

CHALMERS



Eco Careers

A qualitative study of the career opportunities and challenges in the field of sustainable decision-making

Master of Science Thesis in the Master Degree Programme, Industrial Ecology

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Göteborg, Sweden, 2011
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Abstract

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The aim of this project is to create an information material for students in sustainability master programs that can provide an insight in what career opportunities is in the field of sustainable development, what challenges the profession may hold and how to deal with them

By conducting qualitative unstructured interviews with six professionals with experience from the field of Sustainable Decision Making (SDM) a 25 minute documentary was produced, intended to be used for educational purposes as a supplement to the normal environmental management education, primary at Chalmers University of Technology.

The main challenges for SDM could be identified as being related to communication and argumentation for the environmental and social issues in companies and organizations. A clear opinion among the respondents was that they had to fight for their existence to be heard and accepted both by the board and by colleagues was identified.

Tools to address the main challenges mentioned are presented in the form of three exercises where three short group exercises draws the attention to the importance and difficulties to obtain good communication skills in the field of SDM.

Interdisciplinary understanding was mentioned as a key factor to be successful in the field of SDM. Increase contact between industry and students and integrate organisation theory on a general level was some of the suggestions on how to adjust the courses curricula to better prepare the students for their professional careers were presented.

The report conclude that SDM is a field under professionalization and its sensitivity to societal development and political climate create a role that can look very different depending on the interests of the top management in the organisation. Having an interdisciplinary approach was finally mentioned as important when addressing sustainability issues and universities have a role in fostering these students to become the SDM of tomorrow.

Keywords: Career Opportunities, Career Advise, Education for Sustainable Development, Higher Education, Sustainable Development, Interdisciplinary Education

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List of abbreviations and expressions

CC	Corporate Citizenship
CPM	Centre for environmental assessment of Product and Material systems
CSR	Corporate Social Responsibility
ESD	Education for Sustainable Development
EM	Environmental Manager
ESG	Environmental and Social Governance
HR	Human Resource
HSV	Swedish National Agency for Higher Education
NGO	Non Governmental Organisation
NMC	The Swedish Association for Environmental Managers
SD	Sustainable Development
SDM	Sustainable Decision Maker
WBCSD	World Business Council For Sustainable Development

1 Introduction

What do you want to become when you grow up? This is a question that almost all of us, from one time or another, have asked or been asked. As a soon-to-be graduate from half a decade of university studies that question might not be as cheerful to answer as it once was. It is no longer OK to answer *stuntman, princess* or *explorer*, even though it is what we deep down still would like to one day become; we have to answer something real. But what comes after university and what does the real world really hold for us?

Environmental and sustainability issues gain importance in industry and public sectors today and the number of people working with these issues are increasing. Environmental management is, however, a relatively young profession and has not yet been completely professionalized (Dobers, Strannegård, & Wolff, 2001). As the demand for professional expertise increases so is the number of university degrees related to the field, resulting in a new generation professionals entering the labour market. The fact that the profession is applied in every sector and the nature of the profession differs widely from situation to situation makes it difficult for students to see where their education can take them. The question *What do you want to become when you grow up?* does not only become relevant, but also difficult to answer since the profession is an undefined cloud of opportunities and challenges. Student and career counsellors at universities experience that students on these education programs have many concerns regarding their future career opportunities (Ihre, 2010) (Hagman, 2010). This thesis has sprung from these questions and will try to answer them with students at master programmes of sustainable development in mind.

1.1 Aim and Objectives

The aim of this project is to create an information material for students in sustainability master programs which can provide an insight in which the career opportunities are in the field of sustainable development, what challenges the profession may hold and how to deal with them.

The objectives to do this are:

- to exemplify the nature of the profession through qualitative interviews with professionals in the field of sustainability.
- to identify the main challenges for these professionals.
- to identify tools with which these challenges can be dealt.
- to identify strategies so the university proactively can prepare the students for their future work life.

The intention is to use the result as a supplement to the regular course material in environmental management conducted at a master level. The result will be presented in the form of a documentary; this is believed to be a suitable media of communication to properly address the target group. In relation to the viewing a supplementary teacher guided discussion will take place to frame the aim of the film and give the students an opportunity to share their personal reflections of the material and their thought about the future. This puts the environmental education in a context which can inspire the students and discourage the doubts and confusion that they may experience as they go through education and in a constructive way equip them with tools to better handle what the future holds before them.

Additionally the result may be used as guidance for potential future students on the verge to choose their master program as a glance in to the possibilities an environmental career can give.

1.2 Delimitations

The primary target group of this thesis is students in master programs related to sustainable development. To represent the possible career opportunities and associated challenges in this profession will the careers investigated be of persons with some kind of academic background and experience from professions related to sustainability in companies or organisations. The academic backgrounds of the professionals interviewed will, however, not necessary are of the same origin as the target group. The emphasis is on creating an image of what the professional career might hold for the students. It is not in the projects interest to track down alumni's and their career since it is believed that a qualitative investigation with respected and well oriented professionals create a better idea of what to come than a strict follow up of previous students career paths.

The project should be seen as an insight in the everyday work for some, but not all, professionals in the field. The author want to emphasise that the opinions and statements presented is highly subjective and should not be seen as a normative for the majority of the professionals in this field. The interviewees do however possess a detailed understanding of their field of profession in combination with their experience from university studies are the respondents are believed to give a fair view of the situation and their opinions will therefore be analysed and taken in to account in the process of creating suggestions on how to improve master courses curricula to better prepare the students for their upcoming careers

The material used in this thesis has originally been in both Swedish and English and the author has done all translations.

1.3 Distribution

Part 1 INTRODUCTION, LITTEATURE REVIEW, METHODOLOGY: This part aim to clarify why, how and based on what this thesis has been conducted.

Part 2 DOCUMENTARY: Since this report aim to be a supplementary material to be used in a classroom situation this chapter will have another distribution than normal in a thesis report. The film itself can be seen as the main result and is to be found on a separate DVD. The chapter also includes an introduction to the documentary where the participating interviewees are briefly presented as well as the topics, which will be discussed in the documentary. The chapter ends with suggestions regarding topics to discuss in the classroom after viewing the material and additional exercises suggested to be conducted in order to address the challenges brought up in the main result.

Part 3 DISCUSSION: In this chapter the result is discussed from a methodological perspective and alternative ways of achieving similar results are also ventures. The result is set into relation to the findings presented in the literature review, which forms the base for the last and final chapter of this report.

Part 4 CONCLUSION: The most relevant findings of the research based on the outcome of previous chapter are presented and a few recommendations regarding interesting areas to expand future research in are given.

2 Literature review

When talking about Eco Careers it is relevant to clarify a few concepts and terminology such as career and profession. The following chapter will bring these issues in to light and in addition present a few theories about companies' view of sustainability and their priority settings regarding these issues. The aim is to create a broad understanding of the nature of the profession and the challenges that comes with the title. In the final section of the chapter the role of higher education is discussed in the aspect of how to prepare students for their future role.

2.1 Definition of career and how it is perceived among university graduates

What we include in the word *career* differs depending on who we are and what we do. Some see it as a positive word a word of success, while others perceive it as more negative and perhaps think of career starving opportunists and stress. The dictionaries, however, have their definition.

Oxford English Dictionary (2011) defines career as:

“A course of professional life or employment, which affords opportunity for progress or advancement in the world”

While Merriam Webster Dictionary (2011) defines it as:

“A profession for which one trains and which is undertaken as a permanent calling”

Anders Parment PhD in economics at Linköpings Universitet has been studying the behaviours of individuals born in the late 1970s and 1980s, often referred to as Generation Y and how they look at career and career opportunities.

Parment (2008) concludes that Generation Y take on a faster career changes in broader ranges than earlier generations. The soon-to-be retired generation born in the 1940s and 1950s has experienced what Webster Dictionary mention as a career being a “permanent calling” something that younger generations will have difficulties to relate to since they see career as an arena for self-realization and do not see work as a duty or right (Parment, 2008).

Generation Y possesses a different outlook on what is important in the professional life and how to get a head than earlier generations. The personal social networks are more important

for Generation Y and the line between professional and personal life is less distinct than before (Parment, 2008), this is a result of the frequent use of Internet and foremost social media. Generation Y also tend to change their employer and career more often than previous generations, constantly seeking development. As they do not perceive work as a duty but merely an opportunity for self development this will occur when the individual has gained the level of personal development that the current position or organisation can offer (Parment, 2008).

The risk of losing valuable knowledge when, what is most likely to be the most attractive employees, pass through the organisation in a higher pace than before is brought up by Parment and Dyhre (2009). They emphasise the importance of keeping both the knowledge in the organisation through internal actions but also the importance of a good personal relationship with the former employees, as they become organisational alumni's (Parment & Dyhre, 2009).

The generation that comes after Generation Y, naturally called Generation Z, includes individuals born during the 1990s and early en the early 2000. This generation will within a few years enter the job market. There are a few theories about this generation as well. Douglas Coupland is a Canadian author of several fiction novels with Generation Z as main characters. There are however little research done about Generation Z and what they might be like in a work life situation, but the common tone is, however, that the generation will be extremely fast in processing information and be more individualistic than Generation Y.

2.2 Definitions of sustainable business practice

There are several terms to describe responsible business practice, which term is used differ between nations, sectors and individuals (Grankvist 2009) (Mebratu, 1998) (Meadows, 1998). The following five definitions are presented by Grankvist (2009) as the most frequently occurring terms in literature and practice in order to describe responsible business practice.

<i>Corporate social responsibility,</i> CSR	One reason for the wide spread adoption of CSR to express sustainable business practice is believed to be the word <i>corporate</i> ; which makes CSR sound more business oriented than other terms and therefore makes it more appealing to company leaders. The term <i>social</i> on the other hand is believed to give association to a practice promoting social responsibilities, which is believed to be working to the terms disadvantage.
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<i>Corporate Citizenship, CC</i>	Implies that a company has the same juridical rights and responsibilities as a physical person, meaning that the company must take responsibility for their actions and how those actions affect their fellow men.
<i>Environmental and social governance, ESG</i>	This term mainly exists in the financial sector where it is used as a way of address environmental and social investments and gives them a monetary value as a way of motivating companies to make these type of investments.
<i>Three bottom line, TBL</i>	The most recently adopted term of the five. It was first introduced in 1994 by sustainability expert John Elkinton and builds on the idea that the long-term planning of a corporation should not only focus on financial results but include three bottom lines in the form of <i>people</i> , <i>planet</i> and <i>profit</i> , meaning the social, environmental and economical aspects of the business.
<i>Sustainability or Sustainable Development, SD</i>	The most balanced mentioning for a responsible business practice and an all inclusive term that not only emphasises environment and social responsibility but also puts the perspective of time and profitability in the equation and it is therefore it the has become the most used term, even though it is one of the youngest.

Mebratu (1998) shares Grankvists' (2009) idea of SD being one of the most successful definitions. What makes the term superior over its precursor and the reason that this it has been broadly adopted is, according to Mebratu (1998) that SD considers multiple aspects of societal development and offers the opportunity for diverse interpretation and focus. The vagueness in the definition is the key to wide acceptance of the concept. It is because its vagueness SD has gained a wide acceptance in the political sphere since a vaguely defined concept becomes applicable in many different situations and modified after the current need (Mebratu, 1998).

The author of this thesis agree that the wide acceptance and balanced focus of the three pillars make the term SD a suitable term to describe responsible business practice in multiple fields and it is the only term that will be used further in this thesis.

2.3 Defining an umbrella term for the field of practice

This thesis regards professions related to SD. Traditionally has the term *environmental management* been used to describe this role, but today a wide range of names are being used

as *sustainability coordinator*, *CSR manager*, *HES-manager*, to mention a few. Regardless of the academic background of the profession or the field of practice, what these professions have in common is that their function is to foster responsible business practice in companies and organisations in one way or another. To overcome the lingual barrier and make the content of this thesis more comprehensive a collective title for these professions ought to be defined. Mitchel, Carew & Clift (2004) presents a term for these professions; *the sustainable decision maker* (SDM), which has been further used in this thesis and includes the various kinds of work environment that students at educations related to sustainable development, might come to work in post graduation.

The author would like to point to the relative importance of creating a common term for this kind of profession also on a larger scale to prevent permanent lingual barriers to form in the field.

This is also an opportunity to clarify the term *Eco Career* that can be found both in the title of this thesis and is frequently used throughout the report and the documentary. Environmental Career, Sustainability Career, Green jobs are some of the terms used on various career sites to describe what here is referred to as *Eco Careers*. It is simply jobs related to SDM and the field of application has no restrictions and can be both on governmental level and in grass root organisations.

2.4 An overview of the professionalization of Sustainable Decision Makers

To better understand the situation for the SDM today and where the field of practice comes from this section provides a historical perspective of the field of practice. It also provides an insight in what motivates the companies to take actions in line with responsible business practice.

Long before the industrial revolution in the late 1800th century human affect on the planet has been discussed, but even so corporate environmental management as a profession is a much younger discipline and it has not yet found its place neither in management nor in organisation studies (Dobers, Strannegård, & Wolff, 2001).

The need for a professionalization of environmental work has come from the extensive societal change during the second half of the last century; which has placed environmental issues in the public debate and in return led to an increased number of actors involved both in the industry and elsewhere (Johansson, 2008). The development has been gradual and the first positions with some type of environmental profile started to appear after the Second

World War when Europe was to be rebuilt and we entered the era of mass production (Johansson, 2008).

As the consequences of the new era started to show, the environmental discussion expanded (Kolk, 2000) and the companies were forced to take action. From more or less aiming to *clean up the mess* (Keen, Valerie, & Dyball, 2005) in the 1950s the field has now, 60 years later, moved from focusing on end-of-pipe solutions and moved towards process-oriented and product-oriented solutions (table 1) and come to include strategic long term planning and new business opportunities (Kolk, 2000).

Table 1 the operational approaches to environmental management for producing companies presented by Kolk (2000).

	End-of-pipe	Process-oriented	Product-oriented
Focus	Disposal, clean-up	Difficult process change	Changes in the entire product chain
Types of measure	Relatively simple technical	Difficult process changes	Changes in the entire product chain
Product of process	None	Process control	Product and process design
Environmental policy / knowledge	No clear policy; not much knowledge	Policy formulation starts; knowledge builds up	Clear policy much knowledge
Place of environmental management in the organisation	Environmental department	Becomes the concern of the other departments	High integrated
Relationship environment-strategy	Environment is not considered	Environment starts to play a role	Environmental concerns are integrated
Regulation or self-regulation	Regulation; firm initiatives are rare	Number of initiatives increasing	Many initiatives; more self-regulation
Environmental consciousness	Limited	Increasing	High
Perception of the environment	Burden	Precondition	Challenges

Kolk (2000) establish that what primary motivates companies to take action in these matters and the strongest driving force behind the evolvement of environmental strategies, following legislations and secondary avoidance of negative publicity due to incidents and enchanting company image.

The social aspect of responsible business practice has developed in parallel to the environmental responsibilities and it goes just as far back in time. Throughout the last century the focus has shifted from workers rights and the formation of labour unions in Europe to the ethical perspective of outsourcing of European companies' production of consumer goods to Asia and the workers conditions overseas. One of the mile stones in the debate came with Howard R Bowen's book *Social Responsibilities of the Business Man* in

1953, which led to intensified debate awareness amongst company leaders, leading to an increase in charity projects and donation made in companies, mostly in the US (Grafström, Göthberg, & Wendell, 2008). Today there is less focus on pure charity donations and a stronger focus on structural changes in the company either to comply with regulations or to assure the public image of the company as responsible citizens (Grafström, Göthberg, & Wendell, 2008).

How fast a company moves towards a product-oriented environmental management or adapts to a new legislation related to social responsibilities differs. According to Kolk (2000) a company can take, one of the four approaches on the RDAP scale (table 2) to environmental and social issues. On one end of the scale we have the reactive company that do as little as possible as late as possible. The other end of the scale we have the proactive companies that take a leading position in sustainable investments and business practice. The company cultures, national descend, what people the company consist of will affect what reactions, and when they occur and affect if the company

Table 2 the four approaches to environmental issues for companies according to Kolk (2000)

Type of reaction	Pasture or strategy	Performance
Reactive	Deny responsibility	Doing less than required
Defensive	Admit responsibility but fight it	Doing the least required
Accommodative	Accept responsibility	Doing all that is required
Proactive	Anticipate responsibility	Doing more than is required

Kolk (2000) also points out the difficulties of defining where a company belong on the scale since this can vary over different legislations and fields of action. It should not be taken for granted that a company move up on the scale in continuous improvement it is possible or even likely that a company have sudden drawbacks or improvements or a status quo (Kolk, 2000).

The profession of SDM has been growing over almost a century, but it is the last decade that it truly has started to be formed as one profession where all pillars of SD are integrated, not only in theory but also in practice.

2.5 Perceived challenges amongst SDM in Swedish companies today

The Swedish Association for Environmental Managers (NMC) has every other year since 1998 conducted a survey among their members. The survey aims to describe the situation for the NMC members in the aspect of attitude towards the job, how the companies accept environmental strategies and development, what priority the environmental projects have in companies etc.

The surveys show that the role of environmental management often is complex and more than half of the respondents have additionally areas of responsibility (Figure 1), often related to quality and safety. This scattered work situation has fostered a feeling among the respondents of not having enough time and financial means to focus on the environmental work.

How large share of your work tasks are related to environmental and/or sustainability issues?

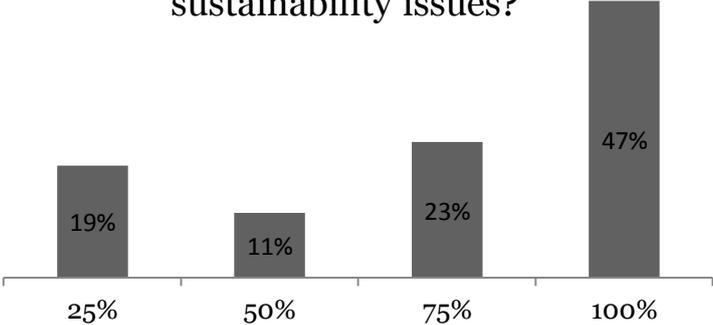


Figure 1 the environmental manager diverse workload (reconstructed from NMC, 2008)

The main challenges over the years have been somewhat constant. What historically has been and still is the main challenge according to the respondents is engage the company board in the sustainability work. A summary of the challenges mentioned in the survey 1998, 2008 and 2010 is presented in table 3.

Table 3 Main challengers for the environmental manager 1998 to 2010 according to NMC survey (NMC, 1998; 2008; 2010).

Top 1998	Top 2008	Top 2010
Keep up with the information stream	Engage the company board	Communicate within the company
Engage company board	Integrate environmental, social and economical aspects	Engage company board
Communicate within the company	Change attitudes amongst co-workers	Creates understanding regarding the importance of sustainability among company board
Change attitudes amongst co-workers	Creates understanding regarding the importance of sustainability among company board	Change attitudes amongst co-workers
Find balance between environmental investments and economic constrains	Find balance between environmental investments and economic constrains	Integrate environmental, social and economical aspects

What these challenges have in common is that they do not concern lack of factual knowledge but difficulties with communication and argumentation for environmental strategies and investments and possible other soft parameters as social competence.

There has been a general change in attitude among SDM's over the past decade. In 2008 did only 8% of the respondents in the NMC survey answered that they had a feeling of hopelessness regarding their job (NMC, 2008), a number that has been significantly higher in the past. The implementation of environmental management systems has created a more legit arena for sustainability issues in the companies, which made the responsibilities of the environmental manager easier to administrate and in return led to an increased support from the CEOs and company board compared to a few years ago. In the 2008 NMC survey over 80% of the environmental managers report that they feel like the work gives result and that the company is moving towards a more sustainable state

2.6 Attitudes towards the profession amongst the future SDM

In his dissertation Johansson (2008) studied the attitudes to environmental problems and the profession amongst students and young professionals from higher educations' in SD. It was found that two clusters of concern exist, *concern for the nature of the profession itself* and *concern for their professional identity in the job*. Table 4 presents the specific concerns in each of these groups where concerns for the profession are presented in the left column and the concerns regarding the professional identity in the column to the right.

Table 4 the concerns regarding the profession students and young professionals (Johansson, 2008).

Concern for the nature of the profession	Concern for their professional identity
Results are difficult to assess and cannot be made visible	Be perceived as lacking a clear professional identity
Cause resistance, feelings of discomfort and being provocative;	Being somebody who also contributes to the problems that one is trying to deal with and solve
Must be integrated within and adapted to existing practices	Being somebody who sees and understands causal relationships that not everybody sees or understands;
Explaining and formulating solutions	Being somebody with a personal commitment in environmental issues
Involves administrating changes that have been decided on	Being somebody other people are prejudiced against.

2.7 How to best achieve a sustainable society

Bruno Latour is seen as one of the most innovative thinkers of our time. In his book *Politics of nature* (2004) he presents his view to political ecology, a concept best described as a merger between scientific and political ecology, where he re-interpenetrates the concept of *ecology* in a more philosophical state than the original definition allows. By separating

human and nonhuman interests, as we have been doing up to this point, Latour claim that we risk the foundation of democracy, which in turn is a limiting factor to obtain a sustainable society. It is proposed that the old dichotomy between nature and society should be dissolved and a community where humans and nonhuman interests are equally valued is to be established.

The modern view of the world consists of one nature, *mononaturalism*, and several human cultures, *multiculturalism* (Latour, 2004). This ought to be transformed into, what Latour refers to as *multinaturalism*, which implies that humans and nonhumans are part of a collective and therefore should have the same right to speak their mind. He state that nature is in no need of being governed or saved by humans, but is in need of being a true member of a multinaturalistic union. This union is to be determined and managed by diplomats. The diplomats have as their mission to handle the interest of the collective in an experimental and flexible manner and not based on absolute facts. In this way they become spokespersons for both human and nonhuman interests and step away from the role of being environmental experts.

The term collective does not imply that there is a definite and single global collective. More than one can exist but it is up to the diplomat to determine which collectives to be taken in to account at each point in time. An example of a collective could be the nature and inhabitants of a specific area, nation or the entire globe, depending on the scale and nature of the current debate. Applied to real life situation a diplomat can be a member of a company that can in creative ways take the debate and not only set to one side of the members of the collective but assure that all parties of the collective is heard and benefits from the process.

Latours' idea is a highly idealistic thought for a future or even utopian state. The point is not to give a handbook on how to reach sustainability on this planet, but to give a new perspective to the societal structure we have today and aims to give an insight in what we are doing and most importantly what we are doing wrong. The new world order with a more dynamic and interdisciplinary management through the diplomats aim to create a more direct and applicable management strategy to the main obstacles for obtaining a sustainable society.

2.8 Sustainability in practice

In the book *business guide to sustainability* (2006) by Hitchcock and Willard the authors' present benefits and risk of adopting sustainability in to an organisation as well as the risk of not doing so. A summary of this can be seen in table 5.

Table 5 Risks and benefits of implementing sustainability in the company (reconstruction from Hitchcock and Willard, 2006).

Possible benefits of pursuing sustainability	Possible risks of not pursuing sustainability	Possible risks of pursuing sustainability
Reduce energy	waste and costs Liability for pollutants	Green washing
Differentiation	Supply problems with raw materials and energy	Cannibalizing your own product
Sidestep future regulations	Attack on your image	Raising unrealistic expectations
Create innovative new products and processes	Legal risks	
Open new markets	Bad-mouthing of your product	
Attract and retain the best employees	Being closed out of certain markets	
Improve your image with shareholders and the public		
Reduce legal risks and insurance costs		
Provide a higher quality of life		

Hitchcock and Willard (2006) also present how sustainability should be handled in a company in order to be a success. Below follows a short summary of the approaches suggested.

- Influencing without authority* Since the position of a SDM normally has no deciding power on overall strategical issues it is crucial to make friends in high places, pick your battles and wait until the timing is right to bring up a certain issue.
- Getting ear and respect from management* Work under the radar until you have enough data to show possibilities for significant changes and back up your arguments with scientific articles from respected business journals. It might also be good to show what others in the same sector has done and translate your ideas into strategical approaches and talk in business terms
- Avoiding burn-out* There will be a lot to be done in most organisations, so set your priorities and strike where impact is likely to be the largest and do not be overwhelmed if the company has a slow reaction or is defensive.
- Enroll others* Get to know people, listen to their challenges and get to know their problems and speak to them on their terms. Be aware of that some will be ready to listen to you, and some will not. Focus on the low hanging fruits.

Bartholdson (2009) has an additional contribution to how to succeed in sustainability projects and point to the importance of having a committed manager in each project. Two main types of managers are recognized as typical for the field, *the enthusiastic bureaucrat* and *the networking balancing act artist*. The enthusiastic bureaucrat is described as a skilled debater with brave arguments and enthusiastic approach, not always with the most well under built arguments and do not feel the need to have scientific facts as a base but rather feeling. The networking balance act on the other hand is a problem solver with a well built social network that seeks broad cooperation within other organizations.

The latter follows what Hitchcock and Willard's suggestions imply while the former show a more aggressive approach, a direct conflict to what have been suggested earlier. This is an example of the diverse opinions and pressures that can be put on a SDM.

2.9 The role of universities for forming the environmental managers of tomorrow

The background for SDM's has traditionally been economical or technical with an additional interest in and experience from environmental issues (Larsson & Larsen, 2001)(NMC 1998; 2008; 2010) (HSV, 2003). As SD becomes more and more integrated in the companies' agendas the role of the environmental managers is changing. The added responsibilities in fields like safety or social issues transform the traditional environmental manager into the role of a SDM. This new view of environmental management opens up for a more diverse background for the practitioners.

A common opinion amongst scientist in the field of environmental management is that an interdisciplinary approach in higher education of SD would equip the future SDM with the tools to handle the, above mentioned, challenges and increase the chances of becoming successful. (Larsson & Larsen, 2001) (Keen, Valerie, & Dyball, 2005) (Meadows, 1998) (A Mitchel, L Carew, & Clift, 2004).

In a report from the Academy of Higher Education in the UK do Daw, Jucker and Martin (2005) state that universities in general lack in the understanding of the importance that a wide range of skills and knowledge is included in the students training. They mean that the empasasis often lies on the individual subjects and with very litte integration between them, something that is required to create action oriented, well-informed young professionals (Daw, Jucker, & Martin, 2005). Three approaches that educators' can take to ensure that the students understand sustainability issues are presented by the authors and is displayed below.

Educators as role models and learners. By acting as a role model and keeping a close connection to reality the educator can create a position where he/she gains the level of credibility needed to be able to put sustainability in to a context that students understand.

Experiential learning by reconnecting to real-life situations. An alternative classroom situation as a fieldtrip, exercise or role-play, that relates the factual knowledge to reality.

Holistic thinking SD is a system of complex, multi-layered and interconnected systems, which requires an understanding of both the societal and technical system. To get the best out of the students both interdependency and transdisciplinary connections between subjects and a higher degree of critical thinking must be obtained.

Reid, Dahlgren and Petocz (2008) have studied how students of in various countries and educational programmes perceive their university culture and career opportunities. The study attempts to answer the question *what is the use of higher education in learning for the professions*. It is concluded that the perception of professional identity is a complex intersection of the national settings, pedagogical approaches and institutional goals in each specific case, on one hand and the interaction with the students own experience on the other.

The way students approach the subject and the future role differs depending on if the sense for the future profession is strong or weak.

Students in programmes with a strong sense of profession as psychology often have a more personal connection to learning. These students focus on a both gaining a generic understanding transferable to many different contexts and a more substantive and case specific knowledgebase. For students in programmes with a weak sense of profession as political science the student focus on developing the meaning in discipline and learn in a way that provides them with specific knowledge in the field but in a generic manner so that the knowledge can be applied in different contexts.

The authors suggests that universities should create the curricula in a way that distinction between strong and weak professions is less distinct and the smoothest possible transition between university and professional life is obtained. This is believed to best be achieved by a combination of ritual (fact based learning) and more problem based (generic) approaches where the technical or theoretical approaches are applied.

The research is more intense for SD related educations conducted at technical universities than other fields of practice. What is commonly understood is that these universities needs to adopt to the new requirements of environmental management and the engineering educations need to step out of the traditional scheme of mathematical and scientifically models and change the perspective on which problems are approached and study the world in its true, messy, form. This will according to Mitchel, Carew & Clift (2004) diversify the educational system so that it corresponds to the complexity of the real world problems related to environmental management.

Mitchel, Carew & Clift (2004) presents the thesis that the technical knowledge of future environmental engineers and scientist ought to be constant but the professional expertise is to be altered to better fit the requirements of an integrated SD management. It is proposed that the traditional role engineers and scientists have as *objective decision makers*, where complex social priorities are out of the equation, takes the form of the post-normal science oriented position as *Honest Brokers*. The Honest Broker holds the technical expertise of the objective decision maker but also a transdisciplinary approach where social aspects have an impact on the decisions taken. This leads to a broader, long-term perspective to environmental impacts where stakeholder consultation becomes a natural part of the decision process (A Mitchel, L Carew, & Clift, 2004).

Swedish National Agency for Higher Education (HSV) account for what they hold as a good environmental education in the report *Utvärdering av utbildningar i miljövetenskap, miljöteknik och miljö- och hälsoskydd vid svenska universitet och högskolor*" (HSV, 2003) . It is concluded that the content of the education should be problem oriented and include a societal prespective and HSV stress the importance of a interdisciplinaty approach in higher educations in the fields of Environmental Science, Environmental Engineering and Environmental Health. The common denominators of these three diceplines are that they are relatively new and have a broad and unspecified profile where social and natural science are equally important prespectives. The benefits of general and interdisciplinaty educations are put in relations to the risk of losing importatnt specialist competence if they become too general. HSV suggest that the current confusion regarding what professions the different educations lead to could be avoided through strong brandingand clear profilization from the universities (HSV, 2003).

2.10 Summary of literature review

In this chapter have several theories and ideas regarding SDM been presented, before moving on this section presents a short summary of that has been said.

- Generation Y, now entering the labour market has a different view on career than earlier generations. The focus is more on personal development and expansion of the individual social network becomes important in this development.
- The field of sustainable business practice is vaguely defined where many definitions currently are competing, but where the term sustainable development is gaining ground and is becoming the most commonly used term
- The field of SDM is young and has transformed from risk minimising in hard polluting industries to a part of organisations in every sector. Also the social responsibility has become more relevant to invest in the eye of the companies and has been developed in parallel to the environmental responsibilities.
- Companies will not act in the same way in all issues and the differences will be found not only between companies in different sectors or countries, but also within the same company depending on the people responsible and the nature of each specific question.
- Communication and change of attitudes in companies is the main obstacle for sustainable business practice today. Also being torn between different tasks is mentioned as a problem among the respondents in the NMC survey.
- The attitudes to environmental problems and the profession amongst students and young professionals from higher educations' in SD can be divided into two clusters, *concern for the nature of the profession itself* and about *concern for their professional identity in the job*.
- There is an active debate regarding the best practice to develop the field of profession and ways to take to move towards a sustainable society. To have diplomats who in a flexible and creative way handle the interests of both human and nonhumans is suggested by to be an optimal way to assure that SD is conducted.
- Several scientists question the educational practice used today, a development of the educational system to meet the requirements of the business world is in demand and it is the focus on interdisciplinary educations for the futures SDM that is in focus.

3 Methodology

The following chapter aims to clarify how this project has been conducted. The chronological order of the different steps have been performed can be seen in figure 2.

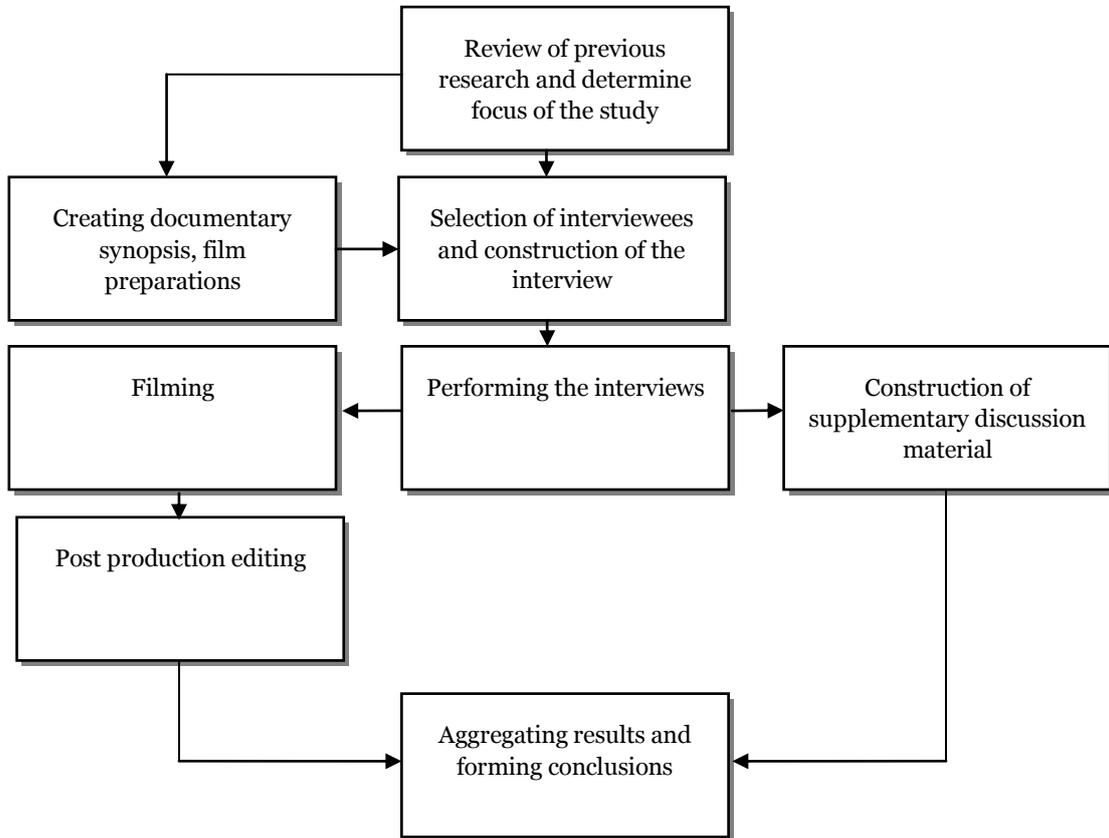


Figure2 Chronologic description of methodology used in this thesis. The main focus has been at investigating the nature of SDM professions by conducting interviews with active professionals in the field. Parallel with this has the preparation for documentation of the interviews and construction of supplementary discussion material been running

3.1 Literature review

The initiating phase of this thesis focused on literature investigation regarding previous research in the field of SDM in the aspect of current practice and theories about the future role and style of this profession. The possible structures for the interviews and practical theories about efficient ways of documenting interviews were also investigated in this step.

The material was sorted and categorised after content and relevance and the material that was seen as most relevant for the study was selected and now forms the content of chapter 2.

3.2 Focusing the study

The focus in this study can be seen as an extension of previous research in the field of SDM in practice and its role in the educational system. What to further explore was extracted from the findings during the literature review and represent the most frequently highlighted issues in the field, which were transformed in to areas of focus. The focus areas detected are: Trends in the field and career options; Challenges: Career advice and finally Recommendations for universities.

3.3 Selection criteria of interviewees

A few criteria for the selection of interviewees were defined to guarantee a satisfying outcome of the project. That the respondents had sufficient experience from their sector to be able to give fulfilling answers during the interview but at the same time have a relation to being a student was highly prioritised. Additionally the knowledge of the English language was defined as crucial quality to assure the quality of the interviews. The respondents came to represent a broad spectrum of sectors and company structures, which reflects the broad range of career opportunities that awaits the target group (table 6).

Table 6 Selection criteria for respondents.

Criteria	Clarification
Relevant university education	to assure relevance in relation to the target group
A minimum 4 years of professional experience	to assure work life experience
A minimum of 1 year in EM or similar position	to assure experience of EM in current position
Sufficient knowledge of the English language	to assure capability of conducting an interview with satisfying outcome.
Represent a field or where sector it is probable the target group will come in contact with	to assure that the outcome is of interest for the majority of the target group

3.4 Interview construction, technique and conduction

The choice of interview style will actively affect the outcome of the study. Since this study aim to result in an informative material with personal experience from professionals in the field of EM the suitable choice was a qualitative unstructured interview (Gillham, 2008) (Patel & Davidsson, 2003) (Ryen, 2004). This grant the opportunity to understand the everyday life and personal conflict that comes with the role and let the respondent freely express their view, creating a personalised insight in what the profession bares.

3.4.1 Construction

The style of the interview has a few principles that are crucial to follow to obtain a high-quality result (Gillham, 2008). The questions should be based on facts and not vacuum

(Gillham, 2008) meaning that it should have a well documented support in previous science whether that science is to be tested or supported by the research. Gillham (2008) also suggests that the question should be generated and tested by independent evaluators both with and without insight in the field of research to find a creative set of questions. Additionally it is suggested that the interviews are focusing at one topic at the time and follows a logic order, digging deeper over time and that all extra adjectives or subordinated clauses are avoided to keep the questions as clear as possible (Gillham, 2008). This is an approach that fits the purpose of this study well and has therefore been adopted.

An interview guide was used to guarantee that the interview was well structured and followed a logic order and included all the issues of interest (Ryen, 2004) (Häger, 2007) (Troost, 2010). A number of central questions were asked in the predefined areas of focus, with supporting prompts and probes to assure that all respondents covered the same aspects of their work. This is a strategy presented by various scientists (Ryen, 2004) (Häger, 2007) (Troost, 2010) (Gillham, 2008) in interview technique and is often held as an efficient way of obtaining qualitative data.

The questions were structured so that they gave the respondent the freedom to answer the question in a personal way and the questions were adapted to the situation throughout the interview so that the driving force during the interview was the respondents' answer and not predetermined questions. Each of the respondents was given a set of personalized questions that reflected their personal experiences and field of interest.

3.4.2 Testing the technique

To assure that the best possible result was obtained the interview and all technical equipment was tested before the real study began. Gillham (2008) suggest two test runs of the interview called the pre-pilot and the pilot study, where the former is a test run where comments and suggestions from the respondent serve as a valuable indication on how successful the study is and the latter is carried out after the suggestions from the pre-pilot is evaluated and taken in to consideration and is more or less a test run of the final interview. This study was tested once with two different respondents, reconstructed and then evaluated with the support from thesis supervisor.

3.4.3 Performing the interviews

The interviews were set in secluded areas both in the respondents' work place and on neutral ground where no one could hear what was said and where the risk of getting disturbed was minimal. The time reserved for the interview had a good margin to prevent the respondent from feeling stressed, which could affect the outcome of the interview.

3.5 Documentation of interviews

The discussion regarding the advantages and disadvantages of recording an interview is running wild among reporters and anthropologists. Some interviewers push the risk of using technical equipment during interviews to partially or fully document the interview. (Trost, 2010)

The risk of technical failure and creation of an uncomfortable situation for the interviewee is favoured arguments for the supporters of traditional documentation while the possibilities to capture tones and gestures are frequently used arguments from the supporters of digital documentation (Häger, 2007) (Ryen, 2004) (Trost, 2010) (Gilham, 2008).

One of the advantages of using digital documentation is that it creates a possibility for the students to take part of firsthand information without the reconstruction of the information that a transcribed interview into written text would provide. This raises the credibility of the information and makes the students more active in the interpretation of the information.

To assure sufficient quality of the documented material the author attended a two-day course at Universitets-TV at the University of Gothenburg to gain adequate knowledge in the art of filming and editing. The course regarded ideas on how to structure the film; *does and don'ts in filmmaking*; basic knowledge of recording equipment and computer aided editing.

3.6 Construction of supplementary discussion material

A supplementary material with topics to discuss in the group in relation to the film was created with the intention to generate a deeper understanding of the issues brought up in a personalised matter. To address the challenges mentioned during the interview a few exercises were constructed, with the intention to bring light on the challenges so that the students themselves become aware of them on a personal level.

3.7 Interpretation of result

The most relevant aspects of the research were chosen and set into relation with the previously conducted research. Since the intention of this project is to communicate a highly subjective story no deeper analysis of the respondents different answers will be done. It is not in the projects objective to draw generalised conclusions of the individual answers; the focus will instead lie on how this material can be used in the future.

4 Documentary

The idea with this project is to create a supplementary educational material for master students in sustainable development relates programmes. The result can be divided into two sections where the first part of the result is presented in the form of a film. The second part is a set of questions and exercises to be conducted in a classroom situation after viewing the material and where the challenges brought up in the film are addressed. This chapter presents the outline of the film and gives a brief presentation of the participating professionals. It also contains a few pointers about the universities role in preparing the students and what is seen as possible ways of expanding the current curricula.

This chapter could be seen as an independent section that, together with appendices A and B, form the supplementary material described in the aim of this report.

4.1 Introduction to the documentary

The film consists of six blocks including introduction and a finalising chapter, and the main part of the film is divided into four sections each with an individual theme. The schematic disposition of the film is illustrated in figure 3.

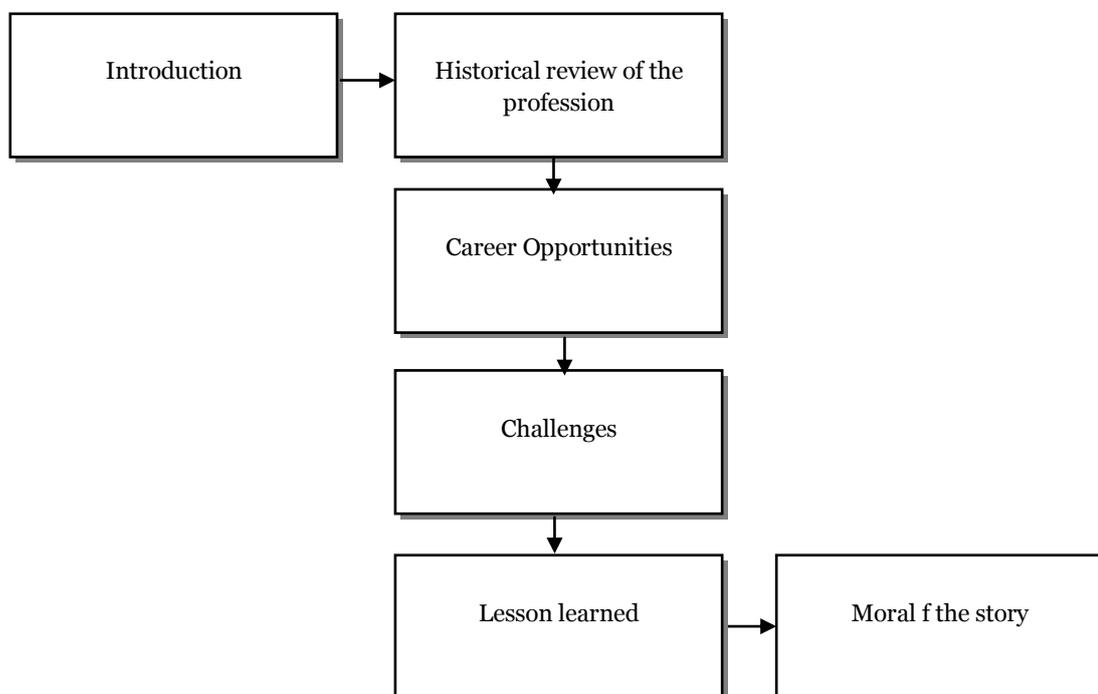


Figure 3 Schematic illustration of the distribution of the film

4.1.1 Presentation of the participants

Even though the respondent are briefly presented in the documentary this section gives a short written presentations to better orient the reader in who is participating and where they come from.

Björn Stigson Holds the title of Chair man at World Business Council for Sustainable Development since 1995 and is now full time committed to international guidance for sustainability issues for businesses. He is additionally serving on boards or committees as advising the Chinese government, the Dow Jones Sustainability Index, the Kennedy School of Government at Harvard University, the Clinton Global Initiative and the Global Reporting Initiative. Earlier in the career he has held several top management position in industries companies as Fläkt Group (later ABB) where he was CEO from 1971 to 1982.

Eva Vitell Head of new on shore wind farm development projects in Sweden for Vattenfall. Until the end of 2010 when Vattenfall restructured their organization she was the environmental manager for Vattenfall Nordic. Vattenfall is the largest energy producer in northern Europe and has business in hydro, coal, nuclear and wind power.

Hanna Jönsson Project coordinator at Hydrogen Sweden until January 2011. Hydrogen Sweden is a non-profit partnership with the mission to assist the introduction of hydrogen as an energy carrier in Sweden. The members and financers are represented in the industry, NGO's and local, regional and national government. Hanna has been responsible for coordinating projects with actors interested to investigate the business opportunities for using hydrogen fuel cells

Johan Trouwé Currently CEO of West Sweden Chamber of Commerce and Industry but has had a long career as environmental manager for companies like the Swedish railroad (SJ) and the German transportation company Schenker.

Maria Smith Environmental and CSR manager at ICA one of Sweden's largest chains of supermarkets. Maria has several years of experience from within the organisation and has been working with for the company's sustainability reporting and sustainability indicators in the past. Additionally she has worked as environmental consultant for eight years.

Peter Lysell

Works as managing partner and Co-Owner of Sharing Insight, a management consultant company, but has almost a decade of experience of LCA manager; Sustainability manager and HR coordinator at chemical company Akzo Nobel.

4.2 The documentary

This section refers to the main result of this thesis, which can be found on the attached file. An introductory material to be given to the audience of the film before viewing can be found in appendix A. The material includes a description of the thought behind the film and a brief introduction of the respondents much like the one presented in section 4.1.1. Additionally it includes some useful information that can assist in job-hunting in the field of SDM.

4.2.1 Teachers parenthesis to the documentary

One of the objectives of this thesis is to identify strategies so the university proactively can prepare the students for their future working life. During the interviews some findings regarding universities role in the preparation for the students' professional career were made. This material did not find a natural place hence the primary target group of the film is students and not educators these findings are presented in this section instead. This section can be seen as a teacher's parenthesis to the film and present the respondents' main ideas regarding how universities can prepare students.

When discussing universities role in preparing students for their professional lives a unison opinion became quite clear among the respondents: *To have an interdisciplinary understanding is important to be successful in the field of SDM.* The ability to understand how society works, how businesses think regarding stakeholders and shareholders' interests was strongly emphasised by the respondents. Additionally were strong communicative skills and a broad knowledge base so that communication with different people on their terms is possible was also held for crucial to manage well.

One of the respondents declared that they feel that universities today lack in the understanding that business needs to be integrated also in educational programmes not directly related to business since the understanding for how companies operate is key to success in any field. Another respondent pointed to that the combination of deep environmental knowledge and an overall understanding for business is a clear key to success in the field of SDM and mentioned a education plan more integrated with business as one way to achieve this.

Interdisciplinary understanding can also be reached within the current curricula for the master courses. To enlarge the classroom by including field visits where the companies products becomes secondary and the companies functionality and organisational structure is put in focus is recommended. This is in contrast to traditional fieldtrips (or guest lectures') where the focus tends to be on the companies' products and not as much on the actual function of the company or the job performed on daily basis.

A strong alumni network is also mentioned as efficient since the student personal networks will be expanded as they have the chance of gaining an insight in possible career paths and the chance to themselves ask the questions regarding the upcoming professional live that they might have. Maria Smith, environmental and CSR manager at ICA, has held a guest-lecture at her former university, Luleå Technical University, on the topic *a normal day at work* (a short version of this lecture can be seen in the film). This is something that can be adapted to any master program with a good relation to its alumni's. With this in mind it becomes evident that to have a strong alumni network, established by the school, not only would be beneficial for the students but also could be lucrative for the master programs.

4.3 Post Documentary discussion session

The idea of the discussion session is to give the students an opportunity to reflect over their hopes and concerns regarding their future careers together with other students and get a new perspective to what a future employment might hold.

4.3.1 Conducting the discussion session

To maximize the exchange between the students they should first regroup in to clusters of three to five students that normally do not know each other. This is preferably done before the viewing to save time and to give a chance for instant reflections.

The primary questions that can be discussed are:

- Do you already know what you want to work with?
- What do you expect the working life to be like?
- Were the challenges presented in the film what you expected?
- How would you like your education to prepare you for the coming career?

The questions can be displayed to the students on a power point or overhead, and there is no need to hand the out in paper form. However, this is a good opportunity to collect some input about changes in the course curricula or ideas to create theme discussions or guest lecturers.

It is therefore highly suggested that the students collect a written documentation of the last question before the session ends.

4.3.2 Tools to address identified challenges

The challenges brought up in the film regarding communication and argumentation can be addressed through a set of simple exercises which can be conducted either in relation to the viewing of the film or separately. The exercises can be found in appendix B and they all aim to explore the communicative skills of the students and give them a chance to test their communication and argumentation skills in a playful, yet educational way.

The time needed to watch the film, conduct the discussion and one or two exercised carried out the exercises should be two times 45 minutes including 15-minute break and will fit within the time frame of a standard university lecture hour.

4.4 Summary of the main findings of the study

To summarise what is brought up during the interviews and there through create an easier transition to the last chapters of this report this section provides a few bullets summarising the main points brought up in this chapter, including the film.

- The profession is young and has changed a lot over the past 20 years. It has come to move from focusing on operational risk management to strategic decision-making. A trend that is believed to be persistent also over the coming decades.
- The title does not ensure a specific type of job and what is included in the role of SDM can take many forms. This gives career opportunities in a wider range of organisations than many other professions.
- The SDM becomes more of an ambassador for the environmental issues than a strict company employee
- Not all companies are proactive when it comes to sustainability, there are many companies that take a more reactive or defensive approach to sustainable issues, which will affect the SDMs' work. Argumentation for the own issues can be a substantial part of the job.
- Networking can be profitable not only on a career level but also in the everyday work. If data and best practice can be shared between companies the chances of implementing cost effective projects increases.
- Being clear on expectation is important to avoid failure.
- What is taken for granted in projects at university a might be where the real challenge lies in reality.

- How well the job can be performed will not be depending on factual knowledge, but on social and communicative abilities. The professional that manage this well will increase the chances of performing well in this field.
- Interdisciplinary understanding is *key to success* in the profession and students can be prepared for this by their universities by including strokes of real life examples, expanding the classroom to companies by conducting educational role plays or exercises.

5 Discussion

The overall aim of this thesis was to create an information material for students in sustainability master programs that can provide an insight in what career opportunities is in the field of sustainable development, what challenges the profession may hold and how to deal with them.

This was done by conducting qualitative interviews with carefully selected professionals with a background in SDM. The result has been presented in the form of a 25 minute documentary presenting the profession from some different angles as well as the main challenges brought up by the respondents and ending with some career advice. This part of the result has a supplementary chapter where the presented challenges are addressed by suggestion a few exercises providing training in the fields. The result also includes a presentation of what the interviews gave in the aspect of how universities can approach the gap between them and the professional lives and provide a smooth transition for their graduates.

This chapter will discuss in what way the choice of methodology has affected the outcome and bring up some of the findings of this project and discuss them in relation to the literature and area of application.

5.1 How the result has been affected by the choice of methodology

The methodology can be divided into two groups the first regards the scientific research approached chosen for the project, the other is related to use of camera and sound uptake during the interviews. Even though filming might not be considered a methodology in a technical sense this has been an important aspect of the project and will therefore be discussed in this chapter anyway.

5.1.1 Qualitative research approach

Qualitative interviews are difficult to perform and to do them well requires practice. For some investigations they are necessary in order to provide the interviewer with the right type of data. Since this thesis aim to communicate a personal portrait of professions related to SDM a qualitative approach was established as the best alternative. Possible alternatives could have been to choose a quantitative research approach where a larger group of respondents answer questions with standardised predefined alternatives. This approach provides the opportunity see the problem from a more mainstream perspective and map out a general view of the problems and perform numeric analysis of the data. This had, however, not given the project the tone desired to fit its purpose was never an option.

To obtain a result with the highest possible quality two test interviews were conducted before the actual interviews; this gave the opportunity to adjust the areas of focus and gain some experience. What can be established is that this increased the quality level of the interview but if the time frame of the project had allowed one additional test run after the first adjustment of the interview could have increased the quality even more.

The most challenging aspect of this thesis has not been the interviewing itself but the combination of being in charge of both technical issues and the interviewing. To both focus on the quality of the video, the sound and listen enough to the respondent to be able to fast come up with interesting follow-up questions is demanding and opportunities that would have been sized under less chaotic circumstances were lost.

The interviews are what form the foundation of the findings in this thesis. They have on their hand has sprung from the literature review presented in chapter 2, which is the first and most fundamental limitations to the research. It is most possible even probable that the outcome of this study would have been quite different if another research material has been reviewed.

5.1.2 The use of camera and sound uptake

Technical recording equipment is, for many, an unnatural influence in a conversation, but as far as this study goes this has not impacted the respondents in general in negative way, even though some strokes of insecurity could be recognised throughout the interviews. What has affected the quality is however the choice to conduct the interviews in the respondents' second language. The answers from some of the respondents might have been better formulated and more fulfilling if their mother tongue had been used during the interviews. This needs, however, to be put in relation to what the use of subtitles would do for the quality of the output. One major drawback with subtitles is that the words communicated to a large share of the audience no longer would be of the respondents but of the author.

Some technical problems has led to that parts of the material from two interviews were lost. This has naturally affected the result of this project to a large extent. The parts of the material could be recovered other parts had to be replaced, which gave the approach to the objectives another angle than first intended.

Presenting result in a report gives the author a larger freedom to reformulate the answers to a comprehensive format. When editing a film the duration and the quality of the clip must be considered as must a good flow in the story must be obtained so the story is logic enough to follow. This result in that interesting data and reflections that not fit the overall tone and themes of the film will be excluded form the material.

Even though the technical aspect of this approach has created some problems, delays and the need to re-evaluate the material and replace damaged files is the the approach to present the result of this thesis in the form of a film held as is one of the strengths of the project. This makes the result stand out. Considering that the target group of this project is students would a presentation in the form of a report most certainly not appeal to the group. The student that voluntarily picks up a 50page report without being tested on the knowledge on an upcoming exam is a very rare bird.

5.2 General discussion of the result in relation to reality and literature

The remaining part of this discussion will focus on how the result can be put in to relation to both reality and the literature review. What has been said during the interviews can be interpreted literally, what is said there is what is meant. We will now move past this first layer of the result and examine the underlying meaning of what isn't said. The first aspect that will be examined is the role of the profession.

What can be said regarding the respondents work compared to what has been presented in literature is that the respondents have had their whole focus sustainability while almost half of the respondents in the NMC survey reveal that they have more than one area of responsibility; in that sense the respondent in this study are not completely representative for the general situation in the field, but it gives a hint that this field might not have a mainstream or typical outline.

The nature of the profession has been described by the respondents through their personal perspective as being related to some kind of advising function to the top management of the organisation. Common tasks in the field of SDM are work with sustainability reporting, external contacts and having an advising function for the board. These tasks can all be found in the job descriptions of the respondents but even though the nature of the their professions are similar the titles used to describe them differ. Both the more general term *environmental manager* and the more specified title *LCA manager* are being used. This show that the role of SDM is somewhat undefined, it can include many different tasks

The respondents express one area as being the most challenging and the most crucial to mater-communication, something that is shared between the respondents of this study and the respondents of the NMC survey (NMC, 1998; 2008; 2010). The general view regarding this issue is the constant need of having to convince and change attitudes amongst co-workers and board members is the primary challenge. This creates a scattered role where the

time has to be shared between the more hands-on development of sustainability strategies for the company and communication and argumentation with co-workers and board members. The risk of being seen as an old nag becomes evident and without proper communication skills and tools to under build the argumentation the job can be extra tough. To possess these skills becomes the key to success or even the difference between success and failure.

Well developed communicative skills are, however, not an exclusive key to success. To be able to affect the often restricted mentality many organisations have towards environmental and social issues and find the strength to take the debate a personal engagement on a deeper level is also needed. This becomes evident when studying the respondents. They all have a personal commitment that stretches out of their professional role and into their personal lives, or more probable the other way around. Working as a SDM is primary being an ambassador for sustainability and secondary an employee in a company, the profession simply becomes more than “just a job”.

One of the more frequently mentioned tools to obtain sustainability is collaboration initiatives both within and outside the company. None of the respondents are strangers to the idea of collaborating with other companies within the same sector or within the supply chain to reach improve the sustainability ambitions set up in their company. The coming generation with its well developed network of personal and professional contacts (Parment 2008) will have a good base for this type of approach to achieve sustainability; which can lead to an expanded networking approach between companies and organisations coming years. The risk of losing valuable knowledge when the professionals move on in their career (Parment & Dyhre, 2009) could also be less significant with this a well inter-organisational approach since the knowledge will stay within the network and through that within the company and not being pin-pointed to a specific individual at the company.

WBCSD present the theory that there is a *green race* going on between companies where the organisation with the most successful sustainability work is the winner of market shares. If this is the case and sustainability becomes a tool for competitiveness, this might limit the collaboration initiatives between companies in the same sector, but could at the same time encourage initiatives throughout the supply chain. The Question is: What will be the most efficient way of achieving a sustainable business practice: Working together or competing to the sustainable top?

One important aspect of being a SDM is related to communication. The MNC survey, Hitchcock and Willard and the interviewees all stress this fact as being one of the main challenges to the profession but also where the key to success lies. This indicates that the role is not of a technical nature as much as a balancing act where social skills are as highly valued

as factual knowledge. Looking at ESD at university level the communicational issues are often forgotten. Of course training in the form of group and individual presentations on projects are a reoccurring element in all higher educations, but other types of communication exercises are rather scarce.

These issues can be addressed already at university by conducting communication seminars where the alternative ways of communication is addressed. With the learning goal to highlight that the lack of a well functioning communication can seriously affect the outcome of any project to the worse no matter how well planned the project is. This would help the students become aware that it is not the lack of factual knowledge that might be the problem in the future but the lack of soft skills. The understanding possible to extract from performing an exercise can act as a wake up signal and on a higher level than any lecture can provide. As mentioned in the film is a challenge in what you at university perceive as basic.

Considering the importance of being a good communicator to succeed in the field of SDM training students to be good communicators will in the extension lead to alumni's with a large potential to succeed in their professional lives, something that would be a direct benefit to the university itself.

An interdisciplinary approach is missing in today's university education, according to the respondents. To include the business perspective rather than interdisciplinary approach through coordination of economic, social and environmental issues, a more conventional approach to interdisciplinary studies related to SD was suggested. This applied economic approach is believed to contribute to the understanding of how a company works in order to find the right tools to approach the critical voices in the organisation as win them over. This type of approach is supported by both HSV (2003) and Daw, Jucker and Martin (2005) and this *quick fix* of potential future challenges and problems to enhance the chances of a successful career and increase the chances of obtaining a sustainable society is exactly what this project is trying to provide.

To expand the classroom and explore new ways of learning is often used in lower classes. An out of the box approach at university is rarer. Master students have at least spent 15 years in school and a new approach can be a welcome and refreshing interference in the traditional academic studies.

6 Conclusion

This chapter presents the conclusions drawn from the above presented discussion and aim to meet the aim and objective of this thesis. As a final remark a few comments will be made regarding possibilities for further research in this field.

One of the objectives of this thesis was to exemplify the profession of SDM. What can be concluded is that it is a field under professionalization and its sensitivity to societal development and political climate create a role that can look very different depending on the interests of the top management in the organisation.

The main challenges in the field are strongly related to communication and the ability to be able to *take people*, to have good people skills. Communicative qualitative skills can be more or less in our personality but by making individuals aware of when the communicational skills are lacking and the result that this can lead to is an efficient way of addressing the challenge in its womb and through that help professionals to embark upon their professional lives in a more efficient way. To address this in universities can be a direct benefit to the university itself since more successful alumni will spread some star dust back to the university.

Except for communicative issues the importance of having an interdisciplinary approach important when addressing sustainability issues. Universities have a role in fostering these students to become the SDM of tomorrow. To make students aware of the interaction between society and technology is one approach; however, what has been identified as a lack is the understanding for the mentality of the company and how to make business. It is believed that to possess the understanding of how to make business will help the SDM to find the selling point for their issues and through this be successful

This project can be seen as an example of this suggested approach even though it do not provide an actual interdisciplinary understanding. It do, however, grant an out of the box approach to higher education

6.1 Discussion of possible areas to expand this research

To address the gap between university and professional life this type of projects might be applicable also in other fields. Students will always have questions about what to come and it is not only students in sustainability masters that ask themselves questions like: What happens after graduation? Did I choose the right courses? Where can I work?

Even though many of the findings in this thesis could be relevant also to students in other fields the author feels that an adapted investigation to better fit students with other educational background would be interesting, and most likely appreciated among those students. It is not necessary to remake this project in detail and certainly not necessary to create a documentary. What is suggested is to expand the interchange between universities and the Industry in a way that highlight the job itself and not what the company does per se.

To further investigate what the challenges and conflicts in the role of SDM, especially in the aspect of loyalty to the companies vs. loyalty to SD would be interesting and that is relatively unexplored as up to today. Due to the delicate nature of the questions asked a complete anonymity must be obtained to maximize the reliability of such study.

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Appendices

Appendix A: Film programme

Appendix: Exercises

Appendix A

What do you want to be when you grow up?

This is a question that almost all of us one time or another have asked or been asked. As a soon-to-be graduate from half a decade of university studies that question might not be as cheerful to answer as it once was. It is no longer OK to answer *stuntman*, *princess* or *explorer*, even though it is what we deep down still would like to one day become; we have to answer something real. But what comes after university and what does the real world really hold for us?



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Eco Careers

-a movie about opportunities &
challenges in the field of sustainable
decision making

A
film by
Malin Ericson Wagland
Produced by
Henrikke Baumann
Chalmers University of Technology
Sweden, 2011

Towards a sustainable society

Environmental and sustainability issues gain importance in industry and public sectors today and the number of people working with these issues are increasing, so is the number of university degrees related to the field, resulting in a new generation professionals that enter the job market.

The fact that the profession is applied in every sector and the nature of the profession differs widely from situation to situation can make it difficult to see where the years of university studies actually can lead to. The question: *What do you want to become when you grow up*; does not only become relevant, but also difficult to answer since the profession is an undefined cloud of opportunities but also of challenges.

Through the stories of six different professionals with six very different careers this film aim to give an insight in what it mean to start an *Eco Career*, what the job is about and what is difficult to obtain as a professional in the field of sustainable decision making.

About the film

The film contains four main areas: A historical review of the field, a presentation of a selection of career opportunities; the challenges that can come with the role and a few career advices. The people you will meet in the film are presented below.

Björn Stigson

Chair man at World Business Council for Sustainable Development, where he act as an advocate in sustainability issues to boards, committees and government.

Eva Vitell

Environmental manager for Vattenfall Nordic until December 2010 and is now head of new on shore wind farm development projects in Sweden.

Vattenfall is the largest energy producer in northern Europe and has business in hydro, coal, and wind power.

Hanna Jönsson

Project Coordinator at Hydrogen Sweden; which is a non-profit partnership with the mission to assist the introduction of hydrogen as an energy carrier in Sweden. The members and financers are represented in the industry, NGO's and local, regional and national government.

Johan Trouvé

CEO at West Sweden Chamber of Commerce and industry but has several years of experience from environmental management at the Swedish railroad (SJ) and the German transportation company Schenker.

Maria Smith

Maria is environmental and CSR manager at ICA one of Sweden's largest chains of supermarkets since the spring of 2010. Before she entered ICA Maria worked as an environmental consultant for three different consultancy firms during 8 years.

Peter Lysell

Works as managing partner and Co-Owner of Sharing Insight but has almost a decade of experience of LCA manager, Sustainability manager and HR coordinator at chemical company Akzo Nobel.

Cheat box to abbreviations:

Eco Careers are jobs related to SDM. The field of application has no restrictions and can be both on all levels of society.

(NMC)Swedish Association for Environmental Managers

(SDM) Sustainable decision makers, umbrella term for profession related to sustainable development

Appendix B

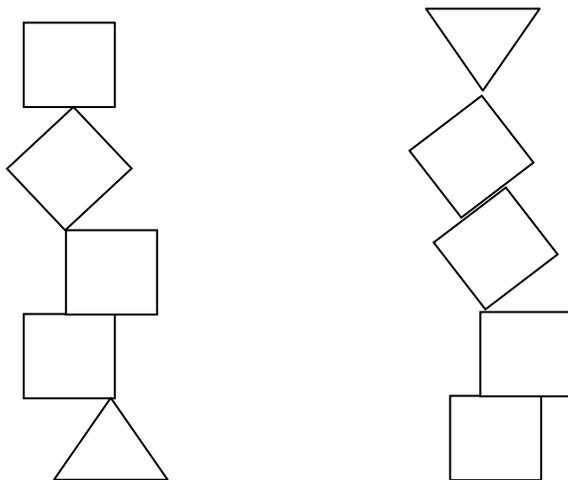
1. Communication Exercise in one way communication

This exercise aims to show how different we experience the same words said to us depending on our personal preferences.

Instructions:

- One person in the group is chosen as the communicator and is equipped with a picture (se next page).
- The communicator starts to describe the picture to the rest of the group (Not overlooking what the group draws)
- The group tries to remake the picture individually. Questions to the communicator are not allowed.
- After the exercise the group compare the result.

The figure to be remade (the figure to the right is for an alternative exercise described below):



Questions for the group after the exercise:

- Did anyone succeed to remake the picture?
- Did the group find the directions clear?
- Did you feel unsure about the diagram?
- How was it to not be allowed to ask questions?

Alternative exercise: This exercise could be transformed in to a two way communication exercise. The group is then simply allowed to ask questions to the communicator. The Question for the group after the exercise will the change slightly. A good way of pointing to the importance of good dialogue is to conduct the two exercises either in parallel in two set of groups or after each other and discuss the differences in outcome.

2. Argumentation Exercise

This exercise is a miniature debate where two people get one topic and without any preparation have to present arguments for their sake. The aim is to train the students in the form of argumentation and to quickly find arguments for their sake.

Instructions:

- The exercise leader prepares a number of suitable topics and writes each of them on a piece of paper. The topics should not be complex or charged with a political or ethical perspective that requires time to discuss. Easy and fun topics are strongly suggested.
- The exercise starts with two people picking one piece of paper and reads the topic out loud for the rest of the group to hear.
- From the topic is known they have ten seconds to plan their arguments.
- Who is pro or against is decided before the topic is known.
- Each of the contestants has 3 times 20 seconds to argue for their sake and come up with a conclusion. The contestant being pro of the topic starts.

3. Presentation Exercise

This exercise is some an exercise in presentation technique, something that is an important a part of many managers work and a reoccurring event. The exercise is simple and can be some in larger and smaller groups, also two and two.

- One person is selected from the group and the others or the exercise leader gives him or her a topic, idem or person to present.
- He or she will hold a one minute presentation on the topic for the rest of the group.

The exercise challenges the creative thinking and aim to make presentation less traumatic for the individuals.

