

# SUSTAINABILITY MANAGEMENT

*Transitions to sustainability?*

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## ABSTRACT

The topic of my research is sustainability. I want to understand this concept. I believe understanding sustainability can best be done within a specific context. Part of this research was conducted during an internship of 8 months at the DHV Sustainability Advisory Group. Here I have researched and participated in the field of *sustainability management*. The main research question is to investigate if sustainability management is a substantial part of the transition to sustainability.

I have used a research framework that is comprised of two parts. The analytical framework offers a governance perspective on transitions in science, technology and society. The research object is characterized as a configuration that works. In this research sustainability management is to be understood as a regime with a specific organizational field, embedded in a patchwork of other regimes. The hierarchy in which sustainability management exists can be described with a multi-level perspective. The larger context is depicted as a socio-technical landscape that exerts external pressure on the regime. In niches innovations are being developed that can influence or change the regime. These forces, when strong enough, alter the regime. In the framework this change can occur along four different transitional pathways, or a sequence of pathways. The second part of my research framework is a discursive framework. The concepts of sustainability and sustainability management do not have universal, absolute meanings. For different actors and in different discussions the conceptions can change. My discursive framework exists of 9 different environmental discourses ranging from the industrial Prometheans that do not underwrite sustainability issues to radical green politics that envision a whole new sustainable social order. The synthesis of the two frameworks offers me a double vision on sustainability management that gives an outsider's perspective that includes both a perspective from the helicopter and multiple perspectives from a variety of actors involved.

My research is a case-study centered around the DHV Sustainability Advisory Group. This advisory group assists large Dutch organizations with their sustainability management and policies. I interviewed 9 persons and conducted an online survey, resulting in 89 responses. Also, I myself was actively involved in several projects. The case-study also encompasses two sub-cases, namely the new international standard for CSR (ISO 26000) and a CO<sub>2</sub> reduction scheme developed by ProRail (CO<sub>2</sub> Performance Ladder).

Using the research framework I constructed five research propositions to test my research theory within the scope of my case. Sustainability management is mostly understood to contribute to the 'Brundtland' definition of sustainability. This is done by integrating the 'People, Planet, Profit' values into the core business of organizations. Strong leadership and stakeholder engagement are key for this. Sustainability management is mostly considered a configuration of meanings, visions and interaction. Also, the anchoring role of the core business indicates a conception of a concentric configuration of sustainable hard-, soft-, org- and socioware. The organizational field of sustainability management are increasingly consultancy and creative advisory firms. The government is attributed a marginal role. In the sustainability management regime the focus is on a new creative sustainable business case, that is opposed to the calculative and rational old economic model. From the data it is very clear that within the

researched scope the 'quest for sustainability' discourses are the most present, especially the 'ecological modernization' discourse. However, the rationalism discourse still have a grounding. At DHV, which is considered a leader in sustainability management the actors in their hearts adhere to a radical 'green politics' discourse. But this should be considered as a personal drive for a sustainable future. In their daily work the reformists' discourses have the upper hand, because that is the language the rest of the world understands. The transition to sustainability is perceived to go to slow, but gradual. This is due to inertia in the regime and landscape. The sustainability management regime mostly undergoes adjustment and reconfiguration pathways. Sustainability management is geared towards sustainability, but that its role is not to transform the society or economy as a whole. Rather than that, I believe sustainability management should lead by example and keep developing and implementing 'hopeful business cases monstrosities'. Although it might be frustrating not to be able to directly influence the landscape, sustainability management actors should innovate towards sustainability and anticipate windows of opportunity.

I have also briefly investigated two sub-cases, that can be interpreted as particular innovations that have change (a part of) the sustainability management regime. These sub-cases are the ISO 26000 and ProRail's CO<sub>2</sub> Performance Ladder. The ISO 26000 has been developed by the 'sustainability development' and 'democratic pragmatists' discourses. After the development the 'economic rationalism' and 'ecological modernization' were glad finally a standard was developed, but were less happy with the lack of recognition of their sustainability efforts. New innovations were developed to meet this need. These development indicate a sequence of reconfiguration and de-alignment & re-alignment pathways. The 'economic rationalists' are clearly present in the development and workings of the CPL. Organizations are triggered with economic incentives and the government should not stand in the way. The shock of the CPL initiated a substitution pathway, which in now followed by a reconfiguration pathway in which other industries are symbiotically added to the regime. I have performed these analyses on the sub-cases to show that my research framework is general enough to be used for multiple phenomena.

I also offer some reflection on my research. The two research frameworks are from the field of Science and Technology Studies and Philosophy of Technology. I believe my research framework is an example of how these to research field, that form the fundamentals of my education, can complement and enhance each other. STS offers can offer a broad and conceptual understanding of dynamics in society and technology. Philosophy of Technology brings in more in dept perspective on the motivations and values present (or maybe more important: not present) in these dynamics. Finally, I give an evaluation of the validity and reliability of my research and make suggestions for further research into the conceptual work as well as in the empirical methods for data collection.

## **PREFACE**

- Mary Schmich (the sunscreen song) -

*Be careful whose advice you buy, but be patient with those who supply it.*

*Advice is a form of nostalgia.*

*Dispensing it is a way of fishing the past from the disposal,*

*wiping it off, painting over the ugly parts*

*and recycling it for more than it's worth.*

My student life has been long and full of experiences. With this thesis I will end a chapter and start a new one. During my college years I have been given many advices, but I am proud to say I have always followed my own course. This certainly not progressed along predetermined lines. I was advised to finish a Industrial Engineering master, as a PSTS master would prolong my stay at the Twente University. What an enrichment PSTS has proven to be! An internship in a commercial environment with a philosophy background? Numerous people frowned their eyebrows and politely showed me the door. But at DHV I found myself surrounded with akin spirits!

I want to thank my former colleagues from the Sustainability Advisory Group for the great time I had during my internship. Special thanks go to Rob van Tilburg and Marieke Hoffmann for their support with my thesis. I also want to thank my supervisors Stefan Kuhlmann and Philip Brey for their time and feedback. But my greatest gratitude goes out to my mother and Kirsten for their infinite patience and unconditional support.

What the future will bring is still unclear, but I will step into it with the same curiosity and willfulness as I have always done. The advices I have given in this thesis, as well as all the advices I have received myself, are always based on the past. Every advice is welcome! But know that the past holds no guarantees for the future.

Matthew Vuijk,

Enschede, May 2011

- Mark Twain -

*History doesn't repeat itself, at best it sometimes rhymes*

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## **1 1. INTRODUCTION**

This research is the finalizing project for the master Philosophy of Science, Technology and Society. The topic of my research is sustainability. I want to understand this concept. I believe understanding sustainability can best be done within a specific context. Part of this research was conducted during an internship of 8 months at the DHV Sustainability Advisory Group<sup>1</sup>. During this period I formed my theoretical frameworks and collected the empirical data. Also, I was involved in several advisory projects in which I supported the consultants in their work<sup>2</sup>. Sustainability has manifested itself in this context as a particular mode of governance, namely sustainability management. I believe sustainability management is worthwhile to investigate if we want to understand sustainability, because sustainability management is the current most promising way for creating a more sustainable society and economy. This claim needs grounding, which I want to give with my research. The main question I want to answer with this research is:

*Is sustainability management a substantial part of the transition towards sustainability?*

In this chapter I will give some background information on sustainability and the DHV Advisory group. However, an extensive elaboration on this case of sustainability management will be given in Chapter 3, where I describe my research methods and empirical boundaries. In sections 1.3 and 1.4 I will explain the relevance and scope of my research. Then I will elaborate on the actual research questions. Finally, I will give a brief overview of the outline of this research report.

### **1.1 Sustainability**

Sustainability is an container concept that is claimed to have a range of solutions to a wide variety of so called crises, such as global warming, credit crisis, resource depletion and pollution. I want to do research in this field, because I believe it is one of the most present topics in a wide range of discussions. I aim for a broad understanding of sustainability, and sustainability management in particular, so I am able to join these discussions and hopefully contribute insightful positions. The reason I want to understand sustainability management in particular, and not for instance policies, is because I believe that the economy and corporations have the biggest potential to push sustainability forward. This is for two reasons. First, the gap to a sustainable mode of existence is the biggest within corporations. Second, the effectiveness of a more sustainable business case for sustainability is society also is the highest at corporations, due to their extent into society and economic power.

Fossil fuels will run low in 2050, the growing world population will cause an increase in food and energy demands, scientists are warning us for the consequences of (human related) global climate change, and due to the globalization the national authorities are losing their grips on private corporations. For the pessimists among us these are signals indicating big threats to human life as it is now in the near future. On the other hand, optimists see opportunities for improving life in a dynamic and more connected global human collective.

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<sup>1</sup> Dutch: DHV – Adviesgroep Duurzaam Ondernemen, based in the DHV Headoffice in Amersfoort.

<sup>2</sup> See APPENDIX iii for more details on these projects.

Global consumption has reached a level that it poses a serious threat in the near future to contemporary human life on this planet. If our way of life doesn't change, it is only a matter of time until mankind will supersede the capacity of earth. Fortunately, there is an increasing awareness of the threats we have created for ourselves. In multiple contexts, such as the political arena<sup>3</sup>, corporate life<sup>4</sup> and the consumer market<sup>5</sup>, the movement towards a more sustainable mode of conduct is gaining momentum. This social dynamic is the subject of my research.

In a global economy the boundaries between state and market are fading. Corporations as the increase in size and extent, are more and more held responsible for their actions and their direct or indirect result. The restrictions imposed by national legislation no longer form the boundaries of the space in which a corporation is allowed to move. Society and consumers demand an active attitude towards social and environmental obligations. This demand is reacted upon by the incorporation of social and moral values and responsibilities in the in and outs of a company. A few examples are the adaptation of business concepts like Cradle-2-Cradle, Corporate Social Responsibility (CSR) and more attention to transparency and diversity. These examples show that social and/or moral demands in a way have been manifested in the corporate world in order to find a sustainable relation between corporations, political bodies and the general public.

## **1.2 DHV Sustainability Advisory Group**

DHV is a consultancy and engineering services provider. DHV's expertise includes infrastructural design, spatial planning and environmental management including water, waste and sustainability management. The headquarters is based in Amersfoort, the Netherlands, but DHV has a worldwide network of offices in Europe, Asia, North America and Africa. In total, DHV has approximately 5500 employees in 73 offices over 9 home countries. The mission of DHV is "to provide multidisciplinary services for the sustainable development of our living environment, in a close relationship with clients, employees, and partners, based on mutual loyalty, while providing a solid return to our shareholders"<sup>6</sup>. These clients are mostly (semi) governments, the public sector, industry, contractors, commercial services, and international development agencies. The activities of DHV are characterized by the commitment to social responsibility, integrity and accountability. DHV is recognized in the Netherlands as a frontrunner in sustainable development. Their department for sustainability advice is innovative and cutting-edge and serves large Dutch corporations to become leaders in their sectors in sustainability. To conduct my research at DHV within the Sustainability Advisory Group has been a great opportunity to investigate sustainability and sustainability management at the frontier of sustainable development.

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<sup>3</sup> Think for instance of: The Rio Declaration on Environment and Development (1992), Johannesburg Declaration on Sustainable Development(2002), Millennium Development Goals (2000) and the ILO Declaration on Fundamental Principles and Right at Work (1998).

<sup>4</sup> Examples are sustainability indices such as the Dow Jones Sustainability Index, the Carbon Disclosure Project, or the increase in CSR activities connected to management remunerations and sustainability reporting.

<sup>5</sup> Examples are the increasing demand for product with label of good governance such as FSC (forestry), MSC (fisheries), EU Ecolabel (consumer goods) or local and biological produce.

<sup>6</sup> DHV (2009). Annual integrated Financial and sustainability report.

The division 'DHV Sustainability Consultants' in which I have been involved during the period of my research is a subdivision of the business unit 'Environment and Sustainability'. The main activity of the sustainability consultants is to give strategic advice to (mostly) private-held corporations on how to draw up the corporation's social responsibility policies. For example, the consultants give advice on measures regarding the client's CO<sub>2</sub> footprint, transparent external communication by implementing the GRI G3-directives for annual reports, participation in de Dow Jones Sustainability Index (DJSI) or the Climate Disclosure Project (CDP) or the implementation of CSR standards like the ISO 26000 directives. The clients are mostly large private-held Dutch enterprises, but SMEs are an increasing group of clients. My activities encompassed supporting the consultants in their work, practicing philosophy in a commercial environment and gaining insights in sustainability as a business activity.

### **1.3 Research Relevance**

The basis of my academic education is my bachelor's degree in Industrial Engineering and Management (IEM), including a specialization in (chemical) process engineering. The learning objective of this bachelor is to analyze problems and define and implement required improvements for the design and control of operational processes in the (chemical) industry sector. The subsequent master programme of PSTS has been a broadening and deepening of the bachelor programme. Broadening in the sense that the modes of problem analyzes have been complemented with social sciences perspectives. Deepening in the sense that managerial and industrial concepts have been enhanced with philosophical and ethical conceptions. With this research I want to consolidate these two complementing aspects in a specific management domain, namely sustainability management. In my bachelor I have been mostly educated in the (neo-classical) economical view on problem solving and rational process optimization with planning or positioning strategies. PSTS has broadened my vision by showing the relevance of the analysis of the scientific, technological and social aspects of decisions. Also, philosophy, and especially ethics, has deepened these visions in the sense that it gave me insights into the intended or unintended implications of directionality of the considered decisions. An objective of my master thesis is to learn to explicate the concept of sustainability, and its conception in management. By doing I tried to enhance terms of IEM with notions from Science and Technology Studies and Philosophy of Technology.

Sustainability is a contested concept that has a broad ontology. If something is sustainable, then what does this mean and for whom does it matter? In this research I have investigated the concept of sustainability and several of its conceptions. I believe it is an important subject for the field of ethics of technology. Ethics of technology investigates values in technology and responsibilities. I believe that the concept sustainability is an container concept that represents a certain set of values and responsibilities in technologies relevant for our contemporary culture and economy. Sustainability is a value-laden concept that represents a certain instigation of a 'good life'. In this research I want to make the connection between often abstract philosophical ideas and the empirical world of sustainability management in order to understand the (philosophical) bigger picture of sustainability in practices. This will done by looking at the current state of affair of sustainability management from a ethical perspective.

sustainability management implies a certain kind of governance. The analyses of governance are central to the research of Science and Technology Studies (STS) as conducted at the department Science, Technology and Policy Studies (STePS) of the University of Twente. The dynamics and forces involved in sustainability management have been analyzed with STS concepts such as 'Transitions' and 'Multi-Level Perspective' (hereafter MLP) in order to better understand the changing governance of sustainability in industry and specifically within the scope of the DHV Advisory Group for sustainability. The aim is to draw conclusions from my research that can contribute to the understanding of the dynamics in sustainable development and in the way socio-technological change (towards sustainability) can be assessed. This will be done by looking at the current state of affairs of sustainability management from a governance perspective.

The third objective of this research is relevant for the DHV Advisory Group for Sustainability. This research is relevant for DHV as it offers an ethical and socio-technological reflection on their 'hands-on' work. In the fast-paced, customer-demand driven advisory work the advisors sometimes get the feeling of missing explicit grounds for their decisions and advice. This research hopefully will offer them much needed retrospective evaluation for future work for a more sustainable society as it will offer a substantive context of their conception of sustainability and a grounding of their daily occupation in the grand scheme of the transition towards a more sustainable society. In my conclusions I will state my suggestions for DHV more explicitly.

#### **1.4 Research Scope**

It would be far beyond the scope of a master thesis to give a full account of the global movement towards sustainability. This research needs boundaries. I have distinguished boundaries with regards to the ethical field, the governance perspective, and the relevant empirical data that is the subject of the MLP analysis.

In this research I will also perform an inquiry into the morality behind sustainability. The ethical work in this research can be categorized as descriptive ethics. Sustainability can have very different meanings. A well established definition of sustainability can be found in the United Nations report *Our Common Future* and is commonly known as the Brundtland definition:

*"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*  
(WCED, 1987)

In this research this definition is part of a given empirical context, but it is not treated as a universal truth. Rather than that, it is interpreted as a specific manifestation in society of a normative ideal. Although the Brundtland definition is widely accepted it should not be considered a given fact that it is the absolute and best definition of sustainability. In discussions about the climate change, environmental issues and such there are many voices to be heard. Ethics and philosophy have the asset that they can be used to discern, validate, and compare these different discourses. In this research I will mostly use the work of Dryzek and Desjardin to delineate the relevant philosophical context in which this research will evaluate 'sustainability'. As John Grin, Jan Rotmans and Johan Schot (2010) also have remarked in the concluding chapter of their book, John Dryzek gives an encompassing overview of the different

environmental discourses (Dryzek, 2005). These discourses deviate from an industrial 'Promethean' discourse along two dimensions. The first dimension indicates if a discourse wants change in a reformist or radical fashion in terms of the Promethean discourse. The second dimension deals with the kind of picture an environmental discourse paints for our future society. Will our political-economical arrangements in this picture be more or less the same or will these arrangements have to be redefined? These two dimensions classify the environmental discourses in four quadrants as shown in the following Table 1-1.

**Table 1-1: Eight environmental discourses opposing the industrial discourse.**

	<b>Reformist</b>	<b>Radical</b>
	<i>Solving environmental problems</i>	<i>Global limits</i>
<b>Prosaic</b>	<ul style="list-style-type: none"> <li>• Administrative rationalism</li> <li>• Democratic pragmatism</li> <li>• Economic rationalism</li> </ul>	<ul style="list-style-type: none"> <li>• Survivalism</li> </ul>
	<i>The Quest for sustainability</i>	<i>Green radicalism</i>
<b>Imaginative</b>	<ul style="list-style-type: none"> <li>• Sustainable development</li> <li>• Ecological modernisation</li> </ul>	<ul style="list-style-type: none"> <li>• Green consciousness</li> <li>• Green politics</li> </ul>

I will not discuss these eight discourses in detail here. I have done this extensively in the papers prior to this research. In the following chapter I will elaborate on how this range of discourses will be operationalized to frame my research.

Geographically and politically, I will limit my research within the borders of the Netherlands. This may seem somewhat limited since more and more policies on environment and sustainability are arranged on European (e.g. EU Emission Trading Scheme that I have researched in my bachelor assignment) or even global levels (e.g. IPCC reports or UN resolutions like the Kyoto protocol on global warming). However, most of these macro-levelled policies have been incorporated in Dutch policies. They have been made relevant for the situation in the Netherlands and are often referred to<sup>7</sup>. This implies that focusing on the situation in the Netherlands does not disregard the higher landscape levels like a European or higher level.

I will focus my research on environmental management characterized as a technology. Within this technological realm I want to limit my research to the network of DHV. This limits my research to the actors directly linked to DHV, such as their clients, competitors, colleagues, but also policy actors. This limitation has several reasons. Firstly, using DHV as central node can function as a guarantee of consistency in aspects like terminology, implementation methods, documents or policy interpretations, which will help me in delivering a structured analysis. Secondly, the DHV consultants can provide me with background knowledge of their network so I can give an adequate analysis. Thirdly, DHV can provide me access to the key persons that are essential for my research. The transition to sustainability is seen as a strategic move. Without the help of DHV I believe it would be practically impossible to speak with the actors in higher management that actually make the decisions. The empirical boundaries of this research are

<sup>7</sup> See for instance the 'Wet Milieubeheer' on <http://wetten.overheid.nl/BWBR0003245/> or the 'Emissiehandel' on <http://www.senternovem.nl/emissiehandel/>

delineated by the organizational boundaries of the company DHV in the Netherlands. Even more specific, the scope is limited to the department of sustainability consultants and their direct environment. This includes some of their clients. This department provides (strategic) management advice to organizations (mainly large and commercial) that want to make their organization more socially responsible or sustainable. In other words, this department of sustainability consultant gives sustainability management advice. This management advice encompasses a wide range of expertise. I will try to focus (but not exclusively) on two clusters of advice, namely advice regarding the ISO 26000 and the ProRail CO<sub>2</sub> Performance Ladder (hereafter: CPL).

The scope of this research also has to be defined in terms of the multilevel perspective, a research heuristic (see e.g. Geels & Schot 2007) which will be developed in some detail below. It has to be defined what the landscape, regime and niches levels are. Empirically the boundaries of this research have been set. But how can this empirical object of analysis be perceived in the nested levels of the MLP? Transitions take place on the level of socio-technical regimes. In this research the work of the department of sustainability consultants is part of a larger regime in which the consultants operate. In other words, they operate in a specific organizational field. The level of organizational fields has been defined by DiMaggio and Powell (1983, p. 148). This definition has also been used by Geels and Schot (2007) and will also be used in this research. An organizational field consists of: "those organizations that, in aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products". It is the specific organizational field surrounding the DHV sustainability advisory group. This will be explicated in detail in section 3.2 where I describe the relevant case.

So, what is analytically relevant for this MLP research in the empirical world are those organizations that, together with the department of sustainability consultants, constitute a recognizable sustainability management practice. This practice has been pragmatically bounded in two ways. Firstly, the investigations will only include the actors and organizations that are directly connected to the department. Secondly, the analysis will focus mostly around advice and products concerning the ISO 26000 guideline and the ProRail CPL.

## **1.5 Research Questions**

There is a movement in science technology and society toward a greener and cleaner elaboration of our socio-techno networked societies. Innovation and sociological studies have signaled this direction towards sustainability (see e.g. (Geels, 2010), (Grin, Rotmans, & Schot, 2010)). With my research I want to contribute to the investigations into sustainable development in order to 'make the world a better place'. With the attitude "to solve the problem, you have to know the problem" I want to give an answer to a basic question of sustainability. The basic question being:

*What is sustainability?*



Posing this question implies that I will hold a critical view on the most well established Brundtland definition of sustainability and the way we can create a more sustainable society<sup>8</sup>. An assumption in this research is that the different views co-exist alongside each other, and not in a mutual-exclusive fashion. Particular views have briefly been mentioned in the previous section as environmental discourses. Maarten Hajer has an interesting view on this co-existence of different conceptions. He believes that one view on environmental problems does not have to exclude another. Various actors are very likely to hold their own perception of what the problem 'really' is. But somehow this variety does not (or should not) limit the co-ordination between them. This is what he refers to as the 'communicative miracle'. "The communicative miracle of environmental politics is that, despite the great variation of modes of speech, they somehow seem to understand each other" (Hajer, *The Politics of Environmental Discourse*, 1995). This notion of a communicative miracle shows that people do not have to agree on with each other to come to a solution for environmental issues. In order to understand this co-ordination between what Hajer calls 'discourses' it is important to first identify and delineate these relevant discursive frameworks.

Maarten Hajer suggests a method of researching discourses by doing an 'Argumentative discourse analysis' (Hajer, 2006). However, in this research I want to address the analysis a bit differently. Hajer suggests investigating the empirical world without any a priori presumptions about how different actors and their positions are categorized. Instead, I have chosen to look at the concept sustainability from two pragmatically chosen perspectives. This has been a pragmatic choice, based on intuition and informed by my education. The first perspective is the philosophical or ethical perspective, the second the governance perspective. Moreover, these two perspectives coincide with the two practices in which I will find myself in the period I will finalize my master thesis, these two practices being 1) the corporate practice at DHV and 2) the philosophical practice at the University Twente. Also, these two perspectives constitute the multidisciplinary character of my education.

These two perspective lead to the following sub questions:

1. *From an ethical perspective, what is meant with sustainability?*
2. *From a governance perspective, what is meant with sustainability?*

A second aim of this research is to understand how the different kind of actors oppose, interact and understand each other. Or to speak in de words of Hajer: how the communicative miracle comes about. The discourse analysis of Hajer tries to find the answer to this question by identifying the dominant discourses and how they structure the discussion and become institutionalized (Hajer, 1995). Although his theories and concepts are very powerful in describing a specific innovation and how it came to be, a discourse analysis does not suffice if we want to answer the more general questions about sustainability. It does not suffice if we place the *management towards sustainability itself* under investigation.

In a recent special edition of the journal *Research Policy on Sustainability Transitions and Innovation Studies* suggestions are given how to address this more general investigation of the

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<sup>8</sup> "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (WCED, 1987)

concept of sustainability and why it is developing goal for our socio-technical societies. In the introductory article Smith et al. claim that sustainability in itself already is normative: "sustainable development emphasizes *explicit* interest in the normative direction of innovation. The challenge for innovation no longer rests solely in economic potential, but also in the societal changes induced by innovative activity and the consequences of this for environmental and social sustainability" (Smith et al. 2010, pp3). They suggest broadening the ways innovation studies, like that of Hajer, along two dimensions, a broadening of the problem framing and of the analytical framing. The actual considerations of these two ways of framing will be discussed the operationalization chapter of this research where I will discuss the analytical and discursive framework. Central to this special edition is the use of a multi-level perspective to analyze the movement towards sustainability, because "a broad, multi-level perspective on socio-technical transitions (MLP) claims to be able to analyze the broader problem framing of innovating entire systems of production and consumption" (Smith et al. 2010, p. 2). The push towards sustainability is such an encompassing innovation. Therefore I will use the MLP heuristic as a tool for analyzing sustainable management.

This choice raises the MLP specific question: which socio-technical system that consists of niches, regimes and landscape should I research if I want to research sustainability? For this I want to stay within the scope of my own educational background of Industrial Engineering and Management. The socio-technical system of choice is the organizational system of corporate and policy actors and their spheres of action with regards to sustainability. I want to investigate the niches, regimes and landscapes of management, or to be more specific sustainability management. This choice leads to the following sub questions:

With regards to the socio-technical system of sustainability management,

3. *what are identifiable management niches;*
4. *relevant management regimes and;*
5. *relevant socio-technical landscapes?*

Admittedly, the heuristic of the MLP might rather be associated with research into innovations in a technology like the water supply in the Netherlands (Geels 2004), sewage systems (Geels 2006), energy supply systems (Verbong and Geels 2006) and biogas developments in Denmark (Raven and Geels 2007), than with research into management and bureaucracy. But this does not mean that it can not be done. In speaking about management we can also use STS concepts like innovation, cultural-social embedding, intended and unintended consequences and technological terms like products, implementation and user scripts. For example, DHV sees management advice as a product. CSR Managers are their clients which they want to provide with cutting-edge innovative products, like CSR benchmarks or CO<sub>2</sub>-footprint calculations. And within DHV advice on sustainable management is seen as a niche which has the potential to change the regime in which corporations do business. The analysis with the MLP will give an insightful presentation of the current state of affairs of environmental management.

A logical follow-up of the first 5 sub questions is to reflect on the results. I will do this by answering the following reflexive questions.

6. *From the ethical perspective on sustainability, what can be said about the current state of affairs in sustainability management?*
7. *From the governance perspective on sustainability, what can be said about the current state of affairs in sustainability management?*

## **1.6 Overview of Report**

This first chapter functions as a introduction to the subject of sustainability management and the scope and relevance of my research. In the following chapters I will present my research methods, results and conclusions. Chapter 2 consists of two parts, my research frameworks and the operationalization of my research propositions. In chapter 2 I have elaborated on the analytical and discursive framework I have used in this research. With these frameworks I have translated my research questions into five testable research propositions. In chapter 3 I have described the research strategy and data finding methods with which I have tested my research propositions. This chapter also includes a further delineation of my empirical scope and an introduction to the investigated case of the DHV Sustainability Advisory Group. Chapter 4 holds my empirical finding, including the analysis using the two frameworks. In this chapter 4 the five research propositions are tested. In Chapter 5 I have displayed the sustainability management examples of the ISO 26000 and CPL in more detail. These examples have an illustrative function, by showing how the frameworks can frame more concrete examples. In chapter 6 I present my conclusions by answering the research questions presented in this chapter 1. I will give some reflections on my research methods, the use of my frameworks and some suggestions for further research in chapter 7.

## 2 RESEARCH FRAMEWORKS AND OPERATIONALIZATION

In this chapter I will present the two frameworks with which I will analyze my empirical findings. These frameworks are necessary for the framing of my research questions in order to translate them into testable research propositions. My research framework set is not specifically build for the case investigated in this research. In line with Smith et al. (2010) I have included a framework that can assess the normative directions in developments as well as a framework that can deal with multi-leveled character of these developments. The combination of these two different frameworks is a general framework that can be used to investigate other developments regarding sustainability. So is the reason why I will discuss the empirical boundaries and specific case in a separate following chapter (chapter 3).

First I will describe the analytical framework that enables me to interpret sustainability management as a configuration that works. In this research sustainability management is to be understood as a regime, embedded in a patchwork of other regimes. The hierarchy in which sustainability management exists can be described with a multi-level perspective. Change in the configuration occurs in several transitional pathways. These analytical concepts will be described in part 2.1. In part 2.2 I will elaborate on my (normative) discursive framework. This is the operationalization of the nine ideological discourses mentioned in the research scope in chapter 1. In part 2.3 I will briefly describe the concept of sustainability management. Part 2.4 encompasses the operationalization of my research questions. With the research frameworks I translated the questions in testable propositions.

### 2.1 Analytical Framework

#### 2.1.1 *Technology as a Configuration that works*

A technology can be characterized as a configuration that works (Rip & Kemp, 1998) (Rip A. , 2005). This configuration consists of a heterogeneous set of components. If a technology works it has a clear function. In order to use the MLP to investigate sustainability management, sustainability management has to be interpreted as a technology. This will be done by expressing sustainability management in technological terms. In other words, sustainability management will have to be described as a configuration with a clear function that consists of a heterogeneous set of components. There are four, overlapping and mutually non-excluding, conceptions of configurations that work. In order to perceive sustainability management as a technology I will have to find evidence that sustainability management can be seen as:

1. **A functional hierarchy.** This hierarchy consists of components, devices, stand-alone artifacts and systems. Different elements are nested in the hierarchical network of systems. Different elements have clear and delineated functions.
2. **Hard-, soft-, org- and socioware** with the ability to transform its surrounding. In this case there has to be evidence of 'sustainability management-hardware' around which a configuration is build up with the purpose to let to hardware work as properly as possible.
3. **(Intended and unintended) meanings, visions and interactions** between different components. In this conception the individual subjective meaning of sustainability

management will have to be found. Are there intended scripts and visions for the future embedded in the practices of sustainability management and what are the implications?

4. Technology is a key aspect in our evolving **socio-technical landscape**. This conception implies a research into the position of sustainability management in the corporate culture. It has to be found out how sustainability management is given a prominent role in the change strategy of corporations (i.e. how do corporations use sustainability management to change the landscape). And what is this landscape, what are the metaphorical mountains, rivers, bridges, highways etc.?

Sustainability management can be characterized as a configuration that works, that can be understood as in four different ways (Rip & Kemp, 1998) (Rip A. , 2005). One way of making the conceptual connection between this STS concept and a day to day practice such as sustainability management is through the concept of a technological regime (Geels, 2002). If a technology is a configuration that works, then the technological regime is the particular natural order present in the configuration. The claim that sustainability management exists as a configuration in corporate world suggests that there is such a distinct thing as a 'sustainability management regime'.

Rip and Kemp (1998: 340) give the following definition of regime:

A technological regime is the rule-set or grammar embedded in a complex of engineering practices, production process technologies, product characteristics, skills and procedures, ways of handling relevant artefacts and persons, ways of defining problems; all of them embedded in institutions and infrastructures.

When interpreting sustainability management as a technology this definition of a regime becomes:

*A sustainability management regime is the rule-set or grammar embedded in a complex of management practices, sustainable process management, management output characteristics, skills and procedures, ways of handling relevant artefacts and persons, ways of defining problems; all of them embedded in institutions and infrastructures.*

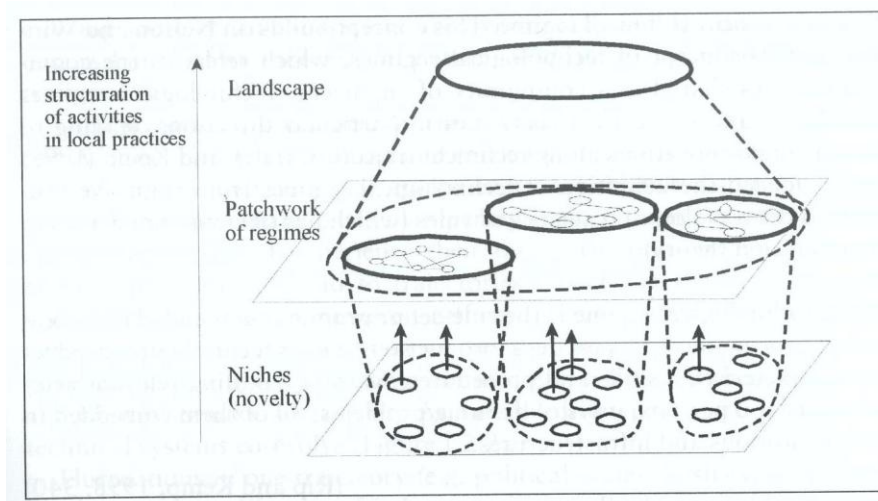
This interpretation of sustainability management as a regime is the object that will have to be found with the analysis of the empirical data.

#### 2.1.2 *The Multi-Level Perspective*

A technological regime is not an isolated phenomenon. It is part of a socio-technological landscape and is surrounded by other regimes. Frank W. Geels introduces the MLP as a conceptual synthesis or an integrative perspective of several different literatures on socio-technical system innovations (Geels, 2004). Geels distinguishes three basic approaches on system innovations: point source, replacement and transformation approaches. He integrates these perspectives in a multi-levelled conceptual framework which can be used as a heuristic for analyzing the complex dynamics of socio-technical change. Geels distinguishes three levels: technological niches, socio-technical regimes and social-technical landscapes. Niches can be located in R&D departments or small scale companies. They contain well protected 'hopeful monstrosities' and act as incubation rooms for (radical) innovations. Regimes are semi-coherent

set of rules carried by different social groups. These regimes provide orientation, alignment and coordination to the activities of relevant actor-groups accounting for the stability in socio-technical systems. Think of institutions, infrastructure and engineering practices. Regimes provide directionality to technological trajectories. The socio-technical landscape is a set of deep structural trends, (socio-economic) macroscopic waves, similar to Kondratiev waves. "the socio-technical landscape contains asset of heterogeneous, slow-changing factors such as cultural and normative values, broad political coalitions, long-term economic developments, accumulating environmental problem growth, emigration. But is also contains shocks and surprises, such as wars, rapidly rising oil prices" i.e. 'the big outside world'. The hierarchy of the three levels (niches, regimes and landscape) is depicted in Figure 2-1.

**Figure 2-1: Multiple levels of niches regimes and landscape (Geels, 2002)**

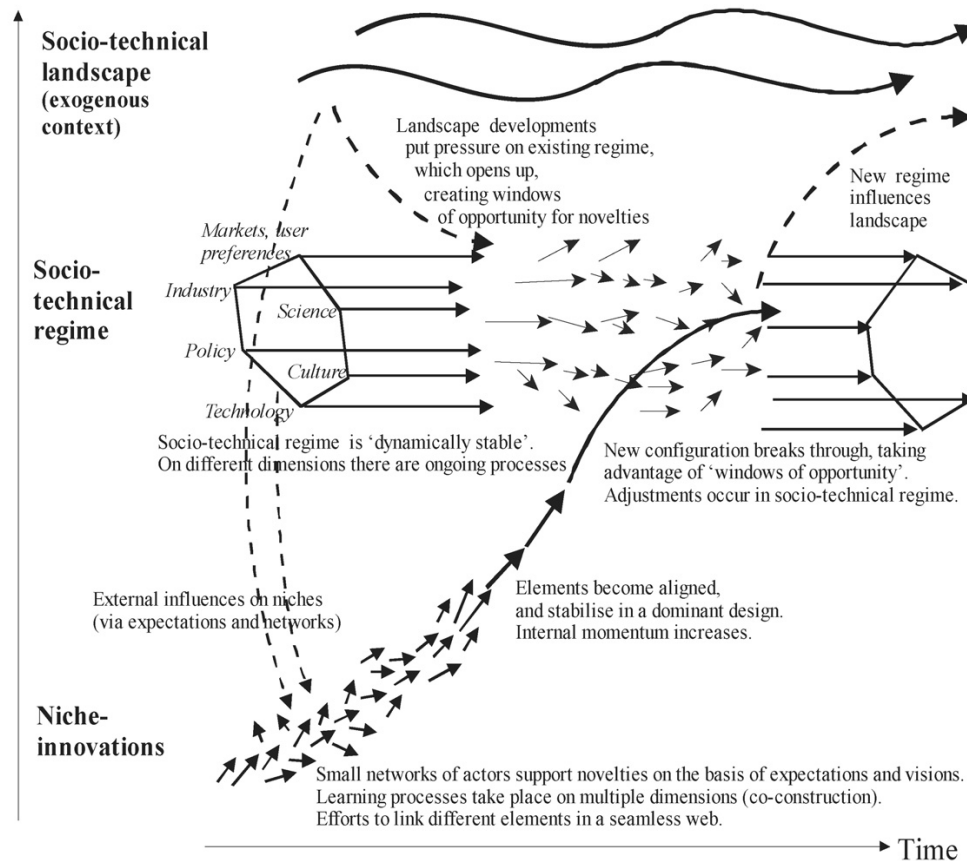


The three levels should be interpreted as a nested hierarchical set. Typically new technologies pass through them linearly passing 4 phases in time: 1) emergence of novelty in an existing context (niche creation) 2) technical specialization in market niches and exploration of new functionality (take-off), 3) wide diffusion: breakthrough of new technology and competition with established regime (acceleration), 4) gradual replacement of established regime, wider transformation (stabilization). The understanding of these phases has been taken from economical studies and describe the transition as product or technology typically undergoes.

Geels combined the MLP of niches, regimes and landscape with the transition phases in one encompassing analytical framework. This has been illustrated in Figure 2-2. It shows the analytical delineation of the different levels (on the vertical axis) and their interactions (the arrows). On the mid-level there exists a stable regime, consisting of heterogeneous components and actors. Over time these components become de-aligned, either by external pressure of the socio-technical landscape or the internal introduction of a novelty. Stabilization is found in a new configuration of components, establishing a new regime. Within this perspective the dotted arrows represent the interaction between the different levels.

**Figure 2-2: Multi-level perspective on Transitions (Geels 2002)**

Increasing structuration  
of activities in local practices



Geels (2002) described the perspective with which I will view changes regarding the sustainability management regime. But this perspective only gives a descriptive analysis of technological transitions and does not explain why changes occur. For this a broader understanding of transitions is needed. Grin, Rotmans and Schot (2010) have further elaborated on the concept of a socio-technical transition.

### 2.1.1.3 Socio-Technical Transitions

According to Grin, Rotmans and Schot (2010) transitions have the following characteristic:

- Transitions are **co-evolution** processes consisting of multiple changes in socio-technical systems or configurations. This means that societal and technological components co-shape and mutually influence each other. It is not the case that there is a sole unilateral causal relation between social and technical aspects. It works both ways and non-linear.
- Transitions are **multi-actor processes** involving social group, individual actors, policymakers etc. These actors are related to each other in a social network, a seamless web.
- Transitions are radical, but need not develop radically. The term radical refers to the degree of change and not the speed. A transition is radical in the sense that it is a shift

in the fundamental part of our culture. The new regime is radically different from the previous regime, but the transition need not be a radical innovation process. It can be incremental. The different forms (pathways) in which a transition can manifest will be discussed in the paragraph below.

- Transitions are **long-term** processes (40-50 years). The claim that a transition takes 40-50 years seems rather strong. Better is to say that history has shown that previous transitions took 40-50 years. Given this information it can be presumed that a transition to sustainability will take several decades.
- Transitions are **macroscopic**. They go beyond the boundaries of an organization. This means that the level of analysis transcends the interaction between organizations and paints a much bigger picture. Transitions describe the aggregate of interactions between organizations, networks and individuals.

Figure 2-2 illustrates a transition as a bottom-up, niche-driven development. This is however somewhat simplistic. Socio-technical regimes do not always follow a similar route through the landscape, because the landscape itself co-evolves with the regime. This interdependency creates an ever changing position of a regime towards its landscape. Also, every novelty has its own particularities that demands a different type of interaction with a regime. Although every change or transition is different, certain patterns can be found if you compare a number of transitions<sup>9</sup>. Based on such a comparison Frank Geels and Johan Schot (2007) have defined an ontology of socio-technical pathways.

#### 2.1.4 *Transition Pathways*

My analytical framework presumes a number of transition pathways. Frank Geels and Johan Schot have given a typology of such pathways<sup>10</sup>. If there is a transition regarding sustainability management, then transition pathway(s) will be able to be recognized. The ontology of transitions pathways encompasses four different patterns. Here follows a brief description of these four pathways.

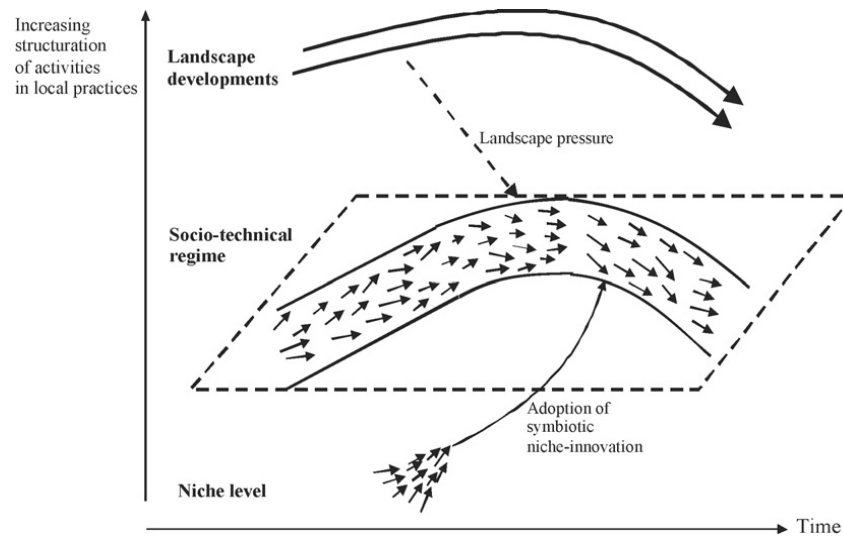
The first pattern is a regime **transformation** (Figure 2-3). A regime transformation occurs when the landscape exerts force on a regime, but a niche that can respond to this force is not yet fully developed. Outsiders of the regime are important as they signal the mismatch between the conducts in a regime and landscape developments. The incumbent components within the regime are forced to change their direction, but are generally not replaced. Change is slow but persistent due to the combination of large external forces and gradual change. Niche novelties can influence the regime, but are not incorporated. Rather than replacing the regime actors, the novelties inspire the incumbent actors to change other parts of the regime.

<sup>9</sup> See for instance Geels (2005, 2006), Van de Poel (2003) and Smith (2006).

<sup>10</sup> Grin, Rotmans, & Schot (2010), Geels, F.W. & J. Schot (2007), Geels, F.W. (2005)

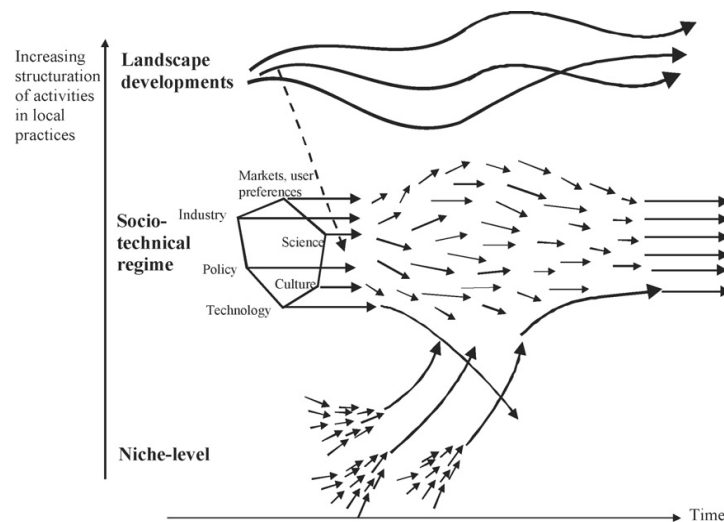


**Figure 2-3: Regime transformation**



The second recognized pattern is the process of **de-alignment and re-alignment** (Figure 2-4). This occurs when landscape developments are divergent and sudden. This causes a process of deterioration within the regime. Due to the sudden and hefty landscape pressures an old regime loses its legitimacy, starts to erode and finally collapses. If niche novelties are not yet developed enough to co-institute a new stable regime a multitude of novelties will compete to fill in the gap. Eventually the regime stabilizes around the 'winner'. This winning novelty forms the core of a re-alignment process eventuating in a new regime.

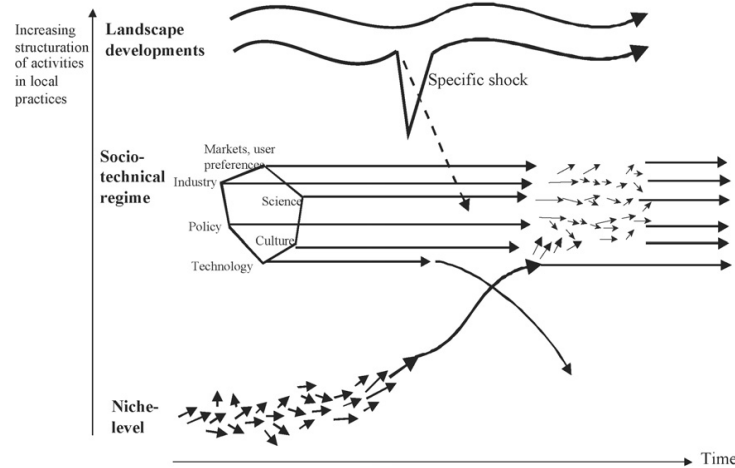
**Figure 2-4: de-alignment and re-alignment**



The third pattern is the **substitution** pathway (Figure 2-5). This occurs if landscape pressure is strong or disruptive (although the figure only depicts a shock pressure) and there exists a fully developed substitution for a controversial configuration component on the niche level. This component can be of any nature, but the picture shows the substitution of a technology. The substituting component was already developed, but the incumbent actors believed this novelty was not worth the destabilization of the configuration, except after a sudden or powerful

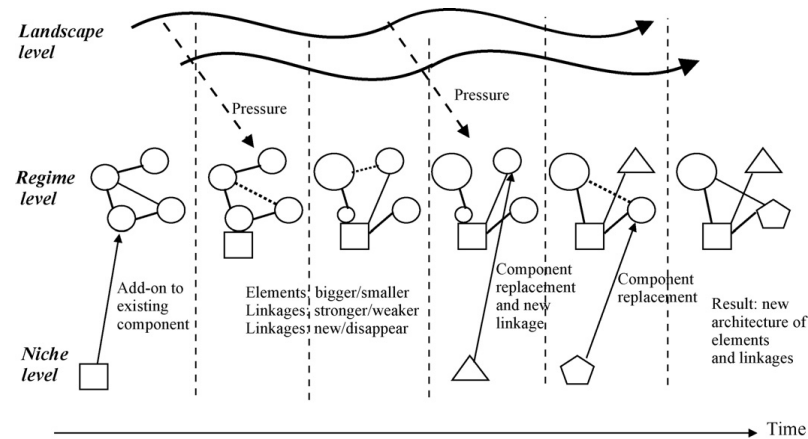
external force. Because the substitution always causes some disruption, after the substitution a process of re-alignment will follow.

**Figure 2-5: Component substitution**



The fourth and last pattern is the **reconfiguration** pathway (Figure 2-6). This transition is a gradual change. The landscape exerts only low pressure. On the niche level novelties have been developed, which are considered by regime actors. If the novelty has enough advantages it is adopted in the regime. Over time the regime evolves, due to the changed configuration. Although the change is a stepwise reconfiguration, a new regime can be radically different than the regime prior to the introduction of novelties.

**Figure 2-6: Reconfiguration of the regime**



## 2.2 Discursive Framework

This discursive framework frames the subject of investigation within a set of ideological discourses that form the philosophical context of this research. The 'Promethean' discourse and the eight environmental discourses opposing it will now be briefly elaborated. Each environmental discourse is an ideological discourse that encompass a particular ethical system. I will discuss each environmental discourse by discerning the prime ideal of the discourse, the ethical substance the discourse is concerned about, the mode of assessment you need to come to moral judgments and the visions of the discourse for the practical field of sustainability (management, politics, economy and society)<sup>11</sup>.

<b>Discourse</b>	<b>Main Narrative</b>	<b>Key metaphors and rhetorical devices</b>
<b><i>Global limits and their denial</i></b>		
Promethean industrialism	Growth forever	No limits; Nature as brute matter; human ingenuity; technological solutions; mechanics; trends.
Survivalism	Looming tragedy	Images of doom and redemption; overshoot and collapse; spaceship earth; human behavior as cancer or virus.
<b><i>Solving environmental problems</i></b>		
Administrative rationalism	Leave it to the experts	Human organizational ingenuity; The administrative mind; ambiguity as intellectual asset.
Democratic pragmatism	Leave it to the people	Public policy as resultant of negotiating forces; policy like scientific trail-and-error; networks.
Economic rationalism	Leave it to the market	'Homo economicus'; stigmatizing regulation as 'command and control'; emphasis on freedom of choice; mechanics.
<b><i>The quest for sustainability</i></b>		
Sustainable development	Environmental benign growth	Policies and agreements; organic growth; nature as natural capital; social justice; progress; challenges will be overcome.
Ecological modernization	Industrial society and beyond	Industrial action; green business case; tidy household; connected to progress; challenges will be overcome.
<b><i>Green radicalism</i></b>		
Green consciousness	Changing people	Green romanticism; biological and organic metaphors; passion; appeals to emotion and intuition.
Green politics	Changing society	Ecosystem; Organic metaphors; appeals to social learning; link to progress.

<sup>11</sup> This way of structuring these environmental ideologies is inspired by the work of Steven Dorrestijn on Foucault. Foucault discussed the idea of 'subjectivation' as concept to understand ethical engagement. Subjectivation is the "formation of a self with self-reflexive experience and the competence of self-conduct". According to Foucault any ethical system can be described along four dimensions: its telos, ethical substance, subjectivation mode and ethical elaboration.

### 2.2.1 *Promethean Discourse*

I will start by describing the Promethean discourse, since it is from this discourse the other eight environmental discourses are distinguished. The Promethean discourse is named after Prometheus, a figure from Greek mythology. It represents the unsustainable industrial mode of society that has been dominant since the industrial revolution. The ideal of this discourse is human welfare and prosperity. Every person has the responsibility to take care of his or her own needs and is motivated by material self-interest and the drive towards progress.

In other words, the 'homo economicus' is the moral agent. Nature is not, nature does not even exist as such. It is perceived only as brute matter that can be transformed into resources for human needs, because of our human ingenuity. According to this discourse there not such a thing as 'unsustainable' way of living, infinite growth as always possible. The problem behind environmental issues is that just not yet have come up with a ingenious way of fulfilling the demand for, for instance, clean air. But this can be fixed technological solutions and efficiency. It is just a matter of spending energy and money. Prometheans are very much focused on the practices of mechanical analysis of society and economy in order to discover trends.

### 2.2.2 *Survivalism*

The survivalism discourse was the first reaction to the established Promethean order. In the 1970s the first sounds of concern were institutionalized by the 'Club of Rome'. Inspired by biological studies on the carrying capacity of ecosystems survivalism made the analogy between crashes of populations of species and the unlimited growth of human population. Survivalism is characterized by a sense of urgency and doom. This discourse is not driven by a moral ideal, but by the dystopian idea that we are about to destroy the ecosystem that sustains us. Survivalism is concerned about the survival of the human race due to the limits of our planet. Democratic rights are subordinate to sustainability.

Sustainability has a very biological interpretation in this discourse. To avoid the dystopia of human destruction we have to find a more biologically balanced mode of human existence. drastic measurements in the societal power distribution are legitimate to guide the general public away from extinction. Survivalism shares the believe in human ingenuity. It even relies on it. Survivalists believe that the global community needs a radical reengineering to become sustainable. In order to achieve this there has to come an authoritarian regime of enlightened leaders. This 'think global, act global' global governing institutes would have to consist of scientific experts and strong leaders. These 'green intellectual elites' should redesign the society and economy to be more biologically balanced with the carrying capacity of the earth.

**Table 2-1: Discourses: Global limits and their denial**

	Promethean Industrialism	Survivalism
Prime ideal	Human welfare	A dystopia due to humanity exceeding natural limits.
Environmental concerns	Human needs for the homo economicus. Nature is only seen as crude matter, that should be available for these human needs. Environmental problem (e.g. pollution) is just matter in a wrong place at the wrong time.	Our human race is at stake. Our arrogant claim over nature is destroying our ecosystem.  The general public should be coordinated so our species will not stress our planet beyond its carrying capacity.
Mode of existence	Striving for infinite progress driven by individual material self-interest.  Competition, survival of the fittest.	'anti-destructive', we have to fight for survival to avoid redemption.  Strong sense of urgency.
Meaning of sustainability	Sustainability is a market demand. Human ingenuity is needed for finding ways to extract resources from crude matter.	Sustainability is achieved if we understand and adapt to the inherent natural limits of the carrying capacity. Sustainability is a biological equilibrium between our specie and planet earth.
Sustainability management	Resource management, efficiency, faith in technological solutions. Alignments of time and money for fulfilling market needs supplied from crude matter.	Radical reengineering of our global community to avoid a catastrophe. Enlightened leaders should step up and manage the planet to a static state of equilibrium.
Political elaboration	Policies should not limit the ingenuity of entrepreneurs. Minimal state.	Due to the extent of the problems an authoritarian regime is legitimized. Democratic rights are subordinate to biological survival.
Socio-economical elaboration	Society and economy follow mechanistic patterns. We can engineer a good society if we understand these mechanics and trends.	As with the political elaboration society and economy should be instrumental to the survival of the our human race. The limitations of earth forces us to make drastic choices in quality and quantity of life.

### 2.2.3 Problem solving discourses

**Table 2-2: Rationalism discourses: solving environmental problems**

	Administrative Rationalism	Democratic Rationalism	Economic Rationalism
Prime ideal	Sense of responsibility for other humans. A meritocratic response or 'noblesse oblige'.	Sense of responsibility for other human. Strive for social justice and democratic rights.	The limitations of nature limit human welfare.
Environmental concerns	The three rationalism discourses believe that the public interest is at stake, but have different interpretation of this interest. The administrative discourse is more focused on the responsibility for the public interest as a duty of public officials and the bureaucracy. The democratic discourse is most concern about the just distribution of welfare and the representation of all interests in environmental discussions. The Economic discourse very much follows the line of the Promethean discourse. What is at stake is the human needs for economic activity.		
	Nature is subordinate to human needs, but has more substance than mere matter. In these discourses nature is perceived as a limited stock of resources.		
Mode of existence	The experts are the main agents. Rational and ingenious organization will solve the problems. Social engineering.	Equal representation of all human interests in policies. Democratic representatives are agents. Negotiation.	Striving for infinite progress driven by individual material self-interest. Homo economicus as agent.
Meaning of sustainability	These three discourses see the problems as 'challenges' to be overcome by human ingenuity. These challenges have to be met with a system based on democracy and capitalism. An example illustrative for the combination the three discourses is the international trading scheme for CO <sub>2</sub> -emissions.		
	Sustainability is a human interest that should be embedded in our systems.	Use of natural resources (including e.g. clean air) is a human right.	The limited resources should be distributed with economic mechanisms.
Sustainability management	Engineering technological and technocratic systems. Complexity is progress.	Fair distribution, inclusiveness and openness of decision process.	Resource management, efficiency. Engineering the economy.
Political elaboration	Politics should engineer a level playing field, but leave the action to the experts.	Policies should represent relevant interests of the public.	Politics should not restrict human ingenuity. Night watchman state.
Socio-economical elaboration	Although the three discourses emphasize different aspects of society and economy, it can be said that they hold more or less the same visions for our future sustainable society. The current constellation of liberal democracy and capitalist economy will remain the context in which we will live our lives.		

The problem solving discourses regard the contemporary social, political and economical arrangements as a given fact. Environmental problems do exist, but have to be solved within these arrangement, mostly via public policies and governmentally induced. This means that the current arrangements should be adjusted to be able to cope with sustainability problems. The mean drive for solving these problems is that these problems stand in the way of fulfilling a responsibility we as humans have. There are three different problem solving discourses. *The administrative rationalism* discourse strives for sustainability because of a 'meritocratic' sense of responsibility to other humans around the world and in the future. This discourse believes that the public interest is at stake. *democratic pragmatism* discourse believe that the unsustainable way of living affects the rights of citizens. *The economic rationalism* discourse overlaps a lot with the Promethean, with the difference that the environmental economic discourse does acknowledge global limits to human activities.

The problem solving discourses are somewhat ambiguous towards the biological interpretation of the survivalists of sustainability. Sustainability is about the limitations of nature as a resource for human activities. It is not really seen as a problem existing in nature, but more a societal challenge that will be overcome. It is a bump in the road we have to take towards prosperity. The liberal democracy and capitalism are still the context for this prosperity, but they have to be adjusted somewhat. The problem solving discourses also rely on human ingenuity but place the emphasis on different skills. The *administrative rationalism* discourse believes sustainability will be achieved with technological and bureaucratic solutions. An example is the 'Emissions-allowances' trading scheme. The appropriate political constellation is the 'night watchman state'. *The democratic pragmatism* discourse emphasis the public debate. Environmental problem solving policies will be the result of the negotiation between equal partners on public forums. The active agents could be called 'democracy-experts' striving for equality amongst global citizens. The negotiations on climate summits are an example of this discourse. The *economic rationalism* discourse will protect the environment because it will not tolerate that (future) property is destroyed. An agent that succeeds to ensure the natural capital best (i.e. most cost-effective), will create a snowball effect and thus creativity and entrepreneurship should not be hindered by regulations. The market will solve environmental problems, because that is what the consumer wants.

#### 2.2.4 *The Quest for Sustainability*

The quest for sustainability aims to dissolve the conflicts between environmental en economic values. The two discourses *sustainable development* and *ecological modernization* are very similar, but differ in the sense that the sustainable development discourse is a more political quest and the ecological modernization a more economical one. For the sustainable development discourse global social justice is what is at stake. The Ecological modernization believes that sustainability is a much better economical and business model for achieving welfare than the unsustainable Promethean one. What is at stake are human values, but these discourses are somewhat agnostic towards the existence of moral standing in nature.

The sustainability quests acknowledges the strengths of the capitalist system and want to transform it in a more sustainable one. Rather than radical change, the sustainability discourses advocate gradual or evolutional change into a mode of existence geared towards organic

growth. Economic growth, environmental protection and distributive justice are mutually reinforcing. Infinite progress can be achieved by seeing benefits for nature as benefits for humans. Not in the sense that these benefits are two variables that have a positive correlation, but that they are one and the same. By taking on this perspective, economic growth equates inherent environmental benign growth. Cooperation is the key mode of action.

**Table 2-3: Quest for sustainability**

	Sustainable development	Ecological modernization
Prime ideal	Organic growth of global society	Welfare through a sustainable business case.
Environmental concerns	These discourses are concerned about the current wasteful mode of our industrial society. We should take more care of ourselves, future generations and our environment. The discourses are agnostic to moral standing in nature. They are more concerned with practical solutions than the moral debate.	
Mode of existence	A deliberative stance in order to dissolve conflicts among and between social, environmental and economic values. Cooperation for global justice.	Ecological industry in which progress is redefined in human environmental and economical values. Cooperation for respecting stakeholders' interests.
Meaning of sustainability	Sustainability is a reassuring prospect for securing our needed growth and treating nature with respect as our natural environment.	Sustainability it a reassuring prospect for securing our economical growth and treating nature with respect as our natural capital.
Sustainability management	The (political) regime should mainly be aimed for setting level playing field for organic growth.	A new business case, developed by imaginative and ingenious parts of industry.
Political elaboration	The main area for creating the preconditions for sustainability. The stage are the international forums, representing the global community.	The arena is a fuzzy non-hierarchical networked complex. The state should be small but a strong partner is stakeholder dialogues, representing the general public.
Socio-economical elaboration	Making the current society more sustainable. the starting point is what we have now, but the end-result is very open-ended, imaginative.	Making the current industry more sustainable. the starting point is what we have now, but the end-result is very open-ended, imaginative.

*The sustainable development* discourse places the environmental discussion in a hierarchical complex of nested and networked social and ecological systems. In this discourse, being more politically flavored, these systems are delineated by bureaucratic lines like national borders or the public-private distinction. This multi-leveled global playing-field is the setting where environmentally benign growth should be pursued. *The ecological modernization* discourse redefines how we ought to arrange our consumption and production. This should be cyclic and not linear, by using nature as our natural waste treatment plant. This discourse is not really



interested in how the political networked system is arranged, but does demand that there is a strong state that can act as a equal partner in the environmental dialogue and represents the public stakeholders in a transparent and inclusive manner. The conception of the global playing field is not a cleanly (yet still complex) delineated hierarchy of networks as in the sustainable development discourse, but a dynamic and fuzzy complex in which it is hard to distinguish top from bottom or big from small. Both still are confident that welfare can be increased indefinitely.

#### 2.2.5 *Green Radicalism*

The green radicalism discourses oppose the anthropocentric arrogance in the other three quadrant in the human-nature relation and advocate a biocentric equality. Humans should have a more natural relationship with nature. The natural order is egalitarian, not hierarchical. Dryzek signals lively discussions, the most prominent one being between the 'green-romantics-approach' and the 'holistic-ecosystem-approach'. These two discourses have been named the green consciousness and the green politics discourses. Rather than on reason, these romantics based their views on artistic intuition and aesthetics, and so also the green romantics: "Green romanticism seeks to save the world by changing the way individuals approach and experience the world, in particular through cultivation of a more empathetic and less manipulative orientations towards nature and other people" (dryzek, 1997, pp. 192). *The green politics* discourse has a much more societal focus. Also, this discourse does not award as much agency and moral standing to nature as the green consciousness discourse. But it does reject the idea of nature being merely instrumental, that the only function of nature is to sustain humans.

The two discourses of green radicalism are the most detached discourses from the established Promethean discourse in the sense that they do not take liberalism, capitalism, the state versus market distinction, the subordination of nature or human ingenuity for granted. These discourses intent to recreate our social arrangements by replacing them with in their eyes more natural ones. The two discourses differ in the method on how we should shape our more natural relationship with nature. The green conscious discourse takes on a more idealistic attitude, while the green politics discourse has a more pragmatic and rhetorical approach. The green conscious discourse emphasizes the individual and spiritual 'greening' of humans, without claiming a particular social embodiment. It is believed that by educating individuals, society itself will follow through a bottom-up or rippling effect. If some cultural institutions should be formed, then this should be small local self-sustaining non-hierarchical communities. The green politics has a more practical attitude, acknowledging the current constellation of politics and economy and trying to alter it radically from the inside out. This can be done individually or in collectives, such as political parties or social movements. The difference with the sustainability discourses is that capitalism and democratic states are not perceived as things that are here to stay, let alone to be striven for. But what sort of culture should we strive for according to the green politicians? The discourse seems somewhat uncertain to what cultural or political ideal is worth pursuing. But this does fit an organic character, supporting mostly local and decentered initiatives and not following the institutionalistic patterns.

According to the green radicalism discourses we need a more empathetic and intuitive dealing with our natural surroundings. Industrial values are unnatural, these are the anthropocentric arrogance in the Promethean discourses, and the mechanistic and calculative solutions of the

Problem-solving discourse, and existence of the positive believe on the benefits of infinite growth. Green radicalists hesitate to denounce the possibility of the infinite sustainable growth. They tend to rely more on the believe in the limits of the earth on economic growth, but do not share the authoritarian mode of solution of the survivalists.

**Table 2-4: Green radicalism discourses**

	Green consciousness	Green politics
Prime ideal	Human life is natural life	A thriving holistic ecosystem
Environmental concerns	Individual humans and their relation with nature. Intrinsic value in nature.	Our human society and its relation with ecosystem. Intrinsic value in nature.
Mode of existence	The current situation is unsustainable because it is unnatural. Man as nature become self-aware. Agency in nature (beyond our imagination) not denied.	Humans are ingenious natural beings. But industrialism has arrogantly mixed up our skills with the right to dominate. This has to be turned around. Society serves the ecosystem, not the opposite.
Meaning of sustainability	A natural egalitarian relation between humans and nature. It is a change in a individual.	Sustainability needed urgently, a new dynamic equilibrium has to be found, with ecosystems 'primus inter pares' next to economy and society.
Sustainability management	Enabling a more harmonized relation with nature, biologically as well as spiritually. Management based on green romanticism, natural intuition and aesthetics.	Changing societies. Imaginative and radical new connections will have to be made. Since radical change is needed, established management roles and skills are not self-evident.
Political elaboration	There is no broader political idea, only perhaps individual politics being more green conscious.	Capitalism and representative democracy are not taken for granted. Emphasis is on social learning. Since the future is undetermined we need social experimentation in order to cope with uncertainty.
Socio-economical elaboration	Society and economy should enable the individual development of a green conscious.	

### 2.3 Object of Analysis: Sustainability Management

The empirical focus of my research is on the management consultancy for corporate sustainability. For this analysis sustainability management will be treated as if it were a technology. In previous section I already explicate the concept of technology as a configuration that works. This section will give some preliminary insights in the concept of sustainability management. A much more elaborated review of sustainability management will be presented in the empirical chapter.

Many refer to the definition of sustainability that has been developed in, what is most commonly known as the Brundtland report: "development that meets the needs of the present world without compromising the ability of future generations to meet their own needs" (WCED, 1987). This definition however, has to be translated and operationalized in business-terms in order to

become effective in a corporate environment. One of the most world-wide influential person who has successfully done this is John Elkington. In 1994 he coined the term "triple bottom line" (TBL). The TBL got wide spread attention after the publication of Elkington's book *Cannibals with forks: The Triple Bottom Line of 21<sup>st</sup> century business* (Elkington, 1997). Together with the organization SustainAbility Elkington also developed the 3P concept "People, Planet, Profit" which was first used by Shell in their annual report in 1995.

The TBL and the 3P concepts are used for setting corporate goals. In the words of Elkington himself: "In the simplest terms, the TBL agenda focuses corporations not just on the economic value that they add, but also on the environmental and social value that they add – or destroy" (Elkington *Enter the Triple Bottom Line*. Chapter 1 in Henriques and Richardson, 1997). The aim of the TBL and the 3P concepts is to not only create awareness of an organization's economic value and impact but also act on ecological and societal values and impacts. Moreover, organizations that follow the TBL and 3P agendas should not just be aware of other values than economic values, but similar to them also track and trace these values and account for them. So besides reporting on the performance in terms of monetary profits an organization will also report on the created gains (or losses) for their stakeholders in terms of social and environmental benefits.

## 2.4 Operationalization

The previous sections of this chapter dealt with the analytic and discursive frameworks which I have used in this research. The analytical framework is a multi-level perspective on technological transitions. It perceives technology as part of a technological regime with a configuration and function embedded in a socio-technical landscape. Changes in this regime follow patterns defined as transition pathways. I have described four pathways. These pathways depend on external forces from the landscape and the developed novelties in relevant technological niches. The discursive framework consists of a range of environmental discourses, that differ in the way they see the problem for which sustainability is the solution, the suggested solutions and their outlook on the future. These two frameworks have been used to investigate the sustainability management regime. I will now use these frameworks to translated my research questions in testable research propositions.

This research can be summed up in one sentence. It is a Multi-Level Perspective on the transitions towards sustainability of the working configuration of Sustainability Management.

The main hypothesis that has been tested in this research is:

*Sustainability management is a substantial part of the transition towards sustainability.*

In order to test if the hypothesis of this research is true a number of **propositions** should follow from my observations. These five propositions and their operationalization are discussed below.

### 2.4.1 *Sustainability management can be perceived as a technology*

The MLP is a heuristic that has been developed to describe the changes and transitions of technologies. Since in this research a kind of governance, i.e. sustainability management, is

under investigation and not a technology, in the common conception of technology, it has to be shown that the MLP can be used for such an investigation.

The evidence needed for this proposition will be acquired from the practices of the sustainability consultants of DHV. The practices will be selected by the researcher on the level of participation the research himself has had. Examples of these practices involve the ISO 26000 guideline and the ProRail CPL.

#### *2.4.2 Sustainability management is an acknowledged concept in the corporate world*

This proposition implies that sustainability management has a certain place in the hierarchy described by the MLP. This hierarchy consists of three levels: innovative practices in niches, structures by regimes and long-term exogenous trends in the socio-technical landscape. The claim that sustainability management is an acknowledged concept in the corporate world suggests that there is such a thing as a 'sustainability management regime'.

In order to find support for the proposition evidence has to be found of a 'sustainability management rule-set' in the above described complex. Has sustainability management been structured and institutionalized in corporate management? And if so, to what degree? The scope of this research forbids a broad exploration of this question. This proposition will be explored in two directions, being DHV internal and external (within the research scope), by the means of interviews and a questionnaire.

#### *2.4.3 The transition to sustainability has a normative component*

Sustainability is not a neutral concept, so the management towards sustainability isn't either. Instead of assuming a specific conception of sustainability (e.g. the Brundtland definition or the Triple Bottom Line) in this research sustainability is perceived as a contested concept. By choosing a fixed conception of sustainability you implicitly deny different interpretations of sustainability. I wanted to avoid such a narrowing, because it closes critical reviewing of the established sustainability regime. For instance, Callicott (1995) and DesJardin (2006), among other, both point out that the common conception of sustainability is a human-centered interpretation that degrades inherent values of nature and animals to mere functional assets (functional to human values like 'living a good life' by being food or means for leisure).

An overview of different environmental discourses and their visions on the transition to sustainability have been presented in this chapter. This overview will be used as a reference with which the dominant attitudes towards nature, guiding norms for action, visions for the future and ideals will be compared. The goal is to discern the different discourses or sets of discourses that can be found in the data. By doing so I will be able to interpret which environmental ideologies are the most present in sustainability management in the selected research scope.

#### *2.4.4 There is a transition (to sustainability)*

If there is a transition with a certain transitional pathway, this has to be found within the scope of this research, i.e. the organizational field of the department of sustainability consultants and organization in their direct vicinity and their products. I have investigated if in sustainability management there is incremental change, which actors are involved and on what level this

change has occurred. Also I have tried to describe this change in terms of the earlier presented transitional pathways.

#### 2.4.5 *Sustainability management is geared towards sustainability*

With previous propositions the concepts of sustainability management and sustainability will be explicated. This fifth proposition makes a claim about the connection between the two. Testing this proposition explores if sustainability management actually is geared towards sustainability. And if so, to what kind of sustainability it is geared. The interesting question is why sustainability management is geared towards a specific range of sustainability.

## **2.5 Summary**

In order to investigate sustainability management, several concepts have been used to formulate research propositions that can be tested with empirical data. These concepts were discussed in an analytical framework and a discursive framework. The analytical framework interprets sustainability management as a regime in a patchwork of regimes, surrounded by a socio-technical landscape and innovation niches. Sustainability management is enforced by and shaped by a drive to sustainability. Transitional pathways are concepts that can help to understand the rise of, changes in and forces on sustainability management. The directionality of change and sustainability is understood with help of the discursive framework. In this framework nine (not-mutually-excluding and overlapping) environmental ideologies are presented. These ideologies act as a reference with which I can discern the most dominant discourses present in the data. The two frameworks have been used to draft the five research propositions that will be tested in chapter 4. These propositions are:

1. Sustainability management can be perceived as a technology
2. Sustainability management is an acknowledged concept in the corporate world
3. The transition to sustainability has a normative component
4. There is a transition (to sustainability)
5. Sustainability management is geared towards sustainability

But first I will explain what the research methods are in chapter 3. The research methods connect the research propositions to my empirical research field. Since 'sustainability management' is still a very broad concept I will have to limit my research scope. Therefore chapter 3 will also encompass the description of my research case.

### 3 RESEARCH METHODOLOGY AND EMPIRICAL BOUNDARIES

The stated research propositions in the previous chapter have been tested with empirical data. In this chapter I will explain how this theory-testing was build up and how the use of different data sources and collection methods can be justified. The outcomes of the data collection and the analysis will be dealt with in later chapters. In this chapter first the research strategy of using a case study will be explained. Secondly, the investigated case will be described. Thirdly, it will be explained which data collection methods have been used for the specific areas of the case. Lastly, the used data collection methods and data sources will be elaborated on.

#### 3.1 Research strategy

This study is a qualitative research on sustainability management. More specifically, this study investigated the case of sustainability management at the Sustainability Advisory Group of DHV. The research method used in this study is a case study, since it is a suitable method to "investigate a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context is not clearly evident" (Yin, 2003). This study is a single-case study in which a number of data collection methods are combined in order to describe sustainability management within the scope of the DHV Advisory Group. These data collection methods are described below. But first the choice for a case study will be explained.

Yin (2003) distinguishes five rationales for conducting a single-case study. These are listed in Table 3-1. The case study I conducted can be justified from the revelatory rationale, although the analyzed phenomenon is not as inaccessible as Yin suggested. The situation was, however, for the researcher a unique opportunity to conduct a research embedded in the practice of sustainability advisory. A scientific opportunity not regularly conducted by research peers.

**Table 3-1: Rationales for a single-case study**

Rationale	Description
Critical case	The case represents the essential case in a relevantly formulated theory testing.
Unique case	The case represents a extreme and rare case that is worth investigation and documenting.
Representative case	The case is a typical case. The case is assumed to be informative for the average circumstances and experiences.
Revelatory case	The case represents an opportunity for scientific investigation of a common practice in an a-typical manner.
Longitudinal case	The same single case is studied on two or more different points in time.

An issue with case studies is the generalization of the results of a single case study to a general theory. In this research the observations of the DHV Sustainability Advisory Group will be transferred to the theory that 'sustainability management a substantial part is of the transition towards sustainability'. This is done through the logic of *analytic generalization*. Other than surveys, which rely on *statistical generalization*, case studies are not meant for the

extrapolation of a sample to populations or universes but for the generalization of a set of results to a broader theory (Yin, 2003) (Firestone, 1993). In this research the set of results are described in chapter 4. Now I will explain how the different types of results are connected methodologically.

One strong point of a case study is the possibility to use multiple sources of evidence and compose these in an argumentation to support the same theory. The use of several source for evidence has broadened this research, because the different types of sources complement each other. It also strengthened the research, because the observed phenomenon is seen from different perspectives. This use of several sources for evidence towards a single conclusion supports the process of *triangulation*. Triangulation increases the credibility and validity of a research. Triangulation can be achieved in four ways (Patton, 1987), triangulation:

- of data sources (data triangulation);
- among different evaluators (investigator triangulation);
- of perspectives to the same data set (theory triangulation); and
- of methods (methodological triangulation).

In this study the triangulation of data sources, of theory and of methods has been pursuit. For this study several data sources within the same social network have been used. These data sources encompass interviewees, sustainability professionals of DHV and members of the newsletter of 'www.duurzaam-ondernemen.nl'. triangulation of data sources was mostly achieved by the spread in location of the data sources and not so much in the spread in time. The spread in location has been sought in the degree the data source has direct dealings with the DHV advisory group. The closest data sources were interviewees that work within the advisory group themselves. The next closest were the interviewees that have a function within the larger DHV Group in the Netherlands. The next data sources were two interviewees from other organizations, that work within a same sustainability management network, but have not directly cooperated with the DHV advisors. The link between these two interviewees and the DHV advisory group is on a product level. The last sort of data sources are the respondents to the online survey. These respondents have been defined by the DHV advisory group as the target group for information, products and business opportunities.

Theory triangulation has been achieved by using two different frameworks to analyze the sustainability management. These frameworks has been elaborated on in the previous chapter 2. The first is the STS framework derived from theories of the Multi-Level Perspective and of Transitions to Sustainable Development. The second framework is a more philosophical framework encompassing an overview of the different environmental discourses on sustainability management and their ethical dimensions. Theory triangulation holds more than just the simultaneous analyses of the same phenomenon with two different theoretical frameworks and comparing the conclusions. The outcomes of the two different frames of analysis will have to be synthesized in a single interpretation of a phenomenon in order to reach theory triangulation. This will be done in chapter **Fout! Verwijzingsbron niet gevonden..**

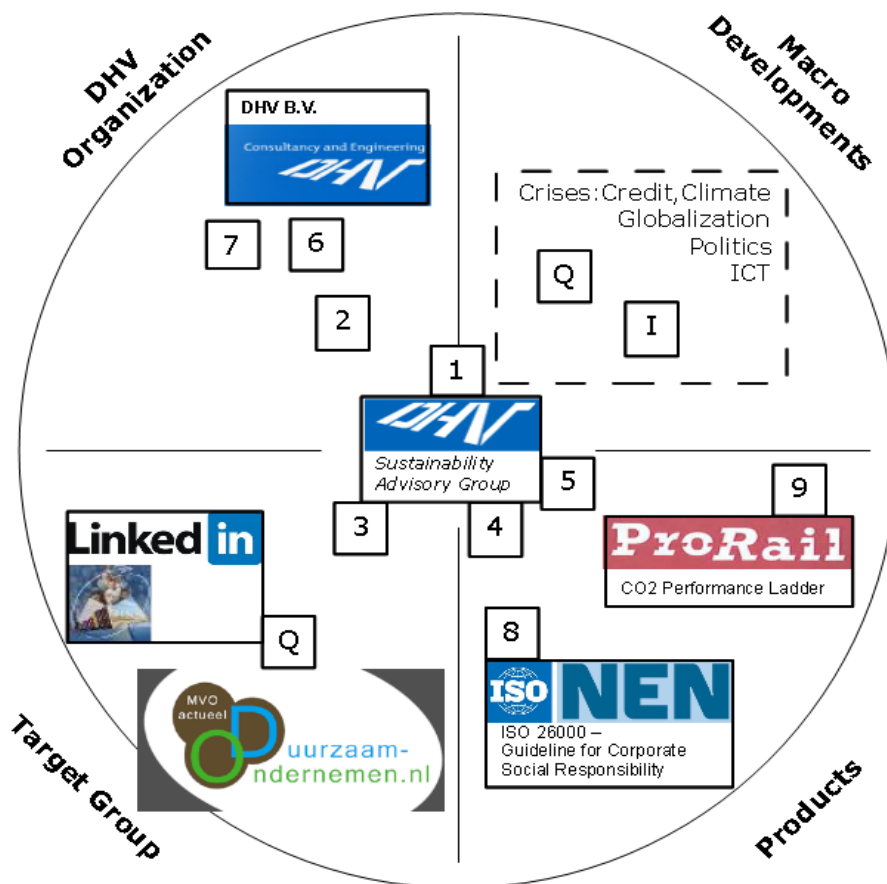
The final type of triangulation pursuit in this research is methodological triangulation. Sustainability management has been investigated by using a quantitative online questionnaire,

and several qualitative research methods, which were interviews, document review and observer participation. Again, in each method the investigated phenomenon was sustainability management, but the specific object of observations had to be adjusted to suit the different methods. How this has been done has been explain below in section 0. this multi-method triangulation was used to achieve a more complete set of findings. The different methods complement each other in content. By using different methods of data collection a broader range of perspectives has been acquired. Also, by collecting data through qualitative as well a quantitative methods it has been possible to acquire data with different dimensions. For example, the questionnaire provides numeric findings on the perception of the definition of Sustainability, whereas the interviews give more social-historical findings.

### 3.2 Case Description

This case study is centered around the DHV Sustainability Advisory Group. In Figure 3-1: DHV Sustainability Advisory Group and relevant surrounding this advisory group and its surrounding relevant for this research is mapped. This map represents the case and its context, and within it the data sources are also indicated.

Figure 3-1: DHV Sustainability Advisory Group and relevant surrounding





The interviews are the boxes with a number, the online questionnaire is indicated with a boxed 'Q'. In the 'macro developments' quadrant I have also placed a capital 'I', to represent the entire set of interviews. The documents and participant observations have not been indicated in the mapping for clarity reasons. These two data collection methods were performed across the whole of the mapping. The case study has been researched as a single-case study with multiple units of analyses. The larger unit of analysis is the advisory group, the sub-units of analysis are two product areas of this advisory group, namely the ProRail CO<sub>2</sub> Performance Ladder and the ISO 26000 Guideline for Corporate Social Responsibility. The larger unit of analysis is surrounded by the context consisting of its target group for potential and existing customers, competition and peers, of the DHV organization and of somewhat more detached social (landscape) developments. An overview of how the data was collected for the units of analysis is given below in Table 3-2: Data collection methods for analysis.

The DHV Sustainability Advisory Group is represented in this research by three senior advisors and a market manager sustainability, interviewee 3. The advisors are depicted in Figure 3-1 as Interviewees 1, 4, and 5. The placement of the boxed numbers express the positions of the advisors, within the scope of this research. Interviewee 1 has a more birds-eye view and a central role in the advisory group. This interviewee also has the most direct relations with the rest of the DHV organization. Interviewees 4 and 5 are more focused on specific advisory work. Interviewee 4 is more involved in more organization advice and has had dealings with the ISO 26000 products. Interviewee 5 is more involved in climate policies and CO<sub>2</sub>-emissions and has had dealings with advice regarding the ProRail CO<sub>2</sub> Performance Ladder. The market manager has manages formal and informal relations with the market. I also studied the advisory group as a participating observer. Documents on the activities of the advisory group include the DHV websites and product leaflets.

In this case study the market has been limited for practical reasons. The advisory group manages a website: 'www.duurzaam-ondernemen.nl' and a digital network within LinkedIn. For this case study an online questionnaire was send to the members of these two digital communities. 'www.duurzaam-ondernemen.nl' was launched in the year 2000 and has a newsletter with 3000 receivers<sup>12</sup>. The LinkedIn group 'Duurzaam ondernemen / maatschappelijk verantwoord ondernemen (MVO) professionals group' is the 13th largest LinkedIn Group in the Netherlands with over 10.000 members<sup>13</sup>. These two digital networks are managed by interviewee 3 (Interviewee 1; Interviewee 3).

I have interviewed three persons that represent the DHV organization in the Netherlands. Interviewee 2 was the head of the market unit Environment and Sustainability and has recently been promoted to the function of Director of Sustainability at DHV. In this function the Interviewee is responsible for the incorporation of sustainability in the projects and products of DHV as well as in the own organization (Interviewee 2). Interviewees 6 and 7 are the current and previous manager Corporate Responsibility, responsible for the policy and the effectuation of CSR at DHV. These three interviewees represent DHV's own sustainability management.

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<sup>12</sup> The actual news item posted on the site on the 16<sup>th</sup> of December 2010 can be found here: [http://www.duurzaam-ondernemen.nl/detail\\_press.phtml?act\\_id=10197](http://www.duurzaam-ondernemen.nl/detail_press.phtml?act_id=10197).

<sup>13</sup> The LinkedIn Group can be found here: <http://www.linkedin.com/groupInvitation?gid=1237417>

The two sub-units of analysis are the product areas ProRail CO<sub>2</sub> Performance Ladder and the ISO 26000. These two sub-units are treated as delineated embedded cases within the sustainability management case. They have been perceived as two sub-regimes within a larger regime. They are two distinguishable networks of heterogeneous components (e.g. actors, policies, norms and values) that are nested in a larger network. Within these sub-regimes I have interviewed two external professionals who are extensively involved in these areas. Interviewee 8 was the driving force behind the development of the CO<sub>2</sub> Performance Ladder at ProRail. Interviewee 9 is Consultant for Management Systems at the NEN, the Dutch foundation for Normalization processes. The NEN was the Dutch representative in the international negotiation process which resulted in the ISO 26000 Guideline. Interviewees 4 and 5 were also explicitly interviewed on the two mentioned sub-units. More information about the content of these sub-units will be discussed in chapter 5. Besides interviews I have also conducted a document review. I myself have also worked with projects concerning the two sub-units, more information on the contents of this work can be found in 'APPENDIX iii. Reflection on Internship' on page 104. Reflections on my own work have been used as participating observer data.

**Table 3-2: Data collection methods for analysis**

<b>Method</b>	<b>Unit of analysis</b>	<i>Sustainability Management</i>	<i>Sub-unit</i> <i>CO<sub>2</sub> Performance Ladder</i>	<i>Sub-unit</i> <i>ISO 26000 Guideline</i>
	<i>Online Questionnaire</i>	Yes	-	-
<i>Interviews</i>	Interviewees 1-7	Interviewees 4 and 8	Interviewees 5 and 9	
<i>Document review</i>	Literature study; DHV product leaflets; DHV policy documents	Performance Ladder manual 1.2; Register CO <sub>2</sub> -Aware Certificates	ISO 26000 Guideline, NEN: website; press releases; product leaflets	
<i>Participating observer<sup>14</sup></i>	Focus group session; National sustainability congres; field notes	Market review; info day for branch association	Contributions to DHV's ISO 26000 scanner; DHV Seminar: CSR Performance Ladder	

The Sustainability Advisory Group and the direct surroundings are not isolated from a broader societal scheme. The context relevant to this case study also consists of, but is not restricted to, phenomena in society like globalization, ICT, the political constellation and crises as the credit, climate and energy crises. This has been indicated in the mapping as the macro developments. As is shown in the mapping the data regarding these developments has been collected with the online survey and the interviews. Information was collected which developments were relevant and how they have influenced the transition of sustainability.

<sup>14</sup> More on the participating observer data can be found in 'APPENDIX iii. Reflection on Internship' on page 43.

### 3.3 Data Collection Methods

Yin mentions six types of sources for evidence for collecting data. Of these six in this research two have not been used, namely 'direct observations' and 'physical objects' (Yin, 2003). How the other four sources for evidence have been used will be discussed below. But first I will go into the linkages between the four used data collection methods and the research propositions.

Please recall that the five research propositions are:

1. sustainability management can be perceived as a technology;
2. sustainability management is an acknowledged concept in the corporate world;
3. the transition to sustainability has a normative component;
4. there is a transition (to sustainability);
5. sustainability management is geared towards sustainability.

In 'Table 3-5: Research propositions and data collection methods' in the concluding section of this chapter it has been summarized how the four different data collection methods have contributed to the evidence building for the five research propositions. Each data collection method has its strengths and weaknesses. Now the four methods will be described and it will be explained how they have been used in this research.

#### 3.3.1 Document Review

The advantage of using documents is that they are stable sources for evidence, their contents do not change much over time are exact. However, which documents are used is dependent on the selectivity of the researcher. The main document used in this research are listed in Table 3-3. The document review has been used in this research to build a preliminary understanding of the investigated concepts and to be mined for detailed information about the (sub) units of analysis. For the first goal scientific literature was used to get an understanding of the concepts Corporate and Economic Sustainability, Socio-Technical Transitions, and of the analytical frameworks regarding the Multi-level Perspective and Descriptive Environmental Ethics. The understanding of these concepts supports *Proposition 1, 3 and 4*.

For the second goal the documents are from within the scope of this research, and focus on sustainability management directly linked to the DHV Advisory group, the ISO 26000 Guideline and the CO<sub>2</sub> Performance Ladder. These subjects are interpreted as general sustainability management and two distinct manifestations. By researching the documents it becomes clear what is understood by sustainability management. If this same understanding is present in the context (represented by the online survey), then conclusions can be drawn about the extent of manifestation in a corporate environment, thus supporting *Proposition 2*.

The strength of using documents is the matter of precise details retrieved from the documents. The documents have been used to corroborate information from other sources such as the interviews and the survey. Especially the field documents have been useful in providing exact names, definitions, procedures etc. By doing so the document give detailed background information that augment findings from other resources.

**Table 3-3: Main documents sorted according their subject**

<b>Literature</b>	<b>Subject</b>	<b>Treated in research in:</b>
<i>Main Scientific Literature:</i>		
Henriques & Richardson (2004)	Corporate Social Responsibility,	Section 2.2
Dunphy, Griffith, & Benn (2003)	Triple Bottom-line,	
Nijhof et al. (2004)	Sustainability management	
Rip & Kemp (1998)	Technology, technological regimes	Chapter 2
Berkhout, Smith, & Stirling (2004)		
Geels (2010), Rotmans (2007)	Socio-technical transitions, transitional pathways	Chapter 2 and 7
Smith, Vofl, & Grin (2010)	Multi-Level Perspective	Chapter 2 and 7
Geels (2004)		
Rotmans, Kemp, & Asselt (2001)		
Callicott J. (2005) Preston (2001)	Descriptive Environmental Ethics	Chapter 4
Dryzek (2005) DesJardins (2006)		
<i>Main Field documents:</i>		
DHV advisory Group and Product leaflets, DHV websites	General sustainability management	Chapter 5
The ISO 26000 Guideline (Dutch edition) and NEN press releases	ISO 26000	Chapter 6
The CO2 Performance Ladder manual, the online register of certificates, corporate communications of certificate holders.	ProRail CO <sub>2</sub> Performance Ladder	Chapter 6

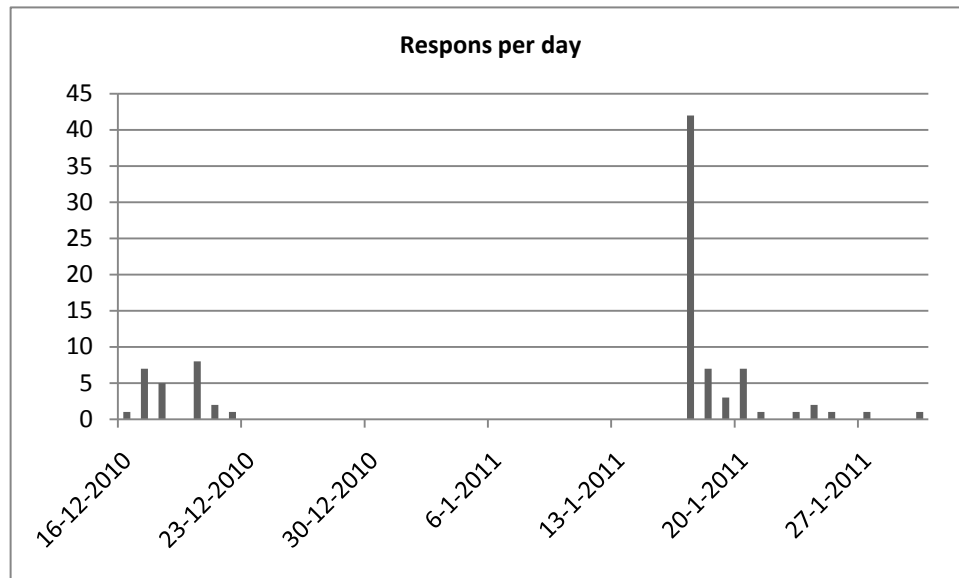
### 3.3.2 Online Survey

Important to understand is that this case study the propositions are not proven with 'statistical generalization', but with 'analytical generalization'. So the data retrieved should not be considered a representative sample from which general theories can be inferred about a population. The data and the empirical results of this research should be considered as a scientific experiment with which I will compare the previously developed research theory and propositions. The resulting comparison should be considered as a new starting point for further research in which the researcher should look for the support of the same theory (Yin, 2003). This second comparison will be done in this research, but only in a minor fashion by comparing the survey data with the interviews and field notes.

The online survey was conducted in a period from December 2010 till January 2011. In total 89 respondents participated in the online survey. The number of daily responses is plotted in Figure 3-2. Considering the size of the audience of the newsletter and LinkedIn group, 89 respondents seems to be a low response rate. However, the administrator of both, Interviewee 3 mentioned that the response rates are often very low. Another reason for this response rate could be the competition for attention with other news items. Before the Christmas holidays there were more

news items than usual. I tried to keep the discussion in LinkedIn active, but this only helped marginally.

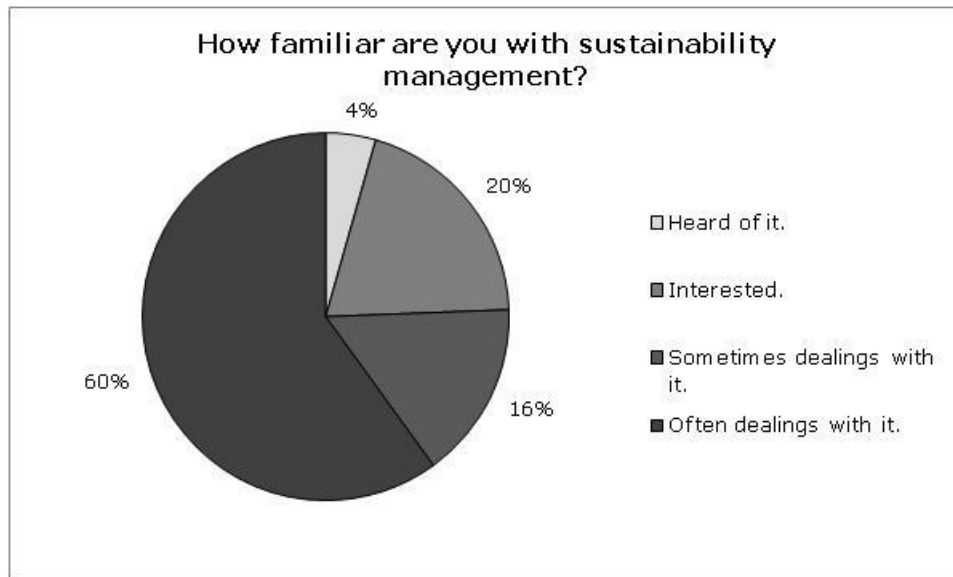
**Figure 3-2: Responses to the online survey plotted by date.**



Although the survey will not be used for statistical generalization, the survey data can of course be analyzed with statistical means. But more on this will be explained in the empirical chapters. As mentioned earlier the online survey was distributed by two ways, on the website [www.duurzaam-ondernemen.nl](http://www.duurzaam-ondernemen.nl) including it's newsletter and the LinkedIn group 'Duurzaam ondernemen / maatschappelijk verantwoord ondernemen (MVO) professionals group'. Both media form a social network of mostly professionals that are interested or work in Corporate Social Responsibility and sustainability. This has been made tangible with the question in the survey asking how familiar the respondent is with sustainability management<sup>15</sup>. The results are depicted in Figure 3-3.

It is clear from the results that 85,6% is at least interested in the subject 'sustainability management'. And about 75 % has active dealings with the subject. These responses make it clear that the targeted groups perceive themselves to have knowledge of the subject of this research. This means that the conclusions and analyses made in this research should be understood within this setting. More importantly, this does not mean that the results of this research can not be extrapolated to the general public of the Netherlands. The analyses are only relevant for these specific professionals with hands-on experience or formal training in CSR and sustainability management. This relevance is also in line with the concept of 'analytic generalization' and the case-study research method.

<sup>15</sup> I assume that 'sustainability management' can be translated as 'duurzaam ondernemen'. The literal translation from English to Dutch would be 'Duurzaamheidsmanagement'. However, this is not a normal concept used the corporate environment. Therefore I have chosen to use 'Duurzaam ondernemen' in the questionnaire.

**Figure 3-3: Results, familiarity with sustainability management**

I had a bit of misfortune that my questionnaire couldn't go online well before the Christmas holidays. This resulted in only 25 responses in December. Also, I had some negative feedback saying that my questionnaire was somewhat confusing and long. I also adjusted the structure of the questionnaire a bit, but left the content, the amount and order of questions and answers the same. I added the comment that the ethical statements were not mandatory, so people would scroll over statements they found hard instead of closing the window and I lost data. This resulted in a few non-answers that I have treated as 'Geen mening' (no opinion). I also gave all the questions and statements numbers and explicitly mentioned the amount in the introduction, so people would have a very clear idea about their progress. A reminder was sent to the targeted groups on the 17<sup>th</sup> of January which resulted in 42 respondents on that same day. I closed the questionnaire on the 31<sup>st</sup> of Januari. I believe that the adjustments I made half way the survey did not significantly influence the data retrieved in a qualitative manner. The content and the order of presentation had remained the same. The most invasive adjustments were a clear numbering of the questions to indicate the progress and minor clarifications on the method of filling in the questionnaire. I believe these adjustments did not change the way the respondents perceived the content of the questionnaire.

The content of the survey was divided in three parts. The first part asked questions about the ideas of the respondents regarding aspects of sustainability management, these aspects being it's definition, the characteristics and locations of changes in sustainability management and involved actors. In other words, the first part of the survey gives data on the perception of sustainability management (*Proposition 2*) and relevant transitions (*Proposition 4*). The second part consisted of 21 discursive and ethical statements. These statements are based on the environmental discourses that have been elaborated on in the next chapter. By searching for trends in the data I have looked for signs of particular discourses present in the data. This will aid me in asking the question which discourse(s) is or are dominant within the targeted group of sustainability professionals, thereby testing *Proposition 3*. Because of a limited added value of

explaining each question and statement separately and to limit the extensiveness of this chapter, I will only elaborate on the actual content indirectly by presenting the results of the survey in chapter 4. A copy of the actual online questionnaire is included in APPENDIX ii.

### 3.3.3 Interviews

The interviews were recorded digitally in order to be able to transcribe them. The interviewees have been discussed in a previous section, but please recall that there were 9 interviewees. 7 are employees of DHV, 2 are from other organizations. A critique could be that the range of interviewees is too restricted to the DHV sphere. But I have done this on purpose in order to build a sound representation of a particular social group in order to conclude observations that are significant and is within the limited amount of time available for this research. The range of interviewees results in, in my opinion, adequate data to analyze the case as described in section 3.2. The interviews were held in almost the same period as the online survey. The seven interviews at DHV were held during November and December 2010, the two external interviews were held in January and February 2011. The exact dates are presented in Table 3-4: Overview of Interviews. By conducting the interviews at approximately the same times as the online survey it is presumable that the different data sources answer questions within the same context, time-wise speaking.

**Table 3-4: Overview of Interviews**

<b>Interviewee</b>	<b>Role</b>	<b>Date</b>
1 DHV advisory	Senior advisor, head of advisory group	18 November 2010
2 DHV B.V.	Program director Sustainability	2 December 2010
3 DHV advisory	Marketing Manager Sustainability	30 November 2010
4 DHV advisory	Senior advisor, expertise on ProRail Ladder	30 November 2010
5 DHV advisory	Senior advisor, expertise on ISO 26000	2 December 2010
6 DHV B.V.	Corporate Responsibility Manager	30 November 2010
7 DHV B.V.	Former Corporate Responsibility	2 December 2010
8 NEN	Advisor Management systems, ISO 26000	25 January 2011
9 ProRail	Head of tender management, Performance Ladder	3 February 2011

The interviews conducted were semi-structured using a printed interview protocol. This protocol is included in APPENDIX i. The interviews were conducted as a guided conversation, leaving much room for elaboration. First the interviewees were asked their job description, thereby probing for clarifications on how (or if) their work (sustainability management) is embedded in their corporate environment. This to find support for *Proposition 2*. In this first part it was also asked if the interviewee has a vision for the future or what they themselves find important in sustainability management, also probing for their definition of sustainability. This to find support for *Proposition 3*. The second part dealt with the question how the configuration of sustainability management looks like according to the interviewee. The goal was to describe the status quo of the *regime* of sustainability management and from which regime it had evolved over time. I

probed for different aspects of the regime such as the actors (customers, competition, government and NGOs), sustainability products and services and their relations. I tried to limit the scope to the specific organizational field as defined by DiMaggio and Powell consisting of: "those organizations that, in aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products"<sup>16</sup>. Also I asked for reasons why an old regime changed into a new 'sustainability management regime'. Probes for these reasons were social or political incidents, societal trends or developments (e.g. climate discussion, ICT or globalization). This second part tried to find support for *Proposition 4*. The interview ended with the question that is also central to this research: how does your work, sustainability management, contribute to a sustainable society? This question enabled the interviewees to conclude the interview and summarize their main points. This final part tried to find support for *Proposition 5*<sup>17</sup>.

#### 3.3.4 Participating Observer

This the time I conducted this research I also was part of the DHV advisory group as an intern. This gave the distinct opportunity to perceive reality from the inside of the case studied. In my role as junior advisor it was possible to actively partake in sustainability management. This embedded researcher role gave an internal viewpoint to interpret the data. For instance, I worked on implementing a management tool for ISO 26000 compliance. In stead of analyzing the tool from hindsight I constructed a large part of it myself, giving me first-hand insights in the *process of manifestation* of sustainability management in reality. Besides this example I have contributed to several projects. An overview of these projects is presented in APPENDIX iii. My internship at the DHV advisory group lasted from 1<sup>st</sup> of May till 31<sup>st</sup> of December 2010, with a short extension in January 2011 in which I worked 62 days as a junior consultant and 78 days on my thesis research.

Also I had the opportunity to retrieve data in a way normally not available through 'normal' scientific investigations. As 'sustainability management was all around me' occasionally I merely just have to sit and listen to find support for or objections to the research propositions. Data collection and feedback could be done in an informal way in conversations, since the advisors were my direct colleagues. Besides this less structured data collection and verification I also organized and participated in a number of events. The main activities were:

- Visiting the 12<sup>th</sup> GRI seminar on the 7<sup>th</sup> of Oktober 2010<sup>18</sup>;
- Visiting the 11<sup>th</sup> National Sustainability Conference on the 24<sup>th</sup> of November 2010<sup>19</sup>;

<sup>16</sup> DiMaggio and Powell (1983, p. 148) as used in Geels and Schot (2007).

<sup>17</sup> Interviewees 4, 5, 8 and 9 were also explicitly asked about the CO2 Performance Ladder (5 and 9) and the ISO 26000 (4 and 8). For these interviews the same interview protocol was used with the following addition. In stead of asking about 'sustainability management' the interview subject was 'sustainability management and the ISO 26000 (or CPL) in particular'.

<sup>18</sup> This event had the theme: "MVO communicatie en verslaggeving". Information on this seminar can be found on the website <http://dhv.m3.mailplus.nl/archief/mailling-90430.html>. GRI (Global Reporting Initiative) is a management tool consisting of requirement and guidelines with which organization can structure their annual sustainability report. This report can be intertwined in the financial report. The GRI also offers an assessment scheme for grading reports.

<sup>19</sup> The NSC is the larges CSR event in the Netherlands with offer 700 visitors. Information can be found on <http://www.sustainability-congres.nl/>.



- Help to Prepare a presentation for KAM-managers of construction builders on the CPL on the 18<sup>th</sup> of November 2010<sup>20</sup>;
- Organizing a focus group meeting on the 2<sup>nd</sup> of February 2011. 4 Advisors of DHV participated in this interactive meeting in which we discussed my preliminary results.

During these events I gathered data by collecting presentations and hand-outs and writing field notes. These field notes were on the content of the events, but also on the reactions of the public and attitudes.

A drawback of being a participant-observer is that it is possible that the case investigated is influenced by the presence of the observer. Also, the research, as I was part of the advisory group, tends to become a supporter of the case being studied. I have tried to avoid these biases often taking a step back and taking on a reflexive attitude on my actions and findings. Also I tried to reframe my actions and findings with a robust analytical framework that has been presented in chapter 2. It is hard to delineate to participant-observer data along the lines of the research propositions, but it can be said that this data mostly helps in interpreting findings for *Propositions 2, 4 and 5*.

### **3.4 Summary**

In this chapter I have explain how I have conducted this research as a case study. This study is a single-case study in which a number of data collection methods are combined in order to describe sustainability management within the context of the DHV Advisory Group. The case study conducted can be justified from the revelatory rationale, the case represents an opportunity for scientific investigation of a common practice in an a-typical manner. In this study the triangulation of data sources, of theory and of methods has been pursuit.

In this research several data collection methods were used: documents reviewing, a online survey, interviews and participating-observation. With these methods data was collected which could support or rebut the five research propositions. How the research methods have been useful for which propositions was explained in the last section of this chapter. A summary is given in the following Table 3-5: Research propositions and data collection methods.

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<sup>20</sup> KAM-managers are responsible for quality, employer safety and environmental impacts of a company. The managers were member of 'Bouwend Nederland', the trade association for construction workers that organized the meeting.

**Table 3-5: Research propositions and data collection methods**

	<i>Document Review</i>	<i>Online Survey</i>	<i>Interview Questions</i>	<i>Participating observer</i>
1.	MLP Literature	-	-	-
2.	DHV, ISO 26000 and CO <sub>2</sub> Performance Ladder documents	4 multiple choice questions	Clarifying: content of work; visions on sustainability.	Interpretation of advisory work.
3.	Environmental ethics literature	21 ethical statements	Personal mission	-
4.	Socio-technical transitions literature	4 multiple choice questions	Description of old and new regime; probing for reasons of regime change.	Investigating behavior and opinions at seminars, conferences and online communities
5.	-	-	Explicit final question	Focus group session for verification of (part of) the propositions

## 4 SUSTAINABILITY MANAGEMENT: EMPIRICAL FINDINGS

In this chapter the results of the data collection are presented. This will be done by explaining in what way the empirical findings support or rebut the research propositions. The explanations are framed using the analytical framework that was elaborated on in chapters 2. Every section will treat a different research proposition. In each section I will first explicate and interpret the found data before I test the proposition.

### 4.1 Sustainability management can be perceived as a technology

For the proposition to hold it is necessary to interpret sustainability management as a technology. This interpretation has been done with the MLP and the characterization of sustainability management as a configuration that works. I will first discern from the collected data what sustainability management actually is. Secondly I will make the conceptual analysis and explicate what is perceived to be the landscape of sustainability management, how it is configured and what the function is.

#### 4.1.1 Data interpretation

Based on documents of DHV and the Sustainability Advisory Group sustainability management is "the explicit aiming of organizational activities to the achievement of a sustainable society"<sup>21</sup>. This is achieved by caring for a balance between People, Planet and Profit (3Ps) in a way that supersedes societal expectations. Sustainability management is explicitly seen as an value adding activity for organizations, a business opportunity. The ISO 26000 also has a similar view on sustainability management. It is the organizational activity that takes care of the:

*"responsibility of an organization for the impacts of its decisions and activities on society and the environment, through transparent and ethical behaviour that contributes to sustainable development, including health and the welfare of society; takes into account the expectations of stakeholders; is in compliance with applicable and consistent with international norms of behaviour; and is integrated throughout the organization and practised in its relationships"*<sup>22</sup>.

DHV as well as the ISO 26000 emphasize the importance of stakeholders. A stakeholder is an individual or group that has something at stake in an organization's decisions or activities. These stakeholders can be employees, governments, investors, suppliers, clients consumers and relevant interest groups. In sustainability management the relation between stakeholders and organizations is characterized by transparency and dialogue. The ultimate aim of all activities is sustainability as defined by the 'Brundtland' definition. Based on the documents it can be said that it is dismissed that investing in sustainable development results in a cost or that it contradicts the economic drive of self preservation of companies. It is said that in the bigger picture social, profit and environmental goals are interdependent and mutually reinforcing.

Another mentioned aspect of sustainability management is the needs for an integrative mode of management. This means that sustainability management is not a side activity of a company.

<sup>21</sup> DHV Sustainability Advisory website: <http://www.dhv.nl/Markten/Milieu-en-duurzaamheid/Maatschappelijk-verantwoord-ondernemen>. Lastly visited on March 22<sup>nd</sup> 2011.

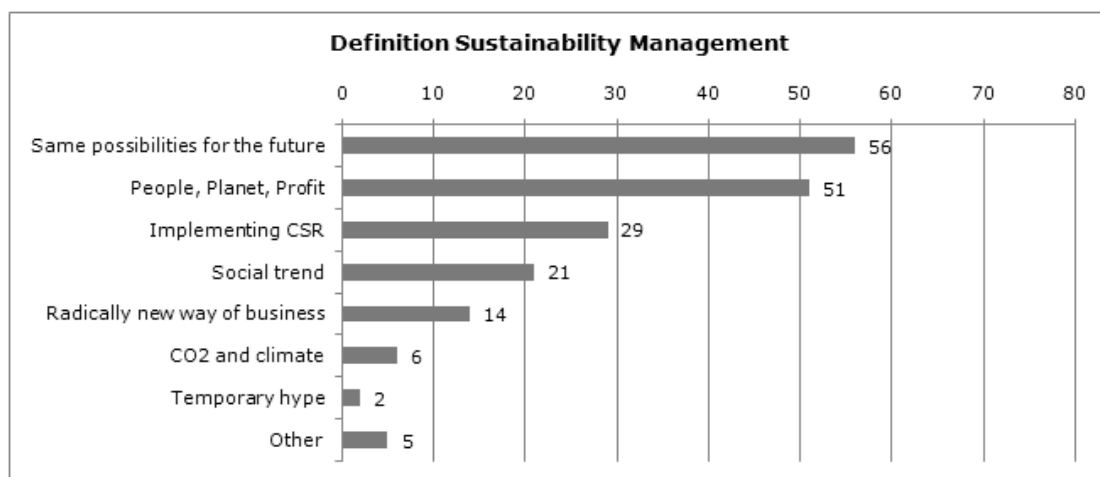
<sup>22</sup> ISO 26000 (2010). Definition of Corporate Responsibility presented in the terms and definition glossary on page 4.

The core business should be managed in a *sustainable* fashion. For sustainability management to be successful, in terms of the documents investigated, sustainable development should be an integral part of an organization's vision, mission and strategy.

It is indicated that applying sustainability management is a way of 'good governance' (ISO 26000) or common 'business sense' (DHV Advisory Group). This is because it is what society expects of organizations. But sustainability goes beyond society's legal expectations: "[it] also entails actions beyond legal compliance and the recognition of obligations to others that are not legally binding" (ISO 26000, 2010, page 7). DHV emphasizes the needs for being in touch with your organizational context, because sustainable development is happening all around you in your direct surrounding. Also, every company is unique, so there is no uniform solution. For a company to be sustainable it needs management that is in sync with the unique organizational context. But there are some common social trends on a more macroscopic level. The Advisory Group mentions societal challenges climate change, poverty and diversity. The ISO 26000 mentions globalization, increasing mobility and accessibility and expansion of direct communication. The ISO 26000 also explicitly mentions the relevant global agreements as aspects of a societal context of sustainability management<sup>23</sup>.

In the questionnaire I asked what sustainability management is according to the respondent. In Figure 4-1 below it is clear that the majority believes 'sustainability management regime' is about securing the same possibilities for the future (generations) as we have now (56 respondents) and about the 3Ps (51 respondents). 14 respondents believe that sustainability management is a radical new way of running a business, but this is a minority. What is also clear is that the principle problem addressed in the regime is not limited to climate change or the CO<sub>2</sub>-emissions.

**Figure 4-1: 'What is sustainability management?' (amount)**



What is also striking is the overlap between the top three scoring definitions. Of the 29 respondents, that indicated that sustainability management is about 'implementing CSR', 19 answered it is also about 'securing future possibilities' and 24 also answered it is about the

<sup>23</sup> These agreements include, but are not limited to the: 'Universal Declaration of Human Rights', 'Rio Declaration on Environment and Development', 'Johannesburg Declaration on Sustainable Development', 'Millennium Development Goals' and 'ILO Declaration on Fundamental Principles and Rights at Work'.

'3Ps'. The overlap of 26 respondents between 'future possibilities' and the '3Ps' is relatively smaller. Due to the method of stating the question it was not possible to say anything about the statistical significance of these overlapping responses. But what can be said is that regarding sustainability management for almost a third of the respondents the three concepts 'implementing CSR', 'future possibilities' and the '3Ps' are coherent.

From the interviews I can derive how sustainability management can be characterized as a technological configurations. It appears that sustainability management is mostly seen as a transforming configuration consisting of hard-, soft-, socio and orgware. I base this mostly on the way a sustainable business has been described. Sustainability management takes the core business of a company as the central 'hardware' around which monitoring and controlling 'software' should be established in order to let the hardware operate sustainable. This is the level on which sustainability management is perceived to be. The org- and socioware is inhabited by different stakeholders (groups). However, the interviewees indicate that sustainability has shifted within the configuration closer to the hardware of a company. At first, sustainability mostly existed in the external socioware, the societal landscape. Later on, when it became clear that sustainability issues were relevant for organizations DHV was increasingly more asked to make sustainability management part of the orgware, by helping to formulate goals and strategies. The last two year there is another shift. DHV is more and asked to 'operationalize' sustainability in the actual business. Interviewee 4 remarked: "*[two years ago] my advice was 80% explorations for the relevant sustainability topics and helping with issue selection. Now, and especially with the arrival of several [management] tools, this has shifted to 60% strategic advice, 40% operationalization*". The sustainability theme is increasingly finding its way closer to core business of organizations.

Interviewees 1, 2, 6 and 7 are the interviewees that have close dealings with the management of DHV's sustainability. These four interviewees emphasize the importance of leadership and the support of higher management for sustainability. This is an indication for me that the individual visions and meanings regarding sustainability is of great importance for the management of sustainability to function properly. The reaction of interviewee 9, who initiative the sustainability management tool ProRail CPL, is illustrative for this: "*The public has the idea that the railway is 'green', so it was only natural to decide to introduce a method for reducing emissions. ... We did not wait for anybody or for the tool to be perfect, we just decided to go for it and it has been a great success*".

#### 4.1.2 Testing proposition 1

Based on the empirical data I believe it is definitely possible to characterizes sustainability management as a configuration that works. The function of sustainability management is to ensure that future generations are not deprived of opportunities because of our actions. The function of the configuration has a large resemblance with the 'Brundtland-definition' of sustainable development. In the configuration two aspects stand out. The first is the emphasis on stakeholders and stakeholder dialogues. The second is the central position the core business of organizations is attributed. Based on these two observations I conclude that two conception of the configuration of sustainability management are dominant. The importance of stakeholder engagement and strong leadership indicates that sustainability management is perceived as a

configuration of meanings, visions and interaction. The anchoring role of the core business indicates a conception of a concentric configuration of hard-, soft-, org- and socioware.

## **4.2 Sustainability management is an acknowledged concept in the corporate world**

If sustainability management is an acknowledged concept in the researched scope then sufficient evidence will be found in the data for a specific organizational field in which a certain regime resides. Please recall that a organizational field consists of: "those organizations that, in aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products" (Diaggio & Powell, 1983). Within the organizational field there should be signs of a sustainability management regime that is: "the rule-set or grammar embedded in a complex of *management practices, sustainable process management, management output* characteristics, skills and procedures, ways of handling relevant artefacts and persons, ways of defining problems" (Rip A. , 2005).

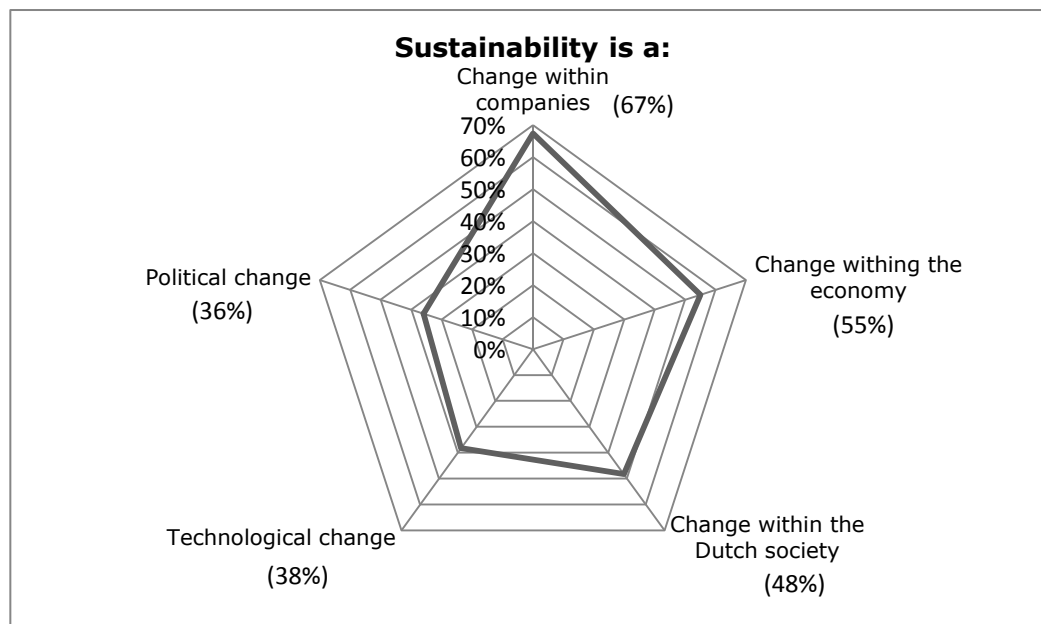
From the data it is evident that sustainability management at least has some acknowledgement. In the survey there is an indication that sustainability is perceived as an phenomenon that is here to stay has been shown in Figure 4-1. Only two respondents believe sustainability management is just a temporary hype. I will now show what I believe should be interpreted in the data as the organizational sustainability management field and regime. First I will show what is thought to be the organizational field and regime in general. This is mostly based on the document review and the survey. Secondly I will describe the specific state of affairs in the researched empirical scope.

### *4.2.1 Data interpretation*

What would help to understand how the organizational field could be distinguished from its context? The key concept in the researched documents that has been found for indicating the relevant organizational field is 'stakeholder'. A stakeholder is: "individual who or organization that has an interest in any decision or activity of an organization" (ISO 26000, 2010). This seems a very broad understanding of all relevant actors in the organizational field. But this is deliberate since sustainability management strives for a societal and environmental improvement that goes beyond the boundaries of a single organization. So the organizational field consists of more types of organizations than just the economically relevant actors such as competitors, suppliers and costumers, but includes people that are effected by actions of an organization because they live in the direct vicinity. The ISO 26000 also give a very explicit remark on stakeholders that might not be so easily represented by an individual or organization that can defend their interests. Think of children, vulnerable groups, future generations and the wild life. In such cases an organization should give attention to views of credible groups that seek to represent such interests. The claimed interests can also be relevant and significant even if they refer to a potential effect to the interests of stakeholders. In sustainability management the main type of relations within the aggregate of the organizational field can be characterized as interactive stakeholder dialogue. The functions of this dialogue are many-fold and are multidirectional. The stakeholder dialogue can be used for sharing information, reconcile

conflicts of different interests (of different stakeholders), determine the consequences of several actions or to form partnership to achieve mutually beneficial goals. A great example of stimulating interaction is the stakeholder dialogue suggested in the CPL. A company gets a higher score if its stakeholder dialogue has a higher impact on the reduction of CO<sub>2</sub> emissions within the organizational scope. If a company communicates ad hoc information it is at level 2. If there is a structural communication and an active attitude for reducing CO<sub>2</sub> it is at level 3. If a company has calculated the CO<sub>2</sub> of its whole supply-chain and facilitates initiative for emission reductions across the railway sector it is on level 4. Level 5 is for the companies that have a pivotal function in sector-wide CO<sub>2</sub> reductions and demands emission information from its stakeholders for doing business. This example shows that stakeholder inclusiveness and the invasiveness of the stakeholder engagement characterizes the organization field of sustainability management. The mode of action is interactive communication in order to discern and acknowledge all relevant interest of a broad range of stakeholders.

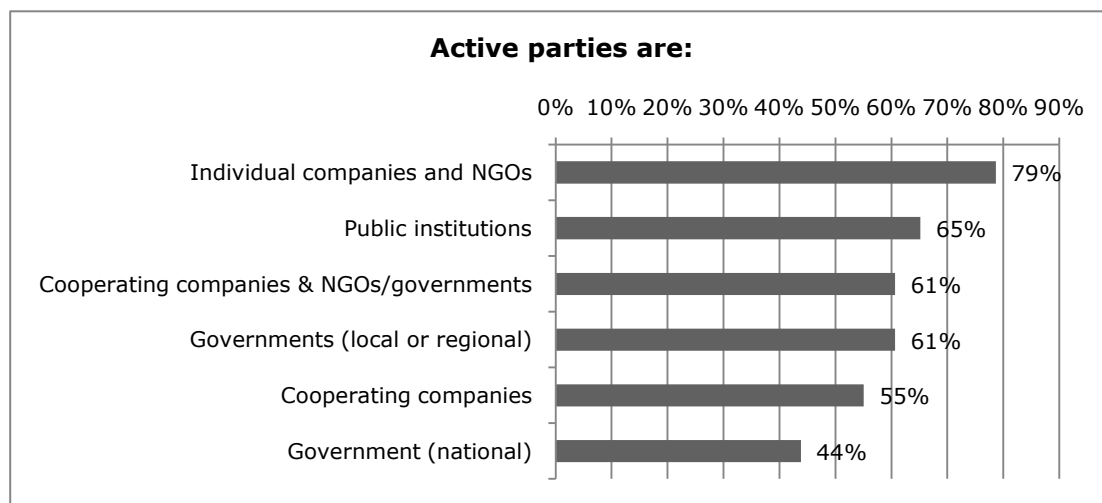
**Figure 4-2: Character of sustainability changes**



I have asked in the survey what the respondents believe what type of change sustainability is. By doing so it is possible to understand how in this regime problems regarding sustainability issues are defined. It is clear from Figure 4-2 that a large part of the respondents believe that sustainability is a multi-dimensional change, as every type of change receives at least support of 1/3<sup>rd</sup> of the respondents. What also can be derived from the data is a ranking of the different dimensions of sustainability. It is very clear that sustainability is mostly about issues that require companies to change. Second and third in rank are economical and societal changes. At the bottom of the ranking are technological and political change. It would be a wrong interpretation to say that technology and politics are not important factors in the management (i.e. change) for sustainability. But it can be said that technology and politics appear to be less important than the economy and the Dutch economy. Also, the most important change for sustainability is the change within companies.

But who are the actors that are active for sustainability? The respondent believe the most active type of actors are the individual companies and NGOs, this is shown in the ranking in Figure 4-3. The least active is the national government. Other types of governments and public institutions are perceived to be just as active as the cooperation between different types of actors. These observations lead to the assumption that sustainability activities are mostly performed in the private and semi-private domain within society. Another observations is that semi-private cooperation is seen as more active (61%) than cooperation between private parties (55%), although the difference is not that large.

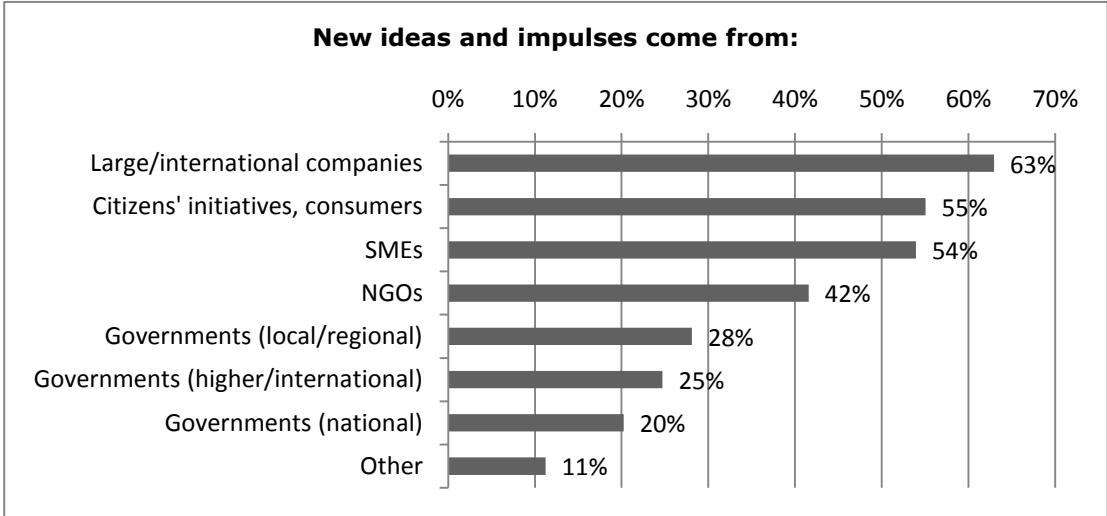
**Figure 4-3: Active parties in sustainability**



Similar conclusions can be drawn if we look at where new ideas and impulses for sustainability are thought to come from. This time the private parties were separated from the NGOs and divided in small and medium (SME) and large companies. The divide between the governmental actors and the private and social actors is evident in Figure 4-4. A remarkable signal are the high marks for individual actions (initiatives from consumers and citizens). In this question there was also room for the respondents to suggest alternative actors. Four respondents indicated that individuals are also sources for sustainability ideas and impulses. Apparently these respondents could not place 'the individual' within the range of possibilities and felt compelled to communicate this to the researcher. This gives me a motive to assume that individuals, separate from their organization, is believed to have at least some agency within this regime.

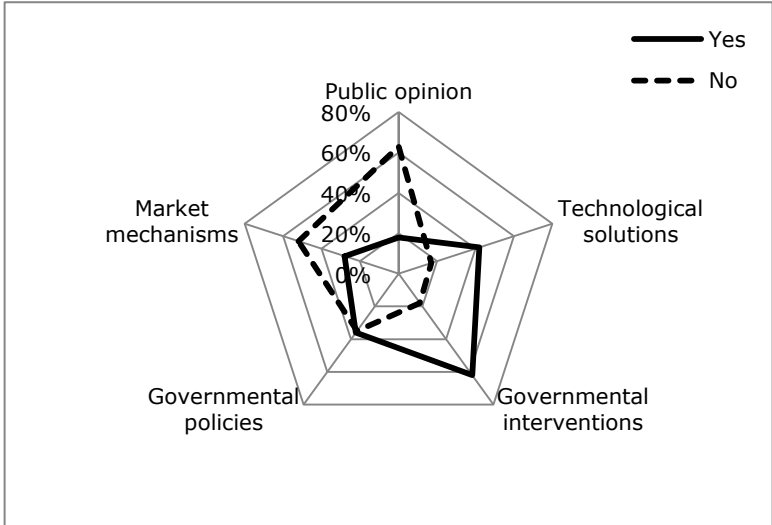


Figure 4-4: Sources for sustainability changes



After establishing the character of the active parties in sustainability, it is interesting to know what is believed to be the factors that determine the direction for addressing the sustainability issues. I have asked what the respondents believe are the solutions for environmental and social sustainability problems and which one aren't. This is depicted in Figure 4-5. Two figures stand out very significantly. 63% believes that the public opinion will not lead to solutions and 62% believe that the government is allowed to intervene drastically to resolve sustainability issues. However, the group of respondents is most ambiguous on the use of governmental policies (yes: 36%, neutral: 28%, no: 35%). This could be interpreted as a preference for a role for the government in the background, only intervening if problems are not addressed. The majority of the respondents also dismiss the idea that sustainability issues will be resolved if we leave it to the market mechanisms (yes: 28%, neutral 21%, no: 51%). Technological solutions for sustainability are received with ambivalence. Although a large part of 42% (17% disagree) believe that technological developments are a direction for solutions, an almost equal part (41%) has a neutral stance.

Figure 4-5: Solutions for sustainability



Based on the previously presented results from the questionnaire a number of assumptions can be made about the regime of sustainability management. First of all, the main function of this regime is: to change the way companies do business. Secondary functions are the change of society and the economy. Although political and technological change is not widely denied by the respondents it is clear that politics and technology are not the prime focus of sustainability management. When we look at how the relevant changes should be informed it is very clear that the respondents have little faith in the general public. The active parties should not listen to the public opinion if we want to achieve sustainability. Market mechanisms are also not preferred. Technological solutions and governmental policies are received with ambiguity. The members of this regime are actors from the private and semi-private domain. Governments are thought to be less active members, but they are allowed to intervene drastically if necessary.

I have interviewed members of the sustainability advisory group and members of staff that are appointed to deal with sustainability issues within DHV. It would be stating the obvious to say that these interviewees believe that sustainability management is an acknowledged concept as it is their daily work. But there are some interesting observations to point out. Interviewee 2, director of sustainability management at DHV, was only just appointed in October 2010. The position did not previously exist. Something similar can be seen with interviewees 7 and his successor interviewee 6. Both were CSR managers but interviewee 7 had to perform his (ad hoc) activities alongside other tasks, whereas four years ago interviewee 6 became the dedicated CSR manager. So, at DHV sustainability management has become instituted in the last few years. Interviewee 2 remarks: *"the fact that there is now sustainability director for integral a company wide approach is an indication that sustainability management is increasingly becoming accepted on strategic level"*. The interviewees recognize the same shift in their surrounding peers, but DHV has a leadership role.

The work done in sustainability management, both as an internal DHV activity and as advice services, has changed as well. In the early years of the advisory group they did a lot of promotional work to create awareness. The advices they gave often dealt with reducing risks for the environment and aiming for compliance with environmental, health or safety legislation (Interviewees 1, 2 and 3). This is changing into advice about sustainable business cases and creating a pro-active attitude towards sustainability within a customer's organization. The goal of sustainability is nowadays increasingly aimed beyond compliance with integral sustainability management solutions. This shift creates a need for advisory employees that are more creative and innovative. This is also noticeable in the competition. The traditional engineering and accounting firms are still much caught in the rigid thinking of rules and compliance. The real competition in sustainability management come from more creative parties such as consultancy firms, communication advisories and some NGOs. These are organizations that see sustainability as a driving force instead of a restraint. It is very remarkable that every interviewee indicates that the Dutch government somehow missed this shift, with the exception of some municipalities. The government is still very much focused on a rational approach of restrictive rules and market mechanisms, rather than appraising 'best practices' and stimulating innovative solutions. Due to this, the government is not seen as an active member of the organizational field of sustainability management.

#### 4.2.2 *Testing proposition 2*

I will now explain what I believe are the organizational field and regime. From the documents it becomes clear that an organizational field of sustainability management is largely formed by the aggregate of relevant stakeholders in a particular case. From the survey it is clear that the respondents believe that individual organizations make up the most part of the organizational field. Enlightened or visionary individuals were also explicitly mentioned. The general public, governments and policy makers are clearly less associated with sustainability management. In the case of DHV the organizational field consists of large Dutch organizations, that have sustainability high in their strategic agenda. These organizations, as well as DHV itself have people in top-management that support sustainability. The advisory group helps these costumers with the assessment of the relevant stakeholder and the implementation of sustainability management. The peers of DHV are no longer the traditional engineering and accounting firms, but strategic and communication consultants. From the interviews it became clear that the government is not really perceived as part of the organizational field, but more as a part of the socio-technical landscape.

The regime present in this organizational field is characterized by a strategic and creative outlook on sustainability management. Sustainability is seen as important part of core activity, as an ordering factor aimed for a goal that is the triptych of social, environmental and monetary values. Management practices are aimed beyond compliance with existing laws and legislation on creating 'best practices'. These practices focus on the change of business conducts within a organization and, to lesser extent, how the economy and society are organized. Management outputs should be transparent and understandable for stakeholders. The actors should be reflexive and communicative, since the stakeholder dialogue is a prominent procedure in sustainability management. Problems regarding sustainability issues are not to be solved with the public opinion, market mechanism, governmental policies or technological solutions. Rather than that, the issues are taken up as a collective challenge which have to be headed with creativity and leadership. The respondents and interviewees make a clear distinction between the rationalistic 'old regime' of compliance and engineerability (of the environmental or social problems) and the new sustainability regime. The old regime is calculative whereas the new regime is interactive.

I looked for proof of the acknowledgement of sustainability management in the corporate world. Considering the identifiable sustainability management organizational field with a distinct regime I believe that this proposition is supported by the data. It was not yet investigated to what extent sustainability management has already been institutionalized. This will be done in a following section on the fourth proposition. But first I will elaborate in more detail on the normative attitudes present in the sustainability management regime. In the next section I will evaluate the different discourses present in the data.

### 4.3 The transition to sustainability has a normative component

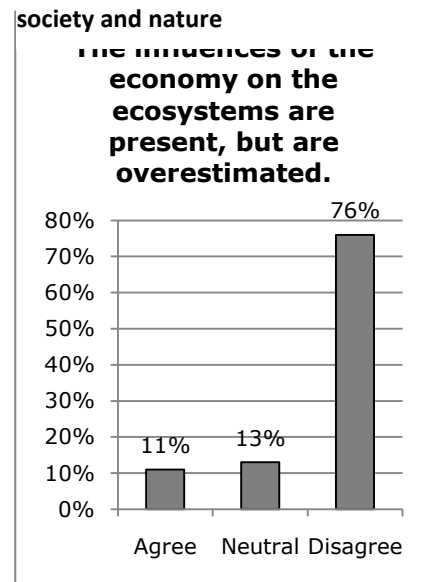
In order to conclude anything about the normative components of the transition to sustainability I will try to frame the findings in the data within the discursive framework of environmental ideologies as it has been described in chapter 2.

#### 4.3.1 Data interpretation

In the online survey there were 21 ethical statements about which the respondents were asked to indicate if they agreed or disagreed with the statements or were neutral. These statements were drafted in such a way that the respondents could be categorized within one of the four quadrants of discourses. The actual form of these statements can be found in APPENDIX ii on page 100. One statement I included was a check if the respondents could indeed be characterized as having environmental concerns. 91% of the respondents believed that society and nature are out of balance. This is an indication that a very large majority of the respondents have environmental concerns. I consider this a first legitimization of an analysis with an environmental discursive framework.

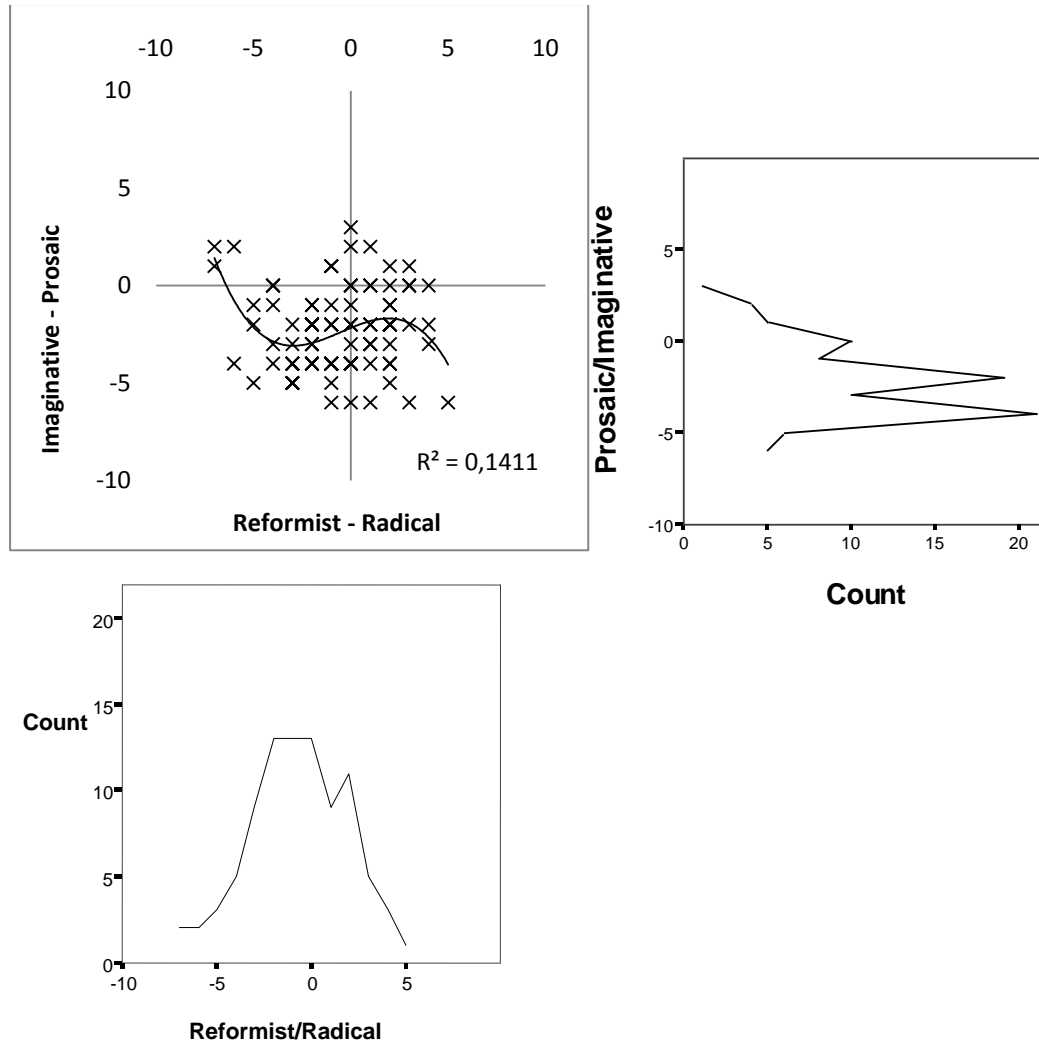
A numeric summary of the results is plotted in the scatter plot and graphs below marked as 'Figure 4-7: Numeric analysis of 20 ethical statements'. the 20 statements were divided in three categories. 8 statements determined if a respondent is prosaic or imaginative, another 8 determined if a respondent is a reformist or radical and 4 statements emphasized the differences between the 2 dimensions. Each individual respondent's position within the 'prosaic/imaginative – reformist/radical' classification has been calculated by scoring their answers. The starting point is (0,0). For example, if a respondents gives a imaginative answer his position changes -1 on the y-axis. If on the second question he answers radical his position changes +1 on the x-axis. So after 2 questions his position changed from (0,0) to (1,-1) placing him in the 'imaginative – radical' quadrant (the Green Radicalism discourses). After 20 questions a final position is reached. The result of the calculations for all 89 respondents have been plotted in the top-left graph. This scatter plot does give a indication where on the grid the respondents can be placed, but does not tell us the weight of this position. It does not indicate how many respondents landed on a specific 'x'. Therefore I added two graphs that indicate how the respondents are distributed along the two dimensions, showing the density of the positions. One remark I want to make is on the scale of the axes. The actual number does not have a quantitative meaning, it merely gives a sense of degree. If a respondent has a position (-4, -6) it is an indication that he is more imaginative than prosaic, but not that he is twice as imaginative than someone on (-2, -6). The number '-4' does not actually mean anything, only the relative positions matter.

Figure 4-6: Statement - Balance



From all three the graphs it can be observed that the 'imaginative – reformist' quadrant has the most respondents placed in it. This is the 'quest for sustainability' quadrant. From these quantitative observations it can be inferred that the quest for sustainability discourses are the most dominant discourses present in the dataset of the questionnaire.

**Figure 4-7: Numeric analysis of 20 ethical statements**



The brief numeric analysis does give a first indication what the most dominant ideological discourses. But it lacks some nuances. I will now look at the content of the statements and compare different statements with each other. This will be done by evaluating the answers regarding the meaning of sustainability, which interests are thought to be the most important, the relationship between humans and nature, the suggested solution pathways and views on society, economy and ecology. I will first discern the discourses per theme and will discuss the findings from the interviews separately. I will present an overall conclusion at the end.

Perception of sustainability

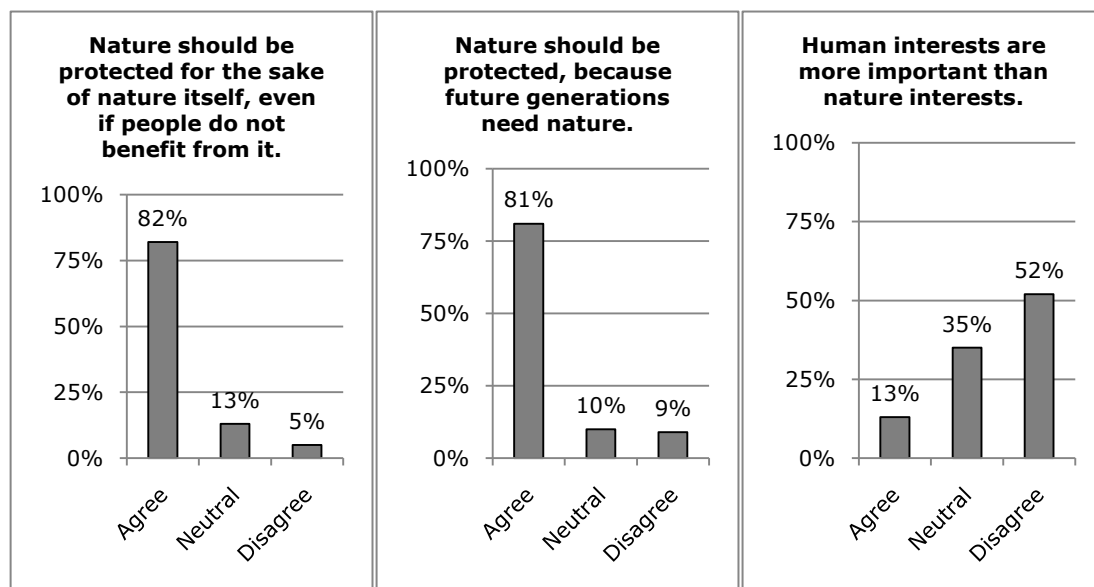
In Figure 4-2 the perception of sustainability already has been displayed. the majority of the respondents believed that sustainability is a change within companies. The least selected

options were: sustainability as a political change and technological. The first is an indication that the respondents are not strong survivalists. Survivalists see sustainability as the rise of an enlightened green class, that with authoritarian means saves our planet. Apparently this political ideals is not strongly present with the respondents. Secondly, sustainability is not mostly a technological issue. This indicates that Promethean ideas, i.e. technological transformation of crude matter, are not very dominant. Please note that this is not the same as saying the technology is not important for sustainability, but it is not the most important. What is notable is the overlap between the characteristics. A large part of the respondents indicated that sustainability is a change in multiple ways. This is a sign that the respondents are more imaginative than prosaic as they consider 'new' values (social and environmental) equally important as economic progress. Also, by selecting the 'change in economy' a large part of the respondents shows that our current capitalism is open for debate, thereby partially dismissing the economic rationalism discourse.

#### Interests at stake

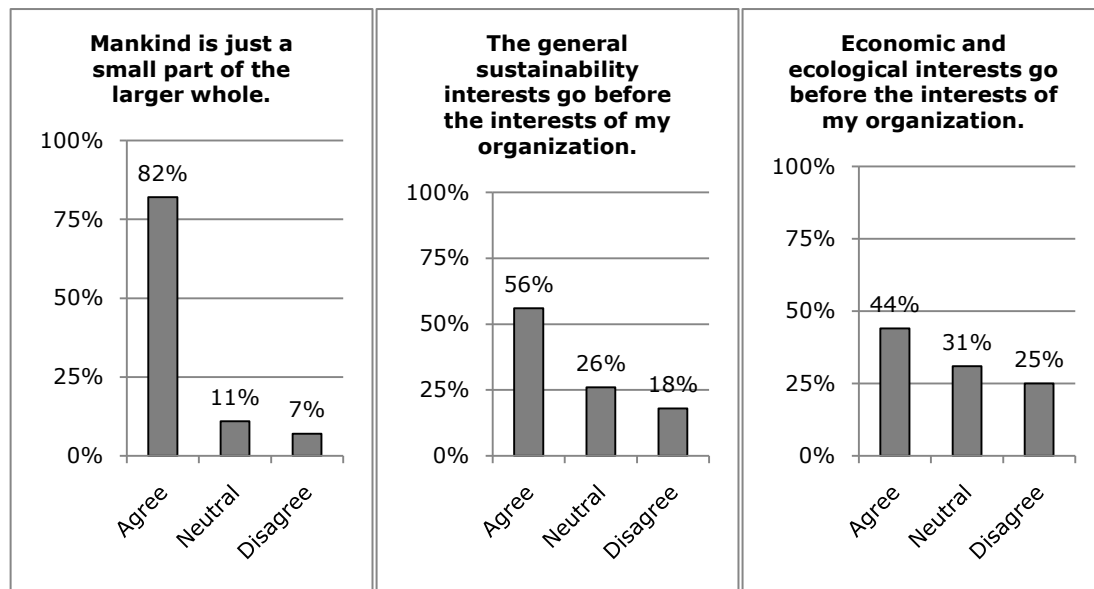
If it can be shown which interests are perceived to be more important than others, then I infer a certain ordering of human, environmental, social and organizational stakes. In the survey a number of statements regarding these interests were stated. Their graphs are shown in Figure 4-8. 82% thinks that nature should be protected even if humans have no benefit from this protection. The majority believes that nature should be protected just for the sake of it. Almost the same percentage believes that nature should be protected for future generations. This could indicate that human and natural stakes are equally valued. This assumption is also backed up by the third graph. 52% disagrees that human stakes are more important than natural stakes. The Neutral answers could be interpreted as: human and natural stakes are equally important. In that case 87% believes that human stakes are not more important than natural stakes, but that natural stakes are at least just as important as human or even more important.

**Figure 4-8: Human and nature's interests.**



A similar, although less strong, pattern can be found in the answers about interests in a more systemic view. The most left graph in Figure 4-9 clearly indicates that mankind is perceived as a part of a larger complex. The middle and right graphs give insights into the ranking of different interests. A majority believes interests for sustainability are more important than the interests of their organization. However, the organizational interests become more important if we only compare them with economic and environmental interests. I have to admit that in the questionnaire the social interests were not mentioned, so there comparison between the middle and right graph is somewhat lop-sided. But what can be concluded is that the respondents see their organizations being subordinate to a larger whole. Also, sustainability is comprised of more interests than either economic or ecologic interests (or social interests). Sustainability is an all-encompassing concept. And we as mankind are just one of many parts that have interests at stake.

**Figure 4-9: Interests in a system view**

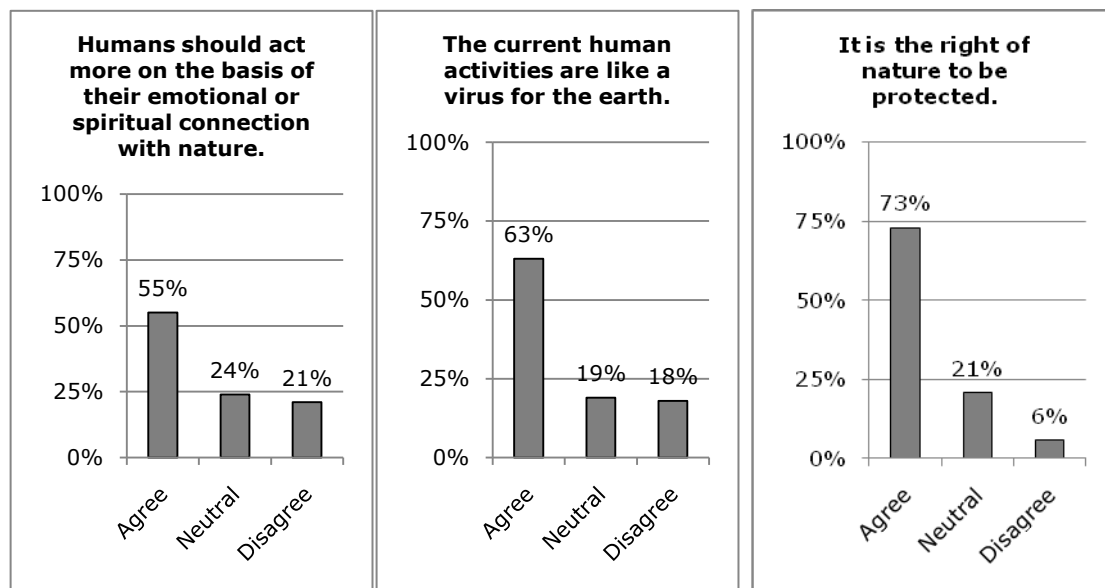


From this data on the perception of 'interests at stake' I can draw some conclusions about what the respondents are concerned about. First of all, human interests are not the only interests that are at stake in sustainability issues. Interests of nature are at least as important for the largest part of the respondents as human interests. We, as mankind and our organizations, are part of a larger whole also including other beings or systems. The problem solving and survivalism discourses would agree with the concern that nature has to be protected for future generations, but they would not agree with the high valuation of other interests than human. The problem solving discourses sees nature as resources and not as something that has value in and of itself. The survivalists could see value in nature, but would place human values higher since they aim for the survival of mankind. So the combination of the first three graphs indicates to me an imaginative attitude. The second set of graphs does not really convince me to conclude a reformist or radical attitude, not by their content as well as the numbers. I might be leaning a little towards radicalism, because the majority (52%) believes sustainability is more important than the organization they work for. The next paragraphs will give more insights.

### Human-nature relation

In Figure 4-8 it was already shown that the 82% of the respondents believe that nature should be protected even human have no benefits from this protection. Figure 4-10 shows that 73% believes that nature has *the right* to be protected. Behind this claim is the assumption that nature exists as something able of having rights. For me this indicates that the respondents adhere to green radicalism views on this point. Two other graph, displayed in Figure 4-10, on the human-nature relation support this same conclusion. The left graph shows that 55% believes that a more emotional and spiritual bond with nature is a good thing. This statement is derived from the 'green conscious' discourse, although agreeing with this statement does not exclude other discourses. The right graph uses a biological metaphor to interpret the sustainability issues. This is in the 'green politics' discourse a way of expressing concerns (although the negative undertone would suit the survivalism discourse as well). For the reformist discourses these two statements would seem somewhat detached from practical reality, especially for the problem solving rationalists. These interpretations make me believe that the respondents have a more radical than reformist perception on the natural world and the place of human and mankind in it.

**Figure 4-10: Human-nature relation**



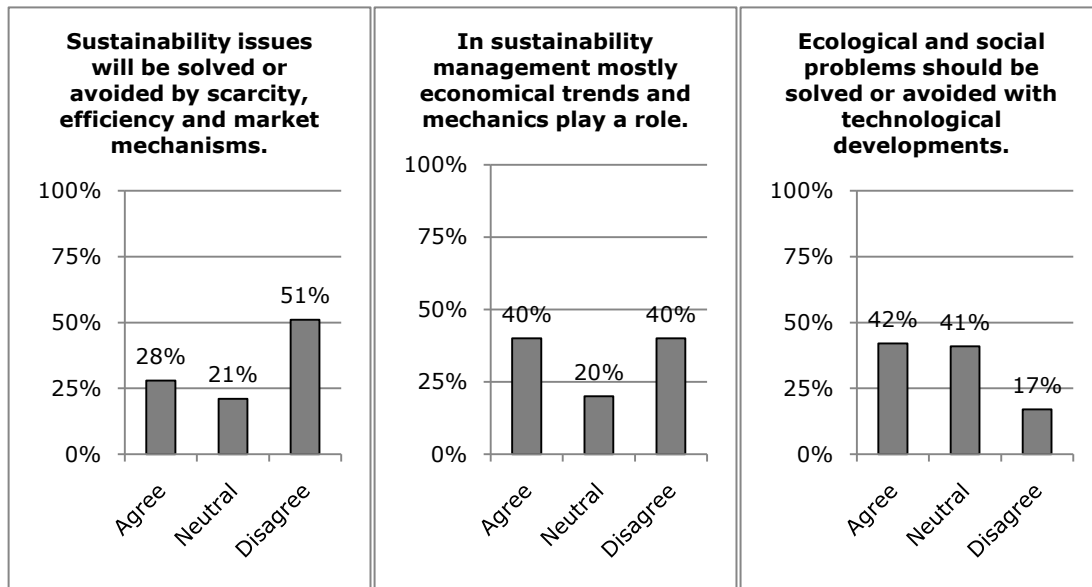
### Solution pathways

The results on the solutions pathways have already been displayed in Figure 4-5, but I would like to discuss them in the discursive frame as well. Some solution pathways suggested by the problem solving rationalists are displayed in Figure 4-11. The left graph shows a disagreement of the respondents with the economic rationalists (and Prometheans). 51% disagrees (21% neutral) with the claim that market mechanisms will solve sustainability issues. There is ambivalence on a prominent role for economical mechanisms in sustainability management. The opposing side is as large as the agreeing side. Less ambivalence is seen in the perception of technologies. 42% agrees that technological solutions should be used to avoid or solve ecological and social problem, but almost a same percentage is neutral on this point. For me,

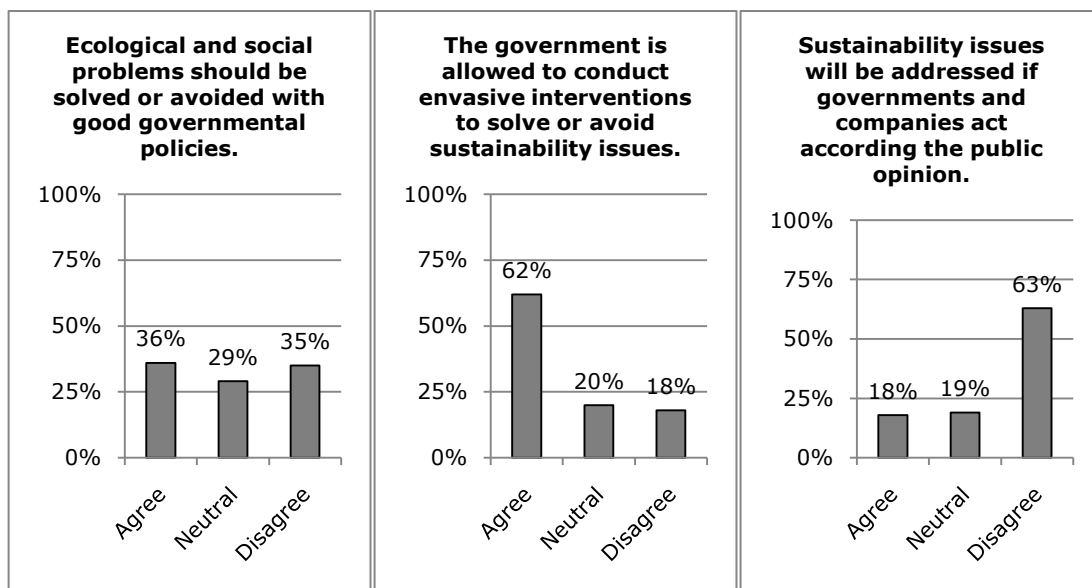


this largely neutral standpoint is an indication that technologies are not seen as the most important solution for sustainability.

**Figure 4-11: Three rationalism solutions**



**Figure 4-12: political rationalism solutions**



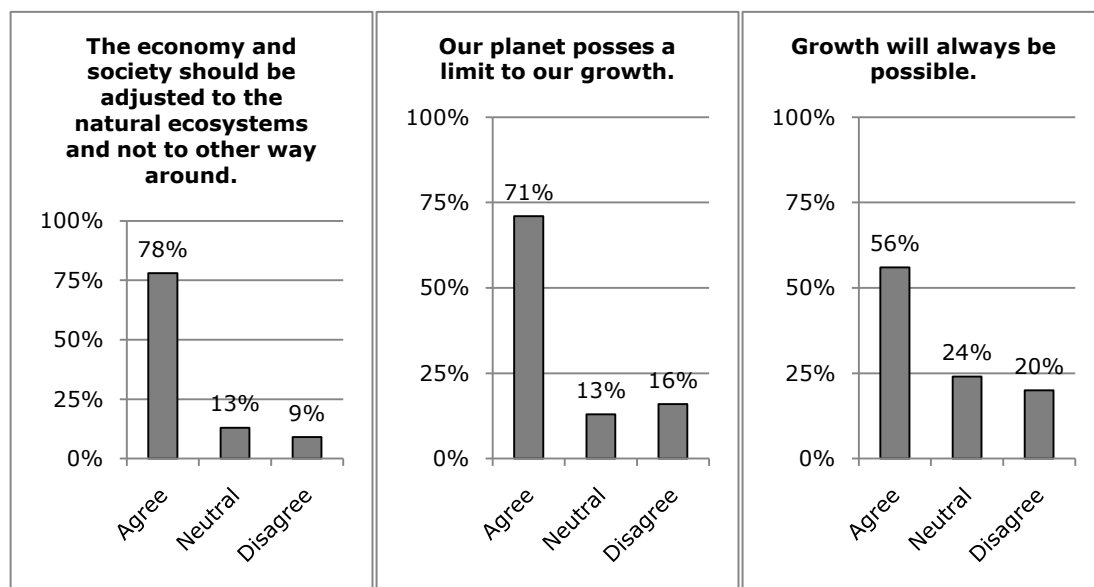
There are more solutions suggested by the rationalism discourses, namely bureaucratic systems and democratic procedures. I have asked what the respondents thought about governmental policies, governmental interventions and the public opinion. The outcomes are depicted in Figure 4-12. Governmental policies are received with quite some ambiguity. Almost the same amount of respondents agreed, disagreed or were neutral. This seems to be at odds with the middle graph. There it is indicated that almost 2/3<sup>rd</sup> of the respondents believes that the government is allowed to intervene drastically. To me this seems to indicate that the government should not have a leading role for sustainability, and only should enforces change if things go wrong. The

most right graph shows that the public opinion should not be followed. Apparently the respondents do not have much faith in direct representative democracy.

Based on these six results it seems fairly obvious that the respondents are no strong followers of the problem solving discourses. The economical mechanism of economic rationalism is clearly rejected. The respondents for the most part also dismiss democratic rationalism by rejecting the public opinion, agreeing with (authoritarian) interventions and their ambiguity on policies (the outcome of democratic procedures). The fact that technological and policy solutions do not have many proponents with the respondents, together with the conclusions on the other rationalism discourses make me believe that the administrative rationalism discourse is also not that present. Figure 4-12 indicates to me that the survivalism discourse is also not so strongly present. Yes, this discourse would also reject the public opinion and agree with drastic interventions. But I believe survivalism would show higher numbers, especially considering the attribute of a strong sense of urgency to avoid our destruction. Moreover, I believe survivalism would not show such ambiguity towards governmental policies. Stringent rules and regulations would be needed to radically change our global society.

I still have to establish if the respondents, with regards to the solution pathway, are (imaginative) reformists or radicals. This is however not easily done as the next three graphs in Figure 4-13 illustrate. A large majority of 78% believes that human structures, like the economy and society, should be adjusted to the ecosystems. Together with the observation, that almost an equal majority of 71% believes that our planet poses limits on our growth, would make me believe that this indicates a green radicalism discourse. However, the respondents also still have an optimistic outlook on our development. A small majority of 56% believes that growth will always be possible.

**Figure 4-13: Growth within ecosystems?**



This seems to be a contradiction: growth is limited but always possible. But this could be explained by the imaginative character of the discourses. An interpretation could be that our planet limits our current type of growth. But what if we could establish a new norm for growth

(e.g. based on people, planet and profit values) that ensures that our economy and society suit the ecosystems; an organic growth? Such a growth could remain possible. On the basis of the solution pathways it is hard to say if the respondents adhere strongly to a radical or reformist discourse, but it can be said that the respondents are certainly more imaginative than prosaic.

#### Important developments

In the questionnaire I also gave the opportunity to the respondents to mention what they believed to be the most important developments in current sustainability management. 75 respondents of the 89 mentioned one or more developments. It is evident from Table 4-1 that themes regarding a sustainable business case are seen as the most important developments. But what is also relevant for this research is what is not mentioned. Very few people emphasized individual development (work/private balance), spirituality or green romantic ideals (intrinsic value in nature, humans in harmony with surrounding). Clearly, based on these responses, the respondents are not strong followers of the green conscious discourse. The respondents have a more business or systems view on sustainability management.

**Table 4-1: Important developments in sustainability management**

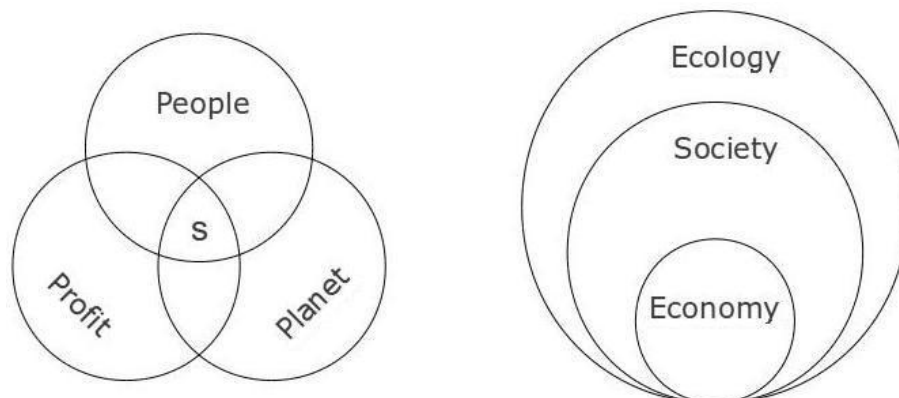
Theme		Count
<i>Energy</i>	Efficiency, reduction of fossil fuels (CO <sub>2</sub> ), sustainable energy	27
<i>Awareness</i>	Dialogues on sustainability, public attention, acceptance	22
<i>Production</i>	Resource efficiency, sustainable procurement and production, recycling, Cradle-2-Cradle	22
<i>Good governance</i>	Transparency, awareness of stakeholders, genuine CSR	21
<i>Norms</i>	CO <sub>2</sub> -footprint, life cycle analysis, benchmarks, ISO 26000	9
<i>Cooperation</i>	Supply chain cooperation, NGOs and government	5
<i>Social Justice</i>	Global welfare distribution, emancipation of social groups	5
<i>Government</i>	Lagging government	4
<i>Biodiversity</i>	More prominent place for nature needed	2

It is also clear that the respondents are more interested in the practicalities of developing a sustainable business case, than in creating a level playing field or political arena for sustainable human structures. The low attention for social justice and the low qualification of governmental effort make me believe that the respondent also do not adhere much to the 'sustainable development' discourse. The main focus of the respondents is on resources (energy, production) and social learning (corporate and public awareness). These are different attributes of the two discourses 'ecological modernization' and 'green politics'. However, the respondents in their answers display a favor for gradual change in stead of a radical shift. I believe that, on the basis of the mentioned important developments, within the set of respondents the 'ecological modernization' discourse is the strongest discourse present.

#### 4.3.2 Findings from the interviews

As I already have concluded in the section on the previous proposition the interviewees have imaginative visions for our future sustainable society. In this section I will explain if the interviewees have a more reformist or radical mode of action. It appears that they are not easily placed along this distinction. The interviewees see the idealistic attractiveness of the 'green radicalism' discourses, but at the same time believe in the usefulness in practice of the 'quest for sustainability' discourses. Let me explain this with the drawings made during some of the interviews. These are displayed in Figure 4-14. The two schemes shows different relations between the environmental (planet and ecology), human (people and society) and economic (profit and economy) realms. Both schemes acknowledges the importance of the three types, but differ in their hierarchical positions. The left schemes shows the 'ecological modernization' understanding of sustainability. People, planet and profit values are equally important and a state of sustainability is reached in the center where the three types of values are in balance. The right scheme is the systems view of the 'green politics' discourse. There is sustainability if our economy fits (or serves) our society, which in its turn should stay within the boundaries of the ecological sphere.

**Figure 4-14: Different perceptions of sustainability**



From the interviews it is clear that the interviewees have a conception of sustainability as depicted in the right, but in their daily business find the conception on the left more useful. Interviewee 6 even called the view on the right the new and the one on the left the old perception on sustainability. At DHV interviewees 2 and 6 are trying to incorporate the right perception in the organization of DHV. The sustainability advisors, on the other hand, help organizations to incorporate people and planet values besides profit in their strategy (left scheme). Although they personally believe in the 'green politics' view the advisors, they consciously use the language and perceptions of the 'ecological modernization' discourse since this discourse is better understood by organizations and individuals that want to shift towards a more sustainable business. The 'green politics' discourse is, literally, too radical.

#### 4.3.3 Testing proposition 3

Sustainability management has a normative component that is represented by the different discourses that are present amongst the respondents and interviewees. What can be concluded is that the majority of the data sources fall in the imaginative category. This was very evident

from the numeric analysis and the analysis of the 20 ethical statements. I have displayed the distribution of the respondents over the four discourse quadrants in Table 4-2. In this table it is clear that the respondents predominantly adhere to the 'quest for sustainability' discourses, but that the 'green radicalism' discourses also have a voice that should not be neglected.

**Table 4-2: Distribution of the respondent**

	<b>Reformist</b>	<b>Neutral</b>	<b>Radical</b>
<b>Prosaic</b>	<i>Problem Solvers</i>		<i>Survivalism</i>
	5	2	3
<b>Neutral</b>	2	2	6
<b>Imaginative</b>	<i>Sustainability Quest</i>		<i>Green Radicalism</i>
	40	9	20

But what is the conversation that these discourses have together? How can we understand the 'communicative miracle'? I believe that the green radicalism discourses, and in the case of DHV especially the 'green politics', how an important part to play as a long term vision of a greater goal to which sustainability management strive for. This is in line with the holistic view on sustainability as a process of social learning by societies. The 'quest for sustainability' discourses contributes a positive 'working attitude' and a practical understanding of sustainability. In the case of the DHV Advisory Group sustainability is understood as a plan for actions for an organization, that can be implemented on a short term. Sustainability management is understood from an 'ecological modernization' point of view. Sustainability is reached if your organization follows a sustainable business case and a 'tidy household' in which 'People, Planet and Profit' are in balance. The 'green politics' and 'ecological modernization' discourse complement each other in sustainability management. The 'green politics' discourse paints a societal ideal and the ecological modernization discourse gives individual organizations the practical tools and concepts to work towards this societal ideal.

#### **4.4 There is a transition (to sustainability)**

This fourth proposition claims that there in fact is a shift towards sustainability. Transitions are "shifts from one socio-technical system to another" (Grin, Rotmans, & Schot, 2010). In this section I will describe if proof of a transition can be derived from the data. I will show that within the sustainability management regime there is a co-evolutionary process consisting of multiple changes in various parts of the regime. These changes are multi-actor driven and go beyond the boundaries of an organization. For a co-evolutionary process of change to be a transitions I have to show the change is a long-term process. Lastly I will try to describe what kind of transition the sustainability transition is using the typology of pathways that have been described by Geels (Geels, 2010).

##### *4.4.1 Documents interpretation*

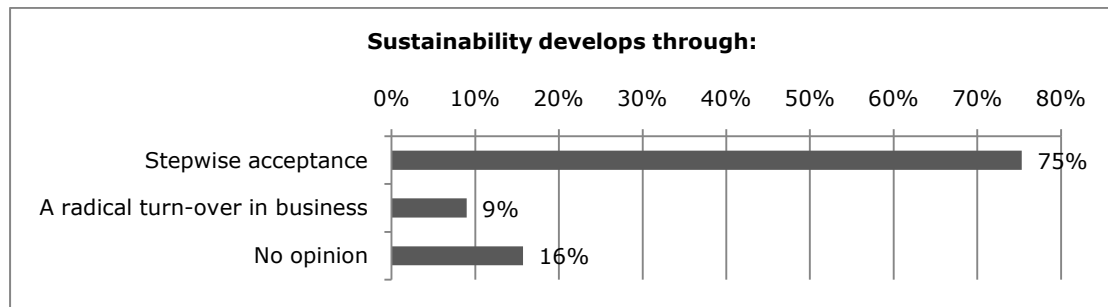
Within the sustainability regime and in the examples of the ISO 26000 and CPL it is constantly emphasized that changes for sustainable development are not isolated events. Rather than that,

for real sustainability to be achieved several managerial fields have to be addressed. In a previous chapter I have already explicated that in academic literature the most common conception of sustainability management is the balancing of People, Planet and Profit. This alone is a clear sign that sustainability management addresses multiple change processes that involve human, environmental and economical values. The ISO 26000 elaborates these values in seven themes: organizational governance, human rights, labour practices, the environment, fair operating practices and consumer issues (ISO 26000, 2010). And in the CPL, although this system of norms is dedicated to the single aim of emissions reduction, only reducing one's emissions is not enough. You do not get a higher score if you reduce more CO<sub>2</sub>-emissions. Also important are the transparency of the communications, the degree of insight in the CO<sub>2</sub> producing factors and the efforts a company does to reduce emissions in the whole sphere of influence (ProRail, 2009). These two examples presuppose large scope a company should consider for sustainability management. A scope far beyond the boundaries of your own company. What the documents also emphasize is that change cannot be achieved by a single organization. As was shown in an earlier section, stakeholder engagement is a key feature in sustainability management. Another feature that proves to me the macroscopic and multi-actor-driven character of sustainability management is the constant seeking for support for decisions and actions. Take for instance the way the ISO 26000 was developed. Over 400 experts from various types of organizations representing 99 countries were involved in the 5 year process. After the voting in September 2010 there was a large consensus, 94% of the voting countries approved the guidelines (interviewee 8 and Press releases: NEN, 2010). Experts believe that the way the ISO 26000 was developed was very much in line with the codes of conduct suggested in the ISO 26000 guideline itself. To me it seems evident from the documents relating to sustainability management in general and to the examples of the CPL and the ISO 26000 in particular that the developments in sustainability management involve multiple co-evolving components, and multiple actors (stakeholders), and are developments that supersede the boundaries of an organization (think of stakeholder dialogue, consensus seeking and intra-organizational cooperation). Also, the change for sustainability is persistent and open-ended. The emphasis on constant interactions, such as feedback-loops and stakeholder dialogues, makes the transition to sustainability perpetual.

#### 4.4.2 *Co-evolutionary and multi-actor driven*

In the online survey I have asked several questions about the characteristic of a transition. The first information I needed was if change for sustainability was perceived to develop incremental or radical. A large majority (75%) of the respondents believe that sustainability entails a gradual change and only 9% believes it is a radical turnover in the way companies do business. On this characteristic there seems to be a large support for an evolutionary transition.

#### 4-15: Sustainability, a gradual or a radical change?



If a transition is characterized as co-evolutionary, change has to occur simultaneously on different interdependent systems. This has also been shown with proposition 2. Sustainability management is about a complex system of components that interact and co-shape each other aiming for a dynamic state of equilibrium. The Figure 4-2 on page 55 showed the interpretations of the character of sustainability. Change towards sustainability is mostly characterized as a change in businesses and to a lesser degree in the economy and society. It is even less perceived as a technological change or a political change. However, change is not perceived to be solely limited to one type of system. The majority of the respondents responded to the question by selecting multiple options, indicating that change takes place at the same times in different systems.

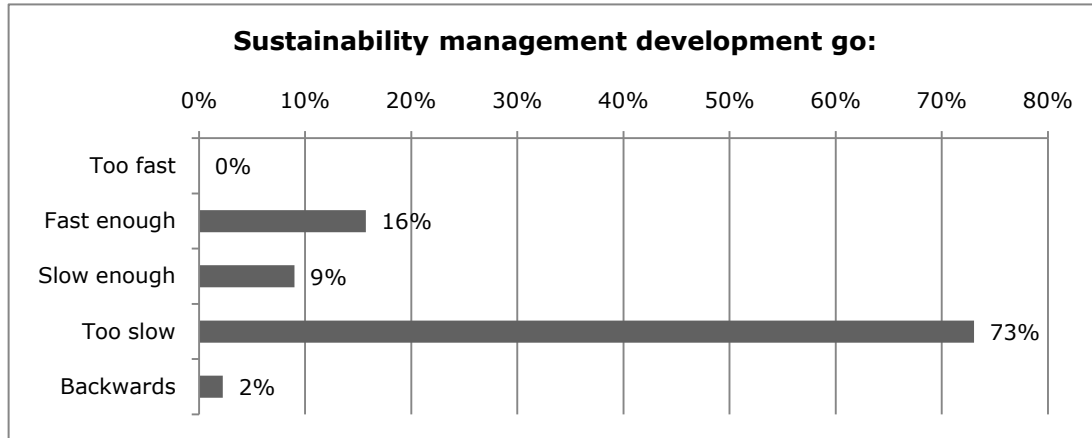
That the transition is multi-actor driven has also already been mentioned implicitly in the previous two sections. In Figure 4-3 and Figure 4-4 the active parties in sustainability and the sources of innovations for sustainability were displayed. The respondents selected multiple sorts of organizations or individuals that contribute to sustainability. But the fact that multiple actors are active with sustainability is not a proof of multi-actor driven change. This would also need an interaction between the multiple actors. This interaction is very much a part of the sustainability transition. For example, as well as in the documents as in the interviews there is a strong emphasis on (stakeholder) dialogue and cooperation. Take for example the CPL. In earlier times it was considered an organizational secret how energy efficient your process was. However, it is increasingly regarded as normal to give disclosure on your CO<sub>2</sub>-emissions, fuel mixes, or energy efficiency. This disclosure enables comparison and critical review of the actors within your sphere of influence. Interviewee 4 remarked on the ISO 26000 that it triggered a transparency on businesses that can be used to select your suppliers or vendors on more values than just money. It even goes so far that it enables organizations to force others to be more sustainable. This interactive exchange and transparency of information is regarded as a fundament of good sustainability management. Interaction between actors is a key feature of sustainability management, thus making the transition to sustainability management a multi-actor driven process.

#### 4.4.3 Transition to sustainability as a long term process

In the survey I have not explicitly asked for opinions about the time span of change. What I have asked is how the speed of development is perceived. This has a very clear result. 73%

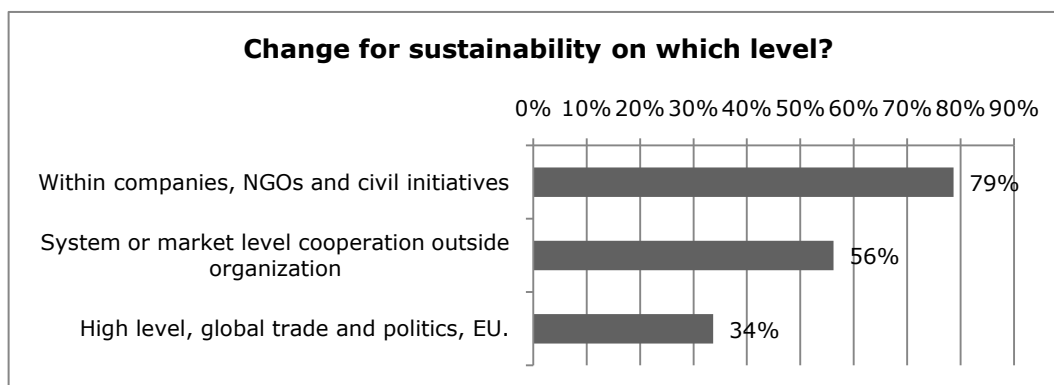
respondents think the developments are going to slow. Nobody believe that is goes to fast. 25% (16% + 9%) of the respondents think the speed is adequate.

**Figure 4-16: Speed of developments**



One way to find out how much a transition has progressed is to ask on which level change already has institutionalized. I have asked on what level the respondents think that activities for sustainability are done. The majority believe that changes occur within organizational boundaries (79%) and between organizations (56%). It has to be analyzed how many people believe that change occurs on all levels. But what can be said is that, based on the perception of the speed and level of activities, within the time span of transition of several decades, the transition to sustainability is still in a primary stage. There is momentum for change, but the ship only just has started turning.

**4-17: Level of sustainability**



Interviewees 1 and 3 were both involved in the set-up of the Sustainability Advisory Group at DHV in 1996. They were the first in the Netherlands to give advisory services explicitly for CSR. DHV is from origin an engineering firm. The reason they started the advisory group was because they signal a need with their costumers that encompassed more than a engineering solution for (mainly) environmental issues. Social aspects of technological solutions also had to be addressed, but more importantly, companies needed advice on strategic level that formed the basis for engineering solutions. So in the case of DHV sustainability management started around



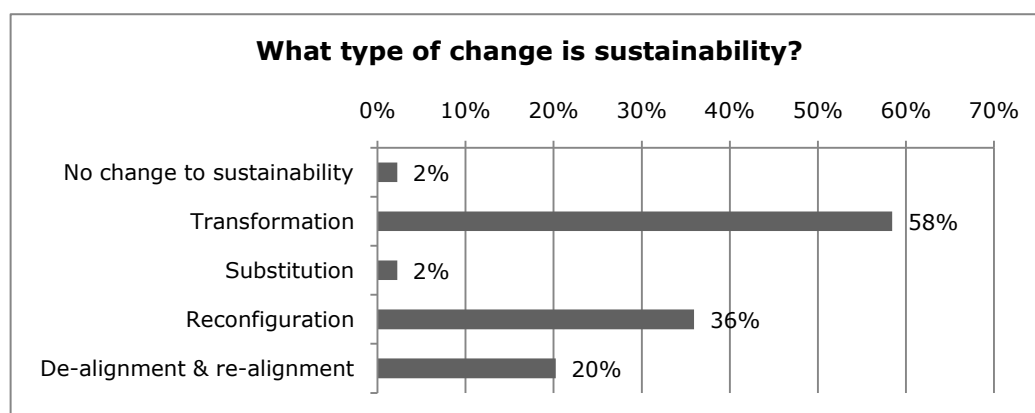
1996 and grew out of environmental advice. Nowadays, the advisors at DHV signal a different trend in the development. Where first the emphasis of organizations lay on getting a 'orderly household', this is now shifting to peer reviewing and cleaning up their chain-of-custody. First organizations focused on own compliance to laws and regulations, now attention is shifting to comparison on a market- or system-level. In the starting years of the advisory group the focus of companies was very much within the factory walls. Nowadays this focus is shifting more outside the factory walls. And from my own observations I can deduce that in international collaboration there is an increase of institutionalization. An instance of such an institutionalization is the newly approved ISO26000 guideline for Corporate Social Responsibility and the ProRail CPL.

If I take the Brundtland report of 1987 as a starting point for the sustainable development I can conclude that the transition towards sustainability has been a long process that is perceived by the respondents as slow. DHV started giving advice on sustainability management in 1996 and was one of the first in the Netherlands. Things have changed since then. The focus of costumers shifted from an internal 'tidy household' regarding environmental issues to a more interactive and external focus. However, there are still plenty organizations that come to DHV for advice on a 'tidy household'. Sustainability as defined by the ISO 26000, the respondents and interviewees as explained in proposition 1 is still a small dot on the horizon. Organizations are still trying to adapt.

#### 4.4.4 *Transitional pathways*

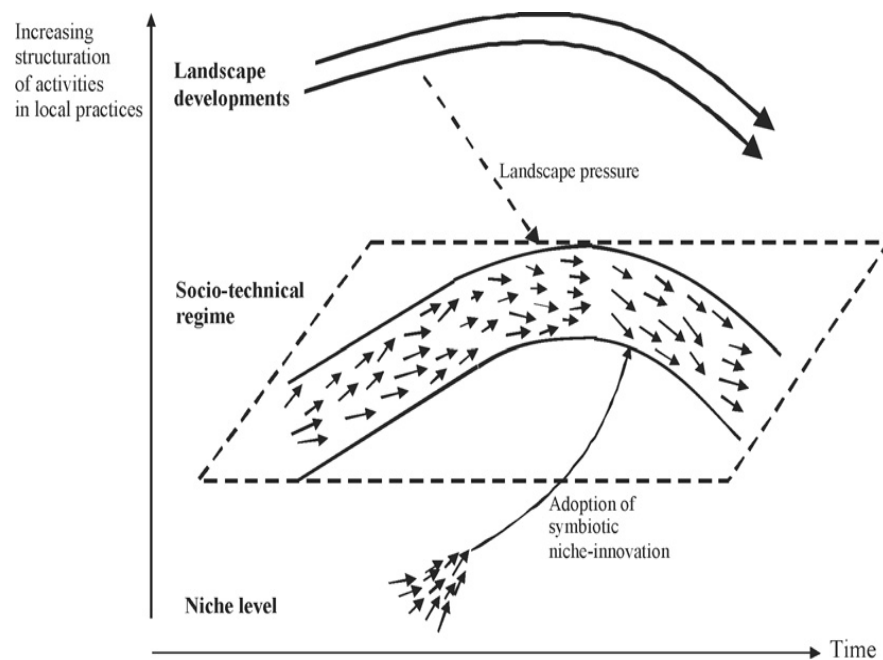
The MLP presumes a number of transition pathways. Frank Geels and Johan Schot have given a typology of such pathways<sup>24</sup>. If there is a transition then transition pathway will be able to be recognized. There are four types of transitional pathways: regime transformation, Substitution, Reconfiguration and De-alignment & re-alignment. I have asked how the respondents would characterize the transition to sustainability. They could choose multiple answers. The majority (58%) characterized this transition as a regime transformation, in which existing organizations and structures adjust themselves on under *external* pressure. 36% thinks it is a reconfiguration and 20% think it is a struggle or competition (de-alignment & re-alignment).

#### 4-18: typology of pathways

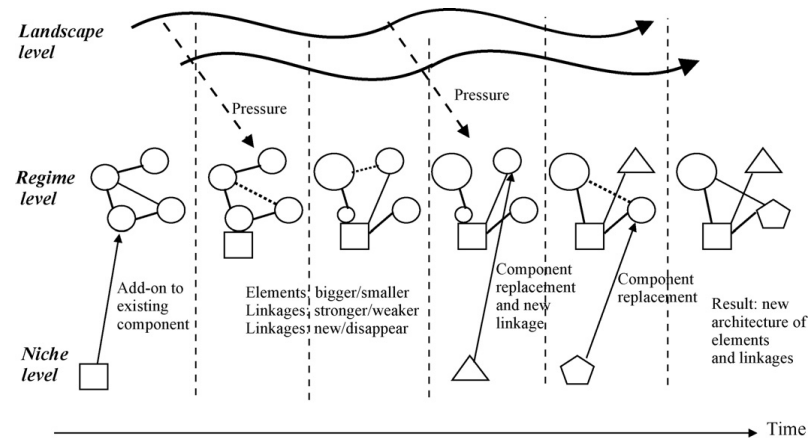


<sup>24</sup>Geels, F.W. & J. Schot (2007). Geels, F.W. (2005)

**4-19: Sustainability following an adjustment pathway (supported by 58% of the respondents)**



**4-20: Sustainability following a reconfiguring pathway (supported by 36% of the respondents)**



These findings are in line with my own observations from case material and interviews. But from these observations I would like to refine the conclusions on transitional pathways along two lines, because I think that the regime adjustment and reconfiguration do not mutually exclude each other. Firstly, I think it is true that organization are really adjusting their activities and strategies to be more in line with external landscape forces, such as societal demands, resource limitations and climate change. Secondly, in their efforts to adapt to a more sustainable way of working organizations are making an effort to reconfigure there management for sustainability. A lot of time the theme 'Sustainability' becomes an additional responsibility for the manager in charge of internal safety and quality. Bavaria for example, the brewery, already had an sophisticated quality and safety management system. But they made an effort to adopt (add) the ISO26000 guidelines and by doing so reconfiguring their existing system. Now they have a

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CSR system that in structure is the same as before, but now also integrated the thought of 'balancing People, Planet, Profit'.

Both the adjustment and reconfiguration pathways imply a gradual change in the rule set within an existing regime. According to Geels (2010) the gradual regime change, signaled by the respondents, is due to slow and non-frequent, but persistent, changes in the landscape. The scenario sketched by the respondents corresponds almost exactly with the sequence of pathways sketched by Geels in the book 'Transitions to Sustainable Development' (Grin, Rotmans, & Schot, 2010). Geels explains that incumbent first will try to react to a strong, but gradual change in landscape by solving the problem with resources from within the regime. If this is sufficient the change can be characterized as a regime transformation (figure 4-19). However, if landscape forces continue, regime incumbents will be more willing to incorporate symbiotic niche-innovations. This step is described as a reconfiguration pathway (figure 4-20). If the needed niche-innovations are not yet fully developed the incumbents will lose faith in the regime, which will lead to a de-alignment & re-alignment process. Based on the answers of the respondents this described sequence of adjustment, reconfiguration and de-alignment & re-alignment pathways is supported in the data.

A similar relation between pathways can be found from data of the interviews. Interviewee 1 indicated that high profile events (e.g. the controversy around the Brentspar oil platform, the position of Shell in Nigeria, the more recent disaster of deep sea oil drillings of BP in the Gulf of Mexico) do not directly influence the regime. These results of flaws in the regime do not lead to a loss of faith with the incumbents in the organizational field. It is rather that external actors, such as media, NGOs and governments and 'the consumer' put pressure on the regime. Organizations are more likely to strive for business as usual and not for a total regime change. Sustainability management in these examples is commonly focused on risk reduction and compliance with regulations. Especially in the starting years of the advisory group the advisors were occupied with creating awareness and educating on CSR. Thus change occurred according to the 'adjustment pathway'. The incumbent organizations remained mainly the same, but only adjusted their course. But increasingly the awareness led to significant change within the configuration of incumbents. In the earlier years (from 1998 and onward) the GRI guidelines for sustainability reporting were published. These guidelines gave organizations handholds for a significant change in their organization to acknowledge and account for other issues than economic performances. Similar patterns can be seen with other management tools and systems like the ProRail CPL<sup>25</sup>. These management innovations can be interpreted as symbiotic niche-innovations. The introduction and implementation of such innovations is an indication of a reconfiguration pathway.

But the interviewees do have a sense of urgency, as if the adjustment and reconfiguration pathways are steps in the right direction but that they are not invasive enough (in line with the opinion of the respondents that change occurs too slow). Interviewee 2 expressed her concerns for the need for transition: "we are in an extraordinary situation. We are facing on multiple sides the faults of the systems that we have created. Systems that have brought us so much, but that

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<sup>25</sup> Also think of management systems for quality management (ISO 9001) or environmental management (ISO 14001).

are no longer the systems for the future. ... But we will have to let them go or we will be forced to do so". The interviewees foresee that a disruptive landscape event that effects multiple components of the regime in the future can cause a loss of faith the current unsustainable management regime. Might this give a windows of opportunity for the rise of a regime wide sustainable business case? This would only be the case if there is a already developed substitute. Interviewees 2 and 4 have the hope that the ISO 26000 will at least contribute to the development of such a niche-innovation. They foresee that in the next development of sustainability management will place much more importance on the whole life cycle of products and not just on the resources the products are made of. Sustainability management will shift from the nature of good product development to the nature of good conduct of business. But it remains inconclusive which type of pathway this shift will chose.

#### 4.4.5 *Testing proposition 4*

From the analysis of the data it is very obvious that the developments regarding sustainability is perceived to evolve in a gradual fashion. The regime that eventually evolved into a sustainability management regime was a fuzzy whole of environmental and social regulations and a mode of management striving for compliance. Over time this evolved into a clear sustainability management regime in which balance between environmental, social and economic values is sought. The transition has many dimensions, but is mainly characterized as a change in how organizations do business (and to a lesser degree a change in society and economy). The transitions is also multi-actor driven. Sustainability management and its implementation stress the importance of engaging all relevant stakeholders, the transparency in communication and to be reflexive on your actions. These facets indicate to me that change regarding sustainability involves interactive interactions between multiple actors and actor groups.

From the data I conclude that the transition to sustainability is perceived to be moving too slow. Also, sustainability is still mostly practices within companies, but there are signs that sustainability is becoming more and more an issues that goes beyond the boundaries of an organization (as is promoted by the ISO 26000 as well). According to the respondents and interviewees the relevant regime changed mostly along an 'adjustment pathway', in which the regime slowly reacts on external landscape forces, but mainly remains intact. Another pathway, the 'reconfiguration pathway', is recognized as well. This is especially typical for the adoption of new management tools and systems like the GRI guidelines and the ISO 9001 and 14001 in the past. But these two transitional pathway will be replaced if current landscape developments accumulate into a multi dimensional disruptive external force by either a 'de-alignment & re-alignment' or 'substitution' pathway. This is dependent on the development of 'hopeful monstrosities' in niches that can form the new core of a new sustainable management regime. The interviewees indicate that a standard for CSR like the ISO 26000 can help with the development of a sustainable business case.

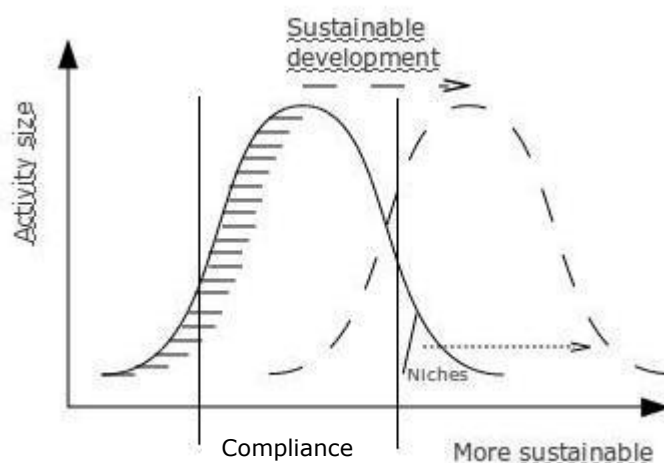
### **4.5 Sustainability management is geared towards sustainability**

With previous propositions the concepts of sustainability management and sustainability have been explicated. This fifth proposition makes a claim about the connection between the two. This proposition will explore if sustainability management actually is geared towards

sustainability. I will describe the link between sustainability management in three ways. First, I will explain why sustainability management contributes to sustainability by setting the example. Second, I will explain how sustainability management can contribute to sustainability from within an existing regime. Lastly, I will explain how I believe sustainability management can effect and deal with landscape pressures in order to create a more sustainable regime.

Sustainability management in the case of the DHV Advisory Group is mostly perceived as the organization of business activities in such a manner, that they are sustainable. The question then is, are these changes enough to actually resolve the big societal problems. Well it seems that sustainability management is not thought to be primarily responsible for changing societies or the economy. Sustainability management is not equipped to deal with the macroscopic shifts in societies. It is equipped to deal with the sphere of influence of a company. But is that enough to contribute to a bigger transition to sustainability? It appears that in the case of DHV the main contribution of sustainability management to sustainability is to lead the way. Interviewee 1 remarked on their contribution to sustainability: *"sustainability management starts where guidelines stop. Guidelines are legal obligations to which you have to obey. Very interesting and the sharper the better. But we are not in the business to lobby for changes in these guidelines, because that is a process between representatives of industry and the government. Sustainability management start with everything you do more than legally required, regardless... That is our job"*. In other words, sustainability management is organizing business beyond the compliance with regulations relevant for sustainability issues. How this ultimately is thought to contribute to sustainability can be illustrated with Figure 4-21 (based on a actual drawing of interviewee 2). It shows how activities gradually shift towards a more sustainable state. Compliance with legal rules is within the vertical lines. Sustainability management, however, is in the most right corner as a more sustainable niche beyond compliance. These sustainable business cases set examples and new standards for 'the masses'.

**Figure 4-21: Drawing of Interviewee 2 on the dynamic of gradual change**



I can now also make the role of the government more clear. The government decides on the positions of the boundaries and bandwidth of compliance. The government should determine the minimum degree of sustainability and should not stand in the way of the sustainable niches. This claim corresponds with the results from the survey. The results showed that

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governmental policies do not give the solutions for sustainability. But the government is allowed to intervene drastically, presumably if legislation and 'the masses' really keep lagging behind the sustainable niches.

The respondents and interviewees share a sense of urgency. They perceive sustainable development goes too slow. If we again take Figure 4-21 as illustrative for the current situation, than we could interpret this as if the majority of the activities is not shifting with the speed of the niches. This is supported by a number of observations. For instance, a statement I often heard was: "the citizens want sustainability, but the consumer doesn't" (Interviewee 3, 4, 5, 9). Another example is the perceived failure of the sustainable procurement policy of the government. The idea was that the government, as a major customer, could give preference to sustainable suppliers. This would lead to a massive impulse for sustainability. However, EU legislation forbids preference policies based on indications other than financial aspect (i.e. the lowest price). This was a setback that disappointed member of the sustainability management regime. However, these examples of lagging consumers and government should not change to role and direction of sustainability management as taking leadership for 'the masses' towards a more sustainable society. By doing so sustainability management will probably induces a transformative pathway letting sustainable business cases slowly penetrate the regime.

In the section of proposition 4 I have shown, with my analytical framework, that this apparent slow speed is due to landscape change that are also slow resulting in transformative and reconfiguration transitional pathways. If actors from the sustainability management regime would want to increase the speed of change, they somehow have to induce either a de-alignment & re-alignment or a substitution pathway. It goes beyond the scope of this research to say anything on how such a thing could be done. But based on the transitional pathways, the landscape pressures should have a broad scope and a high amplitude. I believe sustainability management regime has a better option, namely to keep trying to innovate in the niches. Over time, due to regular changes in the landscape, symbiotic links can be made between the existing regime and more sustainable niche-innovation. If these innovations become incorporated in the business of organizations they will reconfigure the management regime into a more sustainable management regime. Also, if due to a sudden shock in the landscape, the regime becomes highly de-aligned sustainable innovations have to be available in order to become a new core of a more sustainable management regime. I believe it is not the role of sustainable management to induce landscape changes, but to develop 'hopeful monstrosities' and anticipate the windows of opportunity through which these innovations can become part of a sustainable regime.

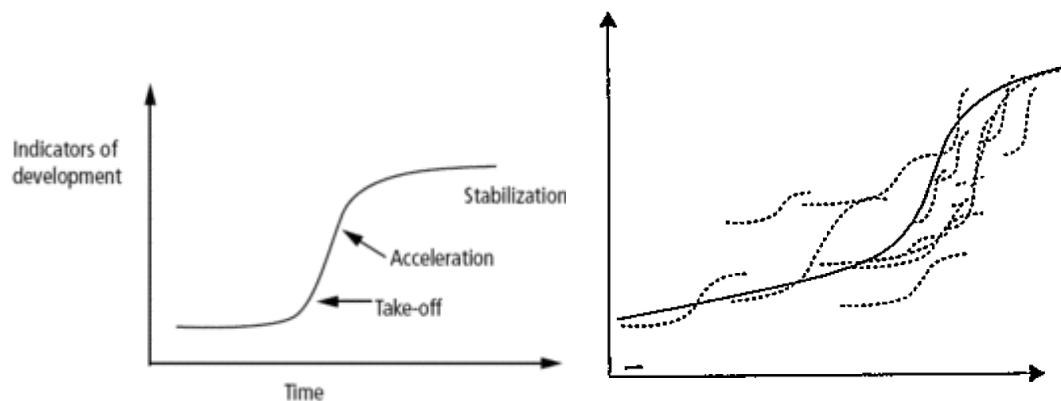
In this section I have made clear that sustainability management is geared towards sustainability, but that its role is not to transform the society or economy as a whole. Rather than that, I believe sustainability management should lead by example and keep developing and implementing 'hopeful business cases monstrosities'. Although it might be frustrating not to be able to directly influence the landscape, sustainability management actors should innovate towards sustainability and anticipate windows of opportunity.

## 5 SOME ELABORATIONS: ISO 26000 AND CLP

Throughout this thesis I have referred to the ISO 26000 and the ProRail CO<sub>2</sub> Performance Ladder several times. Within the research scope these two management tools are relevant innovations for the sustainability management regime. In this chapter I will elaborate a bit further on the implications of the ISO 26000 and the CPL for the transition to sustainability. I will briefly describe the mentioned management tools and their history, after which I will analyze them with help of my research framework.

I have two main reasons for doing this explicit elaboration. First, transitions and regime changes are not single or uniform. Over times landscapes and regimes are influenced by an aggregate of events and processes (illustrated by Figure 5-1). The ISO 26000 and CPL are part of the co-evolving changes in sustainability management. Understanding how multiple niche-innovations are related to a larger change gives a richer interpretation of the transition (Grin, Rotmans, & Schot, 2010). Another reason is to show that my research framework is robust and general enough to deal with different types of empirical data.

**Figure 5-1: Transitions as an aggregate of developments (Kemp and Loorbach, 2006)**



### 5.1 The ISO 26000: Guidelines for Corporate Social Responsibility

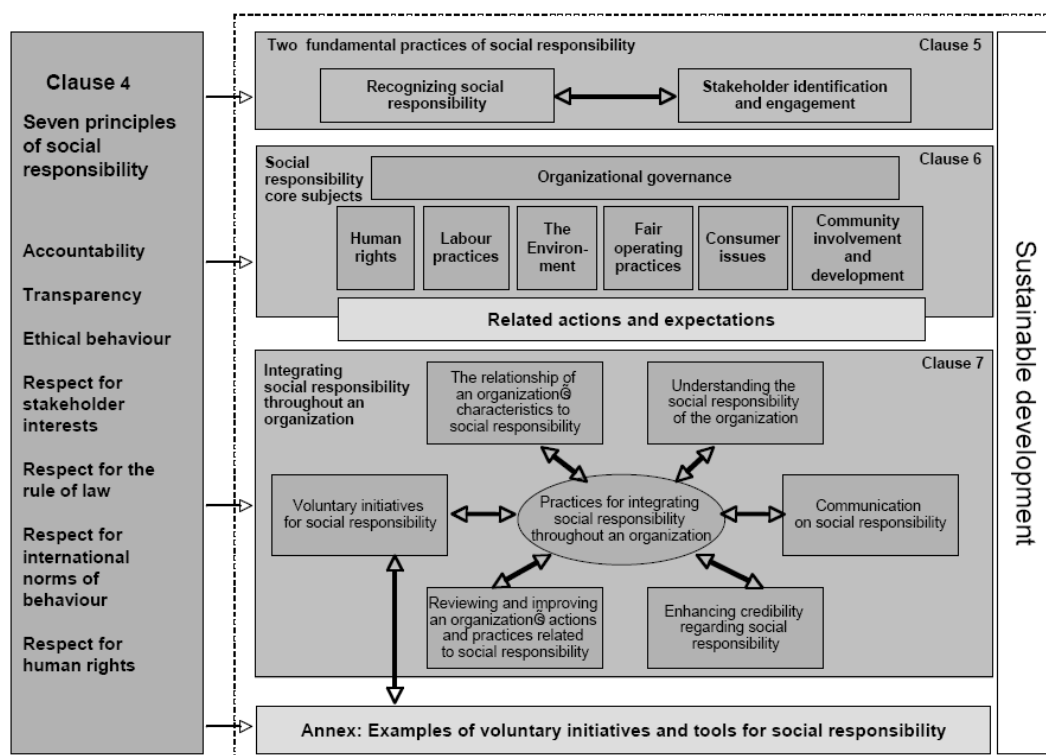
The ISO 26000 Guidelines for Corporate social Responsibility can be used by organizations as a guideline for creating organizational CSR policies. Within the ISO there were early discussions on a global standard for CSR in 2001, but it took until 2005 before the development process started. On 7-11 March 2005 the first international meeting took place in San Salvador. In July 2010 the eighth and final meeting took place in Copenhagen on the final draft of the ISO 26000. Over 400 experts representing 99 countries had taken part of the discussions. But the draft still had to be approved through a voting process, which closed on 12 September 2010. It was approved by 93% of the voting countries, only 5 countries voted against the final draft. The final version of the ISO 26000 was published on the 1st of November 2010.

The ISO 26000 itself is a 120 page counting document containing terms and definitions relevant to sustainability and CSR, the explication of 7 CSR themes<sup>26</sup> and examples. It bases the definition of sustainability on the 'Brundtland' definition but adds a side note: "*Sustainable*

<sup>26</sup> The 7 core themes are Good Governance, Human Rights, Labour practices, the environment, fair operating practices, consumer issues, and community involvement and development.

development is about integration the goals of a high quality of life, health and prosperity with social justice and maintain the earth's capacity to support life in all its diversity. These social, economic and environmental goals are interdependent and mutually reinforcing. Sustainable development can be treated as a way of expressing the broader goals of society as a whole<sup>27</sup>. The organization of the ISO 26000 is depicted in Figure 5-2. I will not discuss the content of the ISO 26000 in detail as the space here is limited. The main goal of the ISO 26000 is to give organizations an overview of the current state of sustainability and offers a handhold for implementing CSR. Interviewee 4 puts it very strikingly: "the ISO 26000 is the first official recognized summary of CSR and sustainability management. You can really see it as a document in which consensus is reached on CSR, it is what WE ALL think is CSR".

Figure 5-2: Schematic overview of ISO 26000 (ISO 26000, 2010)



The relevant landscape for the ISO 26000 regime in the Netherlands can be best illustrated by the development process of the guideline, although the ISO 26000 itself signals a number of interdependent trends, namely globalization, sustainable development and more direct communication (ICT). Two aspects stand out in the development process. First is the global support of the ISO 26000. Of the 99 countries, 69 were developing countries. China was present with a large delegation of 30 members. The ISO really went to great lengths to ensure that the ISO 26000 wouldn't be perceived as "just another Western toy" (interviewee 8). The second is the broad scope of issues and has been addressed. The basis for the 7 themes, apart from the numerous discussions during the development process, are several global agreements on the

<sup>27</sup> ISO 26000 (2010). page 4.



environment, social justice, labor practices agreements etc<sup>28</sup>. It is stated that organizations should shape their CSR policies with these agreements in their mind. The ISO 26000, based on these agreement, offers organizations the structure and overview to do so.

Against the background of landscape the relevant organizational field in the Netherlands can be described. Organizations that have adopted the ISO 26000 form one group of users. For instance the DHV Advisory Group helped beer producer Bavaria and the ING bank with the implementation. Another very important actor is the Dutch institutes for Normalization NEN (nationale normalisatie-instituut). The NEN partook in the ISO 26000 as part of the Dutch delegation. the current task of the NEN is to create awareness for the ISO 26000 and CSR and provide information. The department of NEN dealing with management systems also helps companies to implement the ISO 26000 in their already existing management systems. The Dutch government was also involved in the development of the ISO 26000, but now has taken a step back. The Dutch representatives were enthusiastic about the possibilities for the Dutch government to adopt the ISO 26000 itself, but there are no concrete steps taken up to now (interviewee 8). Another actor group are the advisors that help to implement the ISO 26000, like the DHV Advisory Group.

#### 5.1.1 *Niche development: Conflicting discourses and transitional pathways*

The ISO 26000 has to find its way into the sustainability management regime. But the problem is not much that the incumbent organizations are unreceptive for the ISO 26000. On the contrary: *"the market has a need for a certain holdfast when it comes to sustainability"* (interviewee 4). The ISO 26000 can offer this holdfast as it gives: 1) awareness and inspiration, 2) structure, and 3) (examples of) benefit for organizations (interviewee 8). With the ISO 26000 organizations can bring coherence in their range of management systems and find biases. This has been widely acknowledged. However, companies also want appreciation for their efforts, they want to show the world that they are adhering to the new leading standard for CSR. The problem however, is that the ISO (and thus the NEN) strongly dismiss the idea of normalizing the ISO 26000. The ISO 26000 is very explicit: *"this international norm offers guidelines for users and is neither meant nor suitable for certification purposes. Every offer for certification according ISO 26000 and every claim to have been certified according the ISO 26000 is a wrong display of the intention and the purpose of this international norm"* (ISO 26000, 2010). The ISO 26000 believes that efforts for sustainability should come from a internal wish in the organization and not because they can get a nice certificate on the wall. Interviewee 4 indicates that, that is a noble attitude, but it is not what his market wants. They want to get recognition and a reward for their good efforts. Three Dutch Certifying Institutions (CI) saw this niche and bypassed the restriction by creating a CSR Performance Ladder 'loosely based on the ISO 26000', but it covers the same 7 themes and 33 issues. Now 80% of all the CIs support and certify this CSR Performance Ladder. the first certificate was issued in July 2010, at this moment 12 companies have a certificate (April 2011). The NEN in a reaction, developed a 'CSR self-declaration', the NPR 9026, with which companies by answering a standard questionnaire can

<sup>28</sup> The ISO 26000 mentions for instance: The Rio Declaration on Environment and Development (1992), Johannesburg Declaration on Sustainable Development (2002), Millennium Development Goals (2000) and the ILO Declaration on Fundamental Principles and Right at Work (1998).

proof they followed the ISO 26000. This is however not auditable. It is presumed that the final NPR 9026 will be available mid 2011.

There is a range of discourses to be recognized in the developments around the ISO 26000. But what is clear is that most of the developments can be characterized as 'reformist'. The ISO 26000 is written to comply with existing rules and conducts and the aim is to change existing organizations. First, in the ISO 26000 and at the NEN I believe the 'sustainable development' and 'democratic rationalism' discourse dominate. Social justice and equal opportunities for all stakeholders are sets of values that are highly appreciated. 'Sustainable development' discourse can be presumed due how strict the actors are on following the rules of the created 'level playing field' by the ISO 26000 and the political nature of the development process. On the other side are the organizations that want to get the efforts regarding the ISO 26000 awarded. The reasons is business-sense. If you invest time and money in a project, you want it to pay out, either in direct turn-over due to more costumers or indirect due the positive publicity. Also, their good intentions should not be hindered by obsolete restrictions; it is the result that counts. Both the 'economic rationalism' and the 'ecological modernization' discourses can represent this attitude. A distinction could be made if I would have looked with more dept into the particular organizations. But I believe if an organization would very much focus on management systems and organizational benefit, this would imply a rationalism discourse. If the focus is more on the integrative sustainable business model and an imaginative outlook on progress, this would imply an 'ecological modernization' discourse.

The previously described developments can be interpreted as a sequence of transitional pathways. From point of view of the sustainability management regime from the main case, development of the ISO 26000 occurred in a global ISO niche. The ISO 26000 was purposely developed as a symbiotic innovations by explicitly making connections between the ISO 26000 and existing laws, declarations, management systems (ISO 9001 for quality management, ISO 14001 for environmental management). The vision was that existing organizations would adopt as an add-on to their sustainability management regime. And in fact, this *reconfiguration pathway* did occur. However, with some organizations there was a discontent about the certification possibilities<sup>29</sup>. Some organizations are starting to loose faith. The CIs saw this window of opportunity and developed the CSR Performance Ladder even before the ISO 26000 was officially released in November 2010. This caused a disturbance in the sustainability management regime, although it is hard for me to indicate the extent of this de-alignment. However, I believe that the CSR Performance Ladder, as well as the NPR 9026, can be characterized as niche-innovations. A part of the sustainability management regime is in the middle of a *de-alignment & re-alignment* pathway. At this point in time is can not be foreseen which of the two innovations, or maybe a third, will form the core of a new regime.

## 5.2 The CO2 Performance Ladder' from ProRail

ProRail is the maintainer of the Dutch railway-system and is responsible for its maintenance and development. These construction operations they do not perform themselves, but they write out tenders to which construction companies can subscribe. The company with the lowest price is

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<sup>29</sup> Lively examples of these discussions can be found on LinkedIn in the ISO 26000 Groups.

allocated the assignment. In the summer of 2009 ProRail announced that it would include criteria on how suppliers deal with their CO<sub>2</sub> emissions in new tenders from December 2009. ProRail had been developing the CO<sub>2</sub> Performance Ladder (CPL) from fall 2008 together with the consultancy and accountancy firm KPMG and the large constructor BAM. The introduction caused a great stir in a usually very conservative branch. Suddenly the railway constructors had to think about CO<sub>2</sub> and the environment. The CPL was picked up immediately after the introduction and it spread as a ink stain. Currently (April 2011) there are 108 organizations that have a CPL certificate of which 25 are on the highest level<sup>30</sup>. This success did not go unnoticed by governmental organizations. 'Rijkswaterstaat', the 'Rijksgebouwendienst' and the 'Belastingdienst' were interested in using a similar ladder for their tenders. In March 2011 the Crown Prins Willem Alexander officially opened the new foundation Climate-friendly Tendering and Business (SKOA) that would take over the register of the CPL and would facilitate the further implementations (interviewee 5 and 9).

The CPL has two main starting point: 1) maximizing own initiative, practical results and innovation; 2) minimizing rules and prescriptions for organizations. The aim of the CPL is to get organizations to become aware of their CO<sub>2</sub> emissions and develop policies and targets for CO<sub>2</sub> reduction. It does not judge the actual CO<sub>2</sub> footprint, but the results and efforts of reduce them. These are scored on four criteria: insight in own CO<sub>2</sub> emissions (40%); CO<sub>2</sub> reduction ambitions (30%); Transparent communication (20%); Intra-organizational cooperation (10%).

The assessment of the performance on these four criteria result in a certificate of the level of 'CO<sub>2</sub>-awareness'. The CPL distinguishes five levels, the higher the score the more tender-advantage an organization gets. This has a very large implication. A level 5 score means you get a fictive 10% discount on your tender-fee compared to an organization that does not have a certificate (SKAO, 2011). Considering the harsh competition and slim margins in the construction industry, the constructors were very willing to participate in the CPL.

Within the organizational field of the CPL ProRail has a dominant position as it is the only organization that manages the railway system. The way ProRail introduced the CPL could only be done due to their monopolist position. The other relevant organizations are the companies that work for ProRail. These are construction workers, but also other suppliers like catering, office materials and lease-cars. DHV has two roles in this regime, as a supplier to ProRail (DHV is on level 4) and DHV supports organizations that what to participate or climb up the ladder. Within the regime the competition is fierce. Also, management had not been too occupied with climate and CO<sub>2</sub> issues or only implicit. One of the reasons ProRail developed the CPL was because they were fed up of waiting for the government to come with adequate guidelines for sustainable procurement. The government had the idea that it could make the market more sustainable if it would demand sustainable products of its suppliers. They developed an elaborate scheme, indicating per product group which criteria would 'determine' the sustainability of a product. This developed in a bureaucracy of 'bottom-line' criteria for 80 different groups (interviewee 5). ProRail believed this administrative monstrosity pollard innovations since the sustainability criteria are predetermined and lacked incentives as it only

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<sup>30</sup> Found on the SKAO website <http://www.skao.nl/index.php?ID=42>. Last visited on 30 April 2011.

asked for minimum efforts. Interviewee 9 took the initiative: "*customers and travelers think 'Rail is green'. We had a reputation to uphold and the solution of the government only helps minimally with the climate problems*". He is backed up by interviewee 5: "*ProRail saw the urgency and the opportunity. It was all their own effort ... They placed their necks on the line and pushed the CPL in the market*". Only after the success of the CPL the government recognized the advantages of such a system. The CPL is a market initiative, governmental organization did not partake in the development nor does it need governmental founding.

### 5.2.1 *CPL: a dominant discourse creates a shock in a regime*

The interpretation of the CPL is, I believe, very clear-cut. The motivations of ProRail are a mix of the sense of responsibility as a determining factor in the Dutch railway industry, concerns about the climate change and economic self-preservation (reputation of 'Rail is green'). Clearly the economic rationalism discourse is the most dominant. The CPL motivates the organizations towards sustainability by addressing their nature as 'homo economicus'. In part the CPL was a reaction to the elaborate bureaucracy for sustainable procurement developed by the administrative rationalists of the government. The CPL had no, and still does not want, governmental influences. Politics and regulations should not be restrictive for human ingenuity. It is very clear the CPL was created to stimulate initiatives and innovations, whereas sustainable procurement was thought to do the complete opposite.

The change that ProRail instigated with the announcement of the introduction of the CPL could very well be characterized as a shock event in the landscape of the Dutch railway regime. At the same time ProRail had also nurtured an innovation that could substituted the existing CO<sub>2</sub>-management systems at the regime incumbents. To me, it is obvious that the CPL underwent a *substitution pathway*. The regime assimilated the new component quite quick. But there has been an aftereffect. The success of the CPL is attempted to be copied to other industries and organizations via the new SKAO. This development could be a prelude to a *reconfiguration pathway* in which the patchwork of climate management regime are symbiotically added together, creating a new and larger CPL regime.

## 5.3 Summary

In this chapter I have elaborated on two different manifestation of sustainability management that I have encountered during my internship. First, to show my research framework is general enough to be capable of investigating a wide range of phenomena. Second, because the ISO 26000 and CPL are sub-cases of my main case, the DHV Sustainability Advisory Group. The ISO 26000 has been developed by the 'sustainability development' and 'democratic pragmatists' discourses. After the development the 'economic rationalism' and 'ecological modernization' were glad finally a standard was developed, but were less happy with the lack of recognition of their sustainability efforts. New innovations were developed to meet this need. These development indicate a sequence of reconfiguration and de-alignment & re-alignment pathways. The 'economic rationalists' are clearly present in the development and workings of the CPL. Organizations are triggered with economic incentives and the government should not stand in the way. The shock of the CPL initiated a substitution pathway, which in now followed by a reconfiguration pathway in which other industries are symbiotically added to the regime.

## **6 RESEARCH CONCLUSIONS**

With this research I set the goal to achieve a better understanding of sustainability. Sustainability and sustainability management are said to be the answer to global crises and challenges now and in the future. My investigations into sustainability started with trying to understand sustainability from a philosophical and a governance point of view. Rather than taking on a normative stance I developed a descriptive ethical framework of environmental ideologies mostly based on the work of Dryzek (2005) and Desjardin (2006). For a governance perspective I adopted a multi-level perspective on transitions developed by Grin, Rotmans and Schot (2010) and Geels (2005, 2007, 2010). The synthesis of these two perspectives resulted in an analytical framework with which I analyzed the local case of sustainability management at the DHV Advisory Group. I described and interpreted the sustainability management regime, the external landscape pressures, relevant innovations and discerned the underlying discourses that are the most dominant in this particular case. What now has to be done is to take a step back and reflect on the current state of affairs. I will do this from again two perspectives, the ethical and governance perspectives. But first I will give an overview of the main finding in my research.

### **6.1 Main Findings**

In this chapter I have presented the empirical findings of my research and analyzed them in order to find support for my five research propositions. I found that sustainability management can be characterized as a configuration that works. The configuration is mostly perceived to be divided into hard-, soft-, org- and socio-ware concentrically organized around the core business of an organization. The function of sustainability management is to transform this organization into a sustainable business case that takes its corporate social responsibility. This social responsibility is mostly perceived to be about deploying your activities without taking away the possibilities for future generations. Sustainability management also places a lot of emphasis on the relevant visions, meanings and interactions of and between different actors. In this conception of the configuration the function of sustainability management is to engage with relevant stakeholders. Sustainability functions well if there is transparency, interactivity, dialogues and cooperation. The most active parties in sustainability management are perceived to be the private companies (NGOs and semi-private parties coming second and third), governments are ranked lower. The same can be said about who develops new initiatives and innovations. But here the individual and small companies have a part as well. The general public should not be consulted for sustainable development. And, although the government is not attributed much innovative or solution power, it is allowed to intervene drastically if things go wrong.

From the data it is very clear that in the sustainability management regime the imaginative discourses are the most dominant. The positive outlook on growth and decentralized approach clearly are not things that would be advocated by the survivalism discourse. The rationalism discourses can be dismissed because of the acknowledgement of other values that human stakes and a somewhat 'romantic' relation with nature. Although in the ISO 26000 social justice is a big motivation for sustainability, it was hardly mentioned in the survey. The respondents and interviewees are more busy with the practical organizational problems at hand, than with

justice and politics. Also, the role of the state should be small but the government should be a strong partner in conversations. These opinions indicate an industrial outlook on sustainability leading me to the conclusion that the most dominant discourse in sustainability management is the 'ecological modernization' discourse. However, the 'green politics' discourse should not be neglected. From the interviews and own observations it became clear that this radical discourse empowers sustainability management by giving a vision of a sustainable future on the horizon. This is a future in which our social systems (societies and economies) fit our ecosystems.

The transition towards sustainability is a gradual change in multiple dimensions involving multiple actors. The transition has evolved from a patchwork of good intentions, internal environmental, quality and human resource management into a regime that strives with an integrative approach for a sustainability business case. The focus is still shifting from a internal 'tidy household' to extensive interaction with stakeholders for sustainability in an organization's sphere of influence. DHV, especially its sustainability advisory group, was one of the first to adhere such a approach since 1996. Their work has evolved from creating awareness to issue and strategy selection advice. The current trend is the concrete implementation of sustainability in the core business of organizations and evaluating the entire value chain of production. Although this is a sign of a transition, the changes are perceived to go too slow. This perception is also in line with the transitional pathways sustainability management follows. For the most part the regime transforms itself due to external forces, but incumbents never really loose faith in the status quo of the regime. But, sometimes symbiotic niche-innovations causes a reconfiguration pathway.

Sustainability management does not contribute to sustainability by turning the systems of society and economy around. Rather than that, it sets innovative examples (best practices), creating a pull towards sustainability on the masses. The perceived slow change is due to inertia present in consumer markets and government, although society and citizens expects sustainability. These landscape features are hard to influence. This can be somewhat frustrating and causes anxiety with sustainability management professional. But the best thing to do is to keep on innovating, creating awareness and keep in mind the radical and imaginative vision of the 'green politics' discourse.

## **6.2 Ethical perspective on current state of affairs**

The philosophical reflection I want to give here is a descriptive ethics. This gives an analysis of the relations between people, nature and society and helps us to identify the key values to play a role in actual social problems. What I do not want to do is have a moral monism point of view or discuss who is right or wrong in debates on sustainability observed in this research. What I want to do is make clear what the benefits are of appreciating the diversity of values. From the analysis of the empirical data I concluded that the ecological modernization discourse is the most dominant in the researched case of the DHV Advisory Group and the relevant organizational field. Also, changes of the sustainability management regime mostly occurs along gradual pathways and are done by the incumbent actors and organizations. This state of affairs can be critically assessed with the discursive framework of this research. Let me give three results of such an assessment by my self.

The current objective of sustainability management is to change organizations in such a way that they have sustainability as an integral part of their business and strategy. Sustainability is sensible from a business point of view, as it give you an edge on your competition and (a part of) the consumers will favor your products. But isn't the basic idea that our society becomes sustainable and not just the organizations that it is comprised of? The ecological modernization discourse approaches the sustainability business case as the new ideal. Survivalism and green political discourses however, assess the sustainability business case with a societal ideal in mind. The ecological modernizers ask themselves if their organization addresses sustainability issues, the more holistic discourses ask if the organizational stakes adhere to sustainability. Sustainability management could be more self-critical if they would assess organization from a helicopter view in stead of a outwards oriented organizational perspective. Such a helicopter view would not be to detached from practitioners that have been investigated. Figure 4-9 indicates that part of the respondents do believe that general sustainability interests are more important than organizational interests.

The basic concepts in this research are sustainability and sustainability management. The most adhered to conception of sustainability remains the Brundtland definition. And sustainability management involves the balancing of 'people, planet and profit' values. However, the combination of these two conceptions constitute a very anthropocentric worldview. By regarding the care for contemporary activities and the needs for future generations as the ideal for an organization's 'people, planet and profit' mix this mix becomes instrumental to human interests. In this worldview the 'planet' is regarded as a resource for human activity (for consumption or leisure). Sustainability management is then about 'people, (resources for) people, profit'. Let me emphasis that I do not believe these are a wrong conception. It is however important to be consciously aware of the consequences of having these conceptions. This awareness can, for example, be very helpful in moral debates between vegetarians and meat-eaters or proponents of active of laissez-faire nature preservation.

Sustainability management practitioners are very much opposed to the destructive way of life of the Prometheans. However, the understandings and methods of Promethean and to lesser degree administrative, economic rationalism discourses of the current state of affairs should not be brushed aside. Who are we to determine that this discourse is absolutely wrong? The industrial economy has brought us many good things. The Promethean and rationalism discourses should not be thrown away, but should be appreciated for their procedural values. Bureaucracy, technology, capitalism and democracy have proven to have great transformative powers. These powers should not be feared, but made to good use for sustainability. The problem we have to be aware of, is not to loose sight of the sustainability ideal due to the brilliance of these powers. Sustainability management should safeguard that ingenious and rationalistic means to a sustainability end, don't becomes ends themselves. There is another, more practical reason to appreciate the Promethean and rationalist discourses. It remains the matter of facts that these discourses are the dominant ones in the surrounding patchwork of regimes and socio-technical landscape (liberal, capitalist, political economy). It can be wise to learn their language in order to communicate the sustainability message.

So, how can pluralism help in practice? Take for example ISO 26000. This is mostly a sustainable development discourse and can tell ecological modernists that you have to look beyond the boundaries of your organization and strive for sustainability in your whole sphere of influence. Then Sustainability changes from a organizational ideal into a societal ideal. However, Survivalist could criticize that there is too much interaction, negotiation etc that block real action. 'Unsustainability' is concealed by a veil of sustainability dialogues. Radicalism discourse can criticize the ISO 26000 for the blind spot for intrinsic values in nature. Interviewee 4 was very much surprised that animal welfare is barely mentioned in the ISO 26000. He would have liked to see it as one of the 7 themes or at least a more dominant role for it in environmental issues. Based on this analysis, what can I say generally about the existence of different moral discourses in sustainability management? I suggest instead of emphasizing the differences and hold a contemplative contest in the philosophical ivory tower to accept the moral pluralism present in sustainability debates and take on a pragmatic approach. Abstract philosophical contemplation is an enviable skill, but one should be aware that this does not go so far that it becomes irrelevant for the local and contemporary concerns of sustainability issues.

### **6.3 Governance perspective on current state of affairs**

The ethical perspective showed the value of acknowledging pluralism in the current state of affairs of sustainability management. But recognizing is one thing, dealing with it another. In this section I try to explain what I believe is the most appropriate type of governance for dealing with the situation at hand. Finding a mode of conduct that can reconcile sustainability management with other discourses and regimes requires an intelligent approach. The previous section explained how we should understand the tensions and complementarities between discourses. A governance perspective can help determining what realistically can be done considering the current state of affairs.

Part of the solution is already given by the different observations. Dialogue, stakeholder engagement, transparency, these are all important characteristics of the governance needed in sustainability management. Communicative skills are needed in order to facilitate a proper interactive dialogue and creative thinking is needed to find solutions in a dynamic process. But I want to add an important point here. What can realistically be done is highly dependent on the socio-technical landscape that is largely unalterable by the individual. Although this might seem frustrating, I believe it is a matter of fact. This implies that radical change in a regime will only remain an incident, unless the larger landscape features are receptive for it. And signs for this receptiveness very likely already to be present. In other words, large structural change, like the transition to sustainability, will only be induced by the individual actor with gradual adjustments. This understanding of how change works, I believe, is a crucial part of how one should deal in sustainability management.

Dryzek suggests a course of action that is realistic given the existing constellation of actors, institutes and environment. His suggestion entails that we should recognize the strengths of the discursive framework and let the discourses act by democratic means. Firstly, we should be able to comprehend the complex system of global economy and politics, since this is the arena Dryzek believes the sustainability discussion takes place. The discourses that are strong in this mode of analysis are the Promethean and the ecological modernization discourses. These



discourses give: "a dynamic, structural-level analysis of the liberal capitalist political economy, where it might be heading, and what realistically can be done to alter this trajectory to more ecological benign ends" (Dryzek, 2005, p. 232). However Promethean would not see these ecological benign ends as necessary. The sense of urgency is best expressed by the green radicalism and the survivalism discourses. The authoritarian mode of action of the survivalists, however, would alienated Prometheans, democratic pragmatists and the sustainability discourses. Dryzek comes up with a plan of action that facilitates and engages with social learning. According to him we should establish and strive for ecological goals through discursive procedures suggested by the democratic pragmatists, leaving room for creativity and reflexivity with an open mind as suggested by the quest for sustainability, and acknowledging the sense of urgency of the green radicalism discourses. This course of action is what Dryzek views as the way to go for renewed democratic politics, an ecological democracy.

Understanding of landscape developments and the effects of landscape pressures will help in predicting with type of transitional pathway can occur, given the existence of particular niche-innovations. In stead of claiming a certain way of governance as the right way I suggest to accept the de facto situation as a starting point and take it from there. I believe there is not right or wrong choice to be made (perhaps only in hindsight as a right or wrong outcome). The conception of the different types of transitional pathway can very helpful in this matter as well as the ecological democracy of Dryzek, but in the end it will be the individual moral judgment that will determine a course of action. But the one thing we can do is try to be open about our judgment, include as much considerations from our surrounding as possible, interact with our fellow actors and reflect on our previous decisions. Gradual change towards a sustainable society starts by changing ourselves and those in our sphere of influence.

#### **6.4 Conclusion**

Is sustainability management a substantial part of the transition towards sustainability? This is the question I started my research with. I found out that this very much depend on the conceptions of sustainability and sustainability management you have. On this conclusion I have already elaborated in this research. At final point in my research I would like to let the case of DHV speak for itself. I have asked the question if and how the advisors believe that their work in sustainability management contributes to a transition towards sustainability. The overall conclusion on the interviewees is: yes sustainability management contributes to sustainability, but we are not there yet. I will illustrate my conclusion with quotes of the sustainability advisors.

Should sustainability be achieved by focusing on management of organizations? Interviewee 4: *"Yes, if you really want to make a difference you have to be on the level of the companies. Ok, making citizens and consumers more sustainable helps, but the real action is with the multinationals. Shell is bigger than Belgium. If we could get Shell to be more sustainable it would have more effect than the citizens of Belgium"*. Sustainability management focuses on incorporating sustainability in the daily management practices of companies. But wouldn't there be a better way? Interviewee 1 believes we should that what we have: *"It is the best we got at this time. The Dow Jones Sustainability Index, Carbon Disclosure Project, ProRail CO<sub>2</sub> Performance Ladder; you can criticize these benchmarks, fine by me. But then also come with*

*suggestions for alternatives*". This is clearly a hands-on, action driven approach. Interviewee 5 does suggest a reflexive attitude: *"all these management activities contribute to sustainability if companies actually do business differently. If the activities are intrinsically driven they will remain ad hoc activities. If the efforts are only for the sake of being transparent, or interactive than they do not contribute to sustainability and only distract the attention and resources from actual sustainable activities"*. She points out that sustainability management and advice always has to be assessed if it is actually geared towards sustainability.

How do we know if we have reached a sustainable state of affairs? Well, we don't, it is an open-ended development of constant progression. I stand corrected by interviewee 2: *"It is not about reaching a state of sustainability, but about making you portfolio and activities more sustainable than before. This shift develops incremental as we develop more business innovations. Does this contribute to sustainability? We do what we can as engineering firm, but it is our own choice and responsibility to contribute to sustainability as much as we can"*. But that we still have a long way to go is expressed strikingly by interviewee 4: *"It is difficult, considering how large the group of skeptical of global climate change is. ... We are in a phase in which we still need to legitimize our actions for more sustainability. Why do I need legitimization to save water or energy, or to not emit all kinds of thing in the air?! Isn't this just common sense? Apparently we still need this explanation in the phase we all are in now"*.

My advice to the DHV Advisory Group is to proceed in the way they are going but offer room for critical reflection. I believe this critical reflection should be based on two perspectives. First, the advisory group should keep an eye out on the landscape changes, and not get frustrated by the apparent inertia. Change occurs slow, but if it happens it can be persistent and disruptive so you better be prepared. Action can be based on several transitional pathways or sequence of pathways. Second, have an open and constructive attitude towards discourses other than the dominant ones. Do not fight them but appreciate the diversity and open the dialogue. Especially the 'green politics' discourse can help to shape a vision for the future. 'Sustainable development' can help to understand the political and societal progress also needed for sustainability.

## **7 REFLECTIONS**

### **7.1 Reflections on the Analytical Framework**

In this research I combined two frameworks from Science and Technology Studies and Philosophy of Technology. I believe this synthesis has more value for a research than only using the separate parts. The two research frameworks are complementary. The discursive framework based on descriptive environmental ethics does what the task of philosophy of technology is. It helps to understand and appreciate the role of technology for our society (sustainability has been understood as a technology in this research). As philosophy of technology deals with the fundamental questions of technology and society it can help to identify the basic values and stakes in societal problems, such as issues regarding sustainability. The discursive framework offered a description and analysis of the relations between society, ecology and economy. By offering an encompassing overview of environmental discourses it became clear what the possible roles and consequences can be of sustainability management for a transition towards sustainability. However, as Brey (2008) has indicated philosophy of technology should be oriented towards the practicalities of society. It has a valuable role when it is made instrumental to engineering or social science practices as it can heed everything of value. The strength of the discursive framework lies in the pluralistic understanding of basic values and stakes in particular societal problem. However, it does not suggest a concrete plan of action, although an appeal for sound moral judgment could be understood as one. For a plan of action for a particular societal practice you need to understand this practice. The multi-level perspective on transitions was developed in the field of governance research. It offers an understanding of the dynamics and configurations of science, technology and society. A better understanding means that a better way of governing and managing of a particular constellation of science, technology and society. The analytic framework used in this research offers a helicopter view on sustainability management in the particular case of the DHV Advisory Group. Besides a description of the relevant actors and development in situ, this framework also lays bear the sensitivity for microscopic 'hopeful monstrosities' and macroscopic social structures. This helicopter view makes a dynamic governance possible to manage the present interdependencies and contingencies.

In line with the suggestions of Grin, Rotmans and Schot (2010) I adopted a double vision for researching the transition of a system. This double vision not only gave me a helicopter view on sustainability and sustainability management, but also an overview of the perspectives of the actors that are engaged in these phenomena. In the words of the mentioned authors: "This will yield them an outsider's perspective that includes both a perspective from the helicopter and multiple perspectives from a variety of actors involved". Sustainability management can be enriched by looking at the world from different actor perspectives and the outsiders perspective in an iterative process. Although this double vision is very useful, it is not perfect. The double vision does an excellent job in giving understandings of transitions and its path dependencies. However it does not, make very explicit how we can induce transitions. I have touched this subject briefly by giving suggestion which transitional pathway could be helpful given certain circumstances in the landscape and niche-innovations. But what my research framework lacks is

a clear plan of action for creating specific changes by individuals and organizations. I signaled this lacuna because I could not really place the ideas of 'regime leadership roles' and transformative power of individuals in my research frameworks. Further research into the role of actor agency in the transitional pathway could result in a better understanding of how transitions can be induced.

## **7.2 Reflections on Research Methodology**

I will reflect on my research methodology by assessing the construct and external validity and the reliability of my case study.

I have tried to establish correct operational measures for studying sustainability management and sustainability in chapter 2. I believe that the established research framework has proven to be robust enough to handle the selected data as I have been able to translate proof from the data to support the research propositions. However, a more systemic linkage between my framework and research methods could be achieved between, for example, the discursive framework and survey. This could have been done by performing an inter-observer reliability analysis, in which a second observer would perform the interpretation of the linkage between my framework and research methods. The higher degree of resemblance between my interpretation and that of the second researcher, the more construct validity my research would have. I have made an attempt to do this by discussing my observations in a focus group meeting with the advisory group. I concluded that my interpretations for a large extent overlapped with their interpretations.

The external validity of my research deals with how I have generalized my research findings. In my research I have performed a single-case study with a limited scope. I have been cautious not to overstate my findings beyond the extent of this scope. I have tried to restrict my conclusions to the direct sphere of influence of the DHV Advisory Group. A safeguard I have built in for this is not to perform a statistical generalization, but restrict myself to an analytical generalization. Other than surveys, which rely on statistical generalization, case studies are not meant for the extrapolation of a sample to populations or universes but for the generalization of a set of results to a broader theory (Yin, 2003). However, I have used a survey in this research. But according to the goal of analytical generalization I have not generalized my results of this survey to a more general public than the respondents of the survey. External validity can be higher if multiple sets of results would lead to the same theory. I have tried to increase my external validity by testing each proposition with multiple types of data sources. A suggestion for more external validity would be to perform this testing in other cases as well, and so help to sharpen the tested theories.

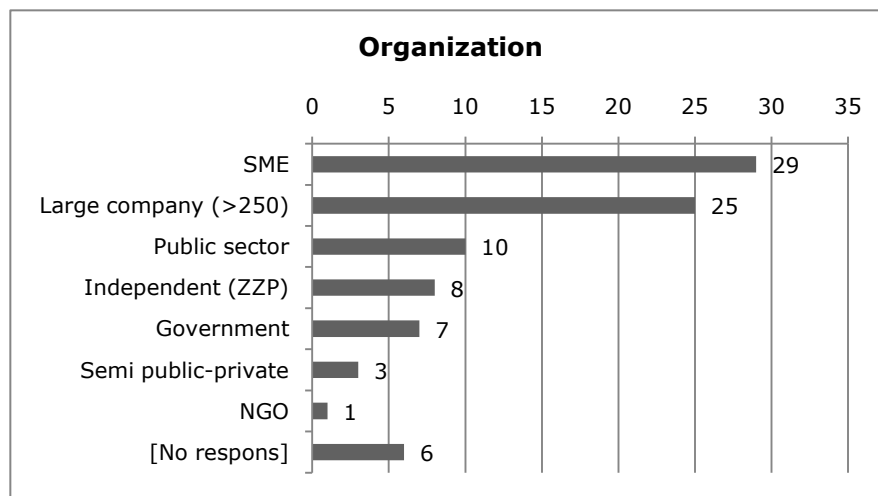
The reliability of my research depends on the degree my research can be replicated. By framing my research in a sturdy and elaborate framework based on a double vision I believe my research can easily be replicated by other researchers and in other cases. I have gone to great lengths to ensure consistency in my data collection, by using protocols, maintaining my database and keeping my field notes up to date. This has not been tested by an auditor. The reliability of my research I believe is high, but it has yet to be tested if others believe this as well.

### 7.3 Research Recommendations for the Empirical Level

At this point I would like to give some suggestions on how my research could be further elaborated. An important aspect of transitions is that conducts in sustainability management and conceptions of sustainability change over time. It would be very interesting to analyze the history of the transition towards sustainability, in the past and the future. A richer picture could be painted if a new research would look back at the developments in the past of the DHV Advisory Group in more detail. Also interesting would be to conduct this same research at a later point in time. This could enhance the theories with more insights of how transitions evolve over time.

Another suggestion for a broader empirical scope become evident if we look at the backgrounds of the respondents (Figure 7-1). Of the respondents the majority works for private companies or has his own business. 17 respondents work for the government or public institutions. There was only one respondent from NGOs. This resulted in conclusions that are mostly dominated by the opinion of private organizations. A more encompassing understanding of sustainability management an the transition to sustainability could be achieved if the same survey would be conducted at policy or governmental actors and NGOs. This could lead to a broader scope of perspectives, presumably richer with notions from the rationalism and sustainable development discourses.

**Figure 7-1: Respondents work for:**



DHV is of course only one actor (although an important one) in a large regime of sustainability management. An obvious addition to my research to perform a similar research at another advisory firm, in order to make more general conclusions on the contribution of sustainability management to the transition towards sustainability.

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## **APPENDIX I. INTERVIEW PROTOCOL**

### Introductie

*Vind je het goed als ik dit gesprek opneem?*

De info van dit interview wordt verwerkt in het eindverslag van mijn thesis. De uitwerking van dit interview zal niet in zijn geheel worden opgenomen in het dit eindverslag. Ik zal de transcriptie van dit interview gebruiken als databron en uit dit interview citeren.

Het interview duurt ongeveer een uur, tot en met ...

Het doel van interview is om uiteindelijk een antwoord te vinden op de hoofdvraag van mijn onderzoek:

“Is sustainability management onderdeel van een grotere transitie naar duurzaamheid en hoe ziet de transitie eruit?”

### Technische vragen:

*Hoe lang werk je al in duurzaamheid? ...*

*Hoe zou je het werk wat je nu doet omschrijven?*

*Wat voor werk heb je zelf zoal gedaan en hoe is dat veranderd in de tijd?*

### Persoonlijke visie:

Dit gedeelte gaat kort in op de waarden die je belangrijk vind in duurzaam ondernemen.

*Heb je een persoonlijke definitie van duurzaamheid en duurzaam ondernemen?*

*Wat vind je belangrijk in het werk dat je doet? Heb je een missie of toekomstvisie?*

Regime shift: Duurzaamheid nu en vroeger

In dit gedeelte wil ik jou ideeën over de huidige configuratie van duurzaam ondernemen schetsen en hoe die anders is dan vroeger.

*Zou je een omschrijving kunnen geven van aspecten van duurzaam ondernemen zoals je die nu ervaart binnen de directe omgeving van DHV? En dan vroeger?*

Aspecten van de configuratie (Probes)	Nu	Vroeger
De producten en diensten waar je bij betrokken bent.		
De soort directe klanten.		
Concurrenten		
Toezietherouder of management, diegenen waaraan je verantwoording af legt		
Partners of samenwerkingsverbanden		
NGOs		
Hogere overheden zoals: De Ambtenarij, Den Haag, Europa		
maatschappelijke bewegingen, trends, actualiteiten, etc.		
Heb je zelf andere aspecten die je zou willen noemen?		

Redenen voor Transitie

Het vorige deel hebben we het gehad over de configuratie van duurzaam ondernemen.

Dit deel zal gaan over de redenen van veranderingen die plaats hebben gevonden in de periode tussen 'vroeger en nu'.

*Kun jij je evenementen of gebeurtenissen herinneren die een directe of aanwijsbare grote impact hebben gehad op duurzaam ondernemen?*

**Probes:** Politiek, radicale innovaties, natuurrampen, Al Gore, brundlandt, Kyoto, Anders?

*Kun jij je maatschappelijke ontwikkelingen herinneren die een sturende rol hebben gehad op duurzaam ondernemen? En hoe uitte zich dat?*

**Probes:** Globalisering, ICT, Klimaatdiscussie

*Kun jij je ontwikkelingen binnen de directe omgeving herinneren die een sturende hebben gehad op duurzaam ondernemen? En hoe uitte zich dat?*

**Probes:** Concurrenten, opdrachtgevers, hoger management

*Kun jij je innovaties of producten herinneren die steeds maar niet van de grond kwamen tot op zeker moment? En hoe uitte zich dat?*

*Kan je voorbeelden geven van ontwikkelingen die inmiddels zich gestabiliseerd hebben/zekerheid vormen?*

*Zijn er andere soort veranderingen die we nog niet hebben behandeld?*

Concluderend:

Graag zou ik je ook de hoofdvraag van mijn onderzoek willen voorleggen.

*Denk jij dat duurzaam ondernemen onderdeel zijn van de grotere ontwikkeling naar duurzaamheid?*

Afsluiting:

We hebben al mijn vragen gehad.

*Heb je zelf nog vragen of toevoegingen?*

## APPENDIX II. ONLINE QUESTIONNAIRE

Mocht u in contact willen komen met de opsteller van dit onderzoek dan kunt u een email sturen naar [m.m.vuijk@student.utwente.nl](mailto:m.m.vuijk@student.utwente.nl)

### Vragenlijst Duurzaam Ondernemen

Deze vragenlijst stelt u een aantal vragen over uw beleving van duurzaamheid en duurzaam ondernemen in Nederland. Het invullen van deze lijst duurt hooguit 8 minuten. Onder de deelnemers van deze vragenlijst worden een aantal exemplaren verloot van het populaire boekje '52 simpele manieren om de wereld te veranderen van de werkplek'. Dit handige duurzaamheidsboekje is officieel gepresenteerd tijdens het 11e Nationale duurzaamheid Congres van 24 november 2010.

Deze vragenlijst is een onderdeel van een onafhankelijk afstudeeronderzoek. De onderzoeker studeert Technische Bedrijfskunde en Filosofie van Technologie aan de Universiteit Twente. In dit onderzoek wordt gekeken of duurzaam ondernemen onderdeel is van een substantiële verandering van onze (bedrijfs)cultuur of dat het meer een hype is. Ook wordt onderzocht waarom duurzaamheid belangrijk wordt gevonden. De contactgegevens van de onderzoeker staan onderaan de vragenlijst.

U vult deze vragenlijst anoniem in, uw antwoorden zullen op geen andere wijze gebruikt worden dan in het belang van het onderzoek. Mocht u op de hoogte gehouden willen worden van de resultaten van het onderzoek, dan kunt u uw emailadres aan het einde van de vragenlijst opgeven. Uw emailadres zal niet worden gekoppeld aan uw antwoorden. Bij voorbaat heel erg bedankt voor uw medewerking en misschien ontvangt u binnenkort het boekje '52 simpele manieren om de wereld te veranderen van de werkplek'!

#### Hoe bekend bent u met duurzaam ondernemen? \*

- Nog nooit van gehoord
- Wel eens van gehoord
- Het heeft mijn interesse
- Af en toe vereist het tijd en aandacht
- Ik ben er (bijna) dagelijks mee bezig

#### Wat is duurzaam ondernemen volgens u? (Meerdere antwoorden mogelijk)

- Een tijdelijke hype.
- De balans in een bedrijf tussen 'People, Planet, Profit'
- In een bedrijf Maatschappelijk Verantwoord Ondernemen (MVO of CSR) implementeren.
- Op een zodanige manier leven en werken dat toekomstige generaties dezelfde mogelijkheden heeft.
- Een radicaal nieuwe manier van bedrijfsvoering.
- Met name gericht op het CO2 probleem en klimaatverandering.
- Een maatschappelijk trend.
- Anders, namelijk:

#### Met welke stellingen bent u het eens? (Meerdere antwoorden mogelijk) Duurzaamheid:

- Wordt stapsgewijs steeds meer geaccepteerd door het publiek, bedrijven, overheid en andere organisaties.
- Het overschakeling van een oude manier van ondernemen naar duurzaam ondernemen gaat op een radicale manier.
- is een verandering in de manier waarop bedrijven werken.
- is een verandering in de manier waarop politiek wordt gevoerd.
- is een technologische verandering.
- is een verandering van de Nederlandse maatschappij.
- is een verandering in de economie.

**Welke partijen zijn in Nederland volgens u actief bezig met duurzaamheid? (meerdere antwoorden mogelijk) \***

- Bedrijven of NGOs op hun eigen kracht
- Samenwerkingsverbanden tussen bedrijven
- Samenwerkingsverbanden tussen bedrijven, overheden en/of NGOs
- Overheden, lokaal/regionaal (gemeenten, provincies, waterschappen)
- Publieke instituten (zoals: AgentschapNL, onafhankelijke onderzoekscentra, universiteiten)
- Overheden, nationaal (ministeries, Tweede Kamer)
- Geen mening

**Op welk niveau bevinden ontwikkelingen en activiteiten op het gebied MVO zich op dit moment in de maatschappij volgens u? (meerdere antwoorden mogelijk)**

- Intern. Binnen bedrijven, bij NGOs, persoonlijk of kleinschalige initiatieven.
- Op systeem of markt niveau. In samenwerking tussen, bedrijven, overheid en/of NGOs.
- Op hoger niveau. Internationale handelsbetrekkingen, Europese en wereldpolitiek.
- Geen mening

**Met welke onderstaande stelling(en) bent u het eens? Nieuwe ideeën en impulsen op het gebied van duurzaam ondernemen komen voornamelijk: (meerdere antwoorden mogelijk)**

- uit het MKB
- van grote en/of internationale bedrijven
- van NGOs
- uit de samenleving (de consument, burgerinitiatieven)
- van lokale/regionale overheden
- van nationale overheden
- van hogere overheden (Europees niveau, internationale klimaat overleggen etc.)
- ergens anders vandaag, namelijk:

**De verduurzaming van onze samenleving is een grote verandering. hoe zou u deze typeren? denk hierbij aan veranderingen die u heeft gezien in de afgelopen 2 tot 5 jaar. \***

- De samenleving verduurzaamt helemaal niet.
- Aanpassing. Onze samenleving verandert doordat bestaande bedrijven en organisaties onder druk van buitenaf zich moeten aanpassen om duurzamer te ondernemen.
- Vervanging. Bestaande bedrijven en organisaties worden vervangen door duurzame nieuwkomers (geheel nieuwe duurzamere bedrijven en organisaties). Deze weten zich beter staande te houden in de veranderende samenleving.
- Herschikking in bedrijven. Bedrijven en organisaties passen zich aan door duurzame ideeën van buitenaf te kopiëren en in te voeren in de organisatie. Nieuwkomers worden hierdoor niet dominant of worden een onderdeel van bestaande bedrijven en organisaties
- Strijd. Bestaande bedrijven en organisaties en de onderlinge verhoudingen verliezen draagvlak. Hierdoor ontstaat een chaotische fase van strijd en verandering. Uiteindelijk stabiliseert de samenleving rond te duurzame winnaars.
- Anders, namelijk:

**Gaan de ontwikkelingen op gebied van MVO volgens u: \***

- te snel
- snel genoeg
- langzaam genoeg
- te langzaam
- gaan achter

**Kunt u aangeven welke ontwikkelingen op het gebied van MVO u op dit moment belangrijk en/of opkomend vindt? U mag met korte steekwoorden antwoorden.**

## Bent u het eens of oneens met de onderstaande stellingen?

Hieronder volgen een aantal stellingen. Met deze stellingen wordt geprobeerd een beeld te vormen van de verschillende meningen en beweegredenen met betrekking tot duurzaam ondernemen. Bij beantwoorden van deze stellingen is het van belang uw persoonlijke overweging te maken. De volgorde van de stellingen is bewust zo willekeurig mogelijk.

Kunt u aangeven of u het eens of oneens bent met de stelling, of dat u er neutraal tegenover staat of geen mening over heeft?

**De natuur dient beschermd te worden omwille van de natuur zelf, ook als mensen hier geen belang in hebben. \***

Eens    neutraal    Oneens    Geen mening  
           

**Ecologische en sociale problemen zullen met name worden opgelost of voorkomen door schaarste, efficiëntie en marktwerking. \***

Eens    Neutraal    Oneens    Geen mening  
           

**Om ecologische en sociale problemen te voorkomen of op te lossen mag de overheid in de toekomst vergaande interventies plegen in de economie en maatschappij. \***

Eens    Neutraal    Oneens    Geen mening  
           

**Groei blijft altijd mogelijk. \***

Eens    Neutraal    Oneens    Geen Mening  
           

**De mensheid is slechts een rader in het grotere geheel. \***

Eens    Neutraal    Oneens    Geen mening  
           

**De huidige menselijke activiteiten lijken zich als een virus voor de aarde te gedragen. \***

Eens    Neutraal    Oneens    Geen mening  
           

**Economische en ecologische belangen gaan voor de belangen van mijn organisatie. \***

Eens    Neutraal    Oneens    Geen mening  
           

**Menselijke belangen zijn belangrijker dan natuurlijke belangen. \***

Eens    Neutraal    Oneens    Geen mening  
           

**Ecologische en sociale problemen zullen voornamelijk worden voorkomen of opgelost als overheden en bedrijven structureel handelen naar de publieke opinie. \***

Eens    Neutraal    Oneens    Geen mening  
           

**Onze planeet stelt een limiet op onze groei. \***

Eens    Neutraal    Oneens    Geen mening  
           

**Mensen moeten meer handelen vanuit hun emotionele of spirituele band met de natuur. \***

Eens    Neutraal    Oneens    Geen mening  
           

**De invloeden van de economie op de ecosystemen zijn aanwezig, maar worden overschat. \***

Eens    Neutraal    Oneens    Geen mening  
           

**De natuur dient vooral beschermd te worden, omdat toekomstige generaties de natuur nodig hebben. \***

Eens    Neutraal    Oneens    Geen mening

**Het evenwicht tussen de maatschappij en de natuur is verstoord. \***

Eens   Neutraal   Oneens   Geen mening  
        

**Ecologische en sociale problemen moeten voornamelijk met goed overheidsbeleid worden voorkomen of opgelost. \***

Eens   Neutraal   Oneens   Geen mening  
        

**De algemene belangen voor duurzaamheid moeten boven de belangen van mijn organisatie worden gesteld. \***

Eens   Neutraal   Oneens   Geen mening  
        

**Het is het recht van de natuur om beschermd te worden. \***

Eens   Neutraal   Oneens   Geen mening  
        

**Ecologische en sociale problemen moeten met technologische ontwikkelingen worden voorkomen of opgelost. \***

Eens   Neutraal   Oneens   Geen mening  
        

**De huidige claim op de natuur getuigt van een menselijke arrogantie en doet geen recht aan het bestaansrecht van andere levende wezens.**

Eens   Neutraal   Oneens   Geen mening  
        

**Bij duurzaam ondernemen spelen vooral economische trends en wetten een rol. \***

Eens   Neutraal   Oneens   Geen mening  
        

**De economie en de maatschappij moeten worden aangepast aan de natuurlijke ecosystemen en niet andersom. \***

Eens   Neutraal   Oneens   Geen mening  
        

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De laatste 2 vragen hebben betrekking op de organisatie waar u mee bent verbonden.

**Hoe zou u het karakter van uw organisatie omschrijven?**

- MKB (tot 250 werknemers)
- Groot bedrijf (250 werknemers of meer)
- NGO
- Publiek-private samenwerking
- Overheid
- Publieke (non-profit) sector
- Anders, namelijk:

**Op welk niveau in de samenleving opereert uw organisatie op het gebied van duurzaamheid voornamelijk? \***

- Binnen de organisatie en/of met directe stakeholders.
- In samenwerkingsverbanden met overheid, NGOs en/of bedrijven.
- Op hoger niveau, internationale handelsbetrekkingen, Europese en/of wereld politiek.

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### APPENDIX III. REFLECTION ON INTERNSHIP

The internship at the DHV Sustainability Advisory Group was performed in the period from the 1<sup>st</sup> of May till 31<sup>st</sup> of December 2010, with a short extension in January 2011. It was agreed that half of the time would be spend on this Master Thesis and the other half on project for the advisory group. The specification of the time spend is displayed in the table below. The projects are sorted by the time spend on them in days. In total I worked for a period of 152 days of which 62,25 for DHV projects and 78,25 days on my thesis. 12,5 Days were used for holidays and illness.

<b>Telefoongids &amp; Gouden Gids</b> Q&A Preparation for a television episode for 'Kassa' Time spend: 9 days	The televisionshow 'Kassa' wanted to do another item on the environmental impact of the paper telephone directories. DTG asked DHV to prepare them for the show. My task was to assess what information was already known about the environmental impact. Together with 2 advisory I drafted the Q&A sheet based on known information and plans of action.
<b>ING</b> Development of processing tool for the ISO 26000 Scanner Time spend: 8,25 days	2 advisors of DHV had performed an issues selection with the Dutch bank ING according the ISO 26000. It was my task to transform these issues and appointed relevance into an Excel-sheet that could calculate the compliance of sub-divisions with the ISO 26000. After the data collection it was my task to prepare the results for presentation.
<b>CO<sub>2</sub> Performance Ladder</b> Review of certificate-holders and their CO <sub>2</sub> reduction activities Time spend: 6,25 days	ProRail had launched its Performance Ladder. For an internal market overview I reviewed the communications of approx. 50 companies. I signaled trends in CO <sub>2</sub> reduction policies, assessed the 'best practices' and tried to discern the argumentations behind different rankings of companies.
<b>Jurriëns Bouw</b> Development of data collection sheet for Jurriëns' CSR policy Time spend: 6,25 days	Jurriëns Bouw did not have a consistent CSR policy and asked DHV to perform a baseline assessment. Together with an advisory I drafted the assessment tool. After he had collected to data it was my task to transform the crude numbers into understandable figures with the tool I had developed.
<b>Ahold</b> Online research into the possible options for sustainable energy purchase Time spend: 5,5 days	Ahold wanted to 'green' their energy consumption in the Netherlands, Czech Republic and the USA. I elaborated their three options: indirect procurement with Tradable Energy Certificates, direct procurement with fixed contracts and self-production.
<b>Conferences and seminars</b> Time spend: 3,25 days	I visited three events: The GRI seminar at Aegon in The Hague, the National Sustainability Conference in Utrecht and the MVO Performance Ladder at DHV in Amersfoort.

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<p><b>Gemeente Alphen a/d Rijn</b> CO<sub>2</sub> emissions calculations of the fleet of vehicles using existing DHV scan Time spend: 2,25 days</p>	<p>This municipality wanted to know how much CO<sub>2</sub> the vehicles emitted. I assisted an advisor in the processing of the data based on their lease-cars, waste-collection trucks etc.</p>
<p><b>DHV</b> Assistance in data collection for DHV's 'CO<sub>2</sub>-aware' certificate Time spend: 2,25 days</p>	<p>DHV also had to partake in the ProRail CPL. DHV wanted to reach level 4 on the ranking. Assigned by the responsible project leader I helped with the collection of data from the HR department on the travelling behavior of employees.</p>
<p><b>KPN</b> Assistance in data processing for KPN Sustainability Report Time spend: 2,25 days</p>	<p>KPN had hired DHV to assist them in the drafting of their 2010 sustainability report. I replaced an advisor during a holiday. I had to keep the data collection up to date with the information supplied by KPN subsidiaries.</p>
<p><b>Minor projects</b> Time spend: 5,5 days</p>	<p>These were minor tasks like checking excel-sheets for consistency and preparing numbers and figure for presentations.</p>
<p><b>Internal affairs</b> Time spend: 9 days</p>	<p>Meetings, department outing, etc.</p>

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This internship had a number of very strong points. From the first day I was giving responsibility for my own sub-projects. Also, the advisors are genuinely committed to sustainability. This gave me the feeling to be part of a actual contribution to a more sustainable Dutch society. The clients and assignments were really at the frontier of CSR and sustainability management. DHV as an organization takes sustainability very serious as well. For instance, during my internship I could see the old energy consuming office we worked in turned into a slick and lean office. This was the first renovation from a G to a A energy label building. DHV practices what it preaches. But their success also had a downside as the advisors spend a lot of time out of office at clients. 'There were very few possibilities to come along and experience the 'front-office'.

During the internship I had the opportunity to use my knowledge and skills learned at university in practice. This count for my master PSTS as well as my bachelor IE&M. It also gave me the opportunity to assess if a job as a consultant is a career possibility. I came to the conclusion that sustainability consultancy is a very dynamic job and you can have an large impact on the daily activities of your clients. However, I also found out that the high pace and fast changes often leaves little time and mind-space for philosophical or moral reflections. It is easy to loose yourself in the tasks at hand and loose sight of the bigger sustainability picture.

## APPENDIX IV. GRADUATION COMMITTEE

My graduation committee consists of 4 members.



### **Chair: Prof. dr. S. Kuhlmann (Stefan)**

Stefan Kuhlmann is Chair of the Department of Science, Technology, and Policy Studies (STePS) and a member of the university's Institute for Governance Studies' (IGS) programme committee. He is a political scientist and studied also history (University of Marburg, Germany; graduation 1978); 1986 he received the degree of PhD in political science (Dr.rer.pol.), at University of Kassel, Germany; 1998 he got a 'habilitation' (2nd doctorate) in political science at this university. Since 1979 Stefan Kuhlmann has been involved in studies of research and technological innovation as social and political processes – with changing entrance points and perspectives. During the last two decades he has analysed science, research and innovation systems and public policies, focusing on the dynamics of governance. Until summer 2006 he was managing director of the Fraunhofer Institute for Systems Innovation Research (ISI), Germany, and Professor of Innovation Policy Analysis at the Copernicus Institute, University of Utrecht, The Netherlands.

### **Second reader: Prof. dr. P. Brey (Philip)**



Philip Brey (Ph.D., University of California, San Diego, 1995) is professor of philosophy of technology and chair of the department of philosophy, University of Twente, the Netherlands. He is also director of the Centre for Philosophy of Technology and Engineering Science (CEPTES) of the University of Twente. He is a member of the executive board of the Society for Philosophy of Technology and of the International Society for Ethics and Information Technology, and director of the European division of the International Association of Computing and Philosophy. He is a member of the editorial board of the journals *Techné: Research in Philosophy and Technology*, *Ethics and Information Technology*, the *Journal of Information, Communication and Ethics in Society*, and *Nanoethics: Ethics for Technologies that Converge at the Nanoscale*, and is vice editor of the *Society for Philosophy and Technology Newsletter*. He was formerly also programme director of the international master programme *Philosophy of Science, Technology and Society* (2003-2006). He previously taught at Delft University of Technology and the University of California, San Diego.

### **External supervisor: ir. M.I. Hoffmann (Marieke)**



Marieke Hoffmann is consultant Sustainable Development at DHV. She studied industrial engineering and management and has experience with a wide range of sustainability topics, such as the assessment of sustainability issues and KPIs (kernprestatie-indicatoren), CSR reporting and the development of data systems for sustainability. She also is experienced in formulating norms and procedures in the field of Health, safety and Environment. At DHV she has worked for several companies among which

are SNS Reaal, Ahold, Corio, Océ, provincie Friesland, TenneT, Draka, TKH, ATM, Corio, Nutreco, Samas, Ministerie van Verkeer en Waterstaat, KPN.



**External subject expert: ir. R.A. van Tilburg (Rob)**

Rob van Tilburg is manager and senior consultant of the Consultancy Group Sustainable Development at DHV. As a industrial engineer he has 15 years of experience in field of corporate environmental and sustainability issues. On behave of DHV he is project leader. His field of operation encompasses in particular the strategic, organizational and communicative approach of sustainability issues at mostly internationally operating, stock exchange quoted companies, which are supported on the executive level. Examples of clients are Ahold, ABN Amro, TNT, Imtech, CSM, ING Groep, Cehave Landbouwbelang, TKH group, Nutreco, Achmea, ENECO, SNS Reaal , Stork NV, TomTom en Fortis. Rob is a frequent speaker on conferences and publishes on a regular basis in national newspapers and professional journals about sustainable development.