MASTER'S THESIS

Could a cooperation network between Finnish universities advance adoption and success of Green Office environmental management system?

Liisa-Maija Malinen

University of Jyväskylä
School of Business and Economics
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JYVÄSKYLÄN YLIOPISTO

ABSTRACT

Malinen, Liisa-Maija

Finnish universities are increasingly adopting EMSs in order to improve their sustainability performance. Theoretical background includes studies on EMS implementation in universities and sustainability networks. Insufficient management commitment leading to lack of resources and time has been identified as a common hindering factor with regard to implementation of said systems. This study is an empirical research on the possibilities of an inter-university network in facilitating the implementation of the Green Office EMS. The study is providing answers to the following questions: whether a university Green Office cooperation network could assist the progress of the programme and in what way? What aspects of the programme implementation a cooperation network is and is not likely to provide benefits in? What issues do the Green Office coordinators see potentially impeding successful operation of a university cooperation network and finally would they be interested in joining such a network? The data was collected by thematic interviews of five Finnish university Green Office coordinators and analysed based on the subjects' background information as well as the set themes i.e. network's effect on exchange of ideas and good practices; bureaucratic aspects of Green Office; innovation generation; joint projects and curriculum; motivation; and marketing.

The findings indicate that the main benefits for universities from network cooperation would be from exchange of ideas and good practices, motivation, and joint projects and curriculum. Also, the opportunities an active university network could provide innovation generation, were apparent. Bureaucratic aspects as well as marketing emerged as unlikely to benefit from university partnerships. Importance of management commitment in the success of an environmental management system implementation arose as an additional theme through both the statements of subjects and practical examples of the universities' operations. The study also provides information on the shortcomings of the Green Office programme when applied to the educational sector. Main hindering factors with regard to effectiveness of an inter-university network were a lack of time and resources for the Green Office coordinators as well as the amount of existing networks and thus, a risk of overlapping. In managerial implications this study presents a design for a university network based on virtual networking technologies as well as useful feedback to WWF Finland.

Keywords: universities, environmental network, Green Office, EMS, environmental motivation, innovation, sustainable development, virtual network, Web. 2.0, Online social network, learning network

Author's address   Liisa-Maija Malinen
                         Corporate Environmental Management
                         School of Business and Economics
                         University of Jyväskylä
                         liisamaija.m@gmail.com

Supervisor   Prof. Hanna-Leena Pesonen
                         School of Business and Economics
                         University of Jyväskylä

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1 INTRODUCTION

Environmental concern and consequently environmental management efforts are increasing in every sector whether it is business, industrial or administrative. This trend is mostly due to increased pressure from legislation, international agreements and taxation (Rohweder, 2004; Koivisto, 2008). Environmental management as a concept can be defined as a process where organization is behaving in an environmentally responsible manner in all their operations (Pohjola, 2003). Furthermore, the governance of environmental impacts caused by operations is tied closely to general management activities as well as everyday functions of an organization (Kippo-Edlund, 2006). The demands for environmental management exertion depend largely on an organization's field of business and activities, namely the burden an organization's operations place on the environment locally and internationally. For example, an oil company carries a considerably greater risk of occurrence of a serious environmental disaster than a basic office does. This is not to say, however, that the operations and environmental impacts of an office are irrelevant but merely that they are more comparable to those of consumers than industry (Asikainen, 2006).

An example of an international agreement concerning universities is the Cooperation Programme in Europe for Research on Nature and Industry through Coordinated University Studies (COPERNICUS), which is a programme developed by The Conference of European Rectors (CRE). It declares "Universities and equivalent institutions of higher education train the coming generations of citizens and have expertise in all fields of research, both in technology as well as in the natural, human and social sciences. It is consequently their duty to propagate environmental literacy and to promote the practice of environmental ethics in society, in accordance with the principles set out in the Magna Chart of European Universities and subsequent university declarations, and along the lines of the UNCED[1] recommendations for environment and development education." (CRE-COPERNICUS, 1994).[2] Further, the United Nations Education, Scientific and Cultural Organization's (UNESCO) UN Decade of Education for Sustainable Development (2005-2014)

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[1] United Nations Conference on Environment & Development, For further information see:
http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf
[2] Retrieved 24.8.2013 from: http://www.iisd.org/educate/declarat/coper.htm.

promotes: "every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future" (UNESCO, 2013)[3], which fundamentally means that essential aspects of sustainable development should be incorporated into education and learning.

The term sustainable development embodies environmental, social as well as economical perspectives and is based on the principle that everything that we need for our well-being depends one way or another on our natural environment. Sustainability can be defined as utilising natural resources in a way that allows humans and nature to live in productive harmony without endangering the needs of future generations. (EPA, 2013) The main focus of this study is on environmental management, however, for some universities surveyed, the overall aim is sustainability and thus, both concepts are employed. Finnish universities' increasing interest in sustainability is evinced in that they have begun to implement environmental management systems (EMS).

A popular EMS amongst universities in Finland is WWF's Green Office (GO), which is primarily created for offices and is considered relatively easy to implement (WWF Finland, 2012). Even though GO per se is a lightweight environmental programme, a lack of resources, time and motivation can create problems regarding successful implementation of any EMS (Ferrer-Balas et al., 2008; Sammalisto & Arvidsson, 2005.; Velazquez et al. 2005; Viebahn, 2002.).

World Wildlife Fund (WWF) is an international organization working towards protecting the nature and humans. It was founded in 1961 and its operations consist of fieldwork, influencing political and other decision making as well as environmental education. The WWF network comprises independent national funds in 28 countries of which the WWF Finland is one. (WWF Finland, 2013f)

The WWF Finland was founded in 1972 and has since engaged in systematic protection efforts of endangered species as well as environment both in Finland and increasingly internationally. WWF Finland published the Green Office Programme in 1998 (WWF Finland, 2013g) and it was launched in 2002 (WWF Finland, 2013h). Networks based on environmental management and sustainability have been found to render multiple benefits for members (Aydin & Morefield, 2008) in, for example, organizational learning (Roome, 2001; Halme, 2001) and spurring innovation (Grasenick et al. 2008; Carrillo-Hermosilla et al. 2009). Could Finnish universities benefit from a cooperation network built around an EMS such as GO and could the EMS implementation process be facilitated by network cooperation?

Published research on environmental cooperation between universities is few and far between. Moreover, research on university cooperation in EMS implementation seems effectively non-existent. On that account, this research examines the subject through papers on university efforts in sustainability (e.g. Ferrer-Balas et al. 2008; Viebahn, 2001; Button, 2008; Velazquez et al. 2006; Sammalisto & Arvidsson, 2005), sustainability education development in a network (Naeem & Peach, 2010), corporate environmental cooperation and

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[3] http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/, Retrieved: 24.8.2013

networking in the service sector (Halme, 2001), public-private networks (Grasenick et al. 2008; Axelsson et al. 2008), inter-organizational learning in strategic alliances (Larsson et al, 1998) and virtual learning networks (de Kraker et al., 2012; Downes, 2010). Today's online environments offer notable benefits for networking for sustainable development by providing easy knowledge exchanging opportunities and interaction, while reducing the need for travelling. Corporate approaches are plausible in the context of this study because educational institutions can be considered as service providing organisations. Moreover, universities and universities of applied science both internationally and in Finland are functioning increasingly like businesses. This is due, for instance, to changing operational environments caused by decisions in the governmental level. For example, in Finland the government provides funding for higher education and in the beginning of the year 2013 new principles for funding came to effect. The funding is now determined by "the extent, quality, impressiveness, profitability and internationalization of operations" (Ministry of Education and Culture, 2012). This leads to increased competition between universities when it comes to government as well as private funding not to mention talented and motivated students and staff. In order to succeed, university boards must run an innovative, efficient, productive and an international organization. Furthermore, as the society today regards sustainable development as a significant ethical principle both in the operation of corporations as well as public institutions, universities also must promote their contribution to the cause. On that account, this thesis investigates the possibilities of enhancing universities' environmental management and sustainable development efforts through cooperation and networking in GO EMS implementation.

The study is an empirical research on the issues affecting environmental coordinators' everyday work regarding the GO programme, their opinions about networking and its ability to assist in the progress of the programme. The data collection method used was a thematic interview and the subjects are Finnish universities' GO coordinators and/ or contact persons. The analysis was carried out by identifying set themes from the research data and reflecting them against the backgrounds of the study subjects and their universities in the one hand, and studying the interviewees individually so as to establish motives behind their answers as well as their progress during the interviews, in the other. Further themes emerging from the data were also identified.

This paper begins with introduction of the motivational background and aim of the research after which, the research task and questions are described. It then continues on to present the methodological choices and describes the thematic basis for the research. In the literary review, the concept of environmental management including prevalent environmental management systems in addition to published research on universities' environmental management in general as well as the thematic topics applied are examined after which, the results are presented. Finally, the findings are discussed and evaluated against the theoretical basis of the study along with presentation of managerial implications, limitations of the research and suggestions for further research.

1.1 Motivation for research (scientific and personal)

Cooperation between companies has been found to benefit the sustainability efforts and performance of companies. However, the studies so far have largely concentrated on operational side of business such as supply chains (Hakanen et al., 2007; Vachon & Klassen, 2006) Hence, studies about cooperation networks between universities regarding environmental management systems are few indeed. Naeem and Peach (2010) present in their research how a university network cooperates in developing curriculum for Education for Sustainable Development (ESD), Kurland (2011) concentrates on a sustainability network within a university, whilst university cooperation with political organizations in creating Regional Centre of Expertise (RCE) is studied in Axelsson et al.(2008). Additionally, studies about universities' sustainability efforts exist (Button, 2008; Viebahn, 2001; Krizek et al., 2011; Velazquez et al. 2005; Sammalisto & Arvidsson, 2005) as well as articles offering recommendations for universities aspiring towards sustainability (Moore, 2005; Viebahn, 2001). Ergo, an information gap exists, which justifies and supports research that provides practical information and examples regarding the everyday work of environmental coordinators in the educational sector, as well as their insights into the possible benefits and hindrances of cooperating on the subject of an EMS. Additionally, this study provides collective feedback from the educational field to WWF Finland, which could facilitate the development of the GO programme to better suit universities and other higher education institutions.

For the author, the motivation for this study arose from a personal experience. When working on a project aiming to discover practical examples of personnel and student motivation in universities that have implemented environmental management systems (EMSs) an issue regarding resources, namely the lack of, arose. During interviews with environmental management coordinators it was repeatedly mentioned that the coordinators were lacking time to perform their responsibilities regarding the EMS satisfactorily as the work was to be done in addition to their primary responsibilities and tasks. The interviewees also indicated great interest in the University of Jyväskylä's progress in implementing an EMS. This experience sparked the idea of possible cooperation between universities in implementing EMSs and thus, the idea to research the viability, interest and practical ways to realize such cooperation originated.

1.2 Aim of the research

First the research attempts to discover the kind of environment in which the individual GO coordinators work in. This is followed by identification of aspects regarding the GO implementation that they find demanding and the reasons for this. Thereafter, the study aims to exhibit possible issues environmental coordinators in Finnish universities consider could benefit and

facilitate their work regarding EMSs as well as issues that could not, if performed, planned or organised in cooperation with other universities. In addition, as concrete issues are established regarding restrictive factors as well as conducive ones, the thesis offers suggestions on a form such a cooperation network could take.

2   RESEARCH TASK

This thesis observes the work of environmental coordinators in Finnish universities as its purpose to establish whether an inter-university cooperation network based on the GO programme could facilitate their work. The author was also interested in the issues that could not be solved or organized in cooperation as well as hindrances that might affect the operation of such network. Finally, this study attempts to establish whether the university environmental coordinators would welcome said network, what role would they be interested to assume in it and what are the possible preconditions for joining. The study aims to produce answers to the following research questions:

> Do environmental coordinators think that cooperating with other universities in environmental issues and namely the implementation of GO environmental management system could facilitate and/or improve the success of their work?

> In what kind of issues do environmental coordinators think cooperation could be of benefit? What kind of issues they do not believe cooperation is viable or beneficial in?

> What problems do environmental coordinators see affecting successful formation of cooperation network?

> Would environmental coordinators be interested in forming a cooperation network of a sort?

3 METHODOLOGICAL CHOICES

3.1 Research design

According to Hirsjärvi et al. (1997) qualitative research aims to describe real life and its results are tied in a certain time and a place. They also state that qualitative research seeks to find and reveal facts rather than prove existing facts. This research aims to discover the feelings and needs of environmental coordinators in their current working situation as well as investigate the possibility of a topic specific network to provide solutions to issues that arose during the interviews. For this purpose qualitative research method will provide the best design.

3.2 Data collection

For the purpose of this study the author wished to receive information about personal experiences and ideas, which cannot be achieved by conducting a highly structured questionnaire. This direction is supported by Hirsjärvi et al. (1997) who express the benefits of an interview to be, for example the ability for the interviewee to bring forward aspects that affect them personally freely, and for the interviewer to specify answers as well as ask additional questions, and learn more widely about the subject's background. Interview is also suitable to use in uncharted field of research because it is difficult for a researcher to predict the direction of answers.

Ahead of the interviews the author was familiar with the concepts and structure of the GO programme, which is a common denominator regarding the interview subjects, yet, as the interviewees and universities' backgrounds can vary considerably and thus, were impossible to predict, the interviews required a semi-structured form. Due to the fact that previous research on the subject matter does not as yet exist, it was the author's intent, in order to produce new data, for the interviews to proceed in a way that the respondents were able to

speak freely and openly. Hence, themed interview was chosen as the interviewing technique. This method serves the research task in that it provides a certain freedom for the interview, which progresses based on set themes rather than set questions. The themed interview technique also enables the interviewee to voice their own thoughts without being influenced by the researchers preconceptions, yet providing sufficient structure to enable the research to keep to the schedule. (Hirsjärvi & Hurme, 2001)

The data for the study was collected from environmental coordinators from Finnish universities and universities of applied sciences that either have GO environmental management system in place and have passed the audit by WWF Finland or are working towards it. The main data collection method was individual interviews with GO coordinators and /or GO contact persons from five universities and universities of applied science in total. It was decided to retain the anonymity of the interviewees in order to reinforce openness in replies. Due to long distance to most interviewees, three of the interviews were conducted via telephone, one via video call and one face-to-face. The interviews were recorded in order to facilitate analysis. The interviews were conducted in January 2013 and transcribed during January/February 2013.

3.3   Data analysis

The analysis process was commenced by first reviewing the background information of each interviewee and the educational organization they represent. History of the GO environmental management system in each university was also viewed in order to differentiate the varying needs that GO coordinators have depending on the stage of the GO process. The analysis then continued by identifying and focusing on the replies concerning the themes that were used as a basis for the interview structure. The data relating to the themes was compared between interviewees in order to recognise differences and consistencies. Hirsjärvi & Hurme (2001) describe this as a process where common factors that link interviewees come up. Themes studied were motivational effect of a green office cooperation network; its' effect on innovation in the institutions; exchanging of ideas and good practices; bureaucratic issues related to GO; marketing; shared projects and curriculum development. Further, the data was reviewed in order to discover any additional themes emerging from the data.

In addition, the results were analysed taking into consideration the background of the respondents such as the reasoning and motives behind the decisions by the universities to implement a GO environmental management system, the level of support offered by the management and the organization in general to GO coordinators as well as the status of the respondent, i.e. their responsibilities, field of professional expertise and other tasks and responsibilities.

In the second phase of the analysis the data from each interview was reviewed individually. This provided valuable information regarding the

respondents' interest and willingness to cooperate with other universities regarding green office issues as well as about the manner in which the respondents believe the cooperation should be organized and would be most beneficial in their current situation. In addition, studying the data from individual interviews gave insight into the respondents' possible evolvement during the interview, for example, how their interest in cooperation changed as the interview discussion progressed and what may have caused it?

A distinction between universities of applied science and universities is not relevant for the purpose of this study and thus, all educational facilities discussed and studied in this paper are henceforth referred to simply as universities.

4 LITERATURE REVIEW

4.1 Environmental management systems

Environmental management systems (EMS) are voluntary tools for organizations to control, document and regularly evaluate the impact their operations have on environment. (Rohweder, 2004. 101.) Implementation of an EMS entails mapping of environmental impacts of operations, materials and products used in production as well as the end product have and may have in exceptional situations on the environment. Organization's operations are then designed so as to minimize the impacts identified. Additionally, training employees to conduct their work duties in a way that they are capable to prevent and/ or reduce environmental impacts is also an important element of EMS. (Pesonen et al., 2005, 11) The primary objective of EMS is continuous improvement: organization sets targets for improvement, which are reviewed and updated regularly. The most significant aspects are embarked upon first after which lesser ones are tackled and thus eventually, organizations gain control of all the operations and products that affect the environment defectively. Targets are set by the organization and can therefore be modest or demanding depending on the organizations resources and ambitions for environmental protection. (Pesonen et al., 2005, 12) EMSs are largely based on the so called "Demin Circle" or more commonly "PDCA" (Plan – Do – Check - Act), which is a simplified diagram aiming to clarify the continuous process an EMS requires (Figure 1). PDCA implicates to designing and reviewing components of business operations in order to improve their outcomes (Plan), Implementing an EMS and measuring its performance (Do), appraising activities and reporting the effects to decision makers (Check) and finally determining changes to be applied so as to improve the process (Act). (Arveson, 2013)

Act   Plan

Check   Do
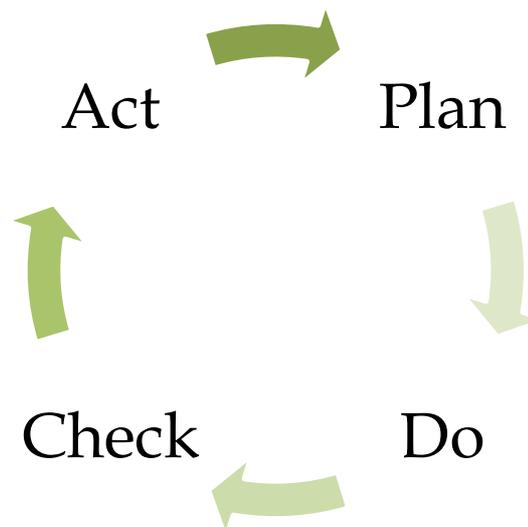
Figure 1   "Demin Circle" i.e. PDCA represents the concept of continuity of activities prevalent in environmental management systems. (adapted from Arveson, 2013)

The most commonly used EMS models are ISO14001, which is a standard developed by International Organization for Standardization (ISO) and EMAS (European Community Eco-Management and Audit Scheme). However, in small and medium sized enterprises a so-called light EMS is gaining popularity. A light EMS is built by applying certain aspects of an environmental standard such as ISO14001 or EMAS. (Kippo-Edlund, 2006; 118)

Kippo-Edlund (2006; 124) presents that the prerequisites for a successful construction of an EMS are:

- Management's commitment to environmental management.
- Commitment of staff into building an EMS and its realization in practice.
- The basis of an EMS lies in existing practices and operations.
- An EMS is created in a very practical way, with a view to incorporate its elements into existing practices of the organization.
- The "language" of the EMS coincides with the general organizational "language".
- Sufficient time resource is allocated for the creation of an EMS.
- Internal communications emphasize the benefits generated by the EMS and environmental management.
- Production and implementation of an EMS benefits from benchmarking against other organizations.

4.1.1 ISO14001 and EMAS

ISO14001 and EMAS are two of the most common EMS used internationally and in Finland. These two systems are similar in the general aspects of their processes. Initially, an organization must produce an environmental policy, with which the organization expresses its commitment to continuous improvement of environmental aspects as well as defines the focus of the work.

The policy must be approved by the management of the organization, be publicly available and it must be communicated effectively to staff. (Lovio, 2004; 124) Ensuing, the process requires a mapping of environmental impacts and legal requirements, setting concrete environmental targets, drawing up an environmental programme in order to reach the set targets, follow the realization of targets and continuously improve the environmental effectiveness of operations by setting new targets. (Lovio, 2004; Kippo-Edlund, 2006)

The information on the organization's environmental impacts produced by the EMS can be utilised in environmental reporting for stakeholders and authorities, as well as in communications and marketing. The main difference between the two EMSs is that EMAS requires a publicised environmental report, where an outside auditor validates the report and verifies the EMS. In ISO14001 a report is optional. (Kippo-Edlund, 2006; 120) Additionally, EMAS requires that an organization must comply with environmental legislation, whereas ISO14001 demands organization's procedures to be such that will lead to a state of legal compliance in a certain time (Pohjola, 2003; 64). EMAS is only utilized within Europe but ISO14001 is used globally.
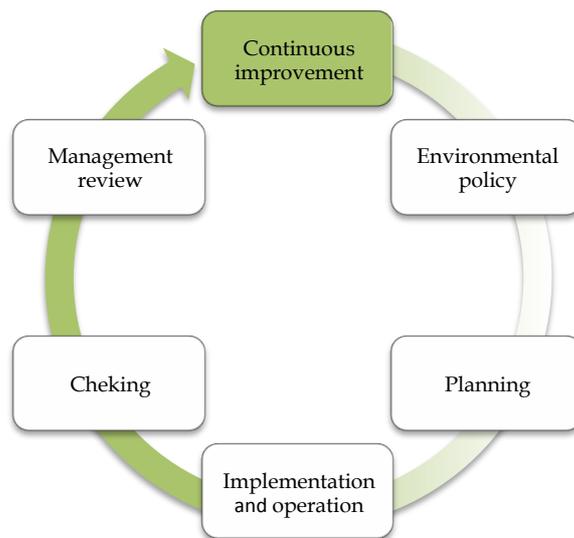

Figure 2   Model for ISO14001 environmental management system. (Adapted from ISO14004:2004)

Figure 3 presents the entire process of an EMS. It illustrates the essential steps as well as the requisite of recording all activities. It also indicates the way continuous improvement is managed in the process.
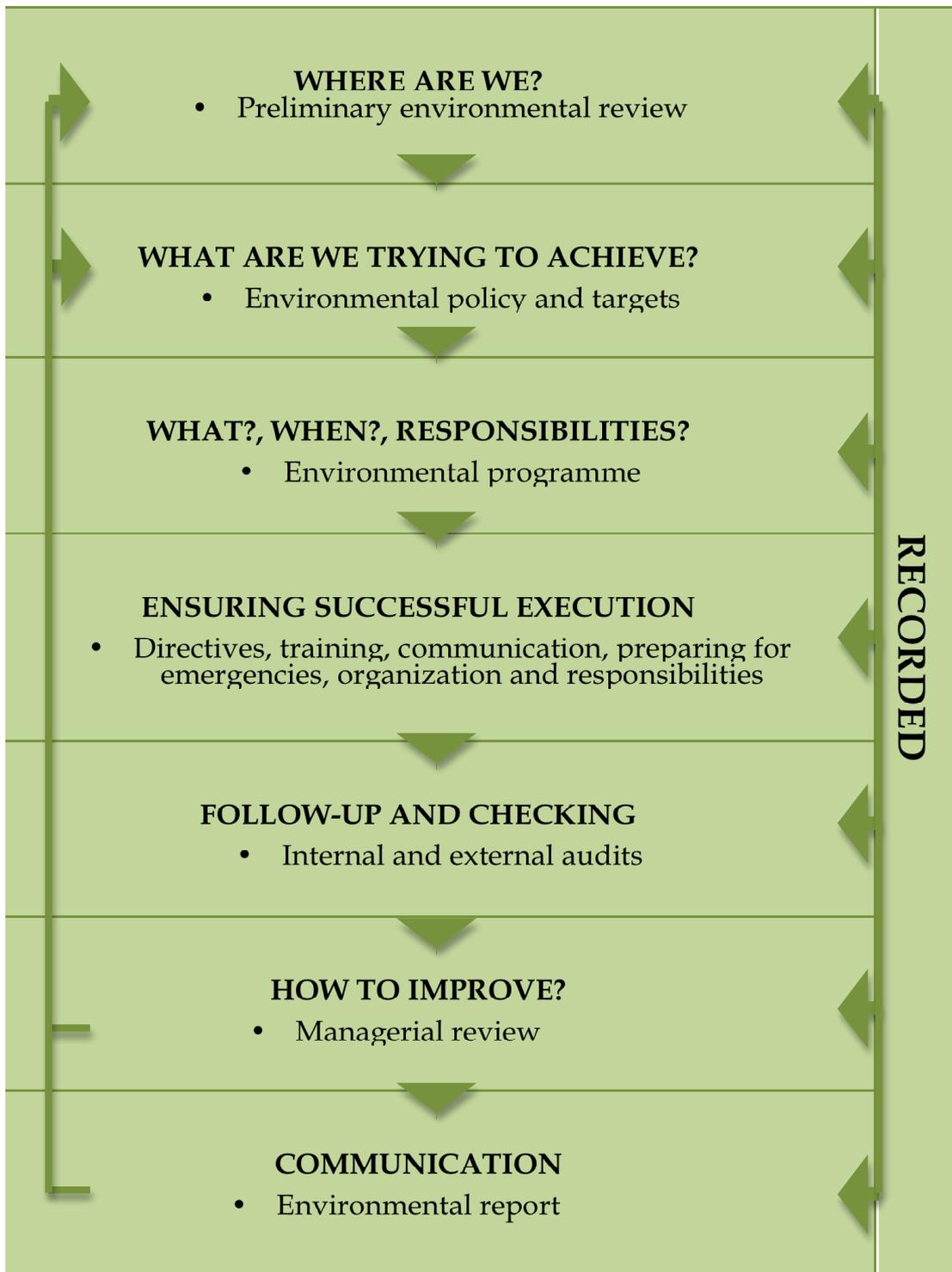
Figure 3   EMS process description (adapted from Kippo-Edlund, 2006)

4.1.2   Lightweight EMS

Lightweight EMS contains the central elements of EMS such as EMAS and ISO14001. The idea is to implement these aspects in a way that an organization is later able to extend the environmental programme to comply with a standardized system. The structure of a lightweight environmental system may vary depending on the type of the organization. For example, SMEs, offices, schools and day care centres have their own models for environmental management. (Kippo-Edlund, 2006; 122)

Figure 4 presents fundamental aspects of a lightweight EMS, which are to identify organizations most significant (direct and indirect, positive and negative) environmental impacts, decide upon long-term (generally more than one year) environmental targets for each of the impacts identified, prepare an environmental programme including targets and actions for the subsequent fiscal year and execute its measures. In practice this means including environmental aspects in everyday work. Realization of the programme is followed yearly; before the following year's planning is begun, management conducts a review where the progress and achievements of the programme are evaluated and new targets are set. It is imperative that these matters are recorded so as to support yearly assessment. In addition, yearly follow-up provides information for long- term development of environmental protection. (Kippo-Edlund, 2006; 123-124)
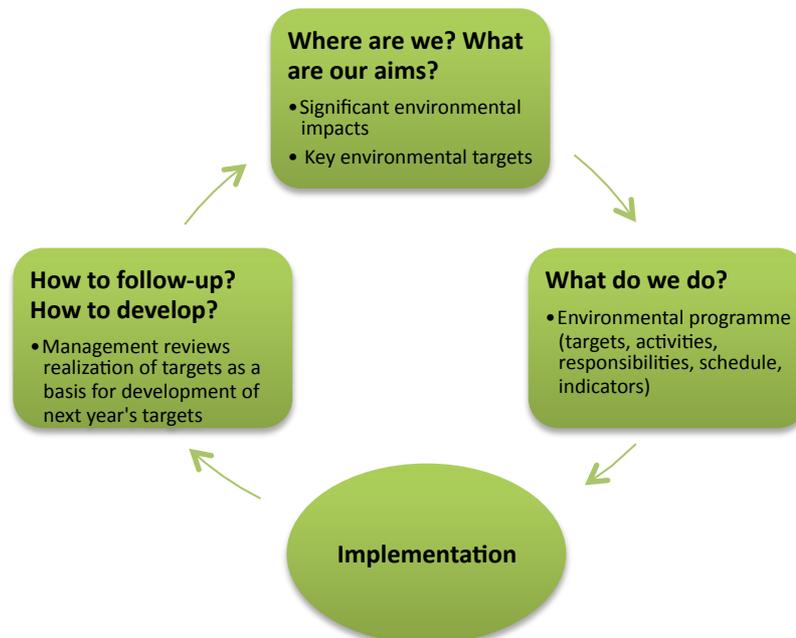

Figure 4   Model for lightweight EMS (adapted from Kippo-Edlund, 2006; 123)

4.1.3 Green Office

GO is an EMS created by WWF Finland essentially for offices in private and public sectors as well as other organizations. The programme aims at reducing an office's environmental footprint and carbon dioxide emissions while creating savings for the organization. (WWF Finland, 2013a). The programme is currently used in 542 companies and 186 organizations, of which 14 are educational organizations, in Finland as well as organizations in China, Estonia, Latvia, Pakistan, Romania, Sweden, Switzerland, Turkey and Vietnam. WWF charges organizations an admission fee and an annual fee for label holders that is used to support conservation work. Both the admission- and the annual fees are determined according to the amount of staff and offices an organization holds. (WWF Finland, 2013b)

A GO network serves the needs of signed member organizations by offering support in the EMS implementation, by conducting regular office inspections, providing regular GO tips and tools such as, web tool "Compass" that contains information, guidelines and a toolbox; a Climate Calculator with which offices can estimate their greenhouse gas emissions and monitor their development; and a Consumer Habit Questionnaire, a tool to measure employees' environmental awareness. Additionally, WWF organizes network meetings where environmental managers and coordinators can join to receive information, meet their colleagues and discuss related topics. Once the EMS audit is passed an organization gains a GO diploma and a limited right to utilise the GO logo. (WWF Finland, 2013c) In order to gain the GO label an office must accomplish the following criteria:

- select a GO coordinator and team,
- plan a practical environmental programme,
- continuously improve energy efficiency so as to reduce greenhouse gas emissions,
- reduce waste, recycle and sort out waste in compliance with local requirements,
- take environmental aspect in to account in purchase decisions,
- communicate and educate GO practices to personnel,
- pursue continuous improvement in environmental matters,
- update environmental programme annually,
- choose indicators, specify numeric objectives and supervise their realization, and
- report to WWF annually. (WWF Finland, 2013c).

WWF present a six-step programme for becoming a "Green Office". These steps are (WWF Finland, 2013d):

1. *Familiarize:* acquaint with GO webpages or join a GO presentation event in WWF Finland headquarters.

2. *Sign contract:* The joining fee is paid simultaneously with the signing of a cooperation contract with WWF. The contract grants also user identification for network extranet – the Compass.

3. *Create an Environmental Management System:* After joining the programme an organization is given a year to create a practical EMS. The organization selects a GO coordinator and a GO team. For this step WWF provides tools through Compass.

4. *Order an office audit:* Once the EMS is complete a WWF's GO expert carries out an office inspection in the facilities. Provided that the office passes the audit the organization is granted a right to use the GO label and a diploma. At this point the first annual payment is charged.

5. *Report annually:* After a successful audit the organization begins to report its chosen indicators to WWF every spring as well as updating the environmental programme with Climate Calculator – web service and in Compass. The reporting instructions are provided by WWF to the GO contact person.

6. *Develop and improve:* GO organization must strive to continuous development of the EMS and improving the environmental awareness of staff. WWF conducts office inspections every three years where the fulfilment of the GO criterion and the usage of the GO label are reviewed.

WWF performs an audit every three years, which must be passed in order for organizations to retain the right for the GO label. As is with other EMSs, in GO the carrying idea is continuous improvement, which indicates that in each audit the targets set previously should be attained and replaced by new ones, thus incessantly advancing in environmental protection.

In fact, WWF Finland reports a constant reduction in greenhouse gas emissions in GO organisations during its ten years of existence. For the first time, however, the greenhouse gas emissions were found to have grown in a report from spring 2013 in GO organizations compared to the previous year. The main contributors to this development are growth in heating emissions, which correlate with the length and coldness of the winter, and increased air travel. Also, the overall greenhouse gas emissions from electricity consumption increased even though the electricity consumption per person decreased compared to the previous year. Additionally, overall paper consumption in GO organizations increased by 3.6 per cent compared to the previous year, yet, the paper consumption per person decreased. (WWF Finland, 2013e)

4.1.4 Criticism of EMS

The usefulness of EMSs as tools for environmental management has divided environmental managers. Some find them to be clear, instructive and to save resources by saving organizations from having to construct an EMS from the beginning, while others, who accentuate organizational culture and behaviour, find them inflexible. The fact is that each organization is unique and contains

people and groups with different interests and thus, cannot be regulated with the help of simple, set tools. The criticism is that most EMS seem to have been developed from the point of view of industrial organizations and their environmental effects, yet, the programmes are supposed to suit all kinds of organizations. (Heiskanen, 2004; 140)

In addition, environmental management "tools" direct the EMS building process to follow a set pattern where the progress advances from targets to goals, responsibilities, documentation, training, implementation and finally auditing and if required, corrective actions. All this information is expected to be readily available to the EMS system developer and recordable with simple directions. (Heiskanen, 2004; 141)

As disclosed earlier in this chapter, what characterises EMSs is that it is down to organizations own discretion as to the demandingness of the system they decide to build. Needless to say, this offers opportunities to create ambitious targets for certain areas (perhaps areas where it is easiest and requires least investment) and do the minimum, reaping the benefits of environmental certification, on others. (Heiskanen, 2004; 141) It is possible, that organizations that are less environmentally motivated and merely engage upon EMS for image building reasons can attain and sustain the certification with relatively little action towards improvement. For example, they can set their environmental improvement targets as low as possible and simply work the minimum amount for the EMS as the audit dates are approaching. As Jones (2012; 637) manifests: "Obviously, a university could effectively have an appalling record in environmental terms, but by achieving minimum levels of compliance, [...] and demonstrating a commitment to continuous environmental improvement, however small that may be, they are legitimised". Hence, the experiences with regard to the functionality of EMS are varying (Heiskanen, 2004; 141).

Furthermore, Heiskanen (2004; 141) raises an issue regarding the time resource required to implement different environmental management tools and systems. Environmental managers are thus pressed with time having to introduce and implement new operational systems that there may be no time for contemplating and executing strategic, radical and future orientated ideas. This has lead to suggestions that EMSs are merely "smoke screens" behind which organizations are able to continue damaging the nature as usual. (Heiskanen, 2004; 141)

Finally, the cost of EMS certification has raised criticism. Generally, the EMS certificates and their increasing popularity are reducing adverse environmental impacts from commercial activities in that whole supply chains are "greening". Large actors' commitment to building a sustainable business or a sustainable business image has induced them to require environmental certification also from actors in their supply chains. This, however, puts smaller actors, to whom the certifying carries too great a cost, in difficult position in attempting to prove the environmental sustainability of their operations to their large customers and associates. (Heiskanen, 2004; 142-143)

4.1.5 Motives for EMS implementation in universities

Sustainability and environmental consideration are on the rise in today's corporate as well as education industries. Generally municipal as well as private organizations are aware of the positive effects with regard to image an EMS can deliver. However, municipal organisations generally consider the benefits EMSs yield on the environment more important than image amelioration. (Kippo-Edlund, 2006; 119). International initiatives such as UNESCO's Education for Sustainable Development (UNESCO, 2013) and declarations like the CRE COPERNICUS (CO-operation Programme in Europe for Research on Nature and Industry through Coordinated University Studies) charter that call for sustainability to be incorporated into education as well as government directives and laws, have voiced the purpose for universities to take up sustainability ambitions (Sammalisto & Arviddson, 2005; Ferrer-Balas et al., 2008). Especially universities that have ratified declarations are likely to be driven to fulfil the obligations accompanied (Wright, 2002. p. 219). Previous research (e.g. Ferrer-Balas et al. 2008) discloses that driving forces for universities to embrace sustainability initiatives and consequently adopt EMS programmes are similar to most universities but may vary depending on university cultures and financing structures. For example, universities that do not receive government funding and hence, charge tuition fees engage in greater competition of students and external funding than universities that are subsidised by the society. Likewise, in Finland the government financing was remodelled in the beginning of 2013. Subsequently, 75% of funding is granted based on the extent, quality and effectiveness of the university and 25% is granted based on goals of other matters of scientific and educational politics. Primarily, this means that universities receive funding depending on the amount of graduates, credits as well as the amount of scientific publications and research funding received (Ministry of Education and Culture, 2012.).[4] This not only increases competition for talented students and staff but also increases pressure for further efficiency. Correspondingly, Sammalisto and Arvidsson (2005) and Jones (2012) recite that students as well as prospective students represent a reason for environmental improvements, hence, driving EMS adoption. According to Sammalisto and Arvidsson (2005; 29)"Some universities see a certified EMS as part of a university's image in attracting environmentally engaged students". Furthermore, universities may embark upon environmental enterprises in order to attract environmentally focused investors (Ferrer-Balas et al., 2008) who are increasingly attentive with regard to the purpose of use as well as the recipient of their contributions (Sammalisto & Arvidsson, 2005; Kuisma, 2004). An increasing amount of investors are interested in organizations' environmental strategies when deciding upon investments, whilst some concentrate their investments specifically on environmental and ethical grounds (Kuisma, 2004; 104). Other societal influences, such as

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[4]   For additional information:
http://www.minedu.fi/export/sites/default/OPM/Koulutus/yliopistokoulutus/hallin to_ohjaus_ja_rahoitus/liitteet/Yliopistojen_rahoitusmalli_2013_alkaen.pdf

increasing corporate demand for environmental experts and managers and competition are also likely to contribute towards universities' comprehensive sustainability ambitions (Ferrer-Balas et al., 2008).

In addition to the external factors affecting EMS implementation universities may be inspired or pressurised by internal factors, such as students and staff. "Environmental champions" (Ferrer-Balas et al., 2008) are faculty members who are persevering in their ambitions for sustainable university. These individuals can be a strong driver when universities decide about EMS adoption (Ferrer-Balas et al., 2008; Sammalisto & Arvidsson, 2005). Another important driving force identified by Kurland (2011) is leaders' values. If university leadership's ethical principles include high regard for sustainability it is likely that efforts such as EMS implementation gain momentum. However, progress may be impeded through changes in leadership positions (Kurland, 2011. p. 411) owing to altering values.

4.1.6   Hindrances in EMS implementation in universities

Universities' decision-making process has been described as bureaucratic and conservative and due to its decentralized organizational structure, which includes various stakeholders in decision-making, it rarely arrives at unanimity (Velazquez et al. 2005). Therefore, changes in university campuses tend to arrive slowly. In previous research it has been found that managerial commitment is a key to a successful EMS implementation in universities (Axelsson et al., 2008; Sammalisto & Arvidsson, 2005; Kurland, 2011). One of the most often stated hindrances in implementation of an EMS in higher education is a lack of leadership motivation and support (Ferrer-Balas et al., 2008). Generally, university leadership is receptive towards environmental improvements that produce cost savings and create a positive image for the institution (Krizek et al. 2012; Velazquez et al. 2005) but are less eager when sustainability ambitions require "broad-based stakeholder inclusion and transparency practices, or require broader life cycle and/or full-cost evaluation perspectives. " (Krizek et al, 2012; 22.).

Insufficient funding and rigid bureaucracy are also hindering elements (Kurland, 2011; 421). For example, if changes become effective only through arduous decision-making processes and if funding for environmental projects and events is in short supply it is clear that designs for continuous improvement will decelerate. Sammalisto and Arvidsson (2005) report in their study of Swedish universities the university management's commitment and organisation or in effect, the lack thereof resulting in low priority and lack of resources allocated for environmental management as a main hindrance in environmental managers' work. They found that in the beginning of the process management support had been considered a driving force but it later shifted into a hindrance due to weak follow up (Sammallisto & Arvidsson, 2005; 26). This indicates that management support is essential not only in the beginning of the process as Axelsson et al. indicate (2008; 476) but throughout and that sustainability should be integrated into the university core strategy i.e. vision, mission and values (Krizek et al., 2012; 30). Additionally, a lack of motivation

and differing mental models from staff and students are found to impede sustainability initiatives in universities (Velazquez et al. 2005; Ferrer-Balas et al., 2008; Kurland, 2011). Motivational issues rise for example, when stakeholders e.g. staff members are reluctant to change their routines to cater sustainability objectives and when scepticism over the proposed measures takes control (Viebahn, 2002; 10).

An issue partly accounting for motivation deficiency could be insufficient rewarding systems. Ferrer-Balas et al. (2008; 310) discovered that "the predominant trend is the lack of incentive structure to promote changes at the individual level". Moreover, Velazquez et al. (2005) present that in some cases the concern is not merely lack of motivation but resistance to change; some stakeholders may even find it difficult to see sustainability as an issue with practical applicability and consider the matter purely theoretical. As a result, these people may have difficulty in applying environmental goals into their everyday work. Correspondingly, Asikainen (2006; 107) describes motivating people to be a specific challenge in the beginning of an EMS implementation; the success of any EMS depends of the commitment and actions of individual staff members.

Activities related to sustainability initiatives are oftentimes carried out on voluntary basis, which brings about a problem regarding division of time between environmental endeavours and participants' other primary responsibilities and duties within the institution (Velazquez et al. 2005; Ferrer-Balas et al., 2008). According to Velazquez et al. (2005; 386) majority of people with sustainability responsibilities have other primary duties. Viebahn (2002) found in his research that a central environmental coordinator is required to manage and coordinate sustainability efforts in universities. Elements of an EMS such as taking into account environmental aspects in all university operations, e.g. the decision-making process and motivation of stakeholders is time consuming and in order to be carried out successfully must be directed by a central coordinator (Viebahn, 2005; 10). Additionally, Sammalisto and Arvidsson (2005) discovered that some universities, after failing to reach their environmental aims, made a restart on EMS with a new environmental coordinator, who was placed in the university president's office as opposed to for example, the maintenance department.

4.2   Environmental cooperation networks

"Environmental partnerships can be defined as formal cooperative relationships between multiple stakeholders whose interactions lead to mutual benefits for the participants and ultimately lead to improved environmental quality. "(Aydin & Morefield, 2008; 41.)

Cooperation between organizations is motivated by diverse reasons. These include sharing knowledge and each others specified technological assets, jointly developing new technologies and products, marketing, creating solutions for pollution prevention and/or minimization, shareholder relations,

regulatory influence and project sponsorships. (Aydin & Morefield, 2008; 42) Environmental networks are frequently governed by trade associations or organizations assembled for the particular objective of cooperation. (Aydin & Morefield, 2008; 42)

Environmentally oriented networks' operative structures are copious. They range from informal meetings between people who all aim towards sustainability to structured networks where a public 'hub' organization directs activities (Halme, 2001). Moreover, today's technological development provides opportunities to create virtual networks extending internationally (Helling et al. 2005).

4.2.1 Benefits and challenges of environmental networks

"Networks are a (loose) structural contribution to sustainable development because they promote the potential for learning and innovation that leads to adaptation " (Roome 2001; 74). Cooperation networks are regarded as offering good prospects for solving problems, as well as increasing competence and productivity (Grasenick et al., 2008). They also present an opportunity for swift market access, scale economies and competence development (Larsson et al. 1998; Grasenick et al. 2008). Furthermore, network cooperation may contribute towards member organizations achieving previously unreachable policy goals (Nelson, 2000; 419).

Ferrer-Balas et al. (2008) discuss that cooperating with other universities and experts through for example, joint projects provides increased understanding of sustainability for participants. Whereas, Larsson et al. (1998) propose that a key to whether or not a cooperation alliance is successful lies in the way organization managers direct the collective learning process. However, because cooperation networks created around environmental management are generally more diverse than (non-environmental) business cooperation networks, due to the overarching nature of environmental affairs as well as the amount of stakeholders concerned (Aydin & Morefield, 2008; 42.), learning process may prove somewhat challenging when attempting to create a common basis for learning in a network of various different motivations and dispositions (Halme, 2001; 100.). Hence, Halme (2001) suggests that a network should consist of members that are "as diverse as necessary and as similar as possible." (Halme, 2001; 112). This implicates that diversity between members provides a more comprehensive knowledge base, from which information can be assimilated; nonetheless, network members require certain uniformity in order to function. For example, organizations with parallel backgrounds have shared understanding regarding the unique aspects of their field. Lee and Van de Meene (2012) investigated a collaboration network in policy learning, which was founded upon climate change mitigation and adaptation efforts of cities internationally. They found that similarity of language and, in some cases, region promotes learning activity and interaction between network members through reduced transaction costs (Lee & Van de Meene, 2012; 214). Additionally, their study indicates that network actors (member cities) that possessed most experience and were most advanced in their efforts were

sought as "teachers" whose activities and practices were benchmarked by the less advanced actors (Lee & Van de Meene, 2012; 213).

Grasenick et al. (2008; 298) further exhibit that knowledge intensive networks encourage the innovation competency of network members through economies of scale, reduced innovation costs, transaction costs as well as costs of co-ordination. Carrillo-Hermosilla et al. (2009; 80-81) present: "technological change is a social and dynamic process" that, when occurring in a network that performs in a constant interaction between actors, can triumph. More to the point, networking can help organizations overcome barriers hindering eco-innovation by enabling information flow between network actors, jointly organized training courses and by creating research centres (Carrillo-Hermosilla et al., 2009, 86). Collective learning, knowledge transfer and a common culture, which provide improved communication and trust among the network members, are also considered positive attributes regarding innovation networks. (Grasenick et al. 2008, 298)

According to de Kraker et al., "Joint learning in [...] networks takes place through a variety of communicative interactions with learning outcomes at the individual level as well as the group level." (de Kraker et al., 2012; 115). They further define that there are two kinds of joint learning: "mutual learning", where individual actors obtain new knowledge and skills or adopt new perspectives and "collective learning", where shared understanding is developed and new knowledge and solutions co-produced by a diverse group of actors. (de Kraker et al. 2012; 115) Moreover, the two types of learning are generally present in any learning network, yet, 'mutual learning' is often distinctive for homogenous networks with a focus on technical innovations, where knowledge and insights are interchanged, and 'collective learning' occurs in heterogeneous networks with a focus on integrated solutions and the aim to develop a new, shared approach. Further, this separation corresponds with whether the learning outcomes are to be converted to individual or collective actions. (de Kraker et al. 2012; 115)

Correspondingly, Larsson et al. (1998; 289) maintain that inter-organizational learning occurs when existing knowledge is transferred between organizations and when new knowledge is generated as a result of interaction inside the network. In order for either of these to take place concurrent transparency and receptivity must prevail to some extent between the organizations. In other words, if no member is willing to release knowledge there is nothing to be obtained or further developed by the other organizations and correspondingly, if members are not motivated or able to incorporate the available knowledge learning cannot take place. Therefore, "organizations are likely to learn most together when all choose collaborative learning strategies of high transparency and receptivity" (Larsson et al. 1998; 300).

Grasenick et al. (2008; 299) pursue this concept by stating that matters affecting a knowledge intensive network's innovation success are "structural, organisational factors on one hand (loose relations, dense communication etc.) and by individual competencies of each of the network partners on the other hand (capacity of absorption)". Furthermore, differences exist in the way knowledge transfer and generation are managed in networks. Halme (2001)

identified collaborative learning networks and networks where a 'hub' organization acts as a knowledge provider to other members. It was noted that the latter approach may pose a threat of information flowing merely "one way" which creates a situation where the receiving members' disposition to adopt information is the only guarantee of learning. Whereas new approaches are more likely created in collaborative learning networks i.e. through "shared practical experiences or events in the network" (Halme, 2001; 112.).

Naeem and Peach (2010) studied a network cooperation programme in Asian universities and found that developing sustainability curriculum for higher education could benefit considerably from joint effort. In fact, they state that there is insufficient amount of collaboration for the development of sustainability education to progress speedily enough and to provide sufficient quality curricula. Rather than sharing their knowledge and experiences with each other, lack of cooperation leads to all individual universities spending already low resources on developing same issues, thus resulting in inadequate commitment on other important changes. (Naeem & Peach, 2010; 286)

Moreover, Naeem and Peach (2010; 288) found that a downfall of joint curriculum development is inter-university competition for students and funding, which creates a secretive environment with safeguarding course-content and limited sharing of development outcomes.

Funding is a significant issue with regard to successful operation and functioning of an organization. In order to generate meaningful outcomes a network should be based on a long-term strategy, which in turn means accessibility to funding over a number of years (Halme 2001; Grasenick et al. 2008). The fact is that "short-term funding has a tendency to lead to fragmentary results"(Halme 2001; 113). To illustrate, Halme (2001; 106) presents a case where one of the reasons a network's pursuit towards sustainability stagnated was a sudden revocation of government funding, and yet the prospect of future funding kept the network alive.

In addition to the hindering impact of financing issues, long-term benefits of networking may also be endangered if network members do not share objectives. As some network participants are more concentrated in achieving short-term benefits, long-term objectives may be neglected (Grasenick et al. 2008; 300). As Nelson (2000; 421) points out, individual network actors' motivations correspond to those of their organization. Thus, management's support and commitment to the network's goals can be a decisive factor as to the success of the network's operations. Moreover, the quality of the interaction between network members can be a positive or a negative factor with regard to motivation for networking. Hence, "motivation is clearly intertwined with expectations about network achievements and the quality of the processes used to attain them" (Nelson, 2000; 427). Voluntary networks may include members who take part merely to gain information but are not entirely committed to the network's aims. Allthough some network members may perceive such behaviour as unwelcomed, it should be accepted that some time is required for participants to assess whether the partnerships cooperation is productive and worth investing resources in. (Nelson, 2000; 422)

In addition, large networks can be difficult to manage and the more members the network has the more prone the jointly agreed objectives are to being breached (Aydin and Morefield, 2008; 45). Managing the structure and size of the network can help overcome this issue. For example, trade associations or other organizations as governing body could alleviate the problem, as they would assume the role of an external monitor. (Aydin & Morefield, 2008; 45)

Grasenick et al. (2008; 300) argue that a small number of network participants facilitates consensus of topics, provides superior expertise and increased availability within the network. In these groups an environment of reliance and trust prevails, which improves communication, as well as allows for shared targets and strategy. Nelson (2000; 426-427), contributes to this by stating that when it comes to networking, "among equals, trust is an important factor in sustaining motivation". However, these kinds of partnerships are in danger of becoming too closed and thus, unable to evolve and liable to seize up. In short, the better the relationship and mutual confidence between individual members of a network becomes, the less receptive towards the outside world and ideas emerging thereof they come to be. (Grasenick et al., 2008; 300)

4.2.2 Virtual networks

Taking advantage of today's vast technological opportunities, Internet based networks are becoming important forms of cooperation. Helling et al. (2005) specify: "virtual networks offer the opportunity to connect people and to support cooperation in different ways. Virtual networks reduce the transaction costs of actors and guarantee better access to environmental information" (Helling et al. 2005; 335). Such networks are not necessarily fixed to time and place and information is constantly available. Additionally, they facilitate bringing together possible partners with who future joint projects are often realized (Helling et al. 2005; 335). Virtual networks require fewer resources to run than conventional networks based on meetings and seminars. Offering the ability to take part in events and meetings from members' own offices considerably reduces the time and financial resources required for travel not to mention organizing meetings, events and seminars.

Downes (2007; 20) describes that "Learning [..] occurs in communities, where the practice of learning is the participation in the community. A learning activity is, in essence, a conversation undertaken between the learner and other members of the community". He further explains that learning environments are often assembled to solve real life issues and thus, require multi disciplinary approaches. The communicative interactions that create the learning process comprise of, for example, bestowing and transferring data, information, experiences, practises, opinions and visions. These kinds of interactions are often supported by some form of technology accommodated by the interned e.g. e-mail and web pages with discussion forums and file exchange options. (de Kraker et al. 2012; 115)

Downes (2007) demonstrates the opportunities offered by social media applications and software for enhancing network learning. He refers to the

currently available social interaction applications as the new and improved Internet: Web 2.0. O'Reilly (2007) defines the attributes of Web 2.0 applications:
"

- services, not packaged software,
- control over unique, hard-to-recreate data sources that get richer as more people use them,
- trusting users as co-developers,
- harnessing collective intelligence,
- software above the level of a single device,
- lightweight user interfaces, development models, AND business models." (O'Reilly, 2007; 37)

Unlike in traditional learning situations that are based on teacher providing knowledge content to learners, in social media communities all members of the network, including experts and learners, take part in creating the content for cooperative learning. This content is comprised of images, video as well as multimedia, in addition to words. (Downes, 2007; 20) On the same note, De Kraker et al. (2012; 115) suggest social networking technology and programmes for enhancing virtual networking opportunities for organizations: "Weblogs and wiki's allow web users to (co-)create content, to make their voices heard through rating and feedback systems, to collect and filter information with RSS feed technology and to share their lives with others through generic social networking sites (e.g., Facebook) and specialized applications for sharing of news (e.g., Twitter), and media (e.g., YouTube, Flickr)." (De Kraker et al., 2012; 115) In addition, online group meetings can be organized utilising free audio and video conferencing applications such as Skype (De Kraker et al. 2012; 115). Moreover, individual users of web-based social software seem to voluntarily form online social networks and communities, which may further support self-organization and consequently improve the lifetime of the learning network as well as decrease the costs of maintenance. (de Kraker et al., 2012; 115)

Appropriately designed virtual networks are certain to advance learning due to the network itself learning. The process of interaction and communications between the actors that compose the network will form a net of connections, in which knowledge is embedded. This knowledge is shared and acquired through interaction between network actors. Furthermore, the organization of the network is what supports learning and a well designed network will organise itself to best support learning. (Downes, 2007; 26) Downes (2007) defines a 'learning network' to comprise of two separate ways of learning activities: networks used to support learning and networks that learn. The theory of 'learning networks' proposes that these two are one and the same. (Downes, 2007; 26)

In order to create a successful learning network Downes (2007; 26-27) proposes four attributes of a network that are most certain to lead to network knowledge.

1. *Diversity:* actors in a network should be diverse i.e. the network should contain members with different backgrounds and points of view. Different

views moderate each other and ensure that issues are considered comprehensively before making decisions. Social networking applications permit the creation of such weak ties that support diversity in networks.

2. *Autonomy:* Each individual actor performs independently from others and according to their own values and principles. Autonomy is supported by for example, content creation tools such as blogging software.

3. *Connectedness (interactivity):* the knowledge developed by a network should be brought about by interaction between actors rather than a collection of partakers' views. Hence, in Web 2.0 software " the personal learning environment supports not just content consumption but interaction and communication." (Downes, 2007; 26)

4. *Openness:* reflects the attestation for transparency and receptivity by Larsson et al. (1998) and stands for the need for all actors in a network to have the ability to contribute to the network and to receive from the network. Openness empowers interaction and the networks opportunity to learn. The Web 2.0 software diminishes barriers for networks that previously operated via mailing lists and discussion boards characterized with controlled access. Personal learning environments empower learning to become "something they can share with the world, to make learning the result of sharing with the world." (Downes, 2007; 27)

De Kraker et al. (2012; 116) utilise these four principles as basis when designing a virtual learning environment for sustainability. The principles were rendered into practical requirements for "services for multi-language technical support and translation, personalization, matching of knowledge demand & supply, co-creation of texts and diagrams, networking, planning of events, virtual meetings, feedback, rating and recommendation." (de Kraker et al. 2012; 116) Additionally, emphasis was made for the need for a learning network to produce relevant, understandable knowledge and practical solutions to real problems. Corresponding to Halme's (2001) findings the sustainability-learning network was thought to benefit from a thematic approach regarding user groups rather than attempting to administer all aspects of sustainable development. This somewhat compromises the principle of diversity by Downes (2007). Furthermore, the virtual element of the network activities was seen to depend on the geographical reach of the network and a regional network was preferred to entail both face-to-face and online interactions. (de Kraker et al. 2012; 116)

As opposed to traditional platforms based on content management systems, where the knowledge is presented by a central administrator in a logical and hierarchically structured style, a social network platform serves knowledge via user information (in profiles) and content (documents, links, fixed information) that is contributed by the users in multiple contexts such as homepages, forums, groups etc. (de Kraker et al. 2012; 116) De Kraker et al. found in their study of social media platform's prospects in enhancing learning in academic networks for sustainability that the network members were not eager to utilise functions that are generally very popular in informal online social networks such as sharing photos, rating (pressing the "like" button), sharing to other social media, collecting contacts etc. They tended to use the

platform as a collaborative workspace and only the common use of personal user profiles and blogposts reporting on informal events and interests differentiated the platform from a conventional workspace. (de Kraker et al. 2012; 119) This could have a bearing in the different habits and experience between generations in the use of social media software; younger people are generally more apt in the use of Web 2.0 applications as opposed to the older generation. (de Kraker et al, 2012; 121)

All in all, de Kraker et al. (2012; 120) established that a social media platform provided actors innovative and sufficient support for interaction in the network, especially in contributing information to other members, exchanging experiences and cooperating on shared documents. Additionally, such a social network platform complements communicative interactions that form collective learning processes in a learning network for sustainable development. Issues hindering the functionality of a learning network based on a social media platform are tensions regarding "the degree of mixing private and professional life, learning networks and social networks, face-to-face and virtual interactions, top-down and bottom-up control, hierarchical and emergent structure" (de Kraker et al. 2012; 121) Hence, de Kraker et al. (2012; 121) propose that social software-based platforms for learning networks should be designed according to the needs of specific networks. These platforms should contain diverse and flexible combination of social network features that meet the users' needs and preferences presently as well as in the future.

5   RESEARCH FINDINGS

In the following paragraphs each university's GO background and current situation are reviewed and summarized. Also the interviewees' possible development during the interviews is here interpreted. For this purpose, each university and interviewee is identified with a letter from A to E. Consequently, where the author feels that the reader could benefit from connecting the respondents to their statements, letters allocated to the interviewees and their universities are mentioned alongside the comments. This can facilitate reader's understanding of the reasoning behind the statements.

5.1   Background

The universities interviewed for this study are in various stages of GO programme. One university received the right to use the GO symbol first time in 2009 and have renewed the right in 2012. The remaining universities have passed the auditing and used the symbol since 2010, 2011, 2012 and one was audited successfully in May 2013.

Three universities have sustainable development included in their strategy, one university is in the process of adding sustainability in their overall strategy and one university has a separate sustainability strategy in place of which, obtaining the Green office environmental management system is part of.

All the interviewees have been included in the GO team from the beginning of the process albeit one person had a one and another a three-year break from the duties. The interviewees possessed different roles in their organizations: administration,   environmental   coordinator,   IT, lecturer/sustainability expert, and quality management. It should also be noted that the interviewees may have different positions within the GO, environmental or sustainability teams of their own universities and were chosen for the study due to the fact that they are appointed GO contact persons. They also may have differing titles regarding their duties, however, in order to

simplify the description of the data their titles shall be referred to as "GO coordinators". The majority (4 out of 5) of the respondents have currently responsibility of practical implementation of GO with support of the universities' GO teams. One respondent has transferred to act as a sustainability expert within the GO team as an environmental planner was hired to perform the practical implementation of GO. All respondents, however, are in the core of the GO programme. Only two universities have hired a full time employee to handle and develop GO issues. In the three remaining universities GO duties were performed in addition to other responsibilities.

5.1.1   University A

University A is a large university with seven faculties, 15 000 students and a staff of 2600. This university has a strong focus on natural sciences and education. The university also offers a study programme in corporate environmental management. It was stated in their strategy in year 2011 that the university as a whole would implement the GO environmental management system. Contract with WWF was signed in 2012. This university employed an environmental coordinator (interviewee) for the practical implementation of the system and passed auditing conducted by WWF in May 2013 and thus, obtained the right to utilise the GO symbol. Interviewee A is a graduate in the field of environmental management and thus has a good knowledge of the subject. Even though, they possess knowhow and ability to conduct the implementation of GO system, the size of the university and the amount of buildings to work through is resource demanding and therefore, in the early stages when still preparing for the audit this respondent stated that it is not possible to look deeper into the practices of individual buildings. One must look at the bigger picture and precede one step at a time. It is a time consuming task to go through each building that the university operates in to make improvements as well as manage the change in people. As the university A is a tenant in the premises they operate in, the interviewee is a part of University properties of Finland Ltd network, Finnish environmental network of university administration run by University of Helsinki as well as the GO network. However, they have not been able to take part in any seminars organized by WWF Finland as yet due to a lack of time. However, they believe that networks in general can be very beneficial but raised a question whether "yet another network" is required. In fact, the interviewee A as the GO implementation project was launched, begun their work by contacting another GO coordinator from another university to interview them of their experiences in implementing the programme.

5.1.2   University B

University B has a relatively long-running history regarding incorporating environmental aspects to the university's operations. In the year 2000 an environmental team was gathered in order to support education and to promote environmental issues regarding the university. The interviewee has

been a member of the "eco- team" since 2003 and currently holds a position of a vice president and secretary in the team. Their GO duties include communications. Interviewee B's primary occupation is managerial assistant. The team consists of staff and students from different departments and units of the university. In 2008 the eco-team decided to acquire a more official certificate for the work they were doing and decided upon the Green Office programme. They passed the audit in 2009. At this moment, the respondent took three years off and returned in time for the second audit in 2012. The university as a whole operates in six separate premises of which four currently hold a GO label; one has ISO14001 environmental management system in place and one is currently working on LEED environmental programme for their premises.

The interviewee B feels they have the support of their superior, they have the GO duties written in their list of responsibilities and the appreciation of the teams work is high in the organization. Additionally, they currently feel they have enough time for the mandatory GO duties, however if there was more time the system could be further developed.

In addition to the GO network, of which interviewee B took part in a couple of meetings before their break from work, they have previously taken part in another network that was based on environmental management. The activities were performed in the interviewee's personal time and consisted of, for example, visits to companies and the parliament. Recently they have not been actively involved in these networks. Generally, this respondent feels positively about networks and believes that they could provide benefits. However, they feel apprehensive about the resources and time a GO network would require and would prefer to act as a follower rather than an organizer. Nonetheless, they see it possible to partake in organization if the responsibility was shared and would pass on between member universities.

5.1.3 University C

University C was founded in 2010 when two universities merged. It was stated in the strategy and values of the university from the beginning that sustainable development was in the core of operations. A sustainability committee has been in place from the very beginning of the establishment of the university and in 2012 the GO label was attained for administrative department. The university has made a conscious decision not to pursue to obtain the label for the entire university merely due to the cost of the programme and the label. The university has approximately 15000 students and 3000 members of staff and therefore the yearly cost of the label is considered too high. Currently the university are creating an environmental programme in order to promote sustainability without the excess cost. University C is committed to sustainability and there is a common belief that it would be more beneficial to spend the cost of the GO label for actions towards sustainable development directly. In this university, marketing has not been a particular motivator for obtaining the GO system. Moreover, this interviewee feels that sustainable development and GO should not be separated and should be managed as one and the same.

The interviewee C has been a secretary for the committee from the beginning and thus, is responsible for practical implementation of sustainability including communication and organization. Sustainability issues are an additional responsibility for this representative. Yet, their primary occupation is quality manager and sustainability principles are stated in the university's quality manuals. This interviewee believes that their resources are currently sufficient to handle GO issues, as the programme advancement is gradual, but if the programme was further developed and expanded to other units it would require a full-time person to be hired for the practical work. They also believe that a certain respect gained from other members of the university as well as courage brought upon by long career in the university facilitates their work and materialization of targets. Also the general environment towards sustainability in the university is very open and receptive.

The representative C feels positive about networks and cooperation. They have cooperated on numerous occasions with two other educational facilities locally sharing marketing materials and human resources in organizing joint events. The university is also a member in other networks both internationally and locally (e.g. Finnish SD-forum, Education for Sustainable Development in Academia in the Nordic countries and COPERNICUS) and the respondent finds that they offer good sharing and learning opportunities. Especially, the local cooperation partnerships provide support and a welcomed change to normal, sometimes lonely duties through joint projects with colleagues.

5.1.4 University D

University D is a large university with 16 000 students and 20 buildings and it is about to grow to consist of 4 bigger campuses in the next 3-4 years time. They have been working on GO since 2010 and achieved the GO certificate for two campuses in 2011 and in 2013 seven of the university premises in total have attained the GO certificate. The university's environmental team consists of members from different units including teachers, property services, library, student services etc. Currently the team consists of approximately 30 members from 7 campuses. From the beginning there has been one central person to, for example coordinate the teams, provide training and implementation support and to handle communications towards WWF. According to the respondent, maintaining the motivation of students and staff to take part requires constant effort.

Since the university hired a full time environmental planner to organize the practical implementation of GO system, the interviewee D has been acting as sustainability expert promoting sustainability in the university. This the respondent D is doing in addition to lecturing.

The university has a study programme in environmental engineering and sustainability outlook is incorporated also in many other programmes. Therefore, university D has a good foundation and skilled personnel regarding environmental and sustainability issues.

The university has made commitments to several sustainability programmes and networks both locally and internationally (e.g. Rio 20+, RCE

Espoo, Climate Partners, Finnish SD-forum, Baltic University Programme, Finnish Business and Society and CR-net) and the interviewee D is active in participating. Hence, time is a limited resource and therefore overlapping should be avoided. Respondent D suggested that virtual network platforms (e.g. jammer) could be utilised in university GO networking. However, they also indicated reservation towards such organization due to many other virtual collaboration networks (e.g. virtual university, virtual university of applied sciences) ceasing operation. Hence, a strong point was made that networks need committed and skilled managers for them to function successfully. Furthermore, interviewee D believes that a GO network could also support WWF in developing the programme to better suit universities. This respondent also marked upon the high cost of GO programme for universities.

5.1.5   University E

University E's focus is in business and economics. In this university the GO process begun in 2010 actively and the university passed the WWF audit in October 2010. Since then the process has more or less come to a halt. This university's motivation for acquiring the GO certificate and right to use the GO symbol was purely for marketing and image building reasons. From the management's side it was important to acquire the label as soon as possible due to another university having already accomplished it. After passing the audit the interviewee took a year off from their duties, during which time the GO programme stagnated. The respondent E's responsibilities as GO co-ordinator are additional to their main duties as an IT planner and they have very little time as well as resources to concentrate more on GO issues. Therefore, it has been difficult for this respondent to manage continuous improvement.

Additionally, the interviewee stated that as they have already made such big improvements in the beginning of the process in, for example, waste management, it is difficult to make further improvements. They state that they find the programme simple and that it is basically a "matter of turning lights off". However, they pointed out that instructions and tools provided by WWF are not clear enough. As an example, the interviewee mentions that WWF instruct to carry out an "electricity mapping", but do not explain what this means in practice. Inquiring the matter from a local electricity company has not resolved the matter even though WWF advice to do so. Hence, this respondent feels that a GO network could provide assistance in such challenges.

University E has a sustainability strategy in place but there seems to be a lack of motivation as well as commitment to the cause from the management of the university. For instance, the respondent disclosed that after the beginning the university management have not provided any more funding towards the GO programme. The university's focus is in business and it does not offer courses or study programmes with a sustainability aspect to them. Yet, the interviewee recognises the importance of sustainability education as they are, in fact, "supposed to produce future leaders". The university E's environmental team has plans to concentrate on GO targets and improvements more during the ongoing year (2013). The aim is to at minimum work to reach the previously

set targets. The university E is a relatively small establishment with three buildings of which two have GO system in place. One building has not been able to take on the GO programme due to a different property management system. Interviewee E seems somewhat sceptical with regards to environmentalism and the people working on environmental and sustainability issues. They feel that these "kukkahattutätis" (patronizing persons with puritan moral senses) may steer away from focus of practical issues regarding the GO and get sidetracked to talking about trivial issues such as "what fish to buy from the shop", "what shoes do you buy" and what is "ecologically sustainable". They also have doubts regarding issues discussed in environmentally motivated networks and pointed out that GO system is meant for offices and not universities and thus, one should only concentrate on issues concerning offices. Yet, the university E has adopted the programme for the whole university rather than for example, the administrative offices only. Despite believing that being a part of a network could improve motivation regarding GO, the respondent E has serious doubts whether a university network could function at all due to the bureaucracy that prevails in the university environment. They find that since the issues regarding GO are simple they have no desire to join a network that could make matters strenuous and complicated. Nevertheless, providing the network would truly offer good ideas regarding the subject of GO e.g. "what has been done, what has been saved in reality and where one can get an energy mapping done" the respondent would be willing to take part in such a network. Apart from the GO network, where they have not been actively involved in, interviewee E is currently not a member in any other network.

5.2 Could a university GO network facilitate environmental coordinator's work and how?

With regard to the various stages the respondents' universities are in GO implementation, an idea of potential gains for universities as well as contribution the universities in different stages of GO could make for a network arose from the analysis.

It was communicated by all of the respondents that sharing well-tried practices would be beneficial and that "there is no point in inventing the wheel again", as two of the respondents put it. The variation between respondents came apparent when interviewees were asked about the ways they could benefit from a GO network. The respondent A, whose university is in the beginning of the process (preparing for the first audit at the time of the interview) indicated that the most valuable information they could receive from other GO universities at this stage is practical information regarding management of the project as a whole and sharing experiences i.e. issues that were found challenging and could perhaps be avoided if known earlier along and issues that were straightforward. This kind of information could be utilized when planning the GO project. Respondent C, representing a university that

has had the certificate since 2012, mentioned that universities often have only one person responsible for sustainability issues and therefore, the work can be somewhat lonely and suggested that for this a university GO network could provide a remedy as sometimes support from colleagues tackling with similar issues can increase motivation and give assurance. For example, by cooperating on organizing events the universities are able to multiply their resources and are thus able to create a bigger impact, save money, attain more media attention, gain support and an opportunity to share ideas and solutions to problems with regard to their work towards sustainability. In addition, this representative suggested that network members could organize visits in each other's universities and review the approach chosen in different campuses. Furthermore, informal audits could be performed between the members in order to motivate continuous development even in between WWF audits. This kind of visits were also suggested by interviewee B from one of the more experienced universities with a GO certificate since 2009 as well as representative A of a university with the first audit still to come. According to them visits could provide valuable practical information and ideas on, for example, communication as well as motivation.

Table 1 presents the interviewees positions towards the possibility of a GO network to generate positive outcomes in sharing ideas and good practices, bureaucracy regarding GO, innovation, shared projects, shared courses, marketing and motivation. The following sections explain the results regarding these subjects in more detail.

TABLE 1   Benefits of Networking. Replies of interviewees indicated as positive aspects (+) or aspects with no impact (-) regarding different subjects. Question mark (?) indicates that respondent was unable to give an answer.

Univ.	Exchange of Ideas and good practices	Bureau-cracy	Inno-vation	Shared projects	Shared courses/curri-culum	Marke-ting	Motiva-tion
A	+	-	+	+	+	?	+
B	+	-	?	+	+	-	+
C	+	-	+	+	+	+	-
D	+	+	-	+	+	-	+
E	+	-	?	+	+	-	+

5.2.1   Motivational effect of networking

All respondents believed that GO network could positively affect their own and/or the organizations motivation regarding GO implementation and continuous improvement. Albeit, interviewee C pointed out that motivational effect in their opinion would be merely moderate as the motivation for improving sustainability is generally already there through personal values of people involved. Furthermore, respondent A mentioned that when it comes to

motivating stakeholders with regard to GO, good communication is the key. This is to say that merely being part of a network is not motivational enough; the membership and its actions along with everything else regarding GO activities and progress must be communicated effectively. Therefore, this respondent feels that a network would be but one method in the ensemble. As for how GO network could act as a motivator, ideas such as sharing success stories and thus providing ideas and motivation for colleagues from other universities, as well as benchmarking own performance against other universities' performance were voiced. This could provide ideas on how to pass hurdles as well as bring gratification via issues that own university has managed to organize well as oppose to other universities. Respondent E, whose university has obtained the GO label since 2009 but has since struggled with regard to continuous improvement, mentioned that a commitment to a network itself would probably increase motivation.

5.2.2 Network's effect on innovation generation

When asked whether a GO network could affect new innovation and ecological ideas being generated within their own universities, all respondents believed that a university cooperation network based on sustainability issues more widely could increase generation of ideas, research cooperation and innovation. Additionally, Interviewee D believes that Finnish universities would have a great deal to offer for e.g. protection programmes such as Protection of the Baltic Sea.[5] However, strictly a GO university network that is based primarily on everyday matters regarding the programme may not reach as far as innovation generation. However, all interviewees saw opportunities in cooperating in projects.

5.2.3 Network's effect on sustainability education

The interviewees were asked views as to the possibility of joint courses, and projects being organized between the network member universities. All the respondents voiced that in the name of sustainability education; joint courses as well as projects would be viable outcomes from network cooperation. Additionally, it was mentioned by one of the respondents that for example, creating themes for dissertations and joint research projects could materialize from university network cooperation. Some universities are already utilizing these kinds of opportunities by providing their students virtual lectures and courses run by other universities. Further, respondent D specified that the main purpose of universities is to educate and that this is the most important act towards sustainable development that educational institutions can perform. The GO programme does not take curriculum development into account and for this a network could provide solutions to. When it comes to competition between universities regarding course offerings only one respondent recognised the possibility of universities being possessive and secretive with

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[5] See: http://www.ymparisto.fi/default.asp?contentid=425527&lan=EN, accessed 30.5.2013

regard to their course content. However, they were doubtful as to the occurrence of such situation as ultimately everyone shares the same aim of sustainable development.

5.2.4 Collective action for change

As specified previously, one interviewee expressed that WWF's GO package is not clear enough. More to the point, four out of five interviewees specify that the GO programme is not perfectly fitting for university campuses, which differ from offices not only by the amount of users (staff and students) and size of campuses but also by differences in the utilization of buildings and education spaces. As an example, interviewee A pointed out that universities with laboratories have to take into account very different aspects related to e.g. chemicals used than a standard office space. It was proposed by four interviewees that a university GO network could provide support and solutions to specific issues concerning the academic world. Two university representatives indicated that such a network could urge WWF Finland to develop the GO system to more suit educational facilities. It was stated that if a network of universities voice their concerns collectively, actions are likely to be taken more speedily to improve matters than if only one person contacts WWF with their concerns.

Likewise, two interviewees stated that a network could even further sustainability in the society due to the fact that a larger amount of actors would get their voice heard better than individual educational organization. Additionally, respondent D suggested that the network could take part in international discussions regarding sustainability and in this way *share the knowledge we have in Finnish universities*. As an example, this interviewee mentioned the World Sustainable Development Teach-In Day. [6]

5.2.5 Issues in which a network is not likely to benefit GO coordinators

Three interviewees, all from universities with a longer history of GO or sustainable development, mentioned aspects for which a GO cooperation network could not provide any help or benefits. One recognized that work in designing educational programmes is particular for each individual university, so a network is not likely to provide help in that aspect. Two of them felt that everyday bureaucratic issues such as drawing up an environmental programme, creating indicators, benchmarking, organizing everyday affairs including meetings and sending out questionnaires to personnel are of each university's own and thus, a network is not likely to bring any benefits regarding them.

On the whole, universities with all the bureaucratic aspects already in place and in control do not feel that a network would be of any additional use in these matters. However, the universities that have a shorter history in GO did not bring up bureaucracy in their replies either, but concentrated more on

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[6]   See: http://www.world-sustainability-day.net, Retrieved: 29.5.2013.

practical aspects such as good practices. Contrarily, respondent D brought forward a suggestion, according to which the network, or in fact, WWF could develop and clarify collective indicators for universities to use. This would enable comparison between universities and thus, could be an advantageous tool for universities as well as WWF itself in developing the programme. The network could together discuss and design improvements for the programme from universities' point of view and present them to WWF in order to develop the programme. This could lead to creation of a "school version" of GO that WWF could utilize, for example, when exporting the programme abroad.

Only one interviewee felt that being a part of a GO network could affect positively universities marketing. They have previously cooperated with other educational institutions in organizing events and developing marketing material and have found that when universities cooperate in organizing an event it is easier to obtain media coverage when there are more participants involved. Respondent A, however, stated that the GO label is likely to affect their marketing but did not see a GO network having much impact.

5.3   Barriers for GO networking

The interviewees were asked if they saw any barriers as to the productive functioning of a university GO network. They all answered the lack of resources as well as lack of time from their own universities could be barriers. Because many of the respondents are handling their GO responsibilities additionally to their other tasks the time resource available on networking is limited. It was pointed out by respondent B, that the benefits offered by the network would have to meet the time resource invested. In addition, organization of seminars and meetings is always a financial burden for the host. Two respondents mentioned monetary issues and the need for adequate financing of network operations as possible barriers.

Additionally, the real benefits of a university GO network as opposed to other existing networks raised questions. Three of five interviewees are currently involved in other networks that are based on environmental and sustainability issues. Consequently, these three people were also the ones challenging the need for another network. The networks that these interviewees are currently participating are inter alia The Baltic University Programme, Finnish SD-forum (keke-foorumi), Education for Sustainable Development in Academia in the Nordic countries (ESDAN), Finnish Business and Society FiBS, CR net (a forum for responsible business) and Finnish environmental network of university administration. All of the respondents are naturally part of the GO network administered by WWF Finland, however, none are particularly active in participating seminars organized by WWF for GO members. One respondent disclosed that albeit it is interesting to learn how companies from different industries are developing, the gains from this information are limited. With all these different forums and networks founded on the subject of sustainable development there is a risk of overlap, thus, a question was raised as to the

added value a universities' GO network could provide. During the interviews it was stated that in order to become successful and established, the contents and organization of the GO network should be carefully planned and the other networks' functionality and sphere of operations studied. This way the practicality and functionality of a GO network could be optimized. Another respondent mentioned that GO issues should go hand in hand with sustainable development and that the two should not be separated.

Furthermore, a concern with continuance and sustained quality of the discussions and operation of the network was voiced by all of the respondents. It was mentioned that a network requires a party that organizes meetings and sustains communication. Opinions varied between one party in charge and an alternating hosting responsibility among the network members. However, none of the respondents indicated willingness to take responsibility of the operation of the network; two are prepared to accept shared responsibility as long as responsibilities were not unduly resource demanding and three indicated that they, under the current situation, would be interested in taking part as a participant only.

5.3.1   Importance of management's support

An important aspect mentioned by four of five interviewees is the commitment of the management. It was observed that the general feeling among the respondents is that in order to successfully implement an environmental management system the management must be motivated and supportive towards the cause. This is further supported by the results, which show that interviewees who felt most positive about their progress and stage of GO also had management behind them with a strong will and vision about sustainability. Majority (3/5) of the respondents pointed out during the interviews that it is imperative to have sustainable development issues stated throughout the university strategy.

As an example, university E, which was motivated to adopt the GO environmental management system solely to utilise the symbol in their marketing and image building has had a downturn in activity regarding developing the programme as well as sustainability issues in general. Also the motivation of this university's representative seemed the lowest of all the interviewees. They also indicated that the management have not been willing to invest in resources for the programme. However, the respondent was convinced about the benefits towards the environment as well as the financial savings generated by the actions taken so far but was not convinced that the management actually realize this. This person also spent the least time working on issues regarding GO. In this university, an information department has the responsibility for communication related to GO and the interviewee suspected that the information department are likely to have rated GO matters at the bottom of their priority list.

6 DISCUSSION AND CONCLUSION

The aim of this thesis was to establish whether a university cooperation network based on GO EMS could assist in the progress of the programme implementation and in what way. The research questions also included elements, in which the network could not bring benefits, what hindrances could affect a successful operation of said network as well as Finnish university GO coordinators' disposition regarding joining such a network. In order to provide answers to the research questions the study first investigated the background information of each university as well the backgrounds of the interviewees and their everyday working conditions with regard to GO. At this stage, hindering factors regarding the GO implementation were of special interest as through them it was possible to establish aspects, in which network cooperation could assist. Interview questions were built on a thematic structure of elements of universities' operations that could be affected by networking. Subsequently, the interview results were reflected against the theoretical background and finally, the data was analysed by searching consistencies and discrepancies. Explanations for the results and controversies thereof were established by examining the results against the background information of the interviewees.

6.1 GO implementation in Finnish universities

From this study, leadership commitment surfaced as the most important success factor with regard to EMS implementation. This corresponds to the prerequisites for a successful EMS as stated by Kippo-Edlund (2006; 124). The results provided both positive examples of management commitment and support and a negative one. One university's GO programme lacks managerial commitment and support. Hence, the programme has not been progressing after the first audit and the GO coordinator seems deprived of resources and devices to pursue continuous development. Correspondingly, as Krizek et al. (2012; 22) explain: the management seems to appreciate the short-term benefits of the GO programme such as the positive image but are not willing to make

more contributions. Such working conditions can potentially reduce the incentive also for the GO coordinator. It is possible for a university to utilise EMS for marketing reasons only as environmental certificates are known to bring image benefits. This is a criticism associated with EMSs and is possible due to the voluntary nature of the systems and ability of organizations to set their own improvement targets (Heiskanen, 2004; 141).

Respectively, a lack of managerial commitment and support has been identified as the most important hindrance regarding successful EMS implementation. (Axelsson et al., 2008; Ferrer-Balas et al., 2008; Sammallisto & Arvidsson, 2005; Kurland, 2011) Similarly to an example presented by Sammallisto and Arvidsson (2005), the university E begun strongly with investments on e.g. waste management but once the GO label had been achieved the progress stagnated. They seem to have lost course as in how to progress with continuous improvement. This is likely to be caused by the structural aspects of the GO programme, and is found similar with other EMSs (Heiskanen, 2004; 141), that to some extent the programme expects certain information to be available to environmental coordinators (e.g. energy mapping as mentioned by interviewee E), while the 'tools' provided are not fully suitable to the operating environment. Furthermore, the GO coordinator was doubtful whether the management realize the savings the actions thus far had generated. This indicates lack of follow up and measurement as well as lack of internal communication (Kippo-Edlund, 2006; 124). As a contrast, the universities that are progressing well and are, in fact, moving from practical aspects of operations more and more towards the idea of overall sustainability have strong managerial commitment and values.

Another important and related hindrance for universities GO coordinators is a lack of time and resources. This finding fortifies Kippo-Edlund's (2006; 124) recital that the creation of an EMS requires sufficient time resources. It further coincides with previous research, which establishes that environmental management activities are often performed on voluntary basis and in addition to primary duties. This creates difficulties when attempting to divide time between responsibilities. (Velazquez et al. 2005; Ferrer-Balas et al. 2008). Only one of the interviewees was employed to manage environmental issues as their primary duty and one university had recently employed an environmental planner to effectuate groundwork. Viebahn (2005) as well as Sammalisto and Arvidsson (2005) stress the need for a central environmental coordinator that is close to the management to handle sustainability aspects. This was also voiced by interviewee C, who stated the need for a full time environmental coordinator, if the whole university was to be included in the GO programme, contrarily to interviewee E, who did not see the need for such and stated that there would not be enough work for one with regard to GO only. This contrast could be explained with the different sizes of the two universities as well as the level of importance the respondents rate the subject.

Strained time resource is further enhanced by the findings, which indicate that the tools provided by WWF for implementation of the GO programme are not ideally suited for the university environment. As a matter of fact, it appears that the programme requires further development in order to appropriately

serve the educational field. All the university representatives interviewed for this study had some complaints with regard to this. According to Heiskanen (2004) this is a common problem with other EMSs such as ISO14001 and EMAS, which are considered to base on industrial operations. Even though, GO is developed for offices and thus, has no roots in industry, the same issues prevail when the programme is transferred to educational environment. Tools are not entirely suitable and do not take into account the different functions a (large) university has compared to offices.

In accordance to Asikainen (2006; 107), motivation of staff and students was pronounced by interviewees to require constant work and intensive communication. Inability to unify differing mental models (Krizek et al.2012) and change set routines (Viebahn, 2002) is likely to impede the implementation of GO program. Kippo-Edlund (2006; 124) identifies staff commitment as a necessity in building a successful EMS. These are issues all environmental coordinators must embark upon.

6.2   Benefits and challenges of an inter-university GO network

The most commonly mentioned expected benefits of a university GO network and agreed by a majority of interviewees were exchange of ideas and good practices, shared curriculum and joint projects as well as increased motivation. The statements made by the interviewees indicate that all of the above aspects of networking could have a motivational impact. Being able to share problems and successes as well as gain assurance by discussing the work with colleagues tackling with similar issues was mentioned as a motivational attribute of university GO network. In addition, a few interviewees mentioned that a network could provide answers to questions and examples of good practices, which, then, could aid the environmental coordinators in achieving their goals (i.e. continuous development). Nelson's (2000; 419) statement that networks offer opportunities for participating organizations to achieve goals that they were unable to attain on their own, suggests that network participation could increase actors' motivation in both environmental management as well as networking.

The results of this study suggest that a Finnish inter-university network based on GO programme would provide benefits to member universities through offering a communication circle in which, members can exchange ideas, ask questions and find answers to problems. Such knowledge transfer could increase efficiency and know-how of members (Grasenick et al., 2008, Larsson et al. 1998). Additionally, a cooperative network of universities could advance the programme development as well as provide valuable practical information from the educational field to WWF Finland.

The passing of audits or the year of the programme implementation are not entirely relevant indicators as to the level of environmental know-how and expertise in universities; many aspects such as the universities' curriculum, backgrounds of staff members and managerial values have an impact on the

universities' know-how with regard to sustainability. Still, the university in the beginning of the process and the university that is struggling with maintaining continuous improvement indicated that a GO network could provide them with ideas and well-proven practices regarding the overall project of implementation. Such outcome could help them avoid unnecessary pitfalls and save them from "inventing the wheel again". Whereas, universities that are more advanced in the GO programme and campus sustainability are interested in mutual comparison and benchmarking, thus receiving ideas for continuous improvement. "Field Trips" to review or even informally audit other universities GO processes are likely to increase motivation to reach targets for all partakers including the university management. This is validated by the fact that production and implementation of an EMS is found to benefit from benchmarking against other organizations (Kippo-Edlund 2006; 124).

Even though, the research on policy learning in network by Lee and Van de Meene (2012) concentrates on cities rather than organizations, the aspect of learning can be applied to universities such as the ones studied in this thesis. Moreover, individuals are the research subjects and associate with the network in both cases. Also, it is individuals, whether present in a city council or an eco team in a Finnish university, who adopt information through learning. With this in mind, it can be assumed that universities that are more advanced in their GO process would be considered as information providers to other members. This is supported by the results in that the interviewees B and D both mentioned that they, through having had the programme in place for numerous years and for multiple facilities, could not think of any specific aspects or situations regarding the implementation process of the GO where they could benefit from collaborating with other universities. In effect, representative D stated that their contribution for a university GO network could be as an advisory member. Contrarily, university representatives A and C, whose GO programmes are relatively young and university representative E, whose programme was somewhat stagnated after the first audit, were interested in receiving practical information as to the programme implementation and best practices. Thus, they can be expected to seek information from the more advanced members.

As universities become confident with the bureaucratic issues and have a clear idea about the requirements and progression of the GO programme they begin to move more towards the concept of sustainability. This includes the educational point of view rather than merely the practical improvements that are largely concerning operational activities and the use of buildings. Due to this direction of development, the GO network has potential to improve universities' overall sustainability as well.

All respondents saw opportunities an inter-university network could offer for students with regard to sharing courses and organizing joint projects. Especially universities that do not have sustainability components incorporated into their curriculum could benefit greatly from shared education. As Naeem and Peach (2010) suggest, a university network would facilitate joint development of sustainability curricula, which would also be beneficial to universities that do not have sustainability expertise within their staff. However,

a risk that competition between universities leads to secrecy about course content and a loss of sharing know-how exists (Naeem & Peach, 2010; 288), yet the results of this study do not suggest this to be a valid concern. The findings indicate a possibility that joint projects could lead to innovative problem solving through joint research and operational projects.

A network based strictly around GO was not particularly thought to encourage innovation generation in universities. Yet, the respondents did recognize the opportunity for innovative projects especially if the network was to address sustainability in universities and society further than merely the GO programme. According to Grazenick et al. (2008) knowledge intensive networks have been found to support innovation creation, providing an environment of trust (members are willing to share their know-how with others), open communication, as well as receptivity prevail among the members. (Larsson et al. 1998; Grasenick et al. 2008).

As to the situations where a university GO network is not likely to provide added benefits to partners, two matters emerged from the results: marketing and bureaucratic matters regarding GO. Being a member of such a network is not likely to affect a university's marketing and image in a positive or a negative way. Marketing efforts that are coordinated jointly by a network, however, may generate more attention from e.g. press than if undertaken by a lone organization. Therefore, marketing the cause and raising awareness in the community could benefit from network activities. Nonetheless, network membership is likely to be rather irrelevant when it comes to image building if compared to the effect of the GO label itself. Also, bureaucratic issues are considered thus particular to each university that network partners are not anticipated to be able to provide support to each other in these matters. Still, if universities were to, for example, work with WWF Finland in developing the bureaucratic aspects of the GO programme or even develop common indicators for the educational sector, the situation could be substantially altered.

The main challenges for successful operation of a university GO cooperation network are a lack of time and resources of environmental coordinators as well as the possible overlapping with existing university networks on sustainability. The GO coordinators interviewed indicated their interest in joining the network providing these issues are resolved. Therefore, in order to compensate the limited time the environmental coordinators have to spare for network activities the content must be worthwhile and exceptional. The research was limited to Finnish universities, yet the results of this study are applicable to educational sector globally. Previous studies indicate that universities worldwide are tackling with similar issues with regard to implementing EMSs in campuses. Perhaps the greatest contribution of this study is for WWF Finland, for which the findings provide valuable feedback from the educational field. The information provided by this research paper could incite the development of the GO programme to better serve the sustainability efforts of universities in Finland as well as internationally.

6.3 Managerial implications

In order to answer the question whether an inter-university network is a viable option in enhancing GO programme implementation a suggestion by Halme (2001) and de Kraker et al. (2012) that a network member base should contain participants that have a sufficient amount of variation and yet should share as many similarities as possible in order to function satisfactorily, provides one perspective as to the member structure. An inter- university cooperation network, due to different educational focuses and expertise that can vary from business to environmental engineering to medicine, and yet, common operational structures, seems to complement this statement.

Drawing from the results of this research a network design most suitable for the purpose of enhancing the implementation and continuous development of GO programme is likely to be founded upon a virtual platform that, as demonstrated by de Kraker et al. (2012), contains diverse and flexible combination of social network features that meets the requirements and preferences of its users. This statement originates from the fact that none of the respondents are for frequently organized face-to-face meetings. The features in the case of a university GO network could be social networking site (e.g. Facebook), a blog with varying and visiting writers, video sharing web service (e.g. YouTube) and a video conferencing application such as Skype. Ferrer-Balas et al. (2008) also found that organizing events and attending meetings often, especially in a large network, proved an extensive strain to a member organization. For the interviewees such obligation is not possible to accept due to the great amount of resources required from themselves as well as their employers. Therefore a network based on virtual communication tools would be a more suitable form of operation. Fortifying this notion, Helling et al. (2005) state: "The practical success of these examples of virtual networks in the environmental sector shows the direction of the future development in this field. Depending on the use of internet-based information and communication tools, virtual networks have no national borders and are able to enhance the cooperation of actors in a global way. This means that virtual networks are an essential instrument to develop solutions in the face of the global environmental challenge." (Helling et al. 2005; 336)

A virtual network requires fewer resources to run as well as reduces the need for travel. In addition, as stated by Downes (2007) and de Kraker et al. (2012) a virtual network, if appropriately designed, can create and organise itself in to a network supporting learning where the knowledge possessed by network actors is shared and acquired via interaction between the actors. This kind of self-organization where the members' commitment to the cause (regularly taking part in communication and posting interesting documents and information on events) plays a central role is likely to increase the lifetime and reduce the maintenance costs of the network. This attribute of online social networks could provide a solution to interviewee D's concern regarding the endurance of virtual networks. Furthermore, a 'learning network' such as specified by Downes (2007) could serve Finnish universities' requirements with

regard to facilitating GO implementation (through sharing knowledge and experiences) and furthering sustainability (by creating new knowledge through interacting) in universities. However, it is imperative that such network is well organized and offers worthwhile content for members. It has been established that motivation for networking correlates with a participant's expectations about network achievements and the quality of the processes employed to obtain them (Nelson, 2000; 427). Therefore, as also noted by de Kraker et al. (2012) the network could benefit from central manager who assumes responsibility for the development and quality control of the network. There is a shortage of time in environmental coordinators workday to be embarked upon a task requiring such amount of effort in order to be performed satisfactorily. Thus, it was suggested that for example, WWF could adopt the responsibility. Network manager (e.g. WWF Finland) could act as a monitor, similar to one described by Aydin and Morefield (2008), overseeing the organization in order to sustain quality of content, to maintain agreed objectives and provide topical information and knowledge to participants. In order to ensure transformative learning of members the network manager should enforce two-way communication (Halme, 2001) and social interaction between members (Downes, 2007). Additionally, while it seems that environmental coordinators (as also found by de Kraker et al. 2012) still find infrequent face-to-face meetings important in order to create valued and sufficiently profound relationships, a meeting or a seminar could be organized concurrently with another sustainability meeting, such as the yearly Finnish SD-Forum, so that GO universities could, along with the main subjects of the meeting, discuss issues regarding the GO. Another option would be for WWF Finland to occasionally organize GO network meetings on the subject of GO in universities.

Equally important is that, even though, a social platform networking carries a relatively small financial burden, funding for the network is sufficient and long-term. Participation of WWF Finland in the network could facilitate acquisition of competent funding due to its extensive network of cooperative parties and connections. Alternatively, public funding could be sought.

Furthermore, a question regarding suitable size of a university GO network should be addressed. A virtual social network provides the opportunity to extend the network internationally and create a vast diversity of members, however, the risk is that in a large network with a discussion forum that attracts a great deal of attention that leads to even more attention it is difficult to follow and continue the discussion. Also in a large network members may not be able to locate the relevant people and resources to connect with. (de Kraker et al. 2012;120) A small member base nurtures trust and expertise as well as communication within the network (Aydin & Morefield, 2008; 45)

Finally, because the need for an additional network was heavily questioned, the contents, operation and coverage of established networks should be studied. Also, since a GO network for all GO label holders already exists, WWF Finland could provide specialised content and tools designed for the educational sector as well as organize virtual meetings, where members could voice their questions and concerns. The issue with additional,

overlapping networks could be, thus solved by creating a smaller, specialised network, perhaps based on a social networking platform, inside a larger one.

In short, a nation-wide university GO cooperation network should provide well-planned and organized system with content that does not overlap with existing networks as well as a social media platform for members, where: best practises can be shared, questions posted and answered, support provided to colleagues and current and factual information transferred. Such network based on practical aspects may spur deeper cooperation partnerships in for example curriculum development and innovation not to mention developing solutions to global sustainability questions.

6.4 Limitations of the research and suggestions for future research

Even though, the five universities interviewed provided a good example on the variability that exists in backgrounds and motivations regarding environmental and sustainability efforts in Finnish universities, the research sample was somewhat small and the results would have benefited from added opinions and data. This would have increased the possibility to draw clearer connections and conclusions as to the prevailing situation.

Additionally, majority of the interviewees seem to have strong values regarding sustainability and their work is not especially closely connected to management operations. Hence, as for example, a question about the hindering effect of competition between universities to the successful operation of a GO network did not gain support from the interviewees, yet the answers may have been contrasting if the interviewees were in managerial positions. Therefore, a deeper study with additional members from different departments could contribute to more factual and comprehensive results.

As to the research conditions, the most likely hindering and possibly result compromising factor is that the interviewee is very inexperienced and has not thus far had any interviewing training. This may have caused differences in the way questions were asked by the interviewer and interpreted by different interviewees. Furthermore, most of the interviews were conducted via telephone without the interviewer being able to see the respondents' facial expressions, which may cause the interviewer not to notice if the respondent has, for example, understood the question correctly (Hirsjärvi & Hurme, 2001; 64, [referring to Drever, 1998]). The chance for this, however, is relatively low as the questions were simple and the interviewer, due to the semi-open structure of the thematic interview was able to redefine the questions if a suspicion of misunderstanding arose. Furthermore, the results provided by the interviews are based on the feelings and conditions of the interviewees on that particular day, which may alter responses. If, for example, a respondent is having a satisfactory and a nice day at work they may be giving overly positive responses and vice versa. In addition, the results of this study provide a description of a certain moment in time and place and are subject to changing.

For instance, if the Finnish government decided to support universities sustainability by granting additional subsidies for hiring an environmental expert, the resources for the current coordinator and knowhow for the university would be multiplied instantly. Also, environmental coordinators, especially when working alone, could be inclined to pose their progress in a more positive light so as to validate their efforts. The interviews were recorded in order to facilitate analysis, however, on one occasion some disturbance on the recording somewhat hindered the transcribing process, which may have caused the interviewer to have missed something without realizing it.

This study is a relatively superficial review about the current situation of environmental coordinators work regarding the implementation of the GO programme in universities, and their thoughts with regard to a hypothetical network. Also, the themes covered in the research could be lacking some interesting subjects that have been identified in previous research, but which the author has missed. Therefore, the study leaves various topics open for further research. For example, the existing inter-university sustainability networks could be mapped in order to determine their coverage and to discover whether a university network described in this study would be worthwhile. If results of this were favourable and a university GO network was established, the network could be studied in order to establish the validity of the results of this research as well as to provide further information of the real benefits, hindrances and operation of such a network, including the design and benefits of a virtual network, the realization of joint curriculum development and innovation projects. Furthermore, each theme (i.e. motivation, innovation, education, marketing etc.) and the network's effect on them could be studied individually. Additionally, in order to develop the GO programme to further correspond with the educational sector, a research on the tools and instructions provided by WWF Finland, their shortcomings and inappropriateness from the point of view of university environmental coordinators could be studied and improvement suggestions provided.

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