Research School.

Keeping track of your progress

The PhD programme consists of two main components: research and education. It is crucial to keep track of both your research and education progress. The PhD candidate is responsible for his or her PhD progress. Good time management is therefore essential, for which courses exist to support you. Also your supervisor(s) are there to help manage your progress.

The SENSE Research School will further facilitate you in monitoring the progress by developing a “PhD progress monitoring form” as part of the online SENSE PhD Roadmap (see p. 11). This progress monitoring form will enable you to prepare the yearly “result and developing meetings” or “evaluating meetings” with your supervisors.

2.2 Your PhD Thesis or Dissertation

The primary aim of a PhD is to be trained to become an independent researcher. By writing and defending a thesis you demonstrate that you are capable of conducting innovative research, and of communicating the results of this research in an oral as well as written form.

The research chapters may consist of separately published journal papers, but this is not mandatory: you and your supervisor(s) may decide to publish your thesis as a monograph and may consider publication as journal papers after you defend your thesis. How to approach this choice is also a matter of custom at the research group or for the discipline of your study. The size of a thesis may vary. It appears to be reasonable to have three to five papers, but this depends on the discipline of research and has to be agreed upon with your supervisor. It is recommended to make a clear agreement on the expected number of papers with your supervisor at an early stage of your PhD programme, so you do not have to face unpleasant surprises at the end.

Writing a PhD thesis can be an exciting and rewarding experience. The aim of the SENSE Research School is to help you wherever possible in performing high quality research and in finalising your thesis timely. We do this in particular by offering an educational programme and by creating a platform for your networking.

We know from experience that it is important and challenging to finish your PhD thesis in time. Many PhD candidates manage to finalise a high quality thesis before their contracts end. However, still too many have to face some delays during their projects. Typical reasons for this are associated with time management, communication with supervisors, and the isolation in which many PhD projects are performed. SENSE offers the possibility to follow courses dedicated to general skills, including time management, communication and networking. Clearly, the time management of your PhD period needs to be directed to finish the writing of the final draft of your thesis (reading version for the PhD Graduation Committee) within your contract period.

Both writing scientific peer reviewed papers and writing a thesis are challenging tasks that need to be learned. And presenting your results clearly for an audience full of experts is also a skill which needs to be developed. SENSE also offers courses to learn how to write and submit a paper, and how to present your work.

2.3 PhD Roadmap: from Start to Graduation

The checklist and timeline below is operationalised for you in the online SENSE PhD Roadmap (see p. 10-11), where you can take and administer the separate steps of this checklist.

First year

- Go to <http://welcome.sense.nl> for an overview of first steps
- Register as a new SENSE PhD candidate at: <http://registration.sense.nl>
- Once you have registered, you will receive the **SENSE e-News** with announcements of PhD courses, congresses, symposia, etc.
- Present the outlines of your PhD research project in your login profile
- Prepare your tailor-made Training and Supervision Plan (TSP), using the online TSP form at the PhD Roadmap, and submit online within six months after the start of your PhD programme
- Complete a detailed elaboration of your research set-up, work plan and realistic time schedule to be approved by your supervisor
- Register for and participate in the introductory SENSE course A1 'Environmental Research in Context'
- Write your PhD research proposal in the first six months of your PhD programme

- At most universities, the progress of your PhD research and the expectations for a fruitful continuation will be assessed at the end of the first year, resulting in a formal go / no go decision.

Second year

- Discuss the progress of your PhD research with your supervisor and fill out the 'PhD progress monitoring form' at the SENSE website
- Update your TSP

Third year

- Discuss the progress of your PhD research with your supervisor and fill out the 'PhD progress monitoring form' at the SENSE website
- Make a realistic time schedule for the remaining PhD period and discuss it with your supervisors to make sure that you will finish your PhD in time
- Update your TSP

Fourth year

- Finish the draft of your dissertation
- Set a date for your defence and inform us by email: monique.gulickx@wur.nl
- Apply for the SENSE Diploma at least 15 weeks before the date of your defence
- Send a request to obtain the SENSE Diploma to the SENSE Education Desk at least three months before the date of your defence (please check the requirements of your institute, this can be even six months before the date of your defence!)

3. Your Training and Supervision Plan (TSP)

3.1 The SENSE Training Programme

The objective of the SENSE PhD training programme is to provide training for PhD candidates to become qualified scientific researchers with a developed capacity to:

- ★ carry out scientific research independently and in a systematic and productive way;
- ★ present the results of research to an international audience;
- ★ contribute to an improved understanding of the causes, consequences and solutions of environmental issues;
- ★ position scientific research in a multidisciplinary context.

Essentially, we aim to help PhD candidates in performing their research, in understanding the wider environmental context of their research, and in preparing them for future careers.

Competencies expected from a PhD graduate

Within SENSE the so-called Dublin descriptors are used to describe the competencies that are expected to be acquired by a successful PhD candidate. The SENSE PhD Roadmap (accessible after login) offers a tool for the 'self-assessment' of the current status of your own PhD competencies: how far are you already in your development and where would you like to make (even) more progress? The PhD competencies are described in five different categories, of which a detailed description and examples of activities to obtain the competences are given in the online SENSE PhD Roadmap (see p. 10):

<u>Competencies category A:</u>	<i>Research Skills and Techniques</i>
<u>Competencies category B:</u>	<i>Position in the Research Environment and Research Context</i>
<u>Competencies category C:</u>	<i>Research Management Skills, including Time Planning and Project Management</i>
<u>Competencies category D:</u>	<i>Didactic, Communication and Presentation Skills</i>
<u>Competencies category E:</u>	<i>Personal Effectiveness, including Networking, Teamwork and Career Planning</i>

In order to make a plan for your training and education in the coming years, it is important to think about these different competencies. Which competencies are you missing? Which competencies could be further improved? Of course, you will develop some competencies anyway while conducting your PhD, as they are part of any PhD study. But some competencies are very specific and might deserve special attention. Try to make a plan that is feasible in time and that corresponds to your own abilities at this moment. The training and education plan is definitely not fixed after approval. **Please note that it is possible to change your TSP whenever you see (good) reason to do so, in consultation with your supervisor(s).** The plan can be adjusted to your preferences throughout your PhD research, as long as you make sure that you meet the overall requirements for the SENSE Diploma in the end.

Finding suitable courses

All courses provided by SENSE can be found at: <http://www.sense.nl/courses>. Some courses are given yearly or more often, other courses are given every two or three years. If there is no date provided, please, contact us for more details.

SENSE aims to offer a complete package of courses that are suitable for SENSE PhD candidates. Considering the broadness of SENSE, it is unfortunately impossible to provide courses for all research subjects. We recommend that you also search for courses provided by other research schools and institutes. If there is a course you require, but you cannot find, please let us know, so we can either help you find a suitable course, or set-up the required course.

For any questions or suggestions on the SENSE Educational Programme, please contact:

Monique Gulickx (monique.gulickx@wur.nl)

3.2 General requirements for your SENSE TSP

As a SENSE PhD candidate you are offered excellent opportunities to develop your skills and competencies and to successfully complete your PhD programme -- by taking these opportunities actively you will also generate significant benefits for your future career.

The Training and Supervision Plan (TSP) is tailor-made and therefore entirely useful for your own development. Your training programme will consist of various types of course elements, with a minimum of 30 ECTS in total. One ECTS is equivalent to a work load of 28 hours (see Box 1).

In order to guarantee a high quality of the trainings programme, a few training activities are required. An overview of possible education and training activities, some required and most optional, are given in table 2 on the next page.

PhD Courses

- Environmental Research in Context
- Specialised and widening PhD Courses
- General Skills Courses

Other PhD Education and Training Components

- Research skills training
- Didactic skills training
- Management skills training
- MSc courses
- Presentations
- Publications

Box 1: ECTS (European Credit Transfer System),
28 hours = 1 ECTS.

Time spent	ECTS
1 day	0.3
2 days	0.6
3 days	0.9
4 days	1.2
5 days	1.5

Table 2. Overview of possible education and training activities

PhD courses			
Course type	Activity	Required / Optional	ECTS (min-max)
A1-SENSE	SENSE Introductory Course: "Environmental Research in Context"	Required	2
A2-SENSE	Research in Context Project, to be approved by the A2 coordinator	Required	2 - 4
Specialised and widening PhD courses	PhD courses on content, methodology, or other research skills to improve your expertise of your research field	Required: at least one PhD course	≥ 2
General Skills courses	General Skills Courses for PhD candidates	Optional	≥ 0
Other PhD education and training components			
Component	Activity	Mandatory / Optional	ECTS (min-max)
Research skills training	Writing your own PhD research proposal, reviewed and approved of by SENSE	Required for most PhD candidates	0 - 6
	A contribution to the writing of a new research proposal	Optional	0 - 3
	Site-specific training, for example the use of specific equipment	Optional	0 - 6
	External training period at a scientific (foreign) research institute	Optional	0 - 6
	Extended literature study, supervised by a SENSE research leader (NOT the standard literature review every PhD candidate should do at the start of his/her PhD)	Optional	0 - 6
	Reviewing scientific articles, book chapters or research proposals	Optional; 0.6 EC per review	0 - 2.4
Didactic Skills Training	Didactic skills courses; supervision of MSc thesis students, lecturing	Optional	0 - 6
Management Skills Training	Organisation of a scientific workshop, SENSE symposium or SENSE Core meeting	Optional; 1 EC for a half day activity	0 - 6
	Membership of a PhD Council, General Board Research Institute, SENSE Research and Education Committee	Optional	0 - 6
	Co-organisation of a SENSE PhD course	Optional	0 - 6
MSc courses	Advanced and specialised MSc courses to be approved of by the SENSE Director of Education	Optional	0 - 12
Oral presentations	Presenting PhD research orally at an open international meeting (e.g. international symposium, conference)	Required: once 1 EC per presentation	1 - 4
Poster presentation	Presenting poster of PhD research at a symposium, conference, seminar, etc.	Optional 1 EC per presentation	0 - 2
Networking	Attending international symposium, conference, seminar, etc.	Optional	0 - 6
Publications	Articles in refereed scientific journals (first author, published or accepted)	Optional; 2 EC per publication	0 - 8
TOTAL			≥ 30

3.3 Overview of PhD Courses

In this section, we provide some details on the PhD courses, including the SENSE-A Courses, Specialised and General Skills Courses.

SENSE A-Courses: Environmental Research in Context

- A1: SENSE Introductory Course: Environmental Research in Context (2 ECTS)

This introductory course is preferably followed in the first or start of your second year of your PhD study. The objectives of the course are:

- Be familiar with the disciplinary and multidisciplinary SENSE research network, the educational programme of SENSE, and the required PhD competences;
- Improve your project planning and strengthen the scope of your PhD research;
- Have insight in the social context in which environmental research generally and your own research specifically takes place.
- Strengthen your interaction with other PhD candidates and introduce you to the opportunities of the larger SENSE network.

- A2: Research Context Project (2 - 4 ECTS)

This research activity can have very different forms. The aim of A2 is to broaden the scope of your PhD research. One leading principle in the choice of a specific A2 project will always be that the PhD candidate him-/herself and his/her PhD research should benefit from the proposed A2 project. Please contact the A2 coordinator, Dr. Ad van Dommelen, timely to agree on the content of your A2 project and the ECTS remuneration.

Some inspiring examples of A2 projects are:

- Organisation or co-organisation of a PhD event for a broader audience than your own research group, e.g. within the framework of a SENSE Research Cluster (highly recommended);
- Contribution to the organisation of a SENSE PhD course or Summer School
- Present your solution for an environmental problem at the Club Green website (www.clubgreen.nl)
- Create an information page about a specific subject of your expertise in Wikipedia
- Make a 'home video' about your PhD research and upload this video at YouTube



Picture 1. Participants of the SENSE A1 course 'Environmental Research in Context' of March 2014.

During this introductory course SENSE PhD candidates start to build their part of the SENSE network. They learn about each other's work and how their own work relates to other studies in environmental sciences.

Specialised and integrating PhD courses

SENSE offers a course programme, intended both to deepen your knowledge in certain environmental and sustainability disciplines or methodologies and to widen your knowledge in adjacent relevant and integrating disciplines. The category specialised and integrating PhD courses includes:

- All SENSE PhD courses
- PhD courses offered by other research or graduate schools

General Skills Courses

General PhD courses - organised by all SENSE universities - are intended to improve your general skills (see www.sense.nl for an overview). These courses include, for instance:

- PhD Competence Assessment (highly recommended)
- Advanced English language courses (Written English; Scientific Writing)
- Courses to improve your oral and written presentation skills; for example the WGS – SENSE course 'Techniques for writing and presenting a scientific paper' (highly recommended)
- Courses to enhance didactic and communication skills, for instance: Supervising MSc thesis candidates
- Courses on project, research and time management; for example 'Time planning and project management for PhD candidates' (highly recommended)
- Courses on career planning

3.4 Other PhD Education and Training Components

In addition to PhD courses, it can be extremely useful to include other education and training components in your TSP.

Research skills training

- Your TSP may also include **writing your own PhD research proposal** during the first six months of your PhD study, reviewed by two external experts and to be approved of by SENSE. If, at the start of your appointment or fellowship, no full PhD proposal is available and you have to elaborate your own PhD proposal yourself, you may include 6 ECTS in your TSP for it.
- In addition, you may be involved in the **writing of a new research proposal** in the last years of your PhD period. This may be an interesting option for those of you who are interested in learning how to apply for funding for additional research.
- **Site-specific training** in, for example, the use of specific equipment can be included (optional; maximum 6 ECTS). If you are doing experimental research and need to be trained how to use certain equipment, you can include this in your TSP. This may also include training in computer software or specific computer models.
- The same holds for an **external training period** at a renowned (foreign) research institute (optional; maximum 6 ECTS). We would like to encourage PhD candidates to spend some time abroad, to gain research experience and to build on your network. For instance, we highly recommend the Young Scientists Summer Programme (YSSP) at the International Institute for Applied Systems Analysis (IIASA) for which you may apply (www.iiasa.ac.at). But you may also include a visit as guest scientist to other institutes. You may contact the SENSE Director of Education for other suggestions if you are interested.
- Another valuable experience for your development as researcher may be to participate in the **review / evaluation of scientific articles, book chapters of research proposals**. The SENSE research school will reward these activities with credits for your TSP in accordance with the real time you spent on it.
- During your PhD you will probably attend some **international scientific workshops, symposia and conferences**. This may be very important to get insight in recent development in your scientific area and for the development of your own scientific network. Therefore, these activities are rewarded with ECTS credits in accordance with the number of days you spent on these scientific events.

- Finally, SENSE will accept an extended and **detailed study of the scientific literature** in your TSP, provided that it is supervised by a SENSE research leader and that it is really additional to the regular PhD study (optional; maximum 6 ECTS). This would not include the standard literature review that any PhD thesis requires. This extended literature study would serve an additional goal.

Didactic and Teaching Skills Training

Teaching experience can be very valuable and may also contribute to work on your competences. Therefore you may obtain credits for your teaching activities. Before you start you should formulate your personal didactic learning goals and afterwards evaluate them. Possible training activities are:

- Didactic skills courses
- Supervision of MSc candidates
- Teaching / lecturing

Management skills training (optional)

- We consider the organisation of scientific workshops, seminars and courses as a training of management skills (1 ECTS for an activity of a half day; maximum 6 ECTS). We would like to encourage SENSE PhD candidates to train their management skills, and organising a scientific meeting is an excellent way to do this. Moreover, you will also increase your network.
- Also a membership of a PhD Council, General Board of Research Institutes, SENSE Research and Education Committee will be accepted as a training component (maximum 6 ECTS). Please contact the SENSE Board of Directors if you have any intention to become a member of one of the SENSE Committees.

Presentations

- All SENSE PhD candidates are invited to present their own research project once, preferably during the first half of their PhD period at a SENSE meeting (1 ECTS). SENSE organises every year a SENSE Symposium or SENSE Summer Academy. In addition, many PhD meetings are organised by SENSE PhD candidates, often initiated by their SENSE research cluster.
- We also would like to encourage SENSE PhD candidates to present the results of their work for an international scientific audience. Therefore, all SENSE PhD candidates are required to present

their results at an international scientific symposium or congress, at least once during their PhD period (1 ECTS per presentation; maximum 3 ECTS).

Publications

- You can get credits for publishing the results of your PhD research in an international peer reviewed scientific journal or peer reviewed scientific book (with you as first author). We highly recommend this, and award you with 2 ECTS per accepted publication in a peer reviewed scientific journal as first author (maximum 8 ECTS).

3.5 Sandwich and other International PhD candidates

Within SENSE, the number of so-called sandwich PhD candidates is increasing. Sandwich PhD candidates typically perform more than half of their PhD research outside the Netherlands, usually in their home countries. They usually visit the Netherlands two or three times, at least at the start and end of their projects.

Because for many such PhD candidates the time in The Netherlands is limited, we provide a highly flexible educational programme. It is essential to plan your time periods in The Netherlands well and to schedule the courses you require in advance. If you have any trouble or need advice, please contact us at any time (see page 18).

In the following, we will summarise shortly which parts of the educational programme need to be followed in the Netherlands (2 ECTS), and what could also be done abroad (up to 28 ECTS).

Examples of what can be done in The Netherlands and abroad

- A1-SENSE Introductory Course: We encourage sandwich and other international PhD candidates to follow the required A1 SENSE Introductory Course (Research in Context). The course is offered twice yearly and an overlap with the visit to The Netherlands should be possible. Our experience is that sandwich PhD candidates appreciate the course, and the possibility to meet so many other PhD candidates. In spite of this, for some PhD candidates it may be physically not possible to attend the A1 course in the first two years of your PhD study. In this exceptional situation, you may send a request to the A2 co-ordinator to compensate the A1 requirement by doing an extended A2 project. Please motivate your request to make an exemption and discuss it with the A2 co-ordinator.
- One PhD course: All SENSE PhD candidates need to follow at least one PhD Course organised by either SENSE or another research school. There are many courses available, and most of them are organised every two years. It is also allowed to fulfil this requirement by doing a relevant PhD course or Summer School at a university in your home country if the quality can be guaranteed.
- Skills courses: most universities offer a broad range of PhD courses to improve your general skills in scientific writing, time planning and presenting, etc. It is advisable to do these courses at the start of your PhD study, so in the first period you are in the Netherlands.

- Attending SENSE meetings: We encourage SENSE PhD candidates to attend at least 2 SENSE meetings. For all PhD candidates, there are several meetings organised every year: the SENSE Summer Symposium, and the SENSE research cluster and SENSE PhD meetings, in most cases organised by enthusiastic SENSE PhD candidates themselves. Occasionally, sandwich PhD programmes organise their conferences abroad, for a specific group of sandwich PhDs.

Other examples for activities that can be followed outside the Netherlands

The SENSE TSP requirements offer the opportunity to do most of the credited activities outside the Netherlands. Some suggestions that are not specifically mentioned in section 3.2 include

- Organising a scientific meeting or PhD colloquium abroad
- Communicating the results of the PhD research to potential users or stakeholders abroad
- To apply the results of your PhD research to a specific problem or region in your home country, resulting in a written report
- Exploring the extent to which follow up research is possible, given local conditions
- Following PhD courses abroad
- Expanding the SENSE network abroad
- Contributing to the SENSE website
- Distance learning (e-learning courses offered by other Graduate Schools)
- Training period at a renowned institute abroad

3.6 Applying for the SENSE Diploma

The SENSE Diploma

After fulfilling the training programme the SENSE Research School will grant you a SENSE Diploma.

At least three months before the graduation date a request to grant the SENSE Diploma must be sent to the SENSE Education Desk by e-mail to our PhD education coordinator, Dr Monique Gulickx (monique.gulickx@wur.nl). The SENSE diploma application form can be downloaded from the SENSE website.

Please, fill in the form as complete as possible. Give full titles, dates, and locations. We will use this information for your official SENSE Diploma.

With the SENSE Diploma, you will be able to demonstrate (e.g. when applying for a job) how you developed and strengthened your competences, specific knowledge and expertise in the past years. It gives a more thorough depiction of your development, in addition to the skills of writing and defending a PhD thesis. Additionally, the SENSE Research School has given its stamp of approval to the course work, indicating that your educational programme was at a high standard of postgraduate level.

4. PhD Supervision

In your quest for a PhD, you will be supervised by one or more supervisors. All PhD candidates have a Promotor. It is advisable to also have a different daily supervisor. Constructive communication between the PhD candidate and the supervisors is very important. It is also important to have similar objectives and procedures, therefore it is necessary to make a plan together with your supervisors at the start of your PhD programme to come to an agreement about the supervision.

Supervisor

Your supervisor is responsible for the (preliminary) research proposal. If such a proposal was written by you, then the supervisor is responsible for accepting it. A good proposal is essential for your research. All research proposals that fall under a research school have been screened with regard to their feasibility. Nevertheless, it is the responsibility of your supervisor that you can complete your PhD thesis within (mostly) four years. Usually, your supervisor is also responsible for the scientific results of the project, if it is funded externally. This is particularly important, as with increasing frequency the proposal for funding agencies and the mandatory programme for earning a research school's diploma may lead to opposing interests. In doing the research, it is the task of your supervisor to help you out of scientific or organisational problems that you cannot solve yourself.

PhD candidate

Your primary responsibility is to complete your PhD thesis as best as you can and to develop yourself as an independent researcher. To increase your chances of success, you are required to be a good communicator. If there are sound reasons why the work is not developing well, if you encounter problems in conducting the research, it is your responsibility to inform your supervisor in such a way that he/she can provide assistance. For every team a different way of communication works, hence you need to find an adequate arrangement that suits you and your supervisors. It is beneficial to regularly meet with peer PhDs, e.g. during lunch or drinks breaks. Often PhDers can help each other really well. Additionally, you can also get useful feedback in discussion groups and SENSE Research Clusters. SENSE will facilitate in the organisation of such discussion groups where they are lacking. If you happen to be overseen and do not participate in a discussion group, please contact SENSE.

Expectations of each other

It is important that the PhD candidate and his or her supervisors have similar expectations. In this section possible expectations are described, which may become useful to you when making the supervision plan. The described expectations that supervisors and PhD candidates have of each other have been based on the results of questionnaires and meetings with staff members and PhD candidates at Wageningen University. These expectations appear to agree well and may probably be generalised for other PhD candidates and supervisors.

For both groups, important qualities of the PhD candidate were:

- enthusiasm
- critical attitude
- taking initiative
- perseverance

In addition, PhD candidates mentioned creativity, whereas supervisors mentioned independence of thinking. Both groups preferred that PhD candidates must not be too compliant to the supervisor: no meek sheep please!

Qualities that were mentioned as attributes of good supervisors were:

- supportive
- accessible
- critical

In addition, the PhD candidates valued enthusiasm, whereas supervisors thought that they should be open-minded and have expertise in the subject of research. There was a general agreement that a supervisor should be an advisor, critic and should facilitate expertise, rather than being just a manager.

So, there seems to be agreement between PhD candidates and supervisors with regard to important qualities. Again, each pair needs to find a relationship that is most suitable to the two personalities. One of the expectations that should be kept in mind is that in general, the supervisor expects the PhD candidate to be the more active partner in initiating meetings and discussions..

5. Solving Problems

...with your supervisor

Despite all good intentions, you may run into problems with your supervisor. Reasons may be time constraints, the fact that the research is also on the edge of the supervisor's expertise, different opinions, or simple miscommunication. In the following section we offer some suggestions on how to deal with such a situation.

First of all, try to keep in mind that problems are not wanted by either of you. If you experience a problem it is essential to discuss this with the involved person. When you are unable to discuss it with this person, you need to find another person you trust to share the problem with. In any case, do not ignore the problem and most definitely do not isolate yourself from it. In that way you will absolutely not solve the problem.

It is important to remember: your supervisors have chosen you for the PhD programme; they have confidence in you and have committed themselves to help you in doing it. Besides this, they have a profound interest in a successful completion of the project and will therefore be motivated to help solve a problem.

If you and your supervisor fail to find a mutually agreeable solution to your problem, or if you do not know how to approach your supervisor we advise you to talk to someone you trust and feel comfortable with. There may be other PhD candidates (perhaps even with the same supervisor) who may have good advice. There may be your HRM advisor, other staff or the professor, who can give you confidential advice (if you ask for confidentiality) , who can take an intermediary role, or if needed, can have a conversation with the supervisor.

In every university, the administration of the department or faculty where you are working appoints a mentor (a Human Resource Management advisor or personnel officer). Confidential advisors generally support university staff (including all PhD candidates). The confidential advisors have a supportive, advisory and guiding role. Of course, all information given to the confidential advisor is treated confidentially.

Confidential counselling for SENSE PhD Candidates

It does not happen often that a problem is or seems really out of control. But it may happen. Rather than quitting your PhD programme (and loose the investment that you have already made, as well as the hopes and dreams for the time after), you may contact the confidential counsellor of SENSE. This person will attentively listen to your problem and will cooperate with you towards appropriate action to help solve it. Of course all discussions this person will be treated confidentially.

To learn more about this possibility, contact:
Dr. Ad van Dommelen, email: ad.van.dommelen@vu.nl or

...with your work

No matter how well organised, well educated, and committed you are, you are going to do research that is innovating. You cannot avoid that you may reach a point where you get frustrated or demotivated because your research is not going the way you want it. It is all part of the challenge.

Here, again, talking helps. Contact your colleague PhD candidates (for instance, if your problem has to do with skills such as working with spreadsheets or computer programmes, or if they are involved in similar research). Also, discussion groups may exist in which colleagues as a group can give you valuable feedback. An obvious counterpart to help you resolve problems is your supervisor and Promotor. Helping you out of a knowledge gap is after all their primary responsibility. If they cannot help you,

... then your problem may not be as innocent as you may have thought earlier;

... you and your supervisor may need to search for an expert who can solve the problem.

At the end of your first year of employment, you will probably have a formal evaluating discussion with your supervisor, about your performance. It is an important discussion, because it has to conclude that your involvement in the project will be continued.

Each year, there are formal evaluating discussions between you and your supervisor about the project. These discussions are explicitly aimed on how both you and your supervisor function in your respective roles: this discussion goes two ways, as the performance of both parties is on the agenda. They offer a good opportunity to reflect on the working environment, and to voice concerns. If there are concerns, it is certainly not the intention that you keep silent about them until you have your annual evaluation: voice them whenever you can.

6. Financial Arrangements

In general, all SENSE institutes will provide a “PhD Education and training budget” for their own PhD candidates to cover the training costs. The SENSE guideline for this budget is at least € 2.500 for the whole PhD programme.

SENSE aims to support PhD activities e.g. discussion groups, workshops, conferences, symposia or expert meetings organised by SENSE PhD candidates. In all cases we expect you to look very actively for possibilities for external funding. In some cases SENSE could also contribute to the overall costs of an activity. Applications for a financial contribution in the organising costs (e.g. travel and accommodation expenses for the invitation of international key experts to create an attractive and high level event) may be sent to the SENSE Director of Education throughout the year. See the SENSE website for more details.

In all other cases expenses for PhD activities must be financed via project funding, departmental or other resources, such as NWO, EU, etc.

For information about how and where to obtain additional funding for educational activities, conference visits, research fellowships and grants see the SENSE website:

<http://www.sense.nl/education/funds>

7. Involvement of PhD candidates in SENSE development

7.1 SENSE PhD Council

The SENSE PhD Council (SPC) is an important body of ideas and advice within SENSE. The council consists of motivated PhD candidates from the different SENSE partner institutes. A representative of the SPC is always invited to meetings of the SENSE General Board (which consists of the directors of the SENSE partner institutes). All input and suggestions from the SPC are highly appreciated and are taken very seriously. If you would like to become one of the members of the SENSE PhD Council and be involved in the development of SENSE, then please contact Dr. Monique Gulickx (see details below). Active participation in the SPC may also be approved as your SENSE A2 project completion.

7.2 SENSE Education Committee

The SENSE Education Committee (SEC) is an advisory board to the SENSE Director of Education. The SEC has regular meetings, to discuss recent developments with respect to the SENSE Educational Programme. More specifically, the SENSE Education Committee advises on:

- The Educational programme in general
- Outline of new courses
- Evaluations of existing courses
- Recent developments with respect to the Educational programme
- The Training and Supervision Plan (TSP)
- The SENSE website

Each university participating in SENSE is represented, preferably by a staff member and a PhD candidate. If you are interested in participating in this committee and in helping to further develop the SENSE Educational Programme, please contact Monique Gulickx (see details below). You are most welcome to participate and contribute!

For any questions or suggestions in relation to the SENSE Educational Programme,
please contact: Monique Gulickx (monique.gulickx@wur.nl)

8. Useful names and addresses (www.sense.nl/contact)

SENSE Board of Directors (<http://www.sense.nl/organisation/organisation>):

- General Director: Professor Frank Biermann (VU University Amsterdam)
- Director of Research: Professor Ernst Worrell (Utrecht University)
- Director of Education: Dr. Ad van Dommelen (VU University Amsterdam)
- Executive Secretary: Johan Feenstra (Wageningen University): johan.feenstra@wur.nl

SENSE Director of Education:

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SENSE PhD Education Coordinator:

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SENSE Confidential Advisor:

Contact Dr. Ad van Dommelen
e-mail: ad.van.Dommelen@vu.nl

SENSE Website:

External website: <http://www.sense.nl>
General support questions, requests, and suggestions: <http://www.sense.nl/contactform>