

Student Empowerment for Sustainability in Higher Education



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Dutch Green Offices supporting student-led action

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7th of July 2017

Wageningen

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Foreword and acknowledgments

Students are oftentimes overlooked and side-lined within a university's sustainability efforts. This is a missed opportunity, given the energy and spirit of students, the learning opportunities that sustainability engagement presents and the sheer size of the student body as largest stakeholder group on campus. Yet for a large number of students to unleash their full potential as sustainability change agents, the institutional support, resources and legitimacy of universities and governments are required.

(Rademakers, 2016)

Choosing the topic of student empowerment for sustainability for my master thesis followed out of a deep personal interest. Throughout my bachelor and master, I was involved in multiple student sustainability groups. I experienced myself how important it is to have a space as a student to make a change in your institute of higher education. Moreover, my involvement shaped my worldview, values and taught me things which were impossible to transfer through my curriculum. It was therefore very interesting to experience in my research how these personal experiences were mirrored in other students and what is needed to support students (as I was one myself) that want to make a change towards achieving sustainability in higher education.

Writing this thesis taught me a lot, but was also very challenging. It would not have been possible without the people that have supported me in this process. Special thanks goes out to: my friends Bruno, Emiel and Nine for allowing me to be my own vulnerable and crazy self. My housemates for the never-ending belief in my capacities and for providing a loving environment to return after lonely thesis days. Edel and Sake, my *thesiskot* companions for the many talks on the process of thesis writing and the meaning of life. My parents who taught me not to be scared, and always supported me the fullest to do the things that are close to my heart. Anais, Maaïke and Emma, my dearest Belgian companions who were supporting me over skype from other continents. Guillaume, for helping me all the way from Dublin with my struggles with the social science concepts. Zanna, for the terrific comments on style and structure. All the persons involved in the Green Office Movement for being so kind to invest their time in my research. Felix, Tim, Anselm and Giorgia from rootAbility, for thinking along about my thesis and being so enthusiast. And finally, my supervisors Kris and Valentina, for taking away my first anxieties for starting a thesis in a field that I was not comfortable with by answering in a very kind and patient way to all my questions, thereby giving me guidance where needed without taking my ownership away. Thank you all.

Summary

Universities have a crucial role in the transition towards sustainability. Their research drives innovation and history making. Their education shapes future decision-makers and consumers. Their buildings, energy use, procurement and waste management have an immediate socio-environmental impact. Students are the core of universities, but often feel powerlessness in achieving a change and enhancing sustainability in their institutes of higher education. Green Offices are a special kind of university program that bridge the gap between students and sustainability in higher education. A Green Office is a student-led and staff supported sustainability hub in an institute of higher education, with an official mandate and resources available to enhance sustainability in the institute of higher education. The purpose of a Green Office is twofold: involving students with sustainability while enhancing sustainability in higher education.

Research shows that student employees working in the Green Office acquire sustainability competences and that Green Offices are improving sustainability in education, research, and operations. However, it is still unclear for both Green Offices and scholars how to support voluntary student-led action and empower students to achieve a change in their institutes of higher education. The aim of this thesis was therefore to investigate how students are empowered for sustainability, how Green Offices are supporting this empowerment process and how all of this fosters sustainability in higher education.

Three case studies were conducted: the Green Office of Wageningen, Maastricht and Utrecht University. Data was collected through semi-structured interviews, secondary sources, and social media analysis. To understand how to support students to transform their institutes of higher education towards sustainability, three aspects were investigated. First, student empowerment was studied by means of individual and collective components and how the students expressed these components. Second, activities and structures of the Green Offices that were supporting or constraining these components were identified. Third, outcomes and impact of empowerment were categorized for all student volunteers that were operating under the umbrella of the Green Office. This resulted in the following findings:

Students that were involved with the Green Office volunteered because they wanted to make an impact, have social interactions, and have learning and career opportunities. Feeling part of the Green Office gave a feeling of legitimacy and increased their belief in their power to make a change. Also, a safe space for trial and error increased their self-efficacy and made them take on bigger projects. Different student groups had different needs and therefore required different engagement strategies from the Green Office.

Students that were intrinsically motivated to make a change towards sustainability needed supporting structures to act upon this. The empowerment structure of the Green Office Utrecht involved the most students with sustainability in higher education. This structure consisted out of project groups that were working autonomous and committees that were supporting the internal organization of the GO. Crucial was that the Green Office provided information on how to get involved. Other support that was given to

the student volunteers was knowledge on the university and resources. In all three case studies investigated, there was a lack of control over decision making on the Green Offices' activities for the student volunteers and the Green Offices had limited power on the governance of the university.

The activities of the student volunteers were mainly focused on facilitating pro-environmental behavior or internal organization of the Green Office. Both the Green Office employees and Green Office volunteers were mainly focusing on enhancing environmental sustainability and not on education, research, or external community outreach. For all student groups that were operating under the Green Offices, the target of change were their peer students, and a minority of the groups also targeted the university governance. Students were reflecting upon the outcomes of their activities, but there was a lack of reflexivity on the impact of the outcomes.

These findings lead to the following recommendations. To fully activate intrinsically motivated students to make a change, empowerment structures are needed. To achieve a sustainable changer, there is a need for a deeper understanding of the socio-economic aspects of sustainability and all dimensions of sustainability in higher education. If feasible, impact assessment and evaluation should be facilitated to understand if student empowerment also leads to a positive biophysical or socio-economic impact.

In conclusion, this study clearly shows that empowerment structures such as Green Offices can be an important tool to activate and direct the potential of students to become agents of change, contributing to sustainability in higher education.

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Abbreviations

ESD:	Education for Sustainable Development
GAN:	Green Active Network Wageningen
GO:	Green Office
GOC:	Green Office Coordinator NL & BE
GOU:	Green Office Utrecht
GOW:	Green Office Wageningen
HE:	Higher Education
HESD:	Higher Education for Sustainable Development
IPCC:	Intergovernmental Panel on Climate Change
LCA:	Life Cycle Assessment
UM:	Maastricht University
UU:	Utrecht University
UMGO:	Maastricht University Green Office
SHE:	Sustainability in Higher Education
SvM :	Studenten voor Morgen
WUR:	Wageningen University and Research

Concepts and definitions

GO committee:	A group of volunteers that support the tasks of the GO employee.
GO employee:	Student who is (partly) paid to work in the GO.
GO project:	A project is a GO volunteer-led group affiliated with and supported by the GO with their own goal and ownership on how to achieve this goal.
GO volunteer:	Student who has a certain relationship with the GO and spends some time voluntarily on the GO's activities.
Green Office:	Student-led and staff supported sustainability hub at an institute of higher education.
Portfolio:	A portfolio is the main task of a GO employee.
Student sustainability initiative:	All forms of groups that are doing student-led actions for SHE: grassroots student sustainability organizations, student associations, student council parties and Green Offices.
Student-led action for SHE:	Student actions with the purpose to achieve a change in SHE at their university.

1. Introduction

1.1. Sustainability in Higher Education

The world we are living in is changing at an ever-accelerating pace. Access to healthcare, education and technology has never been so high (WHO, 2016). Despite these positive trends, it is not all a good news story. Human development has led to a decrease in biodiversity that is so severe that biologists state that we are entering history's 6th mass extinction (Barnosky et al., 2011). Greenhouse gas emissions are still rising every year, causing climate change. As a result, a plus two degree world becomes more and more inevitable, (Malik, Lan, & Lenzen, 2016). The gap between the world's rich and poor is widening (Tribe, 2015). We need to enhance the positive trends and reverse the negative to create a truly sustainable world, where wellbeing for all is maximized within the carrying capacity of the earth. This requires deep transformations in our current economic, social, and political systems.

Universities have an important responsibility in these transformations because they produce knowledge and influence society (Tilbury, 2014a; White, 2013). Their research drives innovation and influences policy and history making (Beringer & Adomßent, 2008; Michelsen, 2015). Their education shapes future decision-makers and consumers: 80 percent is of the decision-makers in industries, communities and politics has a university degree. However, only 2 percent of the global population is attending university, (Fullan & Scott, 2009). Their operations have a socio-environmental impact caused by their buildings, energy use, procurement, waste management and more (Dahle & Neumayer, 2001). All of this shows that they have big influence on our current and future world. Universities are in a unique position. They are able to include sustainability principles in their research and education, diminish the environmental footprint of their operations, and equip students with the right knowledge and skills to unleash their potential as agents of change for the transition towards a just, sustainable and peaceful global society (S. Pearce, Brown, & Walker, 2008).

In order to take up this role and not reinforce current unsustainable patterns, universities need to transform their research, education, operations, and engagement with governments and communities (Shiel, 2013; Tilbury, 2014b). The myriad of studies about the role of universities in this transition towards sustainability is known under the name of Sustainability in Higher Education (SHE) and focuses on various issues with different frameworks and perspectives. Research on the topic of sustainability reporting provides universities with tools to measure their impact. Studies regarding higher education for sustainable development investigate how to integrate sustainability principles in the design, development and delivery of the universities' curricula, management. Social and organization studies give insights on campus operations, stakeholder engagement and the interlinkages between all the former mentioned aspects (Ramos et al., 2015).

Students are at the core of universities' activities. Therefore, they play a crucial role in achieving sustainability in higher education. Below, an overview is given of current insights into and perspectives

regarding students and sustainability in higher education. Thereafter follows a description of the Green Office movement and model, followed by the research objective of this study and the scope and limitations.

1.2. Students and Sustainability in Higher Education

The benefits of involving students in the development of a more sustainable university are twofold: their experience equips them with the skills and knowledge required for sustainable development, and it can accelerate the transition towards a sustainable university (Peter, Nicol, Somervell, & Bownes, 2013). This master thesis will investigate this double role by looking into Green Offices. Green Offices are student sustainability hubs that try to enhance sustainability in higher education. Below, a literature overview about students and sustainability in higher education is given to give background to this study. In the SHE literature, there are multiple domains and perspectives focussing on the role of students. First, 1.2.1 gives a short introduction to the concept of higher education for sustainable development. Second, 1.2.2 explains service learning for campus sustainability. Third, 1.2.3 gives an overview of student perceptions and values for sustainability. Fourth, 1.2.4 gives a review of current literature on student-led action.

1.2.1. Higher Education for Sustainable Development

Education for Sustainable Development (ESD) is a concept which is omnipresent in the 21st century international politics (M Barth, Michelsen, Thomas, & Rieckmann, 2015a). The decade 2005 to 2014 was defined as the United Nations Decade of ESD. The United Nations Educational, Scientific and Cultural Organization (UNESCO) is the main multilateral body that integrates ESD worldwide into different domains and educational sectors, such as: informal learning, lifelong learning, elementary and secondary schools, and institutes of higher education. ESD is now the focus of UNESCO's Global Action Program on ESD and it is one of the Sustainable Development Goals (Goal 4) (UNESCO, n.d.; United Nations, n.d.).

Institutes of higher education have a particular role in the realm of ESD. They are both providers of education as well as researchers of this type of education. Studies on Higher Education for Sustainable Development (HESD) entail research on different scales, ranging from individual learning processes (Fella, 2014; Wiek, Withycombe, & Redman, 2011) and educational programs (Glendinning, 2012; Wals, 2014; Winter & Cotton, 2012) to organizational change in the universities (M Barth, Michelsen, Thomas, & Rieckmann, 2015b; Exter, Grayson, & Maher, 2013; Jones, 2013; Kurland, 2011). Studies on HESD also entail different domains: the educational programs themselves, theoretical perspectives on the frameworks and methods (Kyburz-Graber, 2016; Lotz-Sisitka, 2004; Stephen Sterling, Warwick, & Wyness, 2016) and the political dimensions of HESD (Lozano, Lozano, Mulder, Huisingh, & Waas, 2013; Michelsen, 2015; Wright, 2002). Barth and Rieckman (2008) conducted a literature review of 520 articles on higher education for sustainable development and found the following content focus (in %): curriculum development (33,8), teaching and learning approaches (19,2), organisational change/learning (12,3), students'/lecturers' views and opinions (10,6), development of ESD in higher education in a particular

nation/region (6), assessing student learning outcomes (5,8), philosophical (4.4), and research in HESD (1,7). To sum up, central foci of most HESD literature is how to educate students and equip them with the right competences to build a more sustainable society. Some of them are more specifically about the links between educational programs and achieving campus sustainability, as explained below.

1.2.2. Involving students in campus sustainability

Students can build sustainability competences while improving sustainability on campus by means of service-learning projects (A. Pearce & Manion, 2016). Service learning are projects where students solve challenges for a client inside their curriculum. Service learning comes in many forms, and one of them is on the topic of sustainability challenges (A. Pearce & Manion, 2016). Next to these curricular projects, many universities also run projects where students can be voluntarily involved in initiatives aimed at “greening” their campuses. Using campus sustainability challenges for educational or voluntary projects enables students to build real life competences, and at the same time provides a service to the facilities departments, reducing the environmental impact of the university (Maloni & Paul, 2011; Savanick, Strong, & Manning, 2008; Wu, 2015). In addition, involving students in the management of their campus’ natural area (as e.g. tree planting) not only fosters sustainability on campus but also enhances “a sense of place”, fostering a sense of attachment to the campus, and increases the mental wellbeing of the students (Krasny & Delia, 2015). The benefits are there thus both biophysical improvements of the campus as well as psychological for the students involved.

In regard to programs that require voluntary involvement of students, there is need for a strategy to get them involved. Figueredo & Tsarenko (2013) researched what factors determine the participation of students that define themselves as “green” in university’s environmental initiatives. They stress the importance of providing educational programs for sustainability to foster awareness on sustainability, promoting the existing environmental initiatives so that students become aware of what the university is doing and showing how students can become involved.

1.2.3. Student perceptions and attitudes

Other research on the topic of students and sustainability in higher education looks into attitudes and values of students regarding sustainability. Furthermore, the research examines how students perceive their own contribution towards achieving sustainability. An English study found that students have a positive attitude towards the concept of sustainability, independent of their knowledge level regarding sustainability (Kagawa, 2007a). Students associate sustainability mostly with environmental aspects and not economic nor social aspects (Emanuel & Adams, 2011; Kagawa, 2007b; Winter & Cotton, 2012). The knowledge of students of sustainability in higher education is mostly limited to operations (Emanuel & Adams, 2011; Iverson, 2016).

Students believe that they could contribute to achieving sustainability in the university through their own lifestyle and educating their peers about their lifestyle (Chaplin & Wyton, 2014; Emanuel & Adams, 2011;

Iverson, 2016). Several studies examine student perceptions in order to increase pro-environmental behaviour. Levy (2012) did a case study on promoting pro-environmental behaviours on campus and advocates for education, engagement and assessment in order to support the development of pro-environmental behaviour. Chaplin & Wyton (2014) did a survey to investigate the perception of students on pro-environmental behaviour and conclude that the main barrier to live in a sustainable way is displacement of responsibility to other people or organizations. Apart from lifestyle, students feel disempowered from decision-making about SHE (Winter & Cotton, 2012).

In reaction to this, Iverson (2016) argues that we should go beyond recycling and engage students in a less shallow way with sustainability. This to not only foster awareness and promote individual pro-environmental behaviour, but to equip students to be an advocate for institutional and structural change in their university.

1.2.4. Student-led action for sustainability

Educating students about sustainability, involving them in greening the campus and encouraging pro-environmental behaviour are all crucial aspects in achieving sustainability in higher education. However, students can play an even more elaborate role in integrating sustainability in universities (Disterheft, Caeiro, Azeiteiro, & Filho, 2015). Only through involving the university community in sustainability in university, a paradigm shift towards sustainability in the university can take place (Disterheft, Caeiro, Leal Filho, & Azeiteiro, 2016; S. Sterling, 2004).

Participation of students in enhancing sustainability in higher education comes in many forms. Mentioned above are the service learning programs on campus sustainability and participation in university sustainability programs. In contrast to these two university-led activities, student-led action for sustainability is also present in many universities (Murray, 2017). Student-led action can take many forms. Helferty & Clarke (2009) define 8 types of student-led initiatives with decreasing occurrence: (1) awareness-raising, (2) sustainability assessments, (3) sustainability funds, (4) residence challenges, (5) on-campus retrofits or renewable energy production on campuses, (6) multi-sectoral collaborations, (7) staff/faculty-focused programs and (8) policy development. Of the last three types, there was only one case. Murray (2017) found in her review that most student-led activities were intending to change individual behaviour change, followed by policy changes and education. Another type of student-led activity that rose in numbers in the last decade are the Fossil Free groups that urge their institutes of higher education to divest from fossil fuel industry (Grady-Benson & Sarathy, 2015).

These student-led actions put pressure on the university from below, having the power to achieve a change towards sustainability in higher education (Moore et al., 2005). Apart from making the university greener, students also develop important sustainability competences that they can express in their future careers. In addition, empowerment of students can facilitate feelings of hope in a better future (Mishra & Spreitzer, 1998). In a world were challenges as climate change, loss of biodiversity and social justice issues

are omnipresent, having confidence in one's ability to persevere and effect change is important to cope with these challenges (Shellman, 2014). Unfortunately, many students still feel powerlessness to achieve sustainability in higher education apart from their individual lifestyle choices (Winter & Cotton, 2012). Empowering students for sustainability in higher education is therefore crucial. Unfortunately, not much literature exists on how to support student-led action for sustainability.

1.3. Green Offices

Green Offices (GOs) are a special kind of sustainability program, student-led but supported by the university. The purpose of the GO is twofold: making their university more sustainable and involve students with sustainability.

The Green Office Movement is a rather new but rapidly evolving movement. The first GO was founded in 2010 by students of Maastricht University. Two years later, the founders of the Maastricht GO started rootAbility, a social enterprise aiming to spread the GO model across Europe. In the following years, the movement grew rapidly in number and in range of countries. In 2017, there were 25 established GOs in the Netherlands, Germany, the UK, and Belgium. Furthermore, there were 17 GO initiatives (GOs that doesn't comply fully to the 6 principles set up by rootAbility) in the Netherlands, Sweden, Germany, and Italy. More than 100 students and staff are currently employed by the GOs, and probably even more are volunteering (Lehnhof, Nolan, Tappeser, Scharf, & Meyer, 2016; rootAbility, 2015b). In the following two subsections is explained what the Green Office Model exactly stands for and reveals its relationship with other actors.

In this thesis, a Green Office is defined as:

A student-led and staff supported sustainability hub that initiates, coordinates, and supports a change process towards sustainability at an institute of higher or further education. (Adapted from rootAbility, 2016)

GOs are a hybrid of university sustainability programs and grassroots student sustainability groups with their own unique characteristics. RootAbility, the European umbrella organization and founders of the first GO, uses six principles to distinguish a GO from other sustainability programs or initiatives. First, the team of a GO consist of students and staff. The basic structure is one staff member that coordinates and a core of student employees that are paid to work several hours a week. Next to the paid student employees, several GOs involve unpaid student and staff volunteers in their activities as well. Second, a GO has an official mandate to advance sustainability at the university. Third, the university supports the GO with funding for salaries, projects, training and more. Fourth, the university incorporates the GO in their organizational structure. Fifth, the GO collaborates with internal and external stakeholders like other student groups, facility services, research institutes, the city administration, or local civic organizations.

Sixth, the GO engages in organizational learning around sustainability and change through trainings. (Lehnhof et al. 2016; rootAbility 2015b)

Although there is much variation in between the different GOS, most GOs try to enhance sustainability in higher education in four focus areas: education, research, operations and engaging the university community with sustainability. First, education includes changes in curriculum, extra-curricular activities related to sustainability or giving students the possibility to do an internship/thesis/project related to sustainability. Second, the research focus area involves questions if whether the research at the university fosters sustainability. Third, the operations of the university relate to the tangible environmental footprint and involves procurement procedures, building regulations and other facility services. Fourth, they promote sustainable practices amongst staff, students, and faculties. This consists out of informing on sustainability (in higher education), encouraging and facilitating pro-environmental behaviour and sustainable consumption and empowering the university community to make a change. These focus areas are no separate entities and show overlap in multiple ways. For example, changing the food habits of students and staff goes hand in hand with changing the food provided by the food catering of the university (operations).

Even though the focus areas don't differ that much from the focus areas of other sustainability programs in higher education or student sustainability groups, GOs are different from most 'traditional' sustainability programs. Sustainability programs in universities exist in numerous forms ranging from events and campaigns focused on behaviour change till sustainability coordinators or sustainability committee. The Green Office Model is different from university sustainability programs by the explicit role that students play. Most university sustainability programs are run by staff, and the role of students in these programs is more 'receiving': they can take part in (extra-) curricular activities around sustainability or they are a target for pro-environmental behaviour campaigns. In contrast to this, student employees are running the GO by themselves and determining to a great extent its focus and activities. On the other hand, GOs are different from 'traditional' grassroots student sustainability groups by their official mandate and integration into the university, and the resources they get through funding from the university. To sum up, GOs combine elements of traditional university programs and grassroots student groups while focusing on all elements of SHE. They have multiple faces: as a kind of educational program for sustainability, a tool to decrease the environmental impact of the university or a catalyst for organizational change in the university (F. Spira, personal communication, 2016).

Fella (2014) showed that students that worked for the GO of Maastricht University acquired professional, innovative, and interpersonal competences, as well as international orientation and environmental expertise because of their activities within the UMGO. These competences are needed for the sustainability-related labour market. However, next to student employees, many GOs also try to involve the whole university community with achieving change. Actors involved with the GOs vary between the

different GOS but can be for example, student sustainability groups, single student volunteers or staff and faculty. Levels of participation in the different GOs vary between providing information on the GOs and the university's activities, involving them in the GOs activities or supporting them to execute own ideas or projects. Accordingly, volunteer/empowerment structures vary between the different GOs. A survey of rA showed that GOs have questions on how to include the broader university community in their organization and empower students and staff to make a change (RootAbility, 2016).

1.4. Research objective and research questions

Universities have an important role to play in the transition towards sustainability. Involving student with sustainability in higher education fosters both biophysical improvements on campus as well as builds sustainability competences in students. Although student-led action for sustainability is abundant in our institutes of higher education, not much research is conducted on how to support students that want to make a change in their universities.

Green Offices are a kind of student-led action, embedded and supported by the university. Research shows that student employees working in the GO acquire sustainability competences and GOs are active on enhancing sustainability on education, research, operations, and external community outreach. However, it is still unclear for both GOs themselves and SHE scholars how to support voluntary student-led action and empower students and staff to achieve a change in operations, education, research, or external community outreach towards sustainability.

This leads us to the following research objective: the aim of this thesis is to investigate how Green Offices support student empowerment for sustainability. This gives new insights into the role of Green Offices in student empowerment for sustainability. Moreover, this thesis also inquires how to support students that are aiming to make a change and to how this fosters sustainability in higher education. These objectives lead to the following research questions:

General research question

How do Green Offices contribute to student empowerment for sustainability in higher education?

To fully understand how Green Offices are contributing to student empowerment for sustainability in higher education, specific research questions are outlined below that aim to inquire specific aspects of student empowerment for sustainability by the GOs.

Specific research questions

1. How are **students empowered** for sustainability in higher education?
2. In which ways are **Green Offices** supporting the process of empowerment in students?
3. How does this empowerment foster **sustainability** in higher education?

This first specific question investigates how the empowerment process expresses itself in the students by means of applying the empowerment framework derived from the literature on the students interviewed. The second specific research question inquires in which ways the GOs are influencing the empowerment process of the students. The third specific research question inquires what the outcomes of this empowerment process are, both in the students themselves as changes in the university and how this increases sustainability.

To answer these research questions, three case studies were conducted: on the Green Office of Maastricht, Wageningen and Utrecht. Student empowerment was investigated by means of looking at individual and collective empowerment components. For each GO was looked at how their activities supported the fostering of these empowering components and lastly the link between the empowerment process and structural outcomes and environmental impact was studied.

1.5. Scope and limitations

This research was limited to the Dutch field of higher education. However, many of the students involved with the GO were internationals. However, the university context is specific for Dutch (European) institutes of higher education. Furthermore, the only kind of student-led action investigated were Green Offices. This because of their characteristics of being part of the university while supporting student-led action for sustainability. Students investigated where students that were voluntarily involved with the GOs.

Because of time constraints, this study does not cover empowerment of staff and faculty or students that are not intrinsically motivated to become involved with the GO. Furthermore, it was not possible to do a thorough impact assessment of the empowerment outcomes.

Despite these limitations, this study is a first step towards enhancing our understanding of how to support students to transform their institutes of higher education.

1.6. Outline

Chapter 2 explains the frameworks used to investigate student empowerment. Chapter 3 describes the case study design, sampling, methodology and data analysis. Chapter 4 displays the empirical results of this study: a description of the three Green Offices, and a description how the students expressed the empowerment components, how the GOs supported them and what the outcomes and impact was of student volunteer empowerment. Chapter 5 discusses the implications of the empirical findings and recommendations for SHE scholars and practisers and chapter 6 concludes the thesis. In chapter 7, a summary of recommendations for GOs, universities and scholars is given.

2. Frameworks and definitions

In order to interpret social reality, social scholars use conceptual frameworks. This chapter describes the frameworks used to answer the research questions. First, metalevel assumptions that underlie the frameworks and definitions are revealed. Second, a definition of sustainability in the context of sustainability in higher education is given. Third, the different aspects of empowerment for sustainability are conceptualized.

2.1. Metalevel assumptions

Before specifying the framework on empowerment for sustainability, it is important to reveal the metalevel assumptions about the world we live in, the production of knowledge and how to conduct research (Hart & Nolan, 1999; Holden & Lynch, 2004; Lotz-Sisitka, 2009). This section clarifies the ontological, epistemological, and methodological assumptions made in this thesis.

Ontology relates to the nature of reality (Ahmed, 2008). Central questions are: “What kind of world are we living in?” This thesis views social phenomena as being in a constant status of change while being reliant on social interactions. The world’s patterns and phenomena that we perceive, are socially interpreted and constructed (Hannigan, 2006). This does not mean that the physical world does not exist without interpretation. As Dryzek says: *“Just because something is socially interpreted does not mean it is unreal. Pollution does cause illness, species do become extinct, ecosystems cannot absorb stress indefinitely, tropical forests are disappearing. But people can make very different things of these phenomena and – especially – their interconnections, providing grist for political dispute (Dryzek, 2005:12 cited by Hannigan, 2006).”*

Epistemology refers to the production of knowledge and the existence of truth (Ahmed, 2008). Main questions are: “is meaning discovered or constructed? How do we know what we know? Is there one truth?” This thesis considers knowledge as emerging from interactions between human beings and their environment. What knowledge people have and how they acquire this, is shaped by ideologies in society. As Dryzek says above, environmental problems exist but are socially interpreted by researchers, policy-makers, and the public. The implications for research are that social phenomena are changing because of social interactions, and that knowledge is therefore contextual (Giddens, 1984).

The methods used in research should be dependent on the ontological and epistemological assumptions the researcher takes. The assumptions made above have several key implications for the selection of appropriate research methods. Because of the existence of multiple truths, research is value laden. Knowledge is contextual, and as a result the aim of research should be to understand what is happening now. Another implication of this contextual interpretation is that a comprehensive approach is needed to interpret the results. Lastly, the researcher is no outsider but interacts with the subject. These implications are reflected in this study in the choice of research design. The method of qualitative case studies is holistic and descriptive and therefore in line with the metalevel assumptions taken in this thesis (Holden & Lynch,

2004). Furthermore, a reflection on the role as a researcher is included in the methodology. The selection of appropriate methods is further explained in section 3.1.

2.2. Sustainable universities

Green Offices have in their core description that they want to make a change towards sustainability. However, what does sustainability exactly mean? In this section, I cite some of the current most dominant definitions of sustainable development and apply these definitions to university context. In section 2.3, the notion of sustainability in higher education in relation to empowerment for sustainability is further clarified.

Multiple definitions of sustainability have been proposed and used. It can mean different things to different people and organizations (Swyngedouw, 2010). In this thesis, sustainability is a kind of end target to which sustainable development leads. This does not solve the difficulty of defining sustainability since numerous definitions exist for the concept of sustainable development as well. Out of these multiple definitions, the Brundtland definition is probably the most famous and widely used:

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization in the environments ability to meet present and future needs. (World Commission on Environment and Development, 1987)

What made this definition famous is that it mentions an economic and social dimension next to the environmental dimension. Working further on Brundtland's definition, Elkington (1998) made a framework on sustainable development where he stresses the importance of the social, economic and environmental aspects of sustainability: the triple bottom line or the three P's: People, Planet and Profit. In 2002, at the World Summit on Sustainable Development in Johannesburg, profit was replaced by Prosperity, in order to broaden the economic dimension to quality of life in general (Hammond, 2006). The triple bottom line represents the need for including notions of social justice and economic prosperity in the quest for environmental quality. In addition to these two interpretations of sustainable development, a third famous definition was proposed by the environmental/nature conservation organizations IUCN, UNEP, and WWF (1991):

Sustainable development means improving the quality of human life while living within the carrying capacity of supporting ecosystems. (IUCN; UNEP; WWF, 1992)

The multiple interpretations and definitions underline the epistemological assumption of this thesis: environmental problems are socially interpreted and there are multiple *sustainability's* that exist next to

each other in the social realm (Swyngedouw, 2010). Therefore, it is important to make explicit what I consider as sustainable universities:

Sustainable universities are enhancing the quality of life of current and future generations while operating within the carrying capacity of supporting ecosystems.

This working definition includes elements from both Brundtland (1987) and Elkington (1998) and the definition of UICN/UNEP/WWFs. The notion of future generations is included since universities serve as a place to educate students, still young with most of their lives waiting for them in the future. Elkington's dimensions of people and prosperity are combined into the concept of quality of life.

According to the definition of rootAbility, GOs are trying to enhance sustainability in all universities dimensions: research, education, external community outreach and operations while involving the university community with sustainability. In order to achieve sustainability in these dimensions, it is important to consider the power relations that are related to socio-environmental flows, networks and practices (Swyngedouw, 2010). In this research, power relations are looked at through the notion of empowerment. The following section describes the concept of empowerment for sustainability.

2.3. Empowerment for sustainability

To find out how Green Offices are supporting students that want to make a change in sustainability in higher education, we need to describe this conception of making a change. Below, the concept of empowerment is described, followed by an introduction of the sustainability aspect into the concept.

Empowerment is a concept that entails many dimensions. Hur (2006) designed an overarching framework for empowerment based on a review of books and articles on empowerment from various disciplines like political sciences, education and women's studies, health studies, etc. He defines empowerment as multidimensional, multilevel and both as a process and an outcome. The multidimensional characteristic refers to those dimensions of society, like sociology, psychology, economics, and politics, in which empowerment occurs. Empowerment is multilevel in that it takes place as well on individual, group, and community level. In this thesis, both individual and collective empowerment is looked at.

Furthermore, empowerment can relate to psychological empowerment of individuals or groups themselves as well as the activities/structures that support this psychological empowerment (San Pedro, 2006). In this thesis, I look at the psychological empowerment of student volunteers and GO employees and everyone involved with the Green Office as a group and how the Green Offices are supporting this psychological empowerment with their activities/structures.

Studies have been conducted both on the process or pathway of empowerment and on empowerment as an outcome (Shellman, 2014). Empowerment components are aspects of an iterative process as well as psychological outcomes of the process (Cattaneo & Chapman, 2010). Next to these psychological

outcomes, empowerment includes a change made in the structures surrounding the individuals, which was in this case the university context.

Important in this study is that a sustainability dimension added to the concept of empowerment. The personal meaningful goals that individuals and groups set for themselves during the empowerment process should therefore be related to creating a positive environmental impact. Next to this, outcomes should lead to a decreased environmental impact. To achieve this, impact should be assessed during the empowerment process and evaluated upon after reaching the goals.

To sum up, this thesis distinguishes between the empowerment process, outcomes, and impact (Figure 1) to investigate how GOs are supporting student empowerment for sustainability. These three aspects are elaborated upon below, after a short introduction about agency, structures, and the different forms of power.

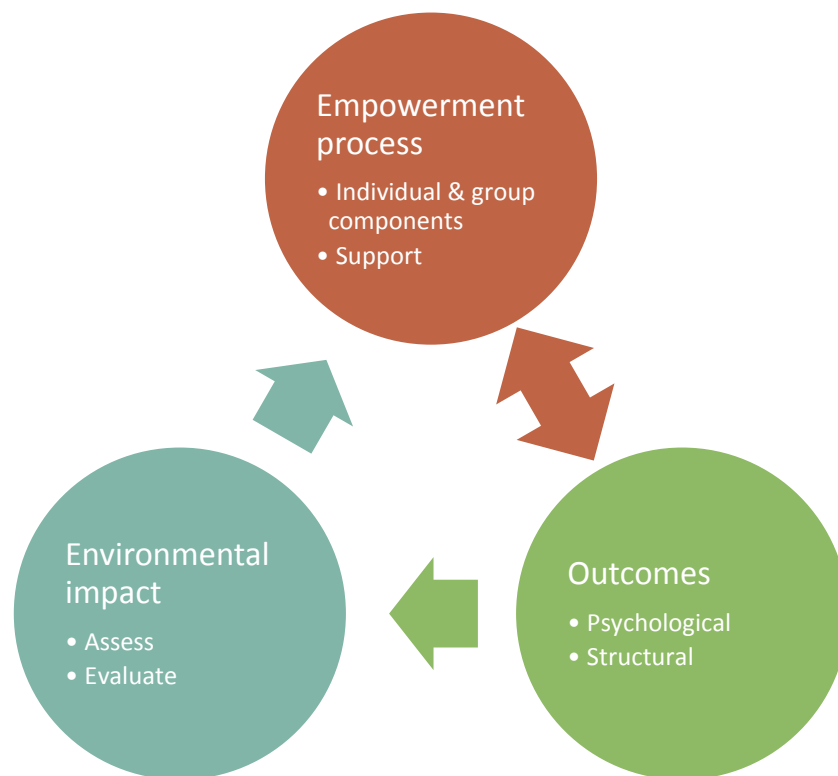


Figure 1: overarching framework for empowerment for sustainability. The empowerment process relates to both individual and group empowerment and how the GO is supporting this process. The empowerment process results in psychological outcomes as well as changes in the structures of the GO and university which leads to a decreased environmental impact of the system. Impact needs to be assessed during the empowerment process and evaluated after meeting the goal.

2.3.1. Agency and structure

An important concept in empowerment theory is agency. Empowerment theory tries to understand how people achieve change and gain control over their lives and communities. As well as empowerment, the

concept of agency entails many meanings and definitions, but it is more specific than empowerment and relates to how humans are enacting. Many sociologists have conceptualized the capacity of a human to change its surroundings in a different way. This academic discussion is also known as the structuration debate. Giddens defined agency as an intervention in the world. The agent has both the intention to do something and the capability to act on this intention (Giddens, 1979, p. 232). Structures are the recursive patterns that are influencing the actors embedded in it. They are created by people and in turn organize and influence the people's lives (Bandura, 2006). When an individual possesses agency, she can have an influence on the structures that surround her. At the same time, structures can constrain and enable agents in their activities (Giddens, 1979, p. 232). Giddens describes this relation between agency and structure by his concept of 'duality of structure': *the essential recursiveness of social life, as constituted in social practices: structure is both medium and outcome of reproduction of practices. Structure enters simultaneously into the constitution of the agent and social practices, and 'exists' in the generating moments of this constitution* (Giddens, 1979). Agency and structure are recursive and intertwined. Structures are present in agents as memory traces of structures and agents are (re)producing the structures in which they exist through their actions. In this thesis, agency as well as structure are important aspects of human behaviour, and therefore, both need to be studied. In this thesis, psychological empowerment is related to agency in that agents feel that they have the capacity and ability to make a change and is related to structures in that empowerment leads to structural changes. Therefore, in empowerment studies, it is important to consider the recursive nature of both structure and agency.

2.3.2. Power

The concept of power is closely linked to both agency and structure. Giddens (1984, 14) describes an agent as someone *able to deploy (...) a range of causal powers, including that of influencing those deployed by others*. He describes power as *transformational capacity of people: the ability to intervene in a given state of affairs so as to alter them as desired*. (Bruce & Yearley, 2006). This first definition is agency-focused. However, Giddens also describes power as a capacity exercised through resources as *structured properties of social systems, drawn upon and reproduced by knowledgeable agents in the course of interaction* (Giddens 1979, 237; Giddens 1984, 14). Henceforth, the duality of structure also reflects itself in Giddens' conceptualization of power relations: power is both exercised by individuals and embedded in structures.

Power is a transformational capacity. Empowerment is enlarging this capacity. Empowerment consists of a change on an individual/collective level in agency and a structural change. Making a change on the personal level (agency) without a structural impact is not empowerment (Cattaneo & Chapman, 2010). Giddens transformational capacity of people is both the access to decision making as the perception of people that they are able to make use of this access to decision making (Rowlands, 1995). Empowerment is therefore both having the internal capacity to achieve change as well as influencing the structures that surround the individual/group. In this thesis, I look at how power expresses itself in students that want to achieve a change in one of the dimensions of sustainability in higher education. What abilities for change

do they have? How are structures constraining or enabling them to make a change? How do these two come together in the process and the components of empowerment?

2.3.3. Empowerment process

There exist different frameworks on the empowerment process. The conceptualization of empowerment varies from source to source and from topic to topic.

Hur (2006) defines the empowerment process as consisting out of five progressive stages: an existing social disturbance, conscientizing, mobilizing, maximizing, and creating a new order. The linearity of this model is in contrast to other scholars as for example Tassone, Giel, and van Lingen (2016); San Pedro (2006); Cattaneo and Chapman (2010) who present the empowerment process as an iterative, reflexive process where the individual cycles through all the components of empowerment. During this process, social context (structure) influences the components and how they interact with each other (Cattaneo & Chapman, 2010). This difference is emerging from the target group of the two frameworks. Hur's (2006) framework is mainly focussing on groups that are dealing with oppression and have as goal to make a change together. Cattaneo and Chapman, Tassone, Giel, and van Lingen and San Pedro are derived from experiential education studies and focussing on individual psychological empowerment. Lyons, Smuts, and Stephens (2001) state that, to reach sustainability, both individual and collective empowerment is needed. Therefore, this thesis inquires both individual and collective components, using Zimmerman (2015), Cattaneo and Chapman (2010), Shellman (2014), and Tassone, Giel and van Lingen (2016) to conceptualize individual components so that all element of the different theories are present starting from the individual. The collective components inquired are taken from Hur's (2006) framework. All of them are explained below in 2.3.4.

To get a holistic picture, empowerment on individual and collective level is looked at in this thesis. Individuals are GO employees and students affiliated with the GO. The thesis looks as well at how being part of a group influences empowerment for sustainability and how this expresses itself in the broader university community. In this thesis, the empowerment process is viewed as an iterative, reflexive process where both individual and collective components of empowerment are cycled through (Cattaneo & Chapman, 2010; Shellman, 2014). However, to come to a full understanding of the empowerment process, structural factors should be studied as well. Questions related to structure are for example: 'What structural/institutional factors are enabling or constraining the process? What factors are crucial for the empowerment process to take place?' This both related to the GO's activities and organization as well as the universities activities and organization.

2.3.4. Individual and collective empowerment components

Most frameworks on empowerment (as the ones mentioned above) distinguish certain components of empowerment. To get a holistic picture on how GOs are empowering students, each component was matched with supporting structures of the GO.

Based on the different literature sources (see Table 1), I distinguished four individual empowerment components: awareness, meaning, self-efficacy, and reflexivity. They are derived from multiple sources and adapted to the SHE context. First, **awareness** is the knowledge on sustainability challenges as well as knowledge on the power dynamics, resources and one’s own skills and abilities in relation to this. Second, **meaning** relates to the values and beliefs that result in meaningful and power oriented goals. Third, **self-efficacy** is the belief that one has the power to make a change. Fourth, **reflexivity** is observing and reflecting upon the change one makes. The sustainability aspect is embodied in meaning, awareness, and reflexivity. Actors that are empowered for sustainability have the knowledge on the sustainability challenge as well as environmental values and beliefs. The individual empowerment components are based on a psychological notion of empowerment. All these components start from the individuals’ perception of their empowerment process, which is in line with the ontological metalevel assumptions (see 2.1).

Table 1: Individual empowerment components

Component	Description	Derived from
Awareness	Awareness on sustainability challenge(s) (global as well as the local context), power dynamics, resources and one’s own skills and abilities in relation to this	(Cattaneo & Chapman, 2010; Tassone et al., 2016)
Meaning	Values, beliefs, personally meaningful and power oriented goals	(Cattaneo & Chapman, 2010; Hur, 2006; Shellman, 2014; M. A. Zimmerman, 1995)
Self-efficacy	Belief that one has the power to make a change	(Cattaneo & Chapman, 2010; Hur, 2006; Tassone et al., 2016)
Reflexivity	Observing and reflecting upon the change one makes	(Cattaneo & Chapman, 2010; Hur, 2006; Tassone et al., 2016)

Next to individual empowerment components, Hur (2006) distinguishes four collective components compiled out of several articles: collective belonging, involvement in the community, control over organizations and community building (Table 2). **Collective belonging** is an individuals’ feeling of belonging to a certain network of peers. In this thesis, I will look whether individuals feel part of the university community or the Green Office. **Involvement in activities** means taking part in activities or events leading to a change in power. **Control over organizations** refers to influencing the decision making of the GO or the university. Lastly, **community building** means creating a sense of community in that the members of the university community are willing to collaborate to make a change together. In contrast to the individual components, the collective components are not purely psychological but are more related to the actions of the agents: do they feel part, do they take part in activities, do they influence the decision making and do they collaborate towards common goals.

Table 2: Collective empowerment components, derived from Hur (2006) and adapted to SHE context

Component	Description
Collective belonging	Having a feeling of belonging to the GO
Involvement in activities	Taking part in activities of the GO or other activities that lead to a change in SHE
Control over organizations	Taking part in the decision making of the GO or the university
Community building	Collaborating to achieve change (within the GO and with other organizations)

This thesis will investigate how the students involved with the GO express these components and how the university and the Green Office are supporting or constraining these components.

2.3.5. Empowerment impact

Changes in one of these dimensions of sustainability in higher education do not necessarily lead to a diminished socio-environmental impact of the system. Therefore, it is important to make a distinction between activities, output, outcomes, and impact. The activities are the actions the students are conducting, the outputs are the immediate results of these actions, outcomes are the structural changes resulting from and the impact is a positive biophysical or socio-environmental change. To give a fictional example, students lobby for a change in energy provider, which then leads to a change in policy (output) which leads to a change in energy use of the university (outcome) which leads to higher percentage of renewable energy use (impact). In this study, especially the outcomes and impact of empowerment are important to understand how student empowerment is fostering sustainability in higher education. They are further elaborated upon below.

Outcome

In this thesis, I distinguish two outcomes of the empowerment process. The first is related to Giddens' agency and the second to structure. Empowerment can be seen both as a process and as an outcome (Shellman, 2014). Individual empowerment as an outcome is defined here as a personally meaningful increase in power in one's life, society and community obtained by the actors' own efforts (Cattaneo & Chapman, 2010; Hur, 2006). Collective empowerment is defined as a sense of freedom, belonging and power for members of a community which leads to social change (Hur, 2006). Empowerment as an outcome is both the new ability people have to make change happen and the belief that they can make these changes. This outcome can be broken down into the individual and collective empowerment components described above, which are therefore both part of the empowerment process and an outcome of this process.

The second outcome is related to structure and is the change that goes beyond the individual and collective components. In this case, structural change in sustainability in higher education is considered as an outcome of the empowerment process. Most empowerment frameworks take psychological and individual change as a starting point and mention structure only as a contextual factor influencing the

components and process of empowerment. To put it differently, these frameworks are agency-based, but do not really focus on changes in structure as an outcome of empowerment. Since GOs have as a main goal to enhance sustainability in their universities, it is important to look at this interaction between agency and structure and at structures themselves. Change in structures includes both institutional changes and changes in the physical environment. Institutions are defined here as a rule-based social patterns that structure social interactions (Van Koppen & Spaargaren, 2015). Examples are changes in discourse, putting issues on the agenda, new university policies leading to different procurement or infrastructure, changes in education, research, ...

In order to categorize these structural changes, I developed a framework based on the work of multiple scholars (Barlett & Chase, 2004; Beringer & Adomßent, 2008; Jones, 2013; Moore et al., 2005) that distinguishes different dimensions of SHE represented in Figure 2.



Figure 2: Sustainability in Higher Education (SHE) subdivided into education, research, external community outreach and operations adapted from (Barlett & Chase, 2004; Beringer & Adomßent, 2008; Jones, 2013; Moore et al., 2005).

Jones (2013) argues in its demand for “Biophilic universities” that universities can contribute to the societal transition towards sustainability in the following four ways: (1) teach in a way that students learn to cope with the complexity of sustainability challenges, (2) conduct research that is addressing the sustainability challenges society is facing, (3) integrate with and influence society and (4) implement sustainable practices in its operations as a role model for society. Operations are the actual environmental footprint of the university. (Barlett & Chase, 2004; Beringer & Adomßent, 2008; Jones, 2013; Moore et al., 2005). To have an outcome in one of these domains, you need a change in policy of the universities. Governance is therefore the overarching category, that is the means of achieving sustainability in education, research, external community outreach and operations.

Figure 2 doesn't include the engagement of the university community with SHE because it is related to and intertwined with these different aspects. Therefore, a different categorization is needed to investigate community engagement with these aspects of sustainability in higher education. A framework derived

from the GOUs model is used to categorize different ways of engagement (GOU, n.d.-a). First, is to inform the university community about sustainability challenges in the university and what strategies are already in place. Second, is to involve the university community with the decision-making processes about SHE. Third, is to support student and staff-led action (empowerment) that enhances sustainability in higher education (Figure 3).

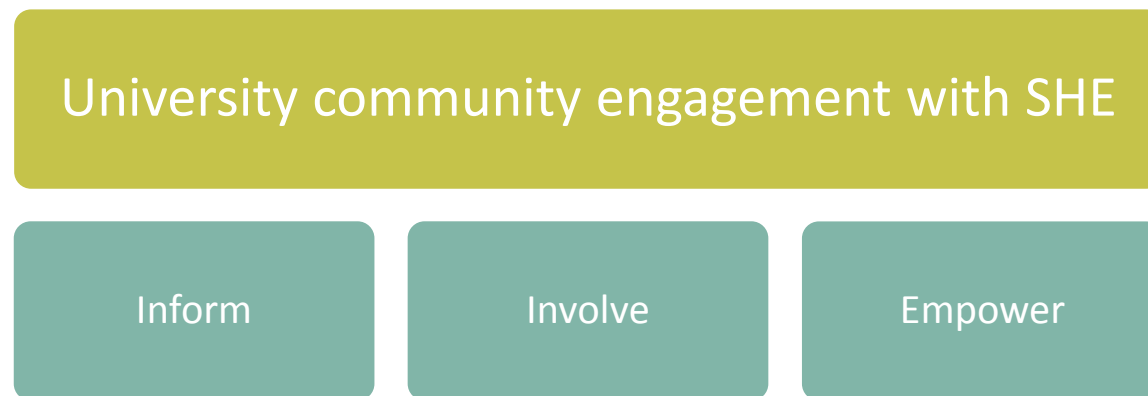


Figure 3: different ways of university community engagement with SHE

Green Offices are working on all dimensions of sustainability with higher education, and trying to engage the university community with this. The different dimensions of SHE and ways of engagement are used to categorize the outcomes in the result section.

Impact

Impact is defined in this study as a positive biophysical or socio-environmental change. This change does not have to be in the immediate environment of the university but can as well happen at the other side of the world. For the operations dimension of sustainability in higher education, it is possible to measure the biophysical impact. However, for the other dimensions as education, research, and community outreach, it is more difficult to measure. Also, socio-environmental impact is more difficult to quantify.

Still, even when impact cannot be quantified in numbers, one can make an estimation of what the impact of a certain outcome would be. Impact assessment and evaluation is a continuous process, and is necessary to conduct before the start of a process, during the action and at the end. Assessing the impact of empowerment was infeasible in the scope of this thesis, so therefore I only look at what activities the GOs have themselves to monitor the impact of empowerment for sustainability.

2.3.6. Conclusions on empowerment for sustainability

Power is transformational capacity; empowerment is an increase in this capacity, both in agency as well as the actual influence on the structures surrounding the agents. Empowerment is an increase in this transformational capacity. The empowerment process can be looked at on an individual and collective level. In this thesis, this is operationalized on an individual level by distinguishing four components: meaning, awareness, impact, and self-efficacy. On a group level, the following components are

distinguished: belonging, involvement, control, and community building. Next to the process, the empowerment is an outcome in itself and leads to structural outcomes in the Green Office and/or the university. Lastly, empowerment for sustainability leads to a positive biophysical or socio-economic impact. In this thesis, the outcomes are categorized in one of the dimensions of SHE: education, research, community engagement and operations (see Figure 2).

All these elements combined give the following working definition of empowerment for sustainability:

An increase in transformational capacity of individuals and groups, resulting in structural outcomes and a positive environmental impact.

3. Methods

3.1. Case study design

A case study design was chosen to explain the research questions. Sustainability is a complex concept with multiple dimensions, interpretations, and opinions on how to achieve it. In addition to this, no two universities and their Green Office are the same. A suitable method to achieve full understanding of a complex system is the case study design (Kumar, 2014). For the same reason, Corcoran et al. (2004) argue that case studies are ideal tools to investigate sustainability in higher education. Given these arguments, a comparative case study analysis enabled to give a holistic picture on student empowerment for sustainability in higher education through green offices. An understanding of the case studies was reached by analysing secondary sources, doing interviews and observations.

3.2. Sampling of the cases

Three different Green Offices were investigated: Maastricht University Green Office (UMGO), Green Office Wageningen (GOW) and Green Office Utrecht (GOU). There are two reasons for selecting these GOs as cases. First, because of their age; they are the three oldest GOs which results in a more rigid organizational structure and elaborate documentation of their activities. The second reason is that all of them have a focus on engaging the university community. Maastricht University Green Office Maastricht (UMGO) has targeting engagement of students as one of their goals and research on student engagement has been conducted before (de Ruijter, 2016). Green Office Wageningen (GOW) has a student employee responsible for university community and communication outreach. Green Office Utrecht (GOU) of Utrecht University has student empowerment is one of its core features (F. Spira, personal communication, 2016). An additional reason to include Wageningen GO that I was a student in Wageningen University and which made investigating this case more convenient from practical point of view.

Next to these three cases, a made a more detailed study on one project group of Wageningen university to come to a deeper understanding of the empowerment process, agency, and structure. There are several reasons for choosing this group as a detailed case. The first is out of convenience: I was familiar with the university structure and the Green Office and lived myself in Wageningen. The goal of the project group was to reduce the number of disposable cups in the university. A second reason is because of its history: many other students in the past had tried to make a change in the use of disposables in the university. Last reason was the nature of the group: there was one GO coordinator involved, but also several other actors: student from other student sustainability groups, the student council, students not attached to any organization and a PhD. All of this allowed to have a rich and diverse picture of the individual empowerment components, collective empowerment and the structures constraining or enabling to reach their goal.

3.3. Secondary sources

To come to a further understanding of the context of the four case studies, their activities and organizational structure were studied by reading the Green Office websites, annual plans, business plans, newsletters, and social media accounts (Facebook pages and twitter). Data was gathered on the topics presented in Table 3. The finished descriptions were shown to the GO manager during the interview and adapted accordingly.

Table 3: framework description of the case studies

Topic	Aspect
Establishment	Date of foundation
	History of foundation
Structure	Number of GO employees
	Hours GO employees work
	Volunteer structure
Mission and vision	vision
	Mission
	defining sustainability
Mandate	Place in the university
	support
Resources	Funding
	Place
Relationships and collaboration	Supportive staff
	Internal collaboration
	Outreach
	External
Activities (2016)	Education
	Research
	Community
	Operations
	Additional

3.4. Interviews

Interviewing the actors involved in GOs, enabled to come to a further understanding of the empowerment process, components, and outcomes. To find out what approach GOs are currently taking on student empowerment, the GO manager, and the student employees responsible for university community engagement were interviewed. To investigate the empowerment process and components, the students involved with the GO are interviewed: students part of a project groups/with an idea related to SHE and volunteers. Additional information from an outsider perspective was gained from interviews with members of the umbrella organisations rA (European level) and SvM (national level). Interviews were semi structured with the topic lists based on the empowerment for SHE framework (see encouraged to illustrate their answers by the drawings displayed in Annex 10). Additional information was gathered

through e-mail conversations with the interviewees or other involved actors. Additional information was gathered through e-mail conversations with the interviewees or other involved actors. Additional information was gathered through e-mail conversations with the interviewees or other involved actors. Additional information was gathered through e-mail conversations with the interviewees or other involved actors. Additional information was gathered through e-mail conversations with the interviewees or other involved actors. e-mail conversations with the interviewees or other involved actors. Additional information was gathered through e-mail conversations with the interviewees or other involved actors. Additional information was gathered through e-mail conversations with the interviewees or other involved actors.

Sampling the interviewees took place as follows: for each GO, the manager was interviewed. Next to this, the GO employee whose tasks are mostly related to community engagement was interviewed. Students involved with the GO were sampled through snowball sampling. The interviews are referred to in the text with codes related to function and GO, explained in annex B.

3.5. Observations

Next to the interviews verbal exchanges and practices of people while visiting the Green Office for interviews or in my position as a Green Office Coordinator were observed. The observations were guided by the observation scheme derived from Berg and Lune (2013) that consisted out of a description of the situation, interpretation if it was already there and subjective reflections (see appendix C). The descriptive notes consisted out of context, actors, relationships, and other observations. The interpretative notes where about the process, components, or outcomes of empowerment. They are thoughts that come up during the observation and were noted down as Observer Comments (OC) to make a clear distinction between description and interpretation. Lastly, the subjective reflections where notes related to myself: How did I feel, what was my meta-level position towards the subject as a Green Office Coordinator or insider researcher. Notes were made immediately in the field or shortly after on a computer or in a booklet.

3.6. Reflective journal

During this thesis, I was volunteering 10 hours a week in the position of Green Office Coordinator of the Netherlands and Belgium (GOC). As GOC, I had regular contact with Studenten voor Morgen (SvM) and rootAbility, two organizations involved with the GOs. SvM is the Dutch student sustainability network of which the GOs are member off. rA is the European umbrella organization. I was part of SvM and working together with the board member Student Network of SvM. Except for writing in my blog about my findings in this thesis; we didn't have any contact about my thesis. Different from SvM, there was no official tie between rootAbility and my position as GOC. However, they gave a lot of input as well for my GOC function and we were having regular meetings with SvM, me and rootAbility where we would discuss the Green Office Movement. Apart from my function, I also had contact with rootAbility about my thesis. My

relationship with SvM was very strong in my function of GOC, but did not have anything to do with my thesis. On the contrary, my ties with rootAbility as GOC were less strong, but I was dependent on them for data and information for my thesis. Due to my double position as both researcher and Green Office Coordinator, I was conducting insider's research. Insider's research means that the researcher is studying a social group where they are participating and influencing the dynamics in multiple ways.

According to Greene (2014), the following methodological issues arise in insiders research: threat of objectivity, compromising validity, gaining access, confidentiality, power and shifting social identities. Objectivity is defined as: the degree to which the findings are depending on the nature of what was studied rather than the personality, beliefs and values of the researcher (Payne & Payne, 2004). My experiences with student engagement and position as Green Office Coordinator might have led to bias and therefore a loss of objectivity. The validity of research refers to the degree to which the empirical findings are true. It might be difficult to keep distance from the study and therefore validity might decrease. Next to these two issues related to the research itself, the following ethical issues arise: confidentiality, power, and shifting identities. It is important that while gaining access, the researcher is clear about its double role. In my case, it would not be ethical to conduct research for my thesis as a GOC without revealing my aims. Since the study object can be peers or friends, confidentiality problems may arise. Furthermore, my position as GOC could give rise to differences in power between me and the participants. Lastly, I switched during the whole of the thesis between the two identities of a researcher and Green Office Coordinator.

To conduct research in a trustworthy way, several methodological tools exist. The following were used in this research: triangulation, peer debriefing and self-reflection. Triangulation means that the researcher uses multiple sources, methods, and theories to test their hypothesis. This principle is not only applicable to insider's research but increases credibility of every kind of research. For the conceptual framework, I looked at theories from all different kind of disciplines. For the methods, data was gathered from multiple sources in multiple ways.

Next to regular meetings with my two supervisors, I participated in a so called "thesis ring". The thesis ring consists of students of the environmental policy chair group of Wageningen University that meet every two weeks to discuss the writings of the students guided by a PhD student. This peer debriefing added to the avoidance of bias and loss of objectivity during the collection of data, reading of literature and data analysis because the other students are genuine outsiders.

During the entire course of the thesis (research proposal, fieldwork, and data analysis), a field diary was kept with my everyday activities related to GOs (as a researcher and as GOC and as an individual). Next to this, I reflected every day on my position in relation to what I am researching by writing stream-of-consciousness. In this way, I looked from a distance at the process and reflected about all methodological

traps related to insider research mentioned above. In section 0 is discussed how being an insider influenced my research process.

3.7. Data analysis

Data analysis consists out of three stages: data reduction, data display, conclusions, and verification. In the data reduction phase, the data is condensed and summarized. After conducting the interviews, a condensed report was made based on the notes taken and the recording. So not all words were literally transcribed, but an answer to each question was described. These condensed reports were coded. Some codes were derived from the conceptual framework and some codes came up during the process of coding. The coding manual is presented in Annex C.

In data displaying phase, the results from the data reduction phase were presented in an organized way. The results of the secondary sources were represented in tables and the thematic categories of all the interviews were looked at together to discover similarities/differences and patterns. In the third phase, conclusions were deducted from the patterns discovered through the data display. In the last phase, the found results are verified. Verifying the results was done in the following ways: the thesis was presented during the National Day of Sustainability in Higher Education and in an online seminar.

4. Results

The findings are displayed in four sections. In 4.1, a description of the organization, activities and actors of each GO is given. In 4.2 shows how individual, group and collective empowerment components were expressed in student employees and GO volunteers. This data is presented without making a distinction between the different GOs because the findings were highly similar findings and not context specific. In contrast to this, the structures enabling or constraining the empowerment process are highly dependent from the organization, activities and actors of each GO and university context and are therefore described separately. Finally, in 4.3, the outcomes and impact of empowerment are described specific for each GO.

4.1. Description of the three GOs and other actors

In this section, the organization, actors, and activities of each GO are described. This serves as a background to better understand the context of empowerment of each GO.

4.1.1. Partners

As written in 1.2, collaboration with internal and external stakeholders is one of the key principles of the GO Model. The university embeds the GO in its organizational structure and gives it funding and an official mandate to advance sustainability. Depending on the project, multiple other stakeholders like other student initiatives, NGOs, companies, municipalities or other GOs are involved (rootAbility, 2015a). These actors differ for each individual GO. However, there are two actors that are interacting with all GOs included in this research: RootAbility and Studenten voor Morgen (SvM). Their objective and relation with the GO Movement are explained below.

RootAbility

An important actor for all European Green Offices is rootAbility. RootAbility is a non-profit organization that was founded in 2012 by the cofounders of the UMGO. Their aim is to promote the creation of more GOs at European universities and support the existing GOs in their functioning. In order to achieve this aim, they help GO initiatives to lobby for an official mandate of the university and they support the established Green Offices with open source material, workshops and events as for example the yearly Green Office Summit (rootAbility, 2016a).

Studenten voor Morgen

Another important actor is Studenten voor Morgen (SvM). 'Studenten voor Morgen' means 'students for tomorrow' and is a student sustainability network which operates in the Netherlands. Their objective is to support students in choosing a sustainable lifestyle, education, and career and to enhance sustainable education, research, and business. Multiple sustainability organizations located all over the Netherlands are member of SvM (Studenten voor Morgen, 2016). Multiple ties exist between the Dutch Green Offices and SvM. First, all Green Offices of the Netherlands are paid members from SvM. Second, SvM has one board member 'student network', who is responsible for all member organizations of SvM. Third, SvM employs a Green Office Coordinator NL & BE who has two main responsibilities: increasing the visibility of

the GOS and support the Green Offices through coordination, process facilitation, improving internal communication and knowledge aggregation. At the time of this research, I held this position. Section 3.6 explains what methodological implication this had and section 5.5. critically reflects on how this double position of both being a researcher and insider affected the research process.

4.1.2. Green Office Maastricht University (UMGO)

Organization

The UMGO was the first GO that came into existence, founded in 2010 by a group of students and staff members of the UM. There are eight GO employees who work 14 h/week fully paid. Their portfolios are: Reporting and Assessment, Education, Research, Administration, Strategy, Operations-Technology, Operations-Logistics, and PR & Community. They are part of the facilities department and are the only sustainability body of the university, resulting in a big share of their projects being targeted at operations. They receive 150 000 euros per year from Maastricht University's General and Technical Services. ("Green Office Maastricht," n.d.-a); Interview M1, 2017)

In 2016, an external consultant gave advice on the organization of the UMGO. Her recommendations and their participation in the European Green Office Summit resulted in a restructuring of the GO which started in November 2016 and will end in the summer of 2017 (Interview M1, 2017). As part of this restructuring, they reframed their vision and mission. The current vision of the UMGO is:

Maastricht University is a driver of sustainable development. UM prioritizes sustainability in all decision making and empowers its community in becoming a transdisciplinary hub for social and environmental research and entrepreneurship

(UMGO, 2017a).

To achieve this vision of a sustainable university, they formulated a mission which expresses their activities as a Green Office. Two interviewees mentioned that they wanted to move from their former image as "green police" of the university to a central connecting point for the whole university community, empowering bottom-up initiatives and facilitating cooperation to achieve sustainability (Interview M1, 2017; Interview M2, 2017). In line with this, they started a new volunteer and community outreach approach. (UMGO, 2017)

Actors

The UMGO was advised by two **staff** members, of which one was doing a PhD on the UMGO. In their new mission, they aimed to collaborate closely with other **student organizations** and student committees by organizing joined events or giving them advice on how to make their organization more sustainable (Interview M4, 2017). The GOW was a member of Studenten voor Morgen and was closely linked to rootAbility.

Before the restructuring, the UMGO had about five **volunteers**. They renamed the volunteers as members. **Members** can be part of projects as a project member or project manager. The UMGO expected some commitment from them, like attending the weekly project meetings and being involved for at least two months. In return, the members could use the office space, the MUGO organized member appreciation days and workshops and they received a reference and a certificate. The MUGO started with this structure at the time of the data collection for this thesis, so no further details on the outcomes of this new structure are included in this thesis (UMGO, 2017b).

People with ideas on project related to increasing sustainability at the UMGO could contact them; the GO discussed this in their meetings and tried to find a fitting project for them.

Activities

The UMGO had activities related to community, education, research, operations, and governance.

The UMGO used their website, Facebook, twitter, and newsletters to provide information on their activities, their team, and sustainability facts on lifestyle and the university. There was also a Green Office Wiki, which gives an overview on the structure, history, awards and media mentions of the UMGO (UMGO, 2016b).

They informed the university community about local sustainability initiatives by a green city guide, organized activities related to sustainable lifestyle and they showed the university's consumption of water, gas, and electricity on info-screens on campus. More interactive ways of involving the university community took place as well: open brainstorms with students and/or local initiatives, and they hosted the WE-platform, a collaboration platform software. Lastly, they started the new member structure described above. Figure 4 shows their working space which is mainly used by the GO employees. (UMGO, 2016a)

Activities related to the educational dimension of SHE were: a sustainability course inventory and assessment, skill sessions, courses, and field trips/excursions. The biggest research related project was the living lab, a community service learning program where students conducted research on sustainability issues in the university or the city of Maastricht. (UMGO, 2016a)

Activities related to operations conducted in 2016 were: facilitating the insulation of historic buildings, monitoring of energy consumption, warm sweater day where the temperature in the buildings was decreased by one degree, facilitating effective waste separation, reducing packaging in catering suppliers. (UMGO, 2016a)

Lastly, the UMGO defined also a governance dimension as part of their activities to enhance SHE. Activities included the annual publication of the sustainability progress report and the development of UniSaf-NI, an open source indicator framework for higher education.

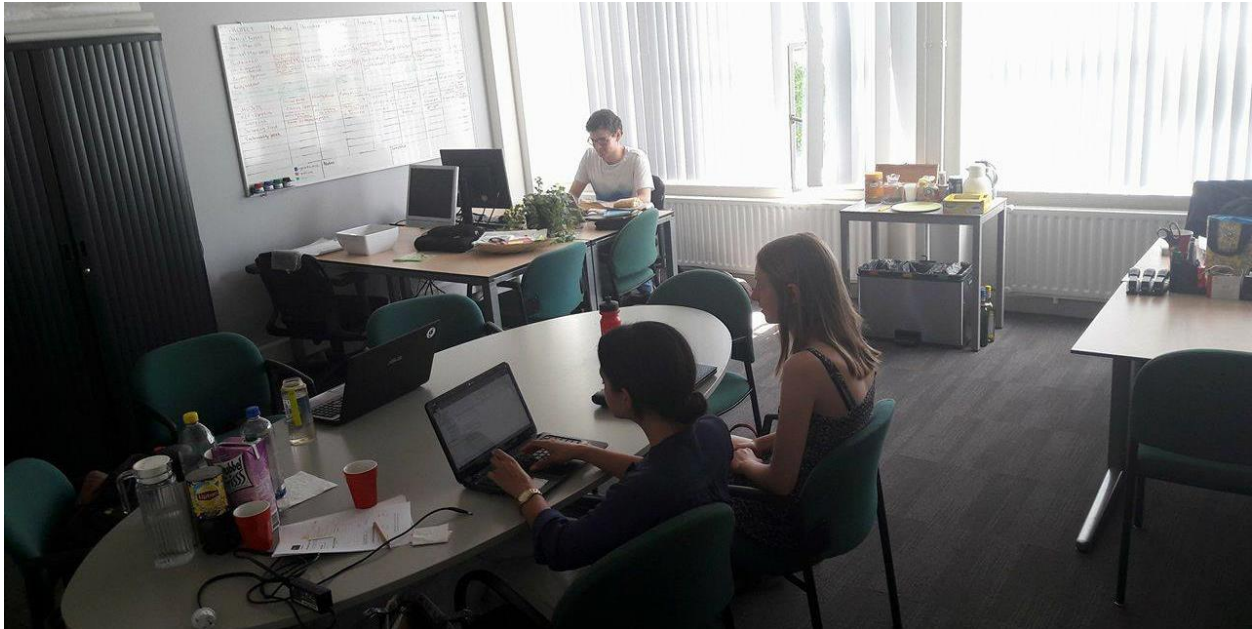


Figure 4: working space UMGO

4.1.3. Green Office Wageningen (GOW)

Organization

The GOW was founded as the second GO in 2012 by students and the taskforce sustainability, inspired by the existence of UMGO. There were four student employees: Outreach, Operations-ICT, Operations-Catering, and Education Coordinators. The manager remained the same since the beginning of the GOW and worked 16 hours a week fully paid. The student employees worked 8 hours, of which 4 paid. The GOW was part of the facilities department and received 1 500 euros per year for the activities, excluding wages, use of the office and the computers. Figure5 shows the GOW working space, which they shared with WEP, another student sustainability organization. (GOW, 2015)

Their vision was that the WUR should lead in the transition towards a sustainable future. The GOW aimed to achieve this vision by being a platform for change, lobby for a sustainability strategy at the WUR and connecting the facility department with research and education. (GOW, n.d.-a)



Figure 5: working space GOW

Actors

The GOW was advised by a supportive board consisting out of four **staff** stakeholders from the education in sustainability and operational departments. Furthermore, the student council also supported them in the same way they support other student organizations. The GOW was a member organization of **Studenten voor Morgen** and was advised by **rootAbility**. (Interview W1, 2017; GOW, n.d.)

The WUR hosted many student sustainability groups that are operating independent from the GOW. The Green Active Network is a flat platform that consisted of 15 **student sustainability organizations**, including the GOW and the Sustainability and Internationalization Student Council Party. Many of these organizations received funding from the Commissie Activiteiten Support from the WUR (WUR, n.d.-b). The GOW was closely collaborating with many of them on events. Furthermore, they shared the office with Wageningen Environmental Platform, a student group focusing on sustainable student lifestyle. The organizations of the network met every two months and in 2017, a coordinator for the network was appointed. Next to this, four green teams consisting out of staff were engaging themselves voluntarily to reduce the environmental footprint of their four buildings. The GO was collecting best practices of these groups and thinking on how to support them more. (Interview W1, 2017)

There was no clear **volunteer** structure in the GOW. They used a WhatsApp group to occasionally request for help and had one volunteer helping with graphic design. *We tried hard, but I have to say that we kind of neglected it lately* (Interview W1, 2017). Single **students with ideas** sometimes wrote an e-mail to the GO with an idea to enhance sustainability and are then directed to the portfolio that suits the idea. But, more often of students came in group with a project idea or existing student sustainability organizations asked to collaborate. The Green Office was also supporting the course 'empowerment for sustainability', for which students had to do a sustainability project. The GO gives a presentation in this course, mentioning that students can pass by, and most editions of the course, several participants came to the GO to ask for help for their idea. None of the student employees had volunteer management in their task description. (Interview W1, 2017)

Activities

The GOW organized activities related to community, education & research, and operations. In their newsletters, Facebook, intranet posts and on their website, they informed the university community about sustainability in the university, their own upcoming events, and activities of other organizations, meeting the team, vacancies for student employees or volunteers. Activities were mainly related to awareness and lifestyle: there are several days or weeks about global sustainability challenges linked to their lifestyle. They had the green (wo)man, a person dressed in a green morph suit present at most activities to increase the visibility of the GO. The GOW was also co-organizing lunch lectures on the CSR agenda of the university. Recently, they introduced the open office Mondays, where students were invited to pass by during lunch. However, no one really passed by in the first months. (M. Eggers, personal communication, March 13, 2017)

Related to education, the GOW co-organized two extra-curricular courses: Entrepreneurship for Sustainability and a studium generale. There was also an award ceremony for teachers that include sustainability in their courses. Furthermore, the GOW has a community service learning program where students could do a sustainability research on the operations of the university inside their curriculum. However, the application procedure had become more difficult due to new university administration rules, resulting in a decrease in projects (M. Eggers, personal communication, March 13, 2017).

Half of the team of GO employees was working on operations, more specifically on ICT and catering. As a result, most projects on operations are linked with these topics. The GOW has a roadmap for better catering with several targets. There was a project group consisting out of the Operations-Catering student employee, other students, and a PhD. The project group was campaigning and lobbying to reduce the disposable cups in the university. Other activities related to operations were the roadmap on better ICT, Warm Sweater Week, and a project on green relationship gifts.

4.1.4. Green Office Utrecht (GOU)

Organization

The GOU was founded as the third GO in 2013 by the UU, students and SOON, an organization that solves social business challenges involving students, young professionals, and organizations. It started as a two-year pilot project and was established in 2015 as a permanent project of the university. There were two staff member that are fully paid: the manager (28h/week), and assistant-manager (16h/week). Next to this, the team consists out of seven GO employees that worked 12 h/week of which six paid: a Communication, Online Communication, Marketing and Outreach, Activities, Campaigns, Project and Volunteer, and Living lab Coordinator (GOU, n.d.-a).

The Green Office of Utrecht was operating next to the sustainability department of facility services. Their core mission was to involve all members of the university in making a change towards sustainability. Their portfolios were based on three pillars: inform, involve, and empower. The operational structure and the

relation with other university actors are described in Figure7. They got 50 000 euros per year funding from the university, excluding the salary of the manager, and office usage. Figure6 shows their office space, which is shared with the staff members of the sustainability program team and open to everyone, style “hipster barista bar meets modern office with flexible workspaces”. (Rademakers, 2016)



Figure 6: working space GOU (GOU, n.d.-b)

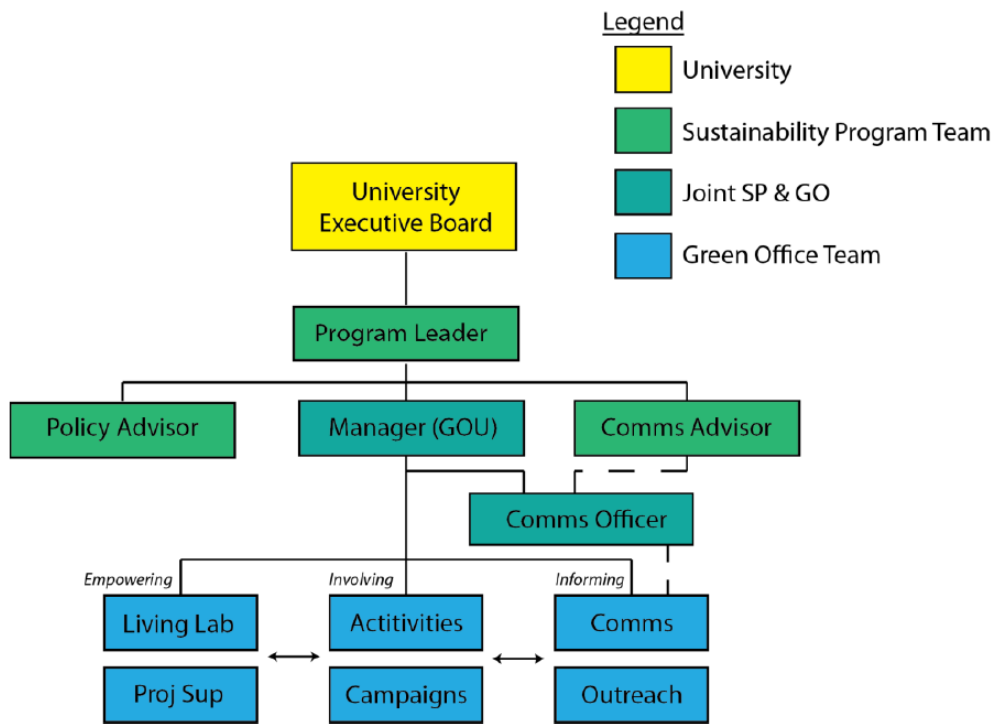


Figure 7: operational structure GOU (Rademakers, 2016), with additionally an assistant-manager next to the Manager of the GOU

Actors and activities

The GOU was a member of SvM, and was collaborating with rootAbility, Soon, Move and Young and Fair. Inside the university, they were partnering with two student associations: Utrechtse biologen vereniging and Storm. (GOU, n.d.-b)

The GOU structured their activities different from the other GOs. The Sustainability Program Team was focusing on operations, and therefore the GOUs primary activity was involving the university community with sustainability. They informed the university community about upcoming events, sustainability news at the UU, and how to get involved by means of their newsletters, Facebook page, twitter, and website. They were running activities, campaigns, and projects. The campaigns and activities had as purpose to raise awareness on sustainability on campus. The GOU supported students that want to launch their own campaign.

The GOU recently restructured their volunteer structure to a membership structure: all student volunteers involved with the GO were renamed as **members**, which involved a certain commitment to the GOs activities captured in a contract. In return, the members received a certificate, reference letter in LinkedIn, public thank you and award of GO Member of the year, workshops, and social activities. The members could be involved as an officer, in a committee or project group. Officers were two single students helping the living lab coordinator or campaign coordinator. Committees consisted out of 6 students helping the Marketing & Outreach Coordinator and 4 students helping the Activities Coordinator. The third form were project groups: groups initiated by a student volunteer supported by the Project and Volunteer Support Coordinator. An overview of project groups is given in Table 6. There was also the possibility to start your own project, with support and funding provided by the GOU. (GOU, 2017a, 2017b)

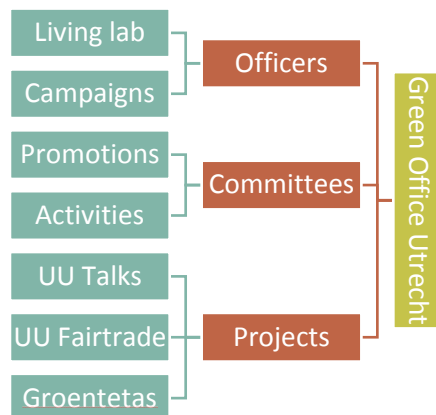


Figure 8: volunteer structure GOU: officers, committees, and projects

Furthermore, the GOU hosted a service learning program where students could conduct research on sustainability at the UU inside their curriculum. Resulting out of the living lab was a symposium with the results of the research. Staff members were encouraged to talk about sustainable research during the Sustainability Cafes and Meet and Greets.

4.1.5. Conclusions on descriptions

The three Green Offices shared some characteristics, but many differences were found as well. Most striking about the UMGO is that it was the only sustainability body with a flat hierarchy: the manager is one of the employees, with the same number of hours and changing every year. The UMGO was also the only GO that fully pays its student employees. What made the UM different from the GOW and GOU in its university structure is that they were situated inside the city and that the different faculties were very decentralized. The GOW was the smallest GO, as well in office space, hours, GO employees and budget. Several reasons for this were found: the WUR is one of the smallest universities of the Netherlands, they also gave funding to multiple other student sustainability organizations and the last couple of years they won the Sustainabil (a ranking of the most sustainable Dutch institutes for higher education organized by SVM), which according to the GO manager made that the board of directors did not prioritize sustainability. The GOW did not have a clear volunteer structure. The GOU was operating next to the Program Sustainability Team which focuses on the facilities of the university. Therefore, their main mission was to engage the whole university community with sustainability which expressed itself in their three pillars, the Volunteer and Project Coordinator and their volunteer management. To conclude, the three GOs had differences in their university context, organizations, relations with actor and organized activities as is displayed in Table 4.

Table 4: Comparison between organizational structure, actors, and activities of the three GOs.

	UMGO	GOW	GOU
Founding year	2010	2012	2013
Manager	One of employees, changing every year	Fixed, 16h/week	Two people: 28 and 16h/week
GO employees	8, 14h/week fully paid	4, 8h/week, 4h paid	7, 12h/week, 6h paid
Place in university	Main sustainability body	Next to facilities department	Next to program sustainability team
Focus	Research, Education, operations, Community, Governance Platform & Empowerment	Operations, Education, Community (inform, awareness)	Inform, involve empower
Volunteer management	Now implementing: fixed commitment, contracts, rewards Not in task description	Incidental calls for volunteers	Yes: fixed commitment, contracts, rewards One Coordinator fulltime responsible
Support for people with ideas	Write e-mail	Write e-mail	Clearly indicated procedure on website

Relation with stakeholders inside university	Collaborate with student organizations for events	Part of the Green Active Network, a platform with 15 student sustainability organizations	Collaborate with these organizations for events
Relation with stakeholders outside university	SvM, rootAbility Green guide about the city	SvM, rootAbility	SvM, rootAbility Partners: SOON, MOVE, Young and Fair

4.2. Process of empowerment

In this part, results of all interviews of all case studies are studied together to understand the process of empowerment in a university context. The structure of this section is the following: In 4.2.1, a description of the individual empowerment components, enabling or constraining structures of each Green Office related to these components as well as how the students perceived this while looking back to their involvement with the GO. In 4.2.2, the collective empowerment components specific for each GO are described. 4.2.3 Concludes on the empowerment process. Below, a general description of the empowerment process in each GO is given.

There are different actors that can be empowered by the GOs: staff and faculty members, individual students, existing student sustainability initiatives and student organizations that do not focus specifically on sustainability (Figure9). How the GO is supporting these different groups differs among the different GOs. This thesis didn't look at how the GOs were empowering staff. Below is described how each GO is empowering these different groups.

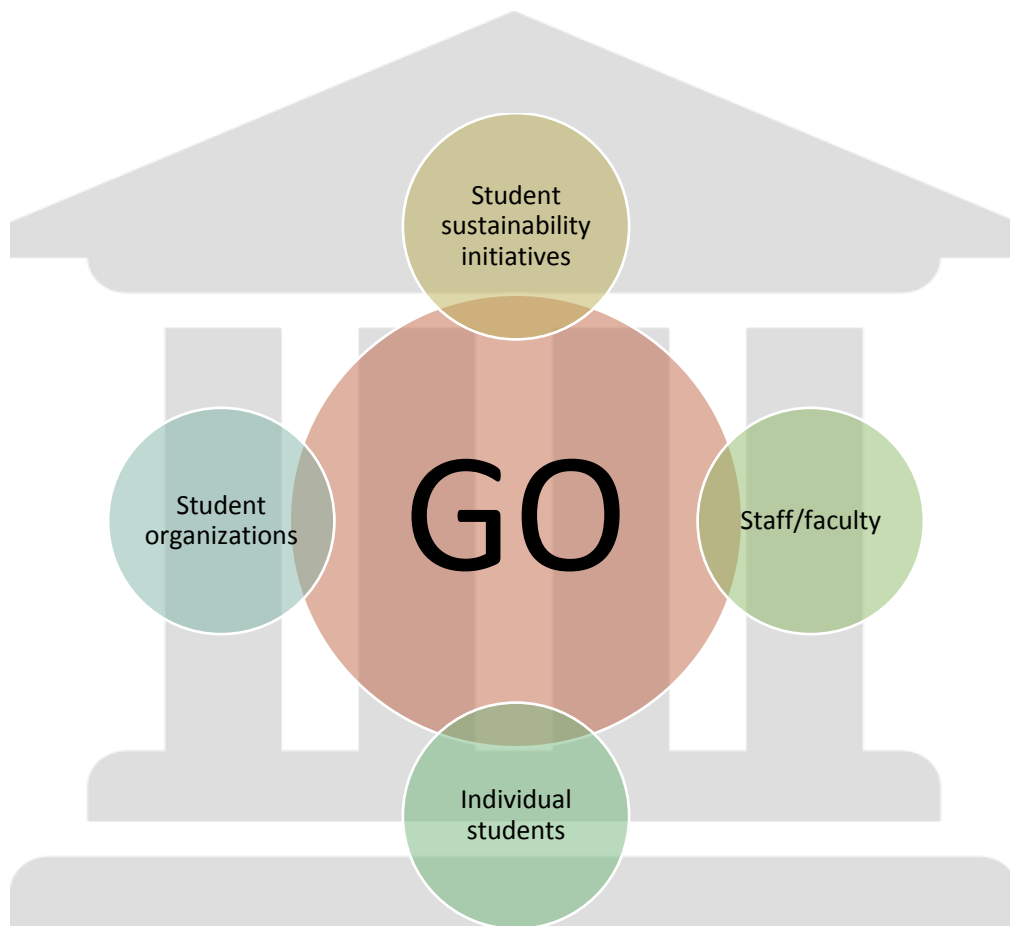


Figure 9: different actors that can be empowered by the GO within the university community

Barriers that are constraining the whole empowerment process and were not specific to one component are the following: lack of resources, vision, positioning, institutional dynamics, and a lack of time. They are elaborated upon below.

The UMGO was at the moment of this research conducting a transition from a volunteer structure where volunteering was more on an incidental basis to a structure like the GOU (Interview M1; M3, 2017). Main barriers to make a change mentioned were institutional dynamics and the fragmented nature of both the physics and organization of the UM, resulting in a low number of students that know the UMGO. A lack of resources was not considered as a problem. In the UMGO, the main barrier for individual students to come to the GO is that they did not know of the existence of the UMGO and how they could get involved or supported in making a change (Interview M3, 2017).

The GOW had the least amount of resources available with the smallest office, least number of hours per GO employee and manager, and smallest team. However, the GOW stated that money was not one of their worries and that this made them more creative in their own actions (Interview M1, 2017). However, a lack of money hampered them to fully support students that wanted to start their own sustainability initiative. The biggest barrier for volunteer empowerment in the GOW found was that it was not their main aim to empower people outside their team. The team was not sure about the added value of volunteers and disappointed by experiences in the past. As a result, no time and resources were invested

in volunteer management or empowerment except from the one project group which was more an incidental initiative from one of the GO employees. Another barrier was a lack of visibility and information on how to get involved with the GO.

In addition to this, the existence of a myriad of other student sustainability organizations operating independent from the GOW made it difficult for individual students to understand what organization would suit them best when they want to make a change towards SHE. Some activities of the Green Active Network facilitated this process, as the poster with all organizations, the fb-page, and the GAN coordinator, but it was still not entirely clear for most people of the university community what kind of opportunities there were to make a change towards sustainability at the WUR (see 4.1.3). Inside the GOW, they could volunteer on an incidental basis or help a student employee. They had a volunteer helping with the poster design and another volunteer helping the GO employee with the ICT portfolio. Student sustainability initiatives operated independent from the GO (see 0). Student organizations and the student council collaborated with the GO on an occasional basis for joint events (2, 3 times a year) (L. Slood, personal communication, 2-05-2017). During the research, one student organization came to the GO with the question of how to make their organization more sustainable. The GOW was developing a strategy to involve them (L. Slood, personal communication, 2-05-2017). (Interview W1; W2a; W2b, 2017)

The GOU had a very different starting point from Wageningen, taking student and staff empowerment as the core of their mission and vision. They also had a lot of resources: time, money, and space. They supported five student project groups; and had two committees and two officers helping GO employees with their tasks, having in total more than 50 student active in enhancing sustainability in higher education. In 2016, multiple students wrote an email to the GOU that wanted to be involved somehow with SHE or participated in an introduction event for GO volunteers. Some of them wanted to be involved in general but did not have a specific task in mind on beforehand, and others came as an individual or in group with a specific idea. The clear indication on the website and the interviews with the volunteer coordinator made that students were directed to specific position: helping one of the GOU employees with its activities (officers or committees), joining an existing student sustainability initiative that is supported by the GO or starting a new student sustainability initiative (see 4.1.4). Student sustainability initiatives operated mostly with support from the GO, apart from the Fossil Free group that did not want to have explicit ties with the university. The GOU collaborated on an incidental basis with some student organizations for events. The GO manager also mentioned that they saw the living lab as an important empowering structure. Main barrier mentioned was a lack of time to fully support all project groups. (Interview U2, 2017)

4.2.1. Individual empowerment

Meaning

Meaning is defined in this thesis as the *values, beliefs, and personally meaningful power oriented goals*. Meaning relates to the question of why: What is the reason that some students want to achieve a change towards sustainability? Why do they invest time and effort in this? And how do the GOs meet these needs?

Although student employees are (partly) paid, their motivations were like the motivation of students who were voluntarily investing time. One student employee expressed it as follows: *It is an advantage that I get paid but I would probably do it as well voluntarily* (interview W2b, 2017).

All interviewees mentioned that they always had a general concern about the environment and a wish for a more sustainable society. *I think the default should be sustainable* (Interview W3b, 2017). Some interviewees related to childhood experiences or their studies (Interview U3, 2017). But, between being concerned and doing something is still a big gap to be bridged. The students mentioned that it was important for them to make an impact that goes beyond them. *I sort my waste, I put the heating down, but what impact does it have? ... I saw this as a means of having a bigger impact than just turning my heating down* (Interview W2a, 2017). This motivation was most obvious and mentioned by all. In Wageningen, students and staff members expressed their concern about the clash between what they perceived as unsustainable actions of the university and the sustainable image of the university (Interview W1; W2b; W4, 2017). To sum up, caring about the environment was one of the biggest values that gave meaning to their activities related to the GO.

Another source of motivation were social interactions. Many people got involved or wanted to achieve a change because of other people. Some people mentioned that they got inspired by actions of other people in other countries or other universities (Interview W3b; W4, 2017). Friends were also mentioned as a source of inspiration or a wake-up call (Interview W3b). In the GOU, some people also became involved because their friends or classmates were already active in a project group or campaign (Interview U2, 2017).

The last motivation mentioned was learning and career building. Many of the interviewees were doing studies related to sustainability. They mentioned that their involvement with the GO allowed them to see how these big environmental problems where they learn about in class express themselves on a local scale and how solving them works in practice (Interview U1; W2b; M1, 2017). Next to this, building organizational and project management skills were mentioned (Interview U2; U3, 2017). In essence, students wanted to learn both about the practical sides of making things more sustainable as well as develop more general competences related to working. These competences might be valued by their future employees, and therefore resume building is a motivation interlinked with learning. Career was not mentioned so often or explicit as learning was.

In conclusions, reasons for students to become involved with the GO were concerns about the environment and a wish to make a positive impact related to this. Additional motivations found were learning, career and social connections. The GOU had activities that match each of these motivations. They had project groups working on their own goals related to sustainability, gave workshops on sustainability and project management for their volunteers, handed out certificates, wrote LinkedIn reference letters and organized social activities for all volunteers. The GOW also had a volunteer certificate and the UMGO was planning to give the same rewards as the GOU in the future. (Interview U2, 2017)

Meaning was also found as an outcome of the empowerment process. Several people mentioned that their involvement with the GO made their motivation to make a sustainable change become stronger (Interview W2a, 2017). What was mentioned as well was that they were more motivated to hold a sustainable lifestyle, because of a decreased sense of hopelessness and because of social norms. One person expressed that after being involved in sustainability initiatives, she didn't feel embarrassed anymore to bring her own cup or to eat vegetarian (Interview W3a, 2017). *That people do not look at you as this weird vegetarian with her own cup... (Interview W3a, 2017) I have become a vegetarian due to the GO* (Interview W2b, 2017). Several people also mentioned that it was a positive experience because they gained skills from the experience. They learned about themselves, teamwork and gained knowledge on sustainability issues, context, and the network of the university (Interview W2a; W4, 2017). This is explained in more detail below.

Awareness on SHE

In my conceptual framework, I define awareness as: *awareness on sustainability challenges (global as well as the local context), power dynamics, resources and one's own skills and abilities in relation to this*. In other words: what change do students want to make, do they have the knowledge on how to achieve this and is the GO enhancing this process? I discuss this component in two sections, with the first section about awareness about the sustainability challenges and the second below about how students expressed awareness on the university context.

The awareness on sustainability challenges reflected itself in that most students wanted to make a change in the operations of the university or in making their peers aware of the impact of their lifestyle choices (Interview W1; U2, 2017). Typical topics related to operations are suggestions to reduce the environmental footprint of the university itself, like for example having Ecosia as a standard search engine, reducing food waste in the universities, recycling, ... (Interview W4; M5, 2017) Often the desired goal is linked to facilitating pro-environmental behaviour of the university community. Examples in the GOU and GOW are volunteer-led projects about waste, food options in the catering, selling of vegetable bags, discount for sustainable products, ... (Interview U1; W2b, 2017) Apart from this, there are also topics on which students want to work that are only focussing on awareness as for example campaign on food choices, bringing your own cup, ... In Utrecht, there is also a project group called UUtalks that serves as a

platform for students to present their research on sustainability (Interview W1; M5, 2017). Striking is that except for the UUTalks, there were no students coming to one of the three GOs wanting to achieve a change on education, research, and more complex operational processes.

At the WUR, most people are doing studies that are somehow related to sustainability since all educational programs of the university relate to the domains of food and food production; living environment and health; and lifestyle and livelihood (WUR, n.d.-a). The GOW does awareness campaigns on sustainable behaviour as for example IT use and food choices. The GOW has a living lab project where every year a couple of students do their thesis, internship or course assignment on sustainability of the university campus' operations. (GOW, n.d.-b)

At the UU, there are some studies related to sustainability, but not all people involved with the GO have a background in sustainability. The GOU is doing campaigns on sustainable behaviour as for example energy consumption by IT, recycling, and food choices. One of the student sustainability initiatives the GOU is supporting is UUTalks, where (PhD) students can present their research on sustainability. The GOU has a living lab as well where 17 students conducted research on the operations of the university within their curriculum in 2016. (GOU, n.d.-b)

Also at UM, only small part of the educational programs has sustainability as a main focus (Maastricht University, n.d.). The UMGO didn't run any behaviour change campaign except from warm sweater day. They do have a project called "the Display" where the university's consumption of water, gas and electricity is screened on campus. The UMGO also facilitates a student-run course on sustainability. The UMGO has a living lab where students are doing research inside their course on sustainability for internal and external stakeholders of the university. (UMGO, 2016a)

An outcome of the empowerment process is an increase in awareness on the university context and sustainability challenges. Looking back, most interviewees mentioned that they learned a lot from their experiences related to the GO. As described above, several interviewees mentioned that their experience made them more aware about the complexity of sustainability challenges and how solving them requires compromising different opinions and interests of several stakeholders. (Interview W2b) *You have to compromise opinions of different stakeholders and parties (Interview W2b, 2017)*. Several students and student employees mentioned that their experience in the GO made them more aware on how difficult it is to make a change towards sustainability (Interview U1, W3b, W2b, 2017). *I am realizing that really trying to solve environmental issues is much more complicated than you would think it is (Interview W2b)*. One employee also mentioned how the problems seemed closer and more urgent. (Interview W2b) This shows that there is a link from increase in awareness to meaning as well. Empowerment is an iterative process. Learning during their involvement also gives meaning to what they do. At the same time, students mentioned that actively trying to solve some of them made these pressing challenges seem less abstract and easier to solve (Interview W2b, 2017). One employee mentioned that before she was not thinking so

much about it because they seemed too big. (Interview W2b). Another employee mentioned that the GO helped her to see the theories she learned during her studies being put into practice by her activities (Interview M1, 2017). *It gives you a more pessimistic image of sustainability but also a kick in the ass to make a change.* (Interview M1, 2017)

To conclude, due to their involvement with the GOs, students perceived that they got a higher understanding of complex sustainability challenges. However, the GOs provided only information about global sustainability challenges, how to live sustainably and the operations of the university and the goals of student initiatives or single students were almost all related to university community engagement and operations. Importantly, no information on education and research related to sustainability was provided and no student initiatives were supported that aimed for a change in education or research of the university.

Awareness on the university context

To make a change in the university's structures, individuals and groups need to know how to make this change. When a change in the university structure is needed with power lying in the university, there are two possible ways of achieving this change: lobbying or putting external pressure. Several students who come to the GO are seeing petitions or other kinds of protest as a suitable method. However, since the three GOs are part of the university, they are not actively taking part or supporting such activities (Interview U1; U2, 2017). Knowledge on the university context and network was mentioned as a resource that the GOU was giving to the project groups. Not only for lobbying, but also for awareness raising campaigns this was valuable. To summarize, for each approach to change, students need knowledge on the university context which the GO can provide as well as knowledge on how the GO relates to the university.

Before the GO can make people understand the university context that surrounds the sustainability challenge, students must know that the GO exists and that it can support them with their projects for change. At the UMGO, the GO employee with the communication portfolio mentioned that visibility of the UMGO was their biggest concern (Interview M2, 2017). A survey conducted in the master thesis of de Ruijter (2016) showed that more than half of the students had never heard of the UMGO. One of the factors that was constraining visibility is the fragmented nature of the UM with different faculties all with their own buildings scattered amongst the city and their own communication channels. On the website of the UMGO, there was a section where they ask to contact them if you want to get involved with them: volunteer or propose an idea for a new project ("Green Office Maastricht," n.d.-b). At the time of this master thesis, there were no project groups or volunteers supported by the UMGO.

The GO employees of the GOW mentioned that they didn't know of the existence of the GO before they saw the vacancy of the GO employee (Interview W2a; W2b, 2017). I also observed in Wageningen that several people wanted to make a change but didn't know that the GOW could support them, or they went

to the GOW and it was not clear how the GOW could help them. The GOW is only open during lunch time, and has recently introduced the open office Mondays, with as a purpose that students can pass by. However, until now there were no students passing by (Interview W2a, 2017). In the project group on the disposable cups, the GO employee who is present is acting as a bridge between the group and the university actors (explained further below).

In contrast to the GOW and UMGO, the students that I interviewed knew of the existence of the GOU before they became involved (Interview U1; U2; U3, 2017). The GOU had a very visible and central location. The office had flex office spaces and is open to everyone (see 4.1.4). Often, people just came in out of curiosity (Interview U1, 2017). The GOU had clear guidelines on their website on how to get involved or how the GOU can support students that want to start their own project. This proved itself as an effective approach, with the GOU having most volunteers and projects (Interview U2, 2017). Also after the recruitment process, the GO employee with the portfolio Volunteer and project group support was helping the student sustainability groups and the volunteers with understanding the university context and getting things done.

This empowerment component was also observed as an outcome: students mentioned that their knowledge on the university context and network increased. *Maybe the most important part was developing my network: how are the different stakeholders working on sustainability, who are allies, what is the discussion at the moment (Interview W4, 2017).*

Self-efficacy

I defined self-efficacy as *the belief that one has the power to make a change*. In other words, self-efficacy relates to one's belief in one's own capacity and ability to reach a certain goal. It is plausible most students that were involved with the GO already had high self-efficacy from themselves or from former experiences. Indeed, most students I interviewed took part in other projects or organizations before they became involved with the GO. One student volunteer mentioned that he is always optimistic and that he thinks things can change easily (Interview W3b, 2017). Nonetheless, I also found several structures that can further enhance self-efficacy of GO employees and GO members.

The most obvious boost for self-efficacy is trial and error. Most students mentioned that they grew into their role and became more confident in their activities by trying and doing. It is a cycle of starting a small project, finding out that it works and trying something bigger. Also, having the opportunity to fail was mentioned several times. Having a feeling of achievement helps, but even when the project didn't succeed, they moved on to something else. (Interview U2; U1; W4, 2017)

One GO employee mentioned that being part of a certain organization increased her sense of power. Because the GO had the vision to enhance sustainability, it was easier for her to propose ideas that were in line with this vision, and part of her task description. She also felt that it gave her legitimacy to start projects and ask other people. *I feel that people will quicker decide to be part of it then when I would*

randomly go to people and say I am Ines and I want to do this (Interview W2b, 2017). One GO volunteer of the GOU mentioned that it helped for the functioning of their project group that the GOU gave them legitimacy in their activities towards the university (Interview U3, 2017). On a personal level, the volunteer contracts of the GOU and UMGO helped to give this mandate and feeling part of the GO. This resulted in a higher belief in one's own capacities to make a change.

Awareness on the university context and collective belonging increased self-efficacy. Both student employees and volunteers mentioned that knowing how the university functions helped to make a start in achieving the change they wanted to see (Interview W2b; W4; U3, 2017). Furthermore, having a safe space to propose new ideas or demand for change was mentioned as well. Putting yourself in a vulnerable position by sharing ideas which are not the norm, and finding like-minded people gives a feeling of trust in one's own capacity and goals worth working for (Interview W2b; W4; U2, 2017). All things considered, people involved with the GO might have a high self-efficacy from the start which is further heightened by doing, failing, feeling part of a group, and having some sort of legitimacy to act.

At the GOW and UMGO, no specific structures were enabling self-efficacy of students apart learning by doing and getting more confident. The project groups and the membership at the GOU helped in giving legitimacy and therefore giving the feeling of increased power to make a change for SHE.

Self-efficacy went up due to the empowerment process. After asking, how did you change? Most interviewees mentioned that their confidence went up. This is a result from two processes. First, they increased their skills and knowledge by doing: they organized for the first time an activity, asked someone for help ... The students expressed that at first, they found this very scary, but that after finding out that it worked they gained confidence and felt ready to take something bigger the next time (Interview U1; U2; U3; W2b, 2017). One GO employee mentioned that his positive experiences in the GO also led to increased confidence in his relationships with others, both professional and private (Interview U2, 2017). Second, as above, the skill of breaking complex problems and thinking in a pragmatic way led to increased self-efficacy for some of the GO employees. Knowledge on the context and network also helped in building confidence (Interview W2b; U3; W4, 2017). One GO-employee summarized it as follows: the GO makes you realize things that you would normally only learn after a lifetime (Interview U2, 2017).

Reflexivity

I defined the reflexivity component as *observing and reflecting upon the change one makes*. In this case, there are two dimensions: both structural changes as an outcome, and possible positive socio-environmental impact following out of these structural changes. Experiencing that they achieved something and celebrating their achievements gave people the drive to go on and gave a feeling of satisfaction. In addition, seeing that things are moving in other universities or Green Offices gave hope and energy to continue. However, when asked what the impact was of their actions, student volunteers and student employees could not tell that they made an impact. Assessing impact was considered as

easier in the dimensions of operations than in the community, research, and education dimension. Especially when the goal of an activity was to cause behaviour change, student employees were not sure if there was a change in behaviour of the target public, let alone the environmental impact of this behaviour change. (Interview W2b; U3, 2017).

From all three GOs, the UMGO had the strongest focus on impact assessment. This was demonstrated in three things. First, they had one GO employee responsible for reporting who makes the annual report of the GO where it is evaluated whether the different goals set at the beginning of the year are met. Second, they often had student groups researching the impact of their actions inside a course project or thesis. Third, they developed a framework for sustainability reporting of higher education institutes: UniSAF (UMGO, n.d.). The framework was being tested in the UMGO but is open source so that other GOs could also make use of it to assess which areas to focus on and what the impact is of certain actions.

In the GOW, they mentioned themselves that impact assessment was not their strongest side (Interview W1, 2017). They did have a year plan which was made at the beginning of the academic year, but only the GO manager and the support board were reading it, and the GO employees were not reading it (Interview W1, 2017). During team meetings, they reflected on how the activities went and if they were successful in their outcomes but not if they had the desired environmental impact. Barriers mentioned were a lack of time, skills and the turnover of students which makes it difficult to assess long term impact (Interview W1, 2017).

In the GOU, they have every meeting a moment to celebrate successes: events that were successful, the implementation of a new project, etc. However, the impact of the conducted activities was also not so clear to them. Even when positive change towards sustainability was achieved, GO employees and volunteers were wondering if this was due to the GO or due to other factors. Also, here, barriers mentioned were lack of time and skills. The GOU does not have an annual report or other kind of annual evaluation. (Interview U1, 2017; E. Swaddle, personal communication, 4th of May 2017)

Reflexivity as an outcome was observed in relation to the students' prospects of their futures. Most of them saw themselves working towards making a sustainable change in their thesis, internship, or future job. (Interview W2a; M2; M1; U3; W2b; U1, 2017). Of course, this can be accredited to their intrinsic motivation which also made them join the GO. However, still some interviewees mentioned that their GO experience made this feeling stronger or made the desire to pursue their life with a strong focus on sustainability clearer (W2a; W2b, 2017). One GO employee and a GO volunteer mentioned that they wanted to be involved with the GO also the next year and another interviewee started to be involved with the GO as an employee, then became assistant manager, and was at the moment of the research interim manager of the GOU and working for rootAbility, the European GO organization.

4.2.2. Collective empowerment

The collective empowerment components are related to how the GO as a group of students is empowered and able to make a change.

Collective belonging

Collective belonging is defined as *having a feeling of belonging to the GO or 'green students'*. There was a link found between collective belonging, meaning and self-efficacy. Related to meaning, social connections were found as one of the motivations to be part of the Green Office and a driver to go on (see 4.2.1). Related to self-efficacy, feeling part of the GO gave legitimacy to a group and allows people to be vulnerable (see 4.2.1). Given these points, collective belonging enhanced the individual empowerment components meaning and self-efficacy.

In the GOU, they had the membership structure which enhances collective belonging. Students that were part of a project group or committee were called "members" and were officially part of the Green Office. This was expressed through a (non-binding) membership contract between the student volunteer and the GO which states what the GO expects from the volunteer and what the volunteer gets in return for his/her efforts. An additional factor that supported collective belonging was the Green Office space, which was open for everyone to sit and work during the day. The UMGO was at the writing of the thesis setting up a similar structure to the one from the GOU and the GOW just had a loose volunteer pool without any structures enhancing collective belonging.

Involvement in activities

Involvement in activities is defined as *taking part in activities of the GO or other activities related to a change in SHE*. All people I interviewed were involved somehow in the activities of the GO. Four possible ways of involvement were mentioned: first, being involved on an incidental basis. Second, being involved on a more regular basis by helping green office employees with their activities, becoming involved in an existing independent project group or getting support in starting your own project. The GOs differed from each other in their strategies to involve the community. Below is described for each GO how they see involvement of the university community, what kind of activities they were organizing for their volunteers and what support they gave.

The UMGOs new vision was of being a body that facilitate contribution of all stakeholders towards sustainability in the university and the city of Maastricht. There was a section on the website on how to become active and get involved with the GO with a google form asking why you want to get involved, in what portfolio, ... At the moment of the interviews, they were testing out a new volunteer management model like the one of the GOU. They organized a volunteer day where students could sign up for projects that were defined by the UMGO. 25-30 people past by and 10 people signed up to be a volunteer. There was also room for proposal of own projects (Interview M1, 2017).

In the GOW they were wondering how volunteers would fit in their organization (M. Eggers, personal communication, March 13, 2017). They mentioned that they had some negative experiences with volunteer engagement in the past. On the website of the GOW, there was no indication at on how to get involved or that the GO can support you when you want to make a change. In 2017, they introduced open office Mondays, but in the first months, no people passed by. There was no established volunteer structure except for the WhatsApp group where they called sometimes for help for practical things. The GOW was organizing several activities for the GO employees and invited their volunteers for some of these activities as well. However, no volunteers were showing up on these activities (Interview W1, 2017).

The GOU started their whole philosophy starting from the three pillars inform, involve, and empower. The volunteer coordinator also stated that their purpose as a GO is not to have a lot of activities but rather about *making people fuel these campaigns*. In the GOU, individuals/groups with ideas can come to the GOU and they can be supported with resources, money, knowledge, ... This resulted in several project groups which were relatively independent from the GOU. The GOU does not define their course, and supports them where necessary (Interview U2; U3, 2017). One member of a project group defined this as an ideal level of connection between the GOU and them. In addition to this, there were volunteer groups supporting student employees in their goals. In this groups, volunteers did have proposals for actions and ideas, but the main responsibility and decision-making capacity laid at the student employee. Next to this, they were organizing two monthly events for their volunteers, which also served as a day to attract and inform new volunteers and a celebration of all activities of all volunteers. (Interview U2, 2017)

To summarize, the GOs had different views on what their role is in engaging the university community with sustainability. There was also a difference found in indication on how to get involved for the three GOs. After that possible volunteers or agents of change have found a way to the GO, there are also differences in how they can be involved in the GOs activities.

Control over organizations

I defined the component control over organizations as *taking part in the decision making of the GO or the university*. There were different groups that influence the organization of the GO itself: the project groups and volunteers, the GO team itself and the GO manager.

The involvement of project groups in the decision making of the GO could only be observed in the GOU, which was the only GO that had functioning project groups at the moment of this research. The project groups themselves mentioned that they are free to organize themselves and are doing this independently from the GOU. The GOU was supporting them with resources and being part of the GOU gave legitimacy in the university context. In none of the GOs, volunteers were participating in the team meetings and having any influence on the organization and the activities of the GO. The team member of a project group of the GOU also mentioned that it already took a lot of time to govern themselves, and that they didn't see the need to influence the GO (Interview U3, 2017). To summarize, the project groups were not

included in the decision-making of the GO, but they were also not really demanding this. The needs of the project groups cannot be generalized since I only interviewed two project group of two GOs.

The power of student employees in the decision making of the GO itself is very dependent on the structure of the GO. In the GOW and the GOU, there was a staff member who stays for several years and is reporting to the facilities department and the sustainability program team. In the GOW, the student employees were involved in making the year plan. The student employees and the manager of the GOW mentioned that if they wanted to discuss something, there was space for it, but that it was not always possible to really make a change in the GO's organization. The reason for this is that there are several activities and programs that come back every year and where it is not encouraged to overthink all of this again. Overall, student employees are involved, but have less power in decision making than the manager. Both the student employees and the manager of the GOW mentioned that in the end, the discussion laid at the manager and that she had to be complacent to the facilities department (Interview W1; W2a; W2b, 2017). In the UMGO, the manager was a student working the same number of hours as the other student employees and changing every year. This made the division of decision-making power more equally divided amongst the team.

The influence of the GO on the organization of the university depends very much on how the GO is embedded in the university. The three GOs were all part of a different department and had different responsibilities and visions (see 4.1.5). Officially, all GOs had a mandate to enhance sustainability in the university but this did not mean that they had full freedom. GO managers and GO employees of all three GOs mentioned that they are in a difficult position, trying to change the university while being part of it (Interview W2b; U1; M1, 2017). *We are walking a thin line. We are trying to change the university while being part of it. We work with the university to implement change.* (Interview U1, 2017) The UMGO was the only sustainability body of the university, and was constantly lobbying for change within a university which is not very receptive for change.

This had implications for what kind of project groups the GO can support. In the GOW, there was a group around food waste that did not want to be identified with the GOW and wanted to act independently. In the three universities, a Fossil Free student group was acting independent from the GO. Fossil Free is an international organization which demands institutions like universities to divest from fossil fuels. They do this by sit-ins, petitions, and other kinds of pressure from outside. Interviewee U2 (2017) mentioned that they could not protest as a GO since they were part of the university. They could ask the university to switch bank, but not through protesting. Overall, all projects in the GOU were related to informing, behaviour change or operations as for example local veggie and fruit bags, lectures, food campaigns... (Interview U2, 2017) *We do not protest. We work with the university to implement change and to engage the community in a way that hopefully results in sustainable change.* (Interview U1, 2017)

Community building

The collective component community building was defined as *collaborating within the GO and with other organizations towards achieving change*. The expression of this component was also very different in the three different GOs because the actors, common interests and collaboration between actors are different from each university context.

In Maastricht, the new vision of the UMGO was to collaborate as much as possible with all actors in the university in achieving sustainability. There existed already student sustainability initiatives that are tied to the different faculties. These initiatives focused on awareness campaigns for other students. The ties between them and the UMGO were not so strong. Other organizations often came to the GO to ask them to make their own organization or event more sustainable and for collaboration for events. The UMGO wanted to improve this in the future: they planned to organize all their events in collaboration with study associations or the student sustainability committees of the different university faculties and to reach out more to actors in the city. (Interview M1, 2017)

In Wageningen, there was the Green Active Network (GAN), a student sustainability platform for Wageningen University. The network consisted out of 15 organizations, including the GOW and individuals. The communication means were a Facebook group, Facebook page and a Google Drive. Since February 2017, there was a coordinator appointed for the platform and there are two monthly meetings and sporadic incidental events. The GOW was part of the network, and played a role in organizing the meet and mingles and the establishment of the GAN coordinator. According to the GOW manager and employees, the common interest is achieving sustainability in university and having a bigger impact together. The GOW was collaborating with some of the other organizations in events and promotion. By doing this they hoped to reach a bigger and more diverse public and avoid competition between the different student sustainability organizations. They mentioned that they could also benefit from exchanging best practices, but that this was not being done so far. The existence of the GAN enhanced the process of collaboration and the GO hopes that in the future, it will facilitate community building between all the GAN organizations, leading to a bigger collective impact. Next to this, the GO was also starting a project on greening student associations. (Interview W2a; W1, 2017)

In Utrecht, the GOU serves more as a platform itself. In February 2017, there were five project groups under the umbrella of the GOU: groentetas, duurzame korting voor Studenten, Ecologico, UUTalks and UU Fairtrade. The student employee with the volunteer portfolio was trying to connect these different groups, enhanced collaboration, and the formation of common goals (Interview U2, 2017). Students from the different projects were often joining to activities of others or volunteering (Interview U3, 2017). Outside of the GOU, there was one student sustainability initiative: a Fossil Free group that asks the university to divest its money from fossil fuels. They also collaborated with some student associations for some events and the student associations often used the GOU office space. In return, the GOU could make use of the student associations' resources.

Apart from this, there were to umbrella organizations supporting the GOs: Studenten voor Morgen with the national Green Office Coordinator and rootAbility. SvM and rA organized the European Green Office Summit, where 80 participants from 30 GOs from all over Europe came together for four days of workshops and knowledge exchange. The Green Office Coordinator was organizing multiple workshops where the GOs learned from each other and or from external organizations and informal gatherings on special occasions as during the National Day of Sustainability in Higher Education, climate march and the Green Office Excursion. RootAbility started this year with a learning exchange program with webinars and a knowledge sharing platform. The three cases were all participating regularly in these activities.

4.2.3. Summary on the process of empowerment

Table 5 gives a summary of the empowerment components and the enabling and constraining structures for each GO.

All individual empowerment components increased. Meaning was found in making an impact, having social interactions, and learning and career-building. Awareness was mostly on the environmental impact of operations and lifestyle. To make a change, knowledge on the university context and the role of the Green Office itself were needed. Self-efficacy was probably already high before the start of their involvement with the GO. Reflection was merely on the outcomes and not on the environmental impact of changes made. Having a feeling of belonging to the GO was related to meaning and self-efficacy and all interviewees took part in activities of the GO. Go volunteers were happy if they could decide themselves on the course of their project but didn't feel the need to participate in the decision making of the GO itself. Community building outside the GOs was very different for each university context.

These empowerment components were supported by the GOs in different ways. They all had a different vision about their role, different resources and different approaches to support students that want to achieve a sustainable change. The GOU had as their main objective to inform, involve and empower the whole university community with sustainability. Their empowerment structures were compatible with this objective: students with ideas and existing student sustainability initiatives were supported by the GOU, while keeping their autonomy, and students could also join committees that were helping GO employees in their tasks. The GOW had least amount of resources, as well monetary as in number of working hours. The GOW was part of a network that consisted out of 15 student sustainability organizations and collaborated for events with them but didn't really support them in achieving their goals. Furthermore, they supported one project group which was incidental and had some volunteers. The UMGO functioned as the main sustainability body of the UM and was in transition towards involving more students in their activities and empowering them, with a similar model as the GOU. Next to this, the UMGO actively collaborated with other student organizations and actors in the city.

Table 5: summary of the empowerment components and enabling structures

Component	Expression and → outcome	UMGO Structures	GOW Structures	GOU Structures
Meaning	Environmental values, social, learning → Strengthened	Not yet	Volunteer certificate	Volunteer certificate, reference letter, public thank you Social activities
Awareness on sustainability	On operations and sustainable life style → Increased	Sustainability crash course The display Living lab	University of life sciences Awareness campaigns on lifestyle Living lab	UUTalks Awareness campaigns on lifestyle Living lab
Awareness on university context and GO	Knowledge on how the GO relates to the GO and what the GO can offer from support. → increased	Lack of visibility Fragmented university	Lack of visibility Open office	Open and visible office Clear information on website Support from volunteer coordinator
Self-efficacy	Present and increased by trial and error, legitimacy, and awareness → Increased	/	Project group	Workshops Project groups
Reflexivity	Reflection on personal achievement, not on impact → Desire to make a change in future	GO employee on reporting Annual plan Student groups assessing impact Sustainability reporting framework	Year plan (only manager)	Celebration of achievement during meetings
Belonging to the GO	Related to meaning and self-efficacy	Membership	/	Membership
Involvement in GO activities	All taking part in GO activities	Activities for volunteers Project groups setting up	Volunteers as an additional effort No information on website on how to get involved Open office	Clearly indicated how to get involved Activities for volunteers Involvement core of GOs mission and vision

		Project groups		
Control on the GO/university	Exerting influence on the university through the GO No need felt to participate in the GO's decision making	/	/	/
Community building outside the GO	Very context specific	Outreach to student organizations and city	Collaboration with other student sustainability initiatives, but not supported by the GO Part of a sustainability network	Student sustainability initiatives supported by the GO

4.3. Outcomes and impact of empowerment

Empowerment can be described both as a process and as an outcome. Reflecting on their involvement with the GO, all interviewees mentioned that it was a positive experience and that it changed them in a certain way. Their involvement with achieving sustainability in higher education led to a strengthening of meaning, increase in awareness on sustainability challenges and the university context, increase in self-efficacy, and desire to make an impact in their future life. These outcomes are related and reinforce each other.

Next to these personal changes in students, empowerment led to a structural change as well. The student initiatives of the GOW and GOU are presented below in In none of the project groups, impact was measured. There are two reasons for this. First, for the projects that were mainly informing peers, it is difficult to measure and to quantify the impact. Outcomes and impact can be biophysical, but also changes in social institutions can occur. These are more difficult to observe and quantify. However, for initiatives that focus on enhancing a sustainable lifestyle like Groentetas and Duko, it should be possible to measure or estimate impact. Second, students did not differentiate between outcome and impact. When I asked both the GOW and the GOU whether they were measuring the impact of the projects, they both said that they did not even consider measuring the impact (J. Pinyol, personal communication, 11th of May, 2017; L. Trogisch, personal communication, 15th of February, 2017).

Table 6 with their main goal, the domain of SHE in which the goal is situated and the outcomes and impact of their actions. Some patterns can be found. Five out of six projects focus on facilitating pro-environmental behaviour of peers, and are situated in the operations dimension of sustainability in higher education. Five out of six projects focus on achieving environmental sustainability. All six are informing peers about sustainability (in higher education), and additionally, two are also lobbying to make a change in university policies.

In none of the project groups, impact was measured. There are two reasons for this. First, for the projects that were mainly informing peers, it is difficult to measure and to quantify the impact. Outcomes and impact can be biophysical, but also changes in social institutions can occur. These are more difficult to observe and quantify. However, for initiatives that focus on enhancing a sustainable lifestyle like Groentetas and Duko, it should be possible to measure or estimate impact. Second, students did not differentiate between outcome and impact. When I asked both the GOW and the GOU whether they were measuring the impact of the projects, they both said that they did not even consider measuring the impact (J. Pinyol, personal communication, 11th of May, 2017; L. Trogisch, personal communication, 15th of February, 2017).

Table 6: student initiatives, their goals, domains in which they are operating and the structural outcomes and impact of their actions. (Green Office Utrecht, n.d.; Interview U2; U3, 2017)

Student initiative	Green Office	Goal	Actions	Outputs & Outcomes	Impact	Domain
ReUse Revolution	GOW	Reduce the number of disposable cups	Lobby at the university shop to sell keep cups Lobby at caterers to have a price reduction Inform	Information on possibility to use your own cup in the machines by poster and screening	Not evaluated	Operations; (pro-environmental behaviour) Inform
UUTalks	GOU	Give students a platform to present their research on sustainability & share innovative ideas	Two times a month, a student presents his/her research followed by a discussion	Sharing of sustainability research and discuss sustainability in groups of 10-20 people	Not evaluated	Research Inform
Groentetas	GOU	Make it easy for students to buy seasonal and local food	Provide the service for students to buy weekly veggie bags	Students are buying and eating local and seasonal food	Not evaluated	Operations (Pro-environmental behaviour)
DUKO	GOU	Encourage sustainable buying	Give a discount for students on sustainable products	A price incentive for students to buy sustainable	Not evaluated	Operations (Pro-environmental behaviour)

Ecologico	GOU	Encourage sustainable transition university collect Utrecht	Activities and promotion	Students learn about sustainability	Not evaluated Difficult to measure	Operations (pro-environmental behaviour) Inform
UU Fairtrade	GOU	Promote Fairtrade consumption and qualify Utrecht university for Fairtrade	Lobby for the procurement of Fairtrade products Awareness raising activities	Insights on the universities procurement and the fairness of the universities' procurement.	Not evaluated Difficult to measure	Operations (pro-environmental behaviour) Inform

Table 7 describes in what way student volunteers were working that helped GO employees with their tasks. Because their the output, outcomes and impact of their actions is intertwined with the activities of the GO employees, I only described their actions and the domain their engagement was situated. 14 out of 19 volunteers were working on informing and involving peers with the activities of the GO. Only two students were also working on enhancing sustainability in higher education (one on education & research and one on operations). To sum up, most of them were more in a supportive role, executing activities that do not have a direct link to enhancing sustainability in higher education.

Table 7: student volunteers not active in a project group, with the number of students, main tasks, GO and working domain (Interview U2; W1; W2a; M2, 2017)

Student volunteers	# students	Green Office	Actions	Domain
Marketing and outreach team	2	UMGO	Help the coordinator responsible for visibility and outreach to the university community	Inform (visibility GO) Involve
Loose volunteers	3	UMGO	Help with various portfolios	Various
Graphic designer	1	GOW	Design posters and other graphical materials	Inform (visibility GO)
Living lab officer	1	GOU	The living lab officer helps the student employee responsible for the living lab. The living lab is a community service learning project where students solve sustainability challenges inside their course, thesis, or internship with the facilities department as commissioner.	Education and research Involve
Campaigns team	1	GOU	Helps the student employee with the campaign portfolio with awareness raising campaigns.	Inform (sustainability)

Activities committee	6	GOU	Helps the student employee with the activities portfolio, organizing activities for other student volunteers	Involve (volunteers)
Marketing and outreach team	4	GOU	Helps the student employee with the marketing and outreach portfolio to increase visibility of the GOU and reach out to the university community.	Inform (visibility GO) Involve
Single student	1	GOW	Help the student employee responsible for greening the ICT. More specifically, promoting the use of Ecosia.	Operations (pro-environmental behaviour) Inform

To sum up, all projects that were supported by the GOW and GOU had a goal related to university community engagement: making their peers aware about sustainability challenges or enhancing sustainable lifestyle. In two project groups, they were also targeting university policies to achieve this. The other volunteers were mostly helping with the internal organization of the GO. The impact of the outcomes was not measured or evaluated by the project groups or the GO.

5. Discussion

This chapter critically discusses the findings in the light of other literature and its implications for theory and practice. Section 5.1 discusses the principal findings on how Green Offices supported student empowerment in the light of current literature on sustainability in higher education. Section 5.2 gives reflections on the empowerment for sustainability framework. Section 5.3 gives the implications of the findings for sustainability in higher education scholars. In each of these three sections, specific recommendations for practitioners and scholars are given. Section 5.4 discusses the limitations of this research. Section 5.5 reflects upon my position as insider researcher and how this influenced the research process.

5.1. Green Offices empowering students

This thesis investigated how Green Offices support the empowerment process of students that are willing to make a change towards sustainability in their institutes of higher education. This was done by means of three case studies, looking at individual and collective empowerment components, what structures were in place to support these components, and the outcomes and impact for sustainability. Below, key findings on the empowerment process are discussed. Next, individual and collective empowerment components and supporting structures are highlighted, compared with literature, and recommendations following out of this are given. Furthermore, the importance of including structural outcomes and impact assessment in empowerment structures is discussed.

The university community consists out of students, staff, and faculty. This study was limited to students. Also, the student population is no homogenous group. There are different groups with **different needs**. Student organizations wanted to collaborate on events with the GO and get help to make their organization more sustainable. Student sustainability initiatives needed support in making a change towards sustainability in higher education. They needed knowledge on the university context, resources, and legitimacy. Loose student volunteers had a motivation to make a change but needed a structure to accomplish this wish. The membership structure of the GOU was a good structure to come towards the needs of the different groups. Student sustainability initiatives can operate under the umbrella of the GO as project groups and loose volunteers can join an existing project group or a committee, working more closely together on the activities of the GO.

All individual empowerment components were investigated in student volunteers. Related to **awareness on the university context**, a barrier found was that students did not always know about the existence of the Green Office and how the GO can support the students. McKinne & Halfacre (2008) and Spira (2013) mention that a lack of understanding of the university context and power relations is a barrier to achieve SHE. Students with potential interest in making a change towards sustainability should know of the existence of a structure that can help them achieve their goals. It is therefore crucial that the GOs are visible and easily approachable, and provide the students with knowledge on university structure, power

dynamics and the resources available to increase their awareness on the university context. A positive example is the Green Office of Utrecht with a very visible office and clear information on their website on how to get involved with the GO and what support they give to students that want to execute their own sustainability project.

Awareness on sustainability was different between the GO employees and the GO volunteers. The GO employees of the three GOs were working on all dimensions of SHE: education, research, and operations. All Green Offices define sustainability as being social, environmental, and economic. This vision does not show itself in the topics on which student volunteers are working. 6 out of 7 project groups were working on enhancing environmental sustainability and all other student volunteers except for one were working on increasing visibility and awareness raising amongst their peers (see Table 6 and 7).

There seems to be a gap between what the Green Offices define as the dimensions of sustainability (socio-economic-environmental) and their actual activities which are mainly focussing on environmental sustainability. Similar findings were found in other literature. Emanuel & Adams (2011) and Iverson (2016) also found in their research on student perception on sustainability that most students mentioned operations when asking about sustainability challenges in their universities. Next to this, Iverson (2016) found that most students think they can influence SHE through changing their individual behaviour and educating their peers on sustainability and pro-environmental behaviour. Additional findings of Iverson were that students believed that organizational change in the university was needed, but felt powerless to make this change. Tassone, Dik, & van Lingen (2017) stress that awareness on sustainability is crucial in empowering students for sustainability. There is a need to increase awareness on economic and social dimensions of sustainability, and that change can go beyond personal behaviour change but also influence institutions and create structural changes in the education, research, or operations of the university.

I suggest several activities to meet this need and increase awareness on sustainability. First recommendation is to involve student volunteers with the activities of student employees that are working on increasing sustainability in education, research, or operations. Student employees mentioned that working on these themes made them more aware on the complexity of sustainability challenges. A second recommendation is to use service learning projects on sustainability in higher education for context-specific investigation of sustainability challenges. Service learning projects are projects where students work inside their curriculum (for example thesis, internship or course project) on a real challenge (A. Pearce & Manion, 2016). GOs can use service learning projects in collaboration with the facilities department and the educational department to identify possible sustainability issues in the university and develop strategies on how to solve them. Service learning projects involve students with identifying and solving these issues, fostering sustainability competences in the students. All GOs investigated have already such service learning program in place for operational sustainability challenges of the facilities department and the UMGO also uses it to evaluate the activities of the GO. Another suggestion to acquire

deeper knowledge on more general issues is through knowledge exchange between the GOS, and the umbrella organizations Studenten voor Morgen and rootAbility.

Making an environmental impact, social interactions and learning/career building were aspects that gave **meaning** to student volunteers' engagement. Not much literature exists on why students engage in voluntary student-led action for sustainability. Young, Scheuer, Roush, & Kozeleski (2016) found a relation between student involvement in campus community gardening and clearly defined personal and community benefits. A recommendation is to cultivate the meaning component by recognizing and answering the needs of the volunteers, rewarding them with social activities and career related services as reference letters or certificates. A good example was the GOU, which had the vision of coming towards the needs of the volunteers and having several of these structures in place.

Self-efficacy increased with increasing awareness on the university context and a feeling of **collective belonging**. Being part of the Green Office gave the student volunteers legitimacy to make a change. Taking the student volunteers serious and giving them responsibility in a learning environment fostered self-efficacy. Tassone et al. (2017) also found that students that executed a real project on the topic of sustainability of their own choice made them develop trust in their ideas and increased their belief that they can make a change. This shows the importance of acting in engaging students with sustainability. Another recommendation is to have a membership structure as for example the GOU has. In the GOU, the GO volunteers have a membership contract with their responsibilities and "rights", and work in project groups or committees. Project groups work quite independent from the GOU with their own goals and activities, supported by a volunteer coordinator from the GOU who helps them with resources and knowledge on university context. The committees are formed around a GO coordinator and are therefore following the goals set by the GO itself. Being officially part of the GO gives legitimacy to the students which increases self-efficacy. Another advantage is that there are different levels of autonomy and commitment possible, meeting the needs of different persons.

Student volunteers showed **reflexivity** on their personal achievement, and celebration of successful achievements helped to keep the motivation high. However, both student volunteers and GO employees lacked reflection on the environmental impact of these outcomes. Reasons for this might be not thinking about impact, a lack of skills or difficulties quantifying impact as for example for the awareness raising projects. Fella (2014) studied competence development in UMGO employees through the GO and suggested also that more reflection for the GO employees of the UMGO was needed. Derived from this study, the same suggestion holds for student volunteers involved with the GO. The GOs should facilitate reflection upon the outcomes and impacts of actions before the start of project groups and committees, and assess impact during and after activities.

Apart from inside the project groups, student volunteers had no **control over decision making** in the GOs. In addition to this, also the GOs' influence on the universities' decisions was limited, despite the GOs'

official mandate to make a change in their universities. Being part of the university makes that you must watch your steps and the institutional complexity makes change a slow and energy consuming process. Other studies also report that students mainly feel excluded from the universities decision making processes and that this makes them feel powerless (Iverson, 2016; Moore et al., 2005; Winter & Cotton, 2012). The GOs could play an important role in relieving these feelings and giving power to the students to make a change, but this was still limited in the observed cases. Therefore, a recommendation for the GOs is to increase access to decision making in the GOs for student volunteers by for example having a general assembly and let them participate in the development of the goals and activities of the GO. A recommendation for the university would be to give the freedom to students to criticize and demand change, even when it conflicts with the universities' own objectives.

Having supporting empowerment structures in place helps to empower the students that are intrinsically motivated to make a change towards sustainability. The GOU envisioned to engage the whole university community with sustainability, resulting in rigid empowerment structures. As a result, they were engaging more than 50 students in achieving sustainability in higher education. This in contrast with the GOW, who saw as their main task to make the university more sustainable and saw student volunteers as a kind of tool to achieve this goal, resulting in only one project group and two volunteers being involved. In the UMGO, they went from a couple of volunteers to 20 after starting their new empowerment structure.. Zimmerman & Halfacre-Hitchcock (2006) mention in their case study on a green building retrofit in the USA that there is a general apathy among students and stereotypes associated with activism as barriers for student involvement in greening the campus initiatives. However, this research shows that there is a relatively large group of students that is willing to become involved with sustainability (in higher education), but only acts upon this motivation when supporting structures are present. Therefore, I suggest it is important for both scholars and practitioners to differentiate between students (and staff and faculty) that are already motivated and the whole university community and use **different engagement strategies**. For students that have the motivation to make a change, but do not know yet how, empowerment structures are crucial in helping them to achieve their goal.

As mentioned above, key findings on outcomes were that most student volunteers were focusing on facilitating pro-environmental behaviour of their peers or involving their peers with sustainability and the GO. However, changes in the behaviour of students will not influence the other dimensions of sustainability in higher education. Despite the mandate of the GOs to make a change in their universities, student volunteers are not trying to achieve policy changes to increase sustainability in education, research, or external community outreach. To reach sustainability in higher education, also changes are needed in these fields. To facilitate this, the GO should support students that want to lobby to make a change in university governance and universities should open up their decision-making space for students.

Another result apart from the empowerment components and structures was that measurable structural outcomes of the projects of student volunteers were limited and that impact of the project groups was not assessed by the student volunteers or the GOs. Impact was not measured partly because it was difficult to quantify and partly because students and the GO did not think about it. However, it is important to consider that not all impact can be quantified in numbers. Furthermore, everything in the world is interconnected, and we might not see the immediate consequences of our actions. As Foucault (1966) said:

“People know what they do; frequently they know why they do what they do; but what they do not know is what what they do does.”

Trying to achieve a change towards sustainability might change yourself as a person, change the discourse in the university, and inspire other action groups or people. These unintended positive consequences can occur without even reaching the initial goal. The impact of this is more subtle and difficult to measure and can occur years after the initial action. These consequences in addition to individual empowerment of students as an outcome make that even when environmental impact is not easy to measure or even questionable, supporting empowerment of students is still very necessary in achieving sustainability in higher education.

5.2. Evaluation of the concept of empowerment for sustainability

This section describes the conceptualization of empowerment for sustainability and implications for other frameworks. Empowerment is a term that is omnipresent in articles as well as policy documents. Often, the term is not defined, and if so, there are multiple meanings, contexts and conceptualizations (Hur, 2006). Studies on individuals and groups that are oppressed often see empowerment to give power to these groups and empowerment is then defined as an increased control over one’s life and environment. This is different from the field of sustainability, where the personally meaningful goal is not necessarily linked to one’s own life. The goal can be related to the earth in general, species, or can even be people at the other side of the world that are threatened because of unsustainable practices here. Because of this difference in goals, I stressed the importance of the structural outcomes and environmental impact in the framework I used. The framework consisted out of three parts: the empowerment process, structural outcomes, and environmental impact. Below is outlined what choices I made in conceptualizing empowerment for sustainability and what further recommendations are evolving from this.

In this thesis, I not only considered the goals but also the actions, outcomes, and impact of the empowerment process. For the empowerment process, I made a distinction between the individual and group empowerment processes and how the GOs were supporting them. I started from the students themselves and defined individual and group components, and looked at activities of the GO that were matching these components. Other empowerment scholars stress mainly the goals of empowered individuals. Are they personally meaningful? And in the case of empowerment for sustainability, are they

related to sustainability? As in this research, studying outcomes and impact could add an extra dimension on studies on empowerment for sustainability because it stresses more the results of the empowerment process. Future research could look more into the links between the activities and the components and see whether this really leads to more empowerment.

To give a holistic picture and investigate both individual and group components, I combined different frameworks. Including the collective components **collective belonging** and **control on organizations** gave extra information on how the Green Office was functioning as a group. However, the component **involvement in activities** was not so relevant in this context since I only investigated the empowerment of students who were already involved in GO activities. However, for further research on how to empower the whole university community, these components become important again. Lastly, due to time constraints, no extensive research was done on how the GOs can work together with different actors from the university community or external stakeholders towards common goals (**community building**). More research is needed to see how GOs can collaborate with student sustainability initiatives, student organizations, staff, and external stakeholders on different fields.

Another important choice I made in the conceptualization of empowerment for sustainability is to separate the psychological empowerment from the structural outcomes and impact of the empowerment process. All empowerment components are starting from the individual's perception and structural outcomes were observed and derived from reports. The reason for this is because the empowerment of the individuals itself is often the most important outcome. This is different from most other empowerment frameworks, where the outcomes are included in the components. For example, Zimmerman (1995) defines three psychological empowerment components: intrapersonal, interpersonal, and behavioural. The last components are specific behaviours and actions undertaken to achieve a personal meaningful goal. In the framework used in this thesis, actions are included in the outcome and there is description of the actions taken, the outcomes and the impact. Also Tassone et al. (2017), who investigate how empowerment for sustainability is fostered by an educational tool, stress mostly the empowerment itself and give little attention to the outcomes and environmental impact. Students in the course executed a project and topics, action skills and reflection upon the action of students are described, but the actual structural outcomes and impact is not further discussed. The reason for this is that the authors stress the learning dimension of empowerment and what skills are fostered by the process. The link with sustainability is captured in the goals that individuals set.

I argue that separating the empowerment process, actions, outcomes, and impact in the conceptualizing of empowerment for sustainability provides information on the role of empowerment in the transition towards a more sustainable world. Distinguishing between them is necessary since not every action leads to a desired outcome and not every outcome leads to a desired environmental impact. More reporting on the structural outcomes of empowerment by other scholars and the GOs themselves might give more

insights on the role of empowerment in achieving sustainability in higher education. Impact assessments are important for the GOs and researchers to see the links between empowerment and a more sustainable state of universities.

5.3. Implications for sustainability in higher education

The insights on empowerment for sustainability and evaluation of the concept of empowerment for sustainability lead to the implications for researchers and practitioners in the field of sustainability in higher education. Below, recommendations are given on how sustainability in higher education should be achieved, derived from this research.

In the transition towards sustainability in higher education, it is not only the end goal of a more sustainable university that counts, but also the way towards this state. It is also important to consider how to involve the university community along this way. Both the structural outcomes and involving the university community in achieving these outcomes are intertwined and should be studied and considered together. Desired outcomes are that institutes of higher education should become sustainable in their education, research, operations, and external community outreach, leading to a positive socio-environmental impact. During the process of achieving this outcome, the staff, faculty, and students should be informed about what is already in place and what sustainability challenges still need to be tackled, as well as involved in decision making and empowered to actively make a change themselves.

In addition, more research is needed that takes this holistic approach of both looking at the environmental impact as empowerment as an outcome in itself. Green offices can be a model to make this double role of both being a catalyst for change and a body that informs, involves, and empowers the university community with sustainability in higher education. More research is needed on how to involve the students, staff and faculty that are not yet intrinsically motivated to make a change towards achieving sustainability.

5.4. Limitations of methodology and data analysis

This thesis was conducted in a limited timeframe with limited resources. Due to time limits, it was not possible to do a longitudinal survey on the empowerment components before and after their involvement with the GO. However, students assessed themselves the change they had made throughout their Green Office experience and other research confirms the acquisition of sustainability competences in GO employees through involvement with the UMGO (Fella, 2014).

For the sampling of the GO volunteers, I was relying on the GO employees giving me the contacts and therefore them choosing who I could interview. In the ideal situation, they should be randomly selected out of all GO volunteers. This might have influenced the results. In the GOU and GOW, I did observe several other GO volunteers in their activities, which partly made up for this lack of random selection.

There were some methodological issues during the fieldwork and data analysis. During the interviews, I didn't always go into depth because of time constraints. Furthermore, I did the Maastricht interviews over skype due to the distance. To make up for this, I immediately noted down everything after the interview with help of the recordings and asked the interviewees to review the interview transcripts. Furthermore, I coded the interviews alone. Ideally, two or more researchers should be coding the interviews and see what the inter-rater reliability is between the coders (Berg & Lune, 2013, p. 155). To increase validity, I discussed the coding manual with my supervisor and went back to the first coded interviews after completing the coding manual.

Other challenges were that Maastricht was in a process of reorganization and Wageningen didn't have a clear empowerment or volunteer structure which made that many of the recommendations are based on the case of the GOU. It would be interesting to evaluate how the UMGO empowered their volunteers after implementing their new volunteer structure.

5.5. Reflections on the author's role and position

I was working as Green Office Coordinator NL & BE (GOC) and had regular contact with SvM and rootAbility during the writing of this thesis. As a result, I had a double role: both researcher and insider of the social group I was studying. In 3.6 it is discussed what this double position entailed and what methodologies derived from (Greene, 2014) I used to cope with it. Below I discuss the different issues related to insider research I coped with: the objectivity of the research, gaining access and whether power or shifting of identity issues arose.

Being objective is one of the most obvious issues related to insider research. Being involved in the GO movement and believing in the potential of GOs to support student empowerment for sustainability coloured the choice of research questions and the perspective I took in this thesis. However, I described my biases very explicit above and think that the methods of peer debriefing and self-reflection helped in describing the results in a way as objective as possible.

My role as Green Office Coordinator increased the access to documents, contacts, and events. Due to my role as Green Office Coordinator I met several people that were working for or researching sustainability in higher education. This shaped my thinking process and gave me extra information. Examples of the influence on the thinking process were the differentiation between outcomes and impact in the conceptual framework and result section after discussing the preliminary results with rootAbility. Next to this, being present at the European Green Office Summit, visiting other Green Offices, and joining and organizing activities gave me more information on how the movement works and what differences there are between Green Offices. There were no difficulties in gaining access, it was rather the opposite.

I didn't really perceive problems related to power issues as for example confidentiality. I never felt uncomfortable asking certain questions during the interviews. This might be as well caused by the fact

that the thesis is not about sensitive topics which could damage the Green Office. There were moments at which I experienced difficulties switching social identities. To give some examples: I gave advice to the GOW, UMGO and rA following out of the thesis, gave an online seminar to the GOs on empowerment for sustainability and a workshop for the green organizations of Wageningen. All of this was in a role of being GOCO but using the insights I derived from the thesis. However, I never changed my interpretation because of my professional relationship with the Green Offices.

In conclusion, being an insider has advantages and disadvantages. In this research, the advantages outweigh the disadvantages, since it facilitated several aspects of the research process and helped different actors in the student sustainability movement in the Netherlands.

6. Conclusions

This research investigated how GOs contribute to student empowerment for sustainability in higher education. Key insights can be summarized into three sub conclusions, answering the three specific research questions outlined below.

How are students empowered for sustainability in higher education?

For students that were motivated to make a change, it was found crucial that there are supporting structures for them to act upon this. Structures that influenced the process of empowerment for sustainability for student volunteers were the following. First, knowing of the existence of the GO and what possibilities there are to get supported was the first requirement for intrinsically motivated students to become active. Second, understanding how the university is functioning was necessary to make a change. Third, students found satisfaction in making an impact, having social interactions, and learning through their engagement with the GO. Fourth, getting responsibility and legitimacy increased their belief in their capacity to make a change. Fifth, encouraging reflexivity on activities, outcomes and impact made them more aware of their own impact. Furthermore, there were different needs for the study organizations, student sustainability initiatives and loose volunteers.

In which ways are Green Offices supporting the process of empowerment in students?

The three GOs investigated had different visions and approaches on student empowerment, resulting in different number of students being empowered. GOs managed to empower students best if they had different engagement and empowerment strategies for different groups. Student volunteers that had an intrinsic motivation to make a change towards sustainability in higher education needed support from the GO to act upon this. The structure of the GOU with project groups and committees was a good example to support students that were willing to make a change towards sustainability in higher education. In all GOs investigated, there was a lack of control over decision making on the GOs' activities for the student volunteers. Moreover, the GOs had limited power on the governance of the university.

How does this empowerment foster sustainability in higher education?

The outcomes of student empowerment by the GOs were both psychological in the students themselves and structural in the universities structures and institutions. All students mentioned that they changed because of their engagement with the Green Office: their motivation to make a positive impact in their current and future life was strengthened, their awareness on sustainability challenges and the university context increased and their belief in their capacity to make a change strengthened. GO student employees were working on the topics of education (including awareness campaigns), research, operations, and external community outreach. This in contrast with GO volunteers, which were all working on the topics of operations and university community engagement or internal organization of the GO. Only part of the project groups was lobbying to make policy changes and all of them were targeting their peer students.

Both GO employees and GO volunteers were mostly working on enhancing environmental sustainability. The impact of the outcomes of the project groups was not evaluated by the student volunteers or the GO employees. Measuring impact would add to the empowerment process. However, impact might also be psychological, social or occur after a prolonged period, which is difficult to quantify.

In conclusion, this study clearly shows that empowerment structures such as Green Offices can be an important tool to activate and direct the potential of students to become agents of change, contributing to sustainability in higher education.

7. Summary of recommendations

Green Offices

- Start an empowerment structure with:
 - Membership to foster legitimacy and commitment
 - Project groups working autonomously
 - Committees supporting the Green Office
- Communicate to students how they can get involved
- Use service learning projects to
 - Evaluate the GOs organization and activities
 - Identify possible sustainability issues in education, research, external community outreach
 - Develop strategies to solve these issues
 - Assess and evaluate impact
- Open up your decision-making space to volunteers (with for example a General Assembly)

Universities

- Give adequate resources to the Green Office
- Open up your decision-making space for students
- Give a true mandate to the GO to make a change in all dimension of sustainability in higher education
- Communicate about how the university is already contributing to sustainability in higher education

Scholars

- Distinguish between the empowerment process, actions, outcomes, and impact in the conceptualization of empowerment for sustainability
- Distinguish between the whole university community and individual or groups that are intrinsically motivated to make a change
- Make a distinction between the different domains of sustainability in higher education (education, research, operations, and external community outreach) and the different ways of engaging the university community with these domains (inform, involve, empower)

Further research is needed on

- The empowerment process by means of a longitudinal study on student volunteers
- How to create collective impact with student sustainability initiatives, student organizations, staff, and external stakeholders
- How to engage students, staff and faculty that are not yet intrinsically motivated to make a change towards sustainability in higher education

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A. Interview topic guides

Introduction:

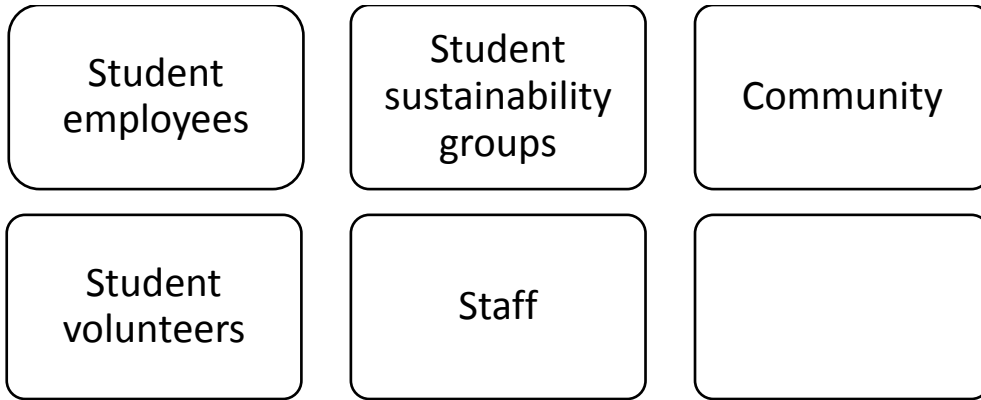
1. Present myself
2. Goal interview: thesis on engaging students with SHE. Case study on GOs. Not in the position of GOC*
3. Results: thesis, recommendations for GOs
4. Time: 60'
5. Ask if can record. Ask if they want me to send the results.
6. Give the schemes and encourage them to draw relationships during the interview.

* I am doing this interview in the context of my thesis, not in my position as GO coordinator. So, when we are discussing things that we discussed before in the position of GOC, please explain it again to me as if we didn't discuss it before.

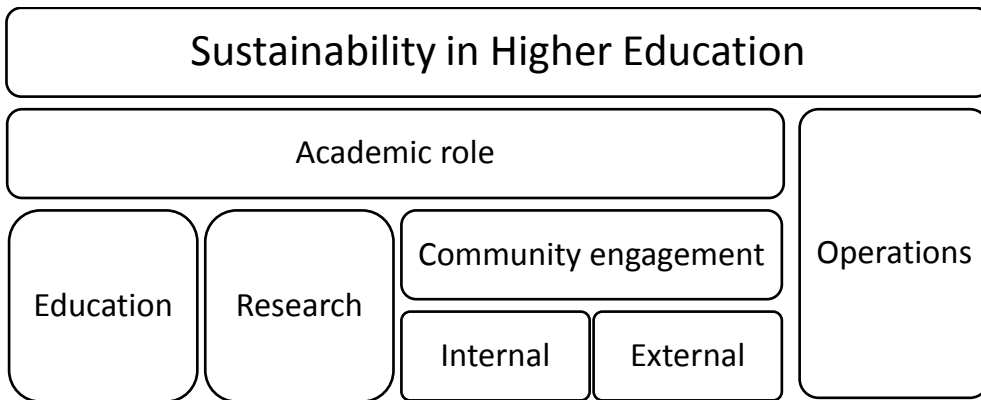
Theme	Topic
Goal	Change
	Background history of the phenomenon
Sustainability	How is this goal related to sustainability
Process	Actors
	Empowering environment
Individual components	Awareness
	On sustainability challenge
	On own competences and resources
	Meaning
	Self-efficacy
Collective components	Impact
	Collective belonging
	Involvement community
	Control over organizations
Structural outcomes	Community building
	Change = related to impact
	Categorize impact on university's organisation Other institutional change

Ending the interview:

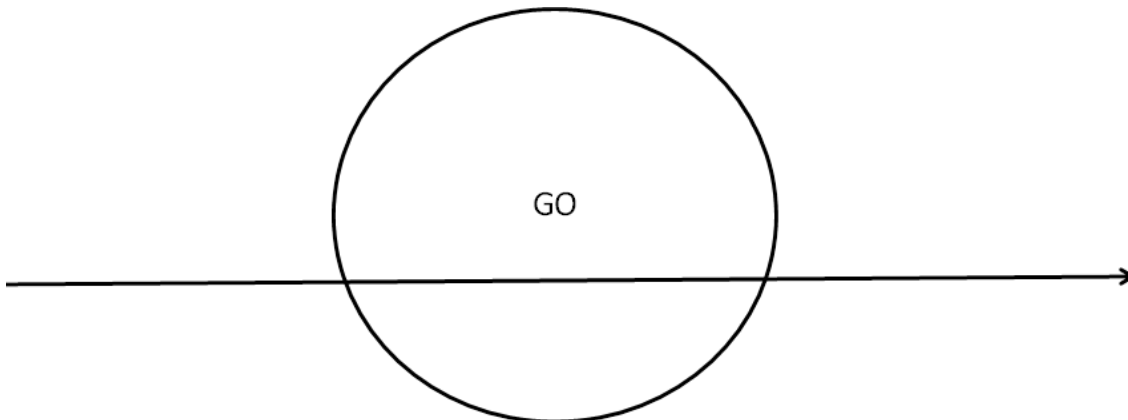
- Summarize most important points and check if something is missing
- Thank them
- Invite for thesis presentation
- Recommendations to interview further



Drawing 1: Target public (GO manager, GO employee)



Drawing 2: What dimensions of SHE are tackled in what way (GO manager, GO employee)



Drawing 3: How did you get involved and how did you change

Table 8: GO manager and student employees

Theme	Topic	Guiding questions
Organization of the GO		<i>Show the description I made – is it complete and accurate?</i>
Goal	Change	Mission and vision → in description Does the GO have a theory of change?
Sustainability	How is this goal related to sustainability	Does the GO have a common definition on sustainability
Process	Actors	In description
	Activities	How is the GO involving student employees, student sustainability groups, the community in general, student volunteers and staff (<i>drawing</i>)
	Empowering environment	How is the GO helping students that want to make a change? How can students find you? How is the GO supporting them? Who is coming and what are their ideas What do they ask from the GO What can the go give them
Individual components	Awareness on sustainability challenge	What are your activities related to awareness on sustainability challenges for the different target publics?
	Awareness on own competences and resources	What resources and competences are needed for students that want to make a change in SHE? Is the GO facilitating this resource allocation? If yes, how?
	Meaning	Why people or the GO wants to achieve a change?
	Self-efficacy	Is the GO involved in making students confident in making a change? If yes, how?
	Impact	Is the GO involved in showing the impact of changes made?
Collective components	Collective belonging	What activities is the GO doing in order to have a group feeling under all different target public? How do they try to make them feel connected with the GO?
	Involvement community	How are you taking part in extracurricular university activities that relate to sustainability? How are you taking part in GO activities?
	Control over organizations	How do the different target publics have an influence on the organization of the GO and the university through the GO?
	Community building	What are the relations between the GO and other organizations/ parts of the university? Do you have common interests? How do you work together in achieving common goals?
Structural outcomes	Categorize impact on university's organisation Show description and ask feedback.	Education
		Research
		Community: internal and external
		Operations
		Other
	Institutional changes	What other changes did you see? More subtle changes Norms, values Change in practices Change in institutions

Table 9: GO employees

Theme	Topic	Guiding questions	
Connection with the GO	Link with the GO	How are you involved with the GO? What time do you invest? What are your responsibilities/tasks?	
Goal	Change	What changes do you want to see in the university related to sustainability? Are you working towards achieving a change?	
Sustainability	How is this goal related to sustainability	What do you know about the sustainable aspect of the change you want to see? How did you get to know this?	
Process	Actors	Who is involved in the process of achieving this change? How is the GO involved? How do these actors relate to each other? (drawing)	
	Empowering environment:	For the employee	What kind of setting is ideal for achieving your goal? What are enabling elements What are constraining factors How is the GO supporting you? In what way could they support you better?
		For students	How can students find you? How is the GO supporting them? Who is coming and what are their ideas? What do they ask from the GO? What can the GO give?
Individual components	Awareness on sustainability challenge	What is the relationship with the change you want to achieve and sustainability? What factors are making it difficult to achieve this change in general? What factors are making it easier to achieve this change in general?	
	Awareness on own competences and resources	What is your capacity to mobilize the resources you need? What skills do you have that can help you achieve the goal? What skills are lacking? How could the GO help?	
	Meaning	Why do you want to achieve this change? - How does it fit with your broader worldview? - Why do you believe this is important? Did the GO inspire you somehow?	
	Self-efficacy	Do you believe you can reach this goal? What helps you being confident in reaching your goal? Role of the GO in this?	
	Impact	What are the changes you achieved/are achieving in SHE? Did the GO make these changes more visible to you in some way? How could they do this?	
Collective components	Collective belonging	What activities is the GO doing? How do they try to make them feel connected with the GO?	
	Involvement community	How are you taking part in extracurricular university activities that relate to sustainability? How are you involved in other university groups	
	Control over organizations	How do you think you have an influence on the universities organization? How do you think you have an influence on the GOs organization? How could they improve this?	
	Community building	How do you interact with other members of the university in achieving your goal? How do you interact with other people linked to the GO in achieving your goal?	
Structural outcomes	Categorize impact on university's organisation	Education	

Categorize impact on university's organisation	Research
	Community: internal and external
	Operations
	What other changes did you see? More subtle changes. Norms, values Change in practices, in institutions
Personal change	Do you feel you have changed since you became involved with the GO? How?

Table 10: Topic List Volunteers/ student sustainability groups

Theme	Topic	Guiding questions
Connection with the GO	Link with the GO	How are you involved with the GO? What time do you invest? What are your responsibilities/tasks?
Goal	Change	What changes do you want to see in the university related to sustainability? Are you working towards achieving a change?
	Background history of the phenomenon	What happened in the past? What is the history of what you want to change?
Sustainability	How is this goal related to sustainability	What do you know about the sustainable aspect of the change you want to see? How did you get to know this?
Process	Actors	Who is involved in the process of achieving this change? How is the GO involved? How do these actors relate to each other?
	Empowering environment	What kind of setting is ideal for achieving your goal? What are enabling elements What are constraining factors How is the GO supporting you? In what way could they support you better?
Individual components	Awareness on sustainability challenge	What is the relationship with the change you want to achieve and sustainability? What factors are making it difficult to achieve this change in general? What factors are making it easier to achieve this change in general?
	Awareness on own competences and resources	What is your capacity to mobilize the resources you need? What skills do you have that can help you achieve the goal? What skills are lacking? How could the GO help?
	Meaning	Why do you want to achieve this change? - How does it fit with your broader worldview? - Why do you believe this is important? Did the GO inspire you somehow?
	Self-efficacy	Do you believe you can reach this goal? - What helps you being confident in reaching your goal? - Role of the GO in this?
	Impact	What are the changes you achieved/are achieving in SHE? Did the GO make these changes more visible to you in some way? How could they do this?
Collective components	Collective belonging	How do you feel part of the university Do you identify yourself with being green? How do you feel connected to the GO? How could they improve this?
	Involvement community	How are you taking part in extracurricular university activities that relate to sustainability? How are you taking part in GO activities?
	Control over organizations	How do you think you have an influence on the universities organization?

		How do you think you have an influence on the GOs organization? How could they improve this?
	Community building	How do you interact with other members of the university in achieving your goal? How do you interact with other people linked to the GO in achieving your goal?
Structural outcomes	Personal change	Do you feel you have changed since you became involved with the GO? How?

B. Interviewee list

Code	Green office	Function	Name	date
M1	Maastricht	Manager	Alizé Huberlant	17-2-2017
M2	Maastricht	Student employee: PR & Marketing	Anna Roberto	17-2-2017
M4	Maastricht	Other: writing research on the organization of the GO	Rieke Sonnenberg	2-3-2017
U1	Utrecht	Assistant Manager	Emily Swaddle	31-1-2017
U2	Utrecht	Student employee: Project and Volunteer coordinator	Josep Pinyol	31-1-2017
U3	Utrecht	Project group UU Talks	Valentina Nacik	6-2-2017
W1	Wageningen	Manager	Marta Eggers	26-1-2017
W2a	Wageningen	Student employee: outreach coordinator	Josien Croezen	27-1-2017
W2b	Wageningen	Student employee: operations-catering coordinator	Ines Weingarten	27-1-2017
W3a	Wageningen	Project group: ReuseRevolution	Lisa Trogisch	1-2-2017
W3b	Wageningen	Student with idea on ICT	Bram Berkelmans	7-2-2017
W4	Wageningen	Other: disposable cup project in the past	Blair van Pelt	25-1-2017

C. Observation scheme

Derived from (Berg & Lune, 2013)

1. Descriptive
 - a. What is the context? Time date place
 - b. What is phenomenon?
 - c. What are the actors involved?
 - d. What are the relations between the actors regarding the phenomenon?
 - i. Practices, routines
 - ii. Verbal exchanges
 - iii. Role GO in this
2. Interpretative
 - a. Process of empowerment
 - b. Components of empowerment
 - c. Outcome of empowerment
3. Subjective Reflections
 - a. Personal
 - b. Meta level
 - i. Power
 - ii. Position towards subjects GOC - researcher
 - iii. Ethics

Thoughts of myself: observer comments (OC), Subjective reflections (SR), Position of Green Office Coordinator (GOC)

D. Coding manual

Table 11: codes derived from themes, category and items with a description for each code.

Code	Theme	topic	Item	Description
GOGoalchangeinv	GOGoal	change	inv	Goal of the GO, involving university in achieving change
GOGoalchangeLifestyle	GOGoal	change	Lifestyle	goal of the GO, promoting sustainable practices
GOGoalchangeuniversity	GOGoal	change	university	goal of the GO, changing the university
GOActvisib	GOAct	visib		visibility of the GO
GOActAwarUni	GOAct	Awar	Uni	awareness action related to sustainability in university context
GOActAwarLifestyle	GOAct	Awar	Lifestyle	awareness activity related to sustainability and lifestyle
GOActAwarglobal	GOAct	Awar	global	awareness activities related to global sustainability challenges
GOActhelpProm	GOAct	help	Prom	empowering activity: help with promotion
GOActhelpRes	GOAct	help	Res	empowering activity: help with resources
GOActhelpknow	GOAct	help	know	empowering activity: help with knowledge on university/network/go organization
GOActhelporg	GOAct	help	org	empowering activity: help with organizing
GOActempmeaning	GOAct	emp	meaning	empowering activity related to meaning
GOActEmpself	GOAct	Emp	self	empowering activity related to increasing self-efficacy
GOActAwarimpact	GOAct	Awar	impact	empowering activity related to showing impact
GOActcolbel	GOAct	col	bel	empowering activity related to collective belonging to the GO
GOActcolinv	GOAct	col	inv	empowering activity related to involvement other actors of the university in the community
GOActcolcontr	GOAct	col	contr	control organization
GOActcolcom	GOAct	col	com	community building
GOActLobby	GOAct	Lobby		activities to change university policy
ActorGOman	Actor	GO	man	GO manager
ActorGOempl	Actor	GO	empl	GO student employee
ActorStugroup	Actor	Stu	group	student sustainability group
Actorstuidea	Actor	stu	idea	student with idea
Actorstuvol	Actor	stu	vol	volunteer
Actorstaff	Actor	staff		staff
ActorOrg	Actor	Org		student and or sustainability organization/committee
Actoruni	Actor	uni		university actor
Actorcity	Actor	city		actor from outside the university
EmpProcneeds	EmpProc	needs		needs students in empowerment process
EmpProcchange	EmpProc	change		how students changed
EmpProcbarrier	EmpProc	barrier		barriers in the empowerment process: fluctuation of students

EmpProcinc	EmpProc	inc		incentive of empowerment process + how did they get involved with the GO
EmpCompawarsust	EmpComp	awar	sust	awareness on sustainability challenge
EmpCompAwarres	EmpComp	Awar	res	individual empowerment component: awareness on resources challenge
EmpCompmeaningcareer	EmpComp	meaning	career	meaning: career
EmpCompmeaningimpact	EmpComp	meaning	impact	meaning: making a change
EmpCompmeaninglearn	EmpComp	meaning	learn	meaning: learning
EmpCompmeaningsocial	EmpComp	meaning	social	meaning: social interactions
EmpCompself	EmpComp	self		building self-efficacy
EmpCompimpact	EmpComp	impact		reflecting on impact of action
CupProject	Extra			activities, actors related to the cup project in Wageningen
impactstructure	Extra			perceived structural impact