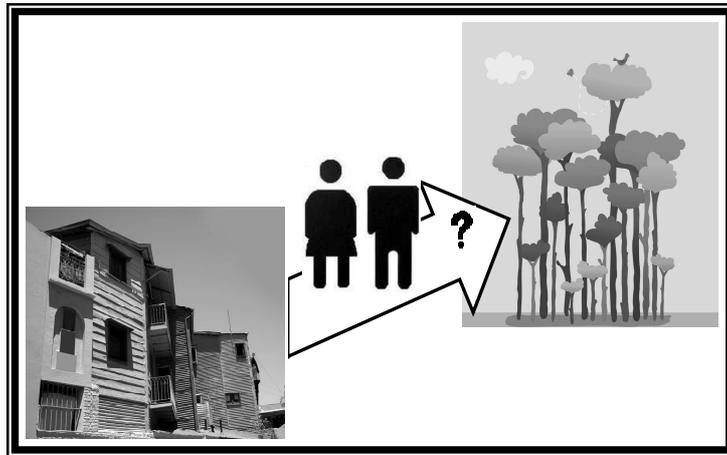


# Staatsbosbeheer and the Dutch Health Sector:

Using Discourse Analysis to evaluate the Staatsbosbeheer's policy  
of linking forests and nature to human health issues

MSc Thesis Forest and Nature Conservation Policy  
AV2009-06



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## Supervisors:

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March 2009

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## Abstract

During the last four years Staatsbosbeheer - the Dutch State Forestry Service - has actively promoted the health benefits of being in forests and nature areas. The organization which is principally associated with woodland has been actively trying to put its policy of linking forests and nature to human health issues on the agenda of the Dutch health sector actors. This study used discourse analysis to evaluate the policy by investigating discourses used by Staatsbosbeheer and the health-sector actors towards the policy. Discourses were collected through document analysis on international literature and interviews within Staatsbosbeheer and the Dutch health sector. Two different discourses have been drawn from document analysis, namely 'ecosystem health for human health' discourse and 'exposure to nature for human health' discourse. Both Staatsbosbeheer and the Dutch health sector adhere to the same discourse which is 'exposure to nature for human health' discourse in a sense that they hold the discourse's main storyline which is that engagement with nature gives positive effects to human health. Nevertheless, respective actors interpret the detailed storylines rather differently. Staatsbosbeheer basically promotes those forests and nature under its management, while the Dutch health sector has a preference to make use of other green environments particularly green spaces in cities. This different interpretation then consequently has influenced their engagement with the Staatsbosbeheer's policy of linking forests and nature to human health issues. Discourse analysis assists the understanding of how respective actors have taken up the idea of the 'exposure to nature for human health' discourse into organizational practices. Hence, from such understanding opportunities and constrains can be drawn to contribute to any necessary future refinements of the policy.

**Keywords:** Staatsbosbeheer, forest, nature, health, overweight, obesity, depression, green, physical activities, discourse, storyline.

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## List of Acronyms

ADA	Argumentative Discourse Analysis
ANWB	Algemene Nederlandsche Wielrijders-Bond / The Netherlands Touring Organization
COPD	Chronic Obstructive Pulmonary Disease
COST	Cooperation in the field of Scientific and Technical Research
GGD	Gemeentelijke Gezondheidsdienst / Municipal health service
GPS	Global Positioning System
KNBLO-NL	Koninklijke Nederlandse Bond voor Lichamelijke Opvoeding - Wandelsportorganisatie Nederland / The Netherlands walking organization
LHV	Landelijke Huisartsen Vereniging / The Netherlands General Practitioner Association
NIGZ	Nationaal Instituut voor Gezondheidsbevordering en Ziektepreventie / The Netherlands Institute for Health Promotion and Disease Prevention
NISB	Nederlands Instituut voor Sport en Bewegen / The Netherlands Institute for Sport and Physical Activity
NIVEL	Nederlands instituut voor onderzoek van de gezondheidszorg / The Netherlands Institute for Health Services Research
NOC*NSF	The Netherlands Olympic Committee * Netherlands Sports Federation
RIVM	Rijksinstituut voor Volksgezondheid en Milieu / The National Institute for Public Health and the Environment
RMNO	Ruimtelijk, Milieu en Natuuronderzoek / The Advisory council for research on spatial planning, nature and the environment
ZBO	zelfstandig bestuursorgaan / independent authority

# Chapter 1: Introduction

## 1.1. The Staatsbosbeheer

Staatsbosbeheer - The Dutch State Forestry Service - was established in the Netherlands in 1899 with tasks to manage state forests and to forest the heath and waste lands in the eastern and southern parts of the Netherlands that used to be integrated into the traditional agricultural system in order to make them profitable (Zwaart 2001; Buis et al. 1999 cited in Groote et al. 2006). After for a long time forestry had been a private business of private owners, the establishment of Staatsbosbeheer started the beginning of a period of intensifying government action in forestry (Nijland & Van Wijk 1994: 39; Verbij 2004). This was mainly motivated by the fact that at that time The Netherlands was severely deforested and there was high demand for wood (Staatsbosbeheer 2008a).

During the economic crisis in nineteen thirties, together with the afforestation of sand dunes to prevent further erosion, forests were planted also to provide employment, as well as a means of rural development (Lovera nd.; Nijland & Van Wijk 1994). Since the beginning of 20<sup>th</sup> century forest function has gradually diversified. In the second half of the 20<sup>th</sup> century, forests were no longer seen important for only a limited number of functions, namely wood production, stabilization of sand dunes and soil improvement; they became increasingly important for outdoor recreation and nature conservancy purposes (Nijland & Van Wijk 1994; Elands & Wiersum 2003; Hoogstra & Willems 2005). This was also supported by the fact that in the late sixties The Netherlands could no longer compete with larger wood producer countries (Staatsbosbeheer 2008a). This situation forced private owners and the government to reconsider the one-dimensional focus on wood production and explore a possible multifunctional focus on forests (Verbij, Turnhout, & Schanz 2007). Moreover, towards the end of the 1960s and during 1970s Dutch society became interested in forest for its nature and recreational value due to increasing leisure time and prosperity, and changing nature images (Verbij 2004). Since then, as a result, Staatsbosbeheer is focusing on the development of forests and nature as well (Staatsbosbeheer 2008a).

Since January 1, 1998 Staatsbosbeheer has been an independent authority (ZBO: *zelfstandig bestuursorgaan*; in Dutch) whose principal is the Ministry of Agriculture, Nature Management and Food Quality (Hoogstra & Willems 2005). This new position gives Staatsbosbeheer more room to capitalize on social needs and to act independently where its interests are at stake (Staatsbosbeheer 2001). As a consequence, more opportunities are available for Staatsbosbeheer to actively offer products and services that are (co)financed by provincial authorities, municipal activities, the commercial sector or the general public (Staatsbosbeheer 2004).

However, the relation with Ministry of Agriculture, Nature Management, and Food Quality is still maintained. With regard to management and the corresponding funding, every year Staatsbosbeheer and the Ministry make an agreement which is recorded in a contract that Staatsbosbeheer is held accountable for at the close of the year (Staatsbosbeheer 2001). This mechanism consequently makes that Staatsbosbeheer is obliged to explicitly aim at involving broader society in forest management through communication and public participation (Staatsbosbeheer 2001; Schanz & Ottitsch 2004).

Nowadays, Staatsbosbeheer not only manages state forests. From 246,000 hectares of nature reserves managed by Staatsbosbeheer around 40% of the area is forests, while the rest are dunes, floodplains, marshland and cultural-historical elements<sup>1</sup> (Staatsbosbeheer 2007a). In structure, as a national organization Staatsbosbeheer is divided into four regions which in turn are divided into districts; while a district consists of one or more management units (*beheerseenheden*; in Dutch) (Figure 1.)

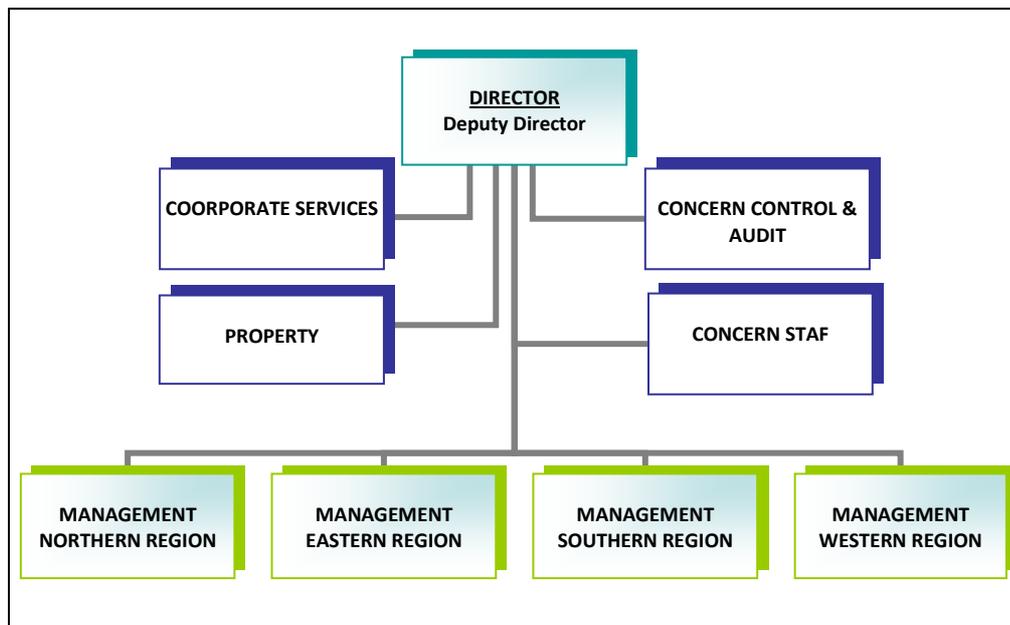


Figure 1. Organisation Chart of Staatsbosbeheer  
Source: Staatsbosbeheer (2008b)

Working towards a sustainable living environment for man, plant and animal is claimed as the central of Staatsbosbeheer's mission which is carried out in accordance with a multi-year vision that is based on the pillars of nature, landscape, recreation and socialization (Staatsbosbeheer 2008c). Accordingly, Staatsbosbeheer has more intensively explored multi-functional nature, including recreational and conservancy purposes, in which man can play a part as a means of stimulating a long-term relationship between man and nature (Staatsbosbeheer 2004). The production of environmentally friendly and renewable raw materials such as wood still get attention from the organization, but not as much as nature conservation and recreation get.

In line with Staatsbosbeheer's objective to promote recreation at as many of its areas as possible, around 90% of Staatsbosbeheer's areas are open to the public; only in areas where vulnerable vegetation grows or easily disturbed animals and birds live public access is limited with necessary measures (Staatsbosbeheer 2001). More and more recreational activities and facilities are offered for many visitors with regard to their demands and needs. This especially took place since Staatsbosbeheer launched its new policy for recreation in 2004. Recreational activities increasingly became various

<sup>1</sup> With regard to the fact that Staatsbosbeheer does not only manage forests but also other nature areas, from now onward the term 'forests and nature' will frequently appear in this report. The term actually means 'forests and other nature areas', and not to indicate that forests are not part of nature.

and the facilities are available also for the physically handicapped. Interestingly, during the last four years (2004 until 2008) Staatsbosbeheer has shown a new interest on linking forests and nature to human health issues. This phenomenon interested me to conduct this research. To make clear, I will describe the problem statement underlying this thesis, and subsequently I will also present my research objective and research questions. Prior to that, in the following section I want to describe first the setting which is important as the context of seeing Staatsbosbeheer actively linking forests and nature to human health issues in relation with Dutch health situation in recent years. The following section also gives a brief description on how involvement of different parties in the efforts of improving public health has developed during the respective period.

## **1.2. Staatsbosbeheer and Human Health**

Officially the Staatsbosbeheer's policy of linking forests and nature to human health issues was started to establish since 2005 when there has been one person appointed as Senior Advisor on Nature and Health responsible for linking nature with health policies (J. Van den Berg, personal communication, December 1, 2008). However, the emergence of the idea can be traced back to 1998 when Staatsbosbeheer became an independent authority and it has had more room to capitalize on social needs since then. More products are offered by Staatsbosbeheer to respond to (new) demands from society (Staatsbosbeheer 2001). For instance, responding to people's demand on recreation Staatsbosbeheer launched its new policy for recreation in 2004. By then, recreational activities increasingly became various and the facilities are available, also for the physically handicapped persons (Staatsbosbeheer 2004). With the same logic, the emergence of the Staatsbosbeheer's policy of linking forests and nature to human health issues can be related to the situation in society that there has been a demand in public health in which Staatsbosbeheer saw an opportunity to capitalize on it.

Therefore it is necessary to look at the health situation of Dutch people around and during the development of the idea of linking forests and nature to human health. In the interviews I had within Dutch health sector, some health problems were mentioned and considered as important health issues in the Netherlands in recent years. Those health problems are diabetes, overweight and obesity, mental health disorders such as depression and anxiety, asthmatic, alcohol abuse, smoking, coronary heart disease, cancer, and chronic obstructive pulmonary disease (COPD). Among others, overweight and obesity<sup>2</sup> were the most frequently mentioned in the interviews. This is in line with the fact that, as mentioned in its policy document published in 2004, the Ministry of Health, Welfare, and Sport decided to focus on the most disabling illnesses that can be grouped as six priority illnesses (categories) as follows:

- Cardiovascular diseases: coronary cardiovascular diseases, heart failure and stroke
- Cancer: lung cancer, breast cancer, colitis and rectal cancer
- Asthma and chronic pulmonary diseases
- Diabetes mellitus

---

<sup>2</sup> These two terms, overweight and obesity, even they look alike one another though they are differentiated by the so-called 'Body Mass Index (BMI)'. A person is considered as overweight if his/her BMI is 25-29.9 kg/m<sup>2</sup>. In the case that his/her BMI is  $\geq 30$  kg/m<sup>2</sup>, then the person is considered as obese. BMI itself is an index that relates body weight to height. It is obtained by dividing a person's weight in kilograms (kg) by their height in meters (m) squared (Health Council of The Netherlands 2003).

- Psychological disturbances: depression, anxiety disturbances and alcohol addiction
- Motor system disorders: neck or back, arthritis, rheumatoid arthritis

With respect to the six priority illnesses the ministry set smoking, obesity, and diabetes as three spearheads that must be addressed as soon as possible (Ministry of Health, Welfare, and, Sport 2004). Obesity was made as one spearhead because it was considered as an avoidable health risk that causes many disabling illnesses such as coronary heart diseases, heart failure, stroke, breast cancer, colitis and rectal cancer, diabetes mellitus and arthritis (Ibid.). Later on, Ministry of Health, Welfare, and Sport (2006) also noticed that overweight is found more in people with a low socio-economic status (low income, cheaper housing, and poorer health). Furthermore, considering that the primary cause of obesity is the imbalance of energy intake from food and energy output through physical exercise, getting people to take more physical exercise, in addition to eating healthier diets, was promoted to address obesity (Ministry of Health, Welfare, and Sport 2004).

Earlier, in 2003 the Health Council of the Netherlands reported that the Netherlands showed an increasing prevalence in the number of individuals suffering from overweight and obesity. On average, about 40% of Dutch adults were overweight, while 10% of the adult population was obese. Furthermore, the Health Council (2003) put forward increasing the usual amount of daily physical activity as well as reducing the energy intake as the aim of preventive interventions whose the development and implementation require a broad coalition of actors, in which the local and national authorities, the industry, the health care system and the population each carry their own responsibilities. One year after, the Health Council together with RMNO (the Advisory council for research on spatial planning, nature and the environment; in English) published another report titled 'Nature and Health' stating again that adequate physical exercise plays important role in combating overweight and obesity and also referring to nature as a place providing an incentive to take exercise (Health Council & RMNO 2004). In addition, the report also exposed four other intermediary mechanisms by which nature beneficially influences human health and wellbeing, namely recovery from stress and attention fatigue, facilitating social contact, stimulation of development in children and stimulation of personal development and a sense of purpose.

With regard to addressing the three spearheads, including obesity, the Ministry of Health, Welfare, and Sport (2004) acknowledges the importance of the cooperation in sharing the responsibility with relevant parties such as municipalities, companies, manufacturers, schools, health-care services and health insurers. The same actors were also mentioned to be responsible in promoting public health when the Dutch government published its public health policy for the time period of 2007–2010 in which overweight is as one priority to be addressed besides smoking, alcohol abuse, diabetes, and depression (Ministry of Health, Welfare, and Sport 2006). In particular, the policy document supported local authorities to implement local health policy for preventing overweight. In fact, the important role of municipalities in developing and implementing local health policy has been obliged by the law since 1990 when the Public Health Collective Prevention Act (*De Wet collectieve preventie volksgezondheid – Wcpv*; in Dutch) delegated several important tasks to the municipalities (Ministry of Health, Welfare, and Sport 2004). Furthermore, under the 2002 Public Health (Preventive Measures) Act, municipal authorities are obliged to pursue an integrated health policy (Ministry of Health, Welfare, and Sport 2007). Later on, when the vision of health prevention published in September 2007, the Ministry of Health, Welfare, and

Sport again confirmed the important role of municipalities in carrying out their local health policy responsibilities. The document noted that in recent years, the municipalities have shown increasing consideration for the health implications of policies adopted in domains other than health, including environmental management, economics and social work (Ibid.). Moreover, by introducing the concept of ‘parallelism interest’, the vision document opened up the possibilities to elaborate many actors from different sectors to work together with health sector in realizing the vision on health and prevention. In addition, the same document also acknowledged nature as a physical setting encouraging people to do exercise that is beneficial for their health (Ibid.).

### **1.3. Problem Statement**

The activeness of Staatsbosbeheer in promoting health benefits of being in forests and nature areas was observable in the last four years. In May 2004 the organization published a document titled ‘At home with Staatsbosbeheer; naturally!: Vision for recreation and experiencing nature and landscape’ stating that one objective of Staatsbosbeheer which is the promotion of recreation in the largest possible number of its sites is motivated by a wish to contribute to health, welfare, and quality of life (Staatsbosbeheer 2004). Staatsbosbeheer also showed enthusiasm for the same concern in the European Union level. In 2004 the Staatsbosbeheer delegated a staff as a member of a working group of the European Cooperation in the field of Scientific and Technical Research (COST) Action E39 ‘Forests, Trees and Human Health and Wellbeing’ which has as its main objective is to increase the knowledge about the contribution that forests, trees and natural places make, and might make, to the health and wellbeing of people in Europe (COST Action E39 2008). Furthermore, on March 30, 2005 Staatsbosbeheer together with three other organizations namely the touring organization ANWB, the national sport association NOC\*NSF, and the health care insurer association Zorgverzekaar Nederland signed a manifesto called ‘*Nederland Actief*’ (the Netherlands Active; in English) to realize more accessible green spaces to encourage Dutch people to do sport and recreation for their health (Staatsbosbeheer 2005). In 2006 Staatsbosbeheer financially supported a research conducted by NIVEL (The Netherlands Institute for Health Services Research; in English) to examine the extent to which Dutch general practitioners advised their patients to exercise in a green environment (Staatsbosbeheer 2007). Following up the result of the research, in 2007 Staatsbosbeheer through some newspapers (see Annex 4) urged Dutch general practitioners to prescribe exercise in a green environment to their patients as a strategy to combat obesity. The effort still continues. On June 27, 2008 Staatsbosbeheer and NIGZ (National Institute for Health Promotion and Disease Prevention; in English) signed a cooperation agreement named ‘*Gezond Groen*’ (Health and Green) whose aim is to identify Staatsbosbeheer areas to promote health of city dwellers (NIGZ 2008a).

These activities of Staatsbosbeheer point to an interesting phenomenon: an organization which is principally associated with woodland (Staatsbosbeheer 2004) now is trying to address human health issues. It would be less surprising if the issues are addressed by those which are commonly known as health-sector actors such as Ministry of Health, municipal health services and health care insurance companies. The Dutch government acknowledges the efforts of Staatsbosbeheer. In the policy document titled ‘Being Healthy and Staying Healthy: A Vision of Health and Prevention The Netherlands’ published in 2007 by the Ministry of Health, Welfare and Sport, nature is

linked up with health and Staatsbosbeheer is referred to as an organization which explores initiatives to get people walking in the forests for their health (Ministry of Health, Welfare and Sport 2007). This is in line with the fact that since it became an administrative body in 1998 more products have been offered by Staatsbosbeheer to respond to (new) demands from society at large including recreational needs (Staatsbosbeheer 2004). Some are directly linked to having benefits to human health, e.g. *speelbossen* (play forests) for children, and walks with the help of GPS (Global Positioning System) (Ibid.).

Considering much effort that has been done by Staatsbosbeheer during the last four years, it is valuable to examine whether its idea or concept of linking forests and nature to human health gains dominance and is seen as authoritative to the existing Dutch health-sector actors. With regard to addressing human health problems, forests and nature might gain different meanings from different actors in the Dutch health sector. Consequently this will also influence their engagement with the Staatsbosbeheer's policy of linking forests and nature to human health issues as well as their engagement with Staatsbosbeheer. With this in mind, here evaluating the Staatsbosbeheer's policy of linking forests and nature to human health issues much relies on interpretative thinking based on the perceptions and the voices of respective actors associated with the policy (Stake 2004)<sup>3</sup>. Using discourse analysis it is possible to investigate if the idea of linking forests and nature to human health gets structured in debates and solidified into institutions and organizational practices. In other words, the extent to which the idea has been taken up by health-sector actors and to what extent it has led to concrete decisions and actions is looked for through this study.

Discourse analysis illuminates the role of language. It is based on that language profoundly "shapes our view of the world and reality, instead of being merely a neutral medium mirroring it" (Hajer 2006: 66). Besides influencing formation of interests and preferences, language enables and limits the range of practices and interactions in which actors can engage (Feindt & Oels 2005). In Foucaultian concepts analyzing discourse means studying language use; but rather than about linguistic system, it is more a matter of social, historical, and political conditions under which statements are made and received (McHoul & Grace 1993). Discourse itself is defined as "an ensemble of ideas, concepts, and categories through which meaning is given to social and physical phenomena, and which is produced and reproduced through an identifiable set of practices" (Hajer 2006: 67). Discourse can be analyzed as a 'strategic situation' that is formative of actors, that enables and constrains them by shaping their field of opportunities and by limiting their freedom (Foucault 1998 cited in Feindt & Oels 2005). Moreover, by uttering discourse actors intend not only "to make others see the problems according to their views, but also to position other actors in a specific way" (Hajer 1995: 54). Thus, in this case by studying language used by Staatsbosbeheer and the existing health-sector actors it will be possible to get the meanings given respectively by these actors towards the Staatsbosbeheer's policy of linking forests and nature to human health issues. Furthermore this may help to understand why particular actors behave in determined ways, and also explain the dominance of particular sets of

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<sup>3</sup> Stake (2004) differentiated evaluation studies into two groups. The first one is called *standard-based* studies which include evaluation studies that rely mostly on numbers and criteria thinking. The other one is called *responsive* studies which include evaluation studies that rely from beginning to end on interpretative thinking.

ideas held by these actors about the policy. Hence, opportunities and/or constraints can be drawn from such understanding which would contribute to any necessary future refinements of the policy.

#### **1.4. Research objective and research questions**

The objective of this research is to evaluate the Staatsbosbeheer's policy of linking forests and nature to human health issues by investigating discourses used by the Staatsbosbeheer and the health-sector actors towards the policy.

Three main research questions below are set to be addressed by this research:

1. What are the different discourses that can be identified around the Staatsbosbeheer's policy of linking forests and nature to human health issues?
  - 1.1. What are discourses/storylines held by Staatsbosbeheer towards the policy?
  - 1.2. What are discourses/storylines held by different health-sector actors towards the policy?
2. Which discourse got dominance over the others?
  - 2.1. Who uttered this dominant discourse?
  - 2.2. How did it get structured and institutionalized?
3. What opportunities and/or constraints can be drawn on the base of identified discourses for future development of the policy?

#### **1.5. Report Online**

This introductory chapter is followed by **Chapter 2** in which I describe about discourse analysis as the theoretical framework which was taken in order to achieve the research objective of evaluating the Staatsbosbeheer's policy of linking forests and nature to human health issues to contribute to any future refinement of the policy.

In **Chapter 3**, methodology by which I conducted this study is presented. Firstly, the characteristic of the study as a descriptive research is introduced. Afterward, I also describe how all data were collected through document analysis and interviews. Subsequently, in the chapter I also explain the selection of my interviewees with whom I had the interviews. Finally, I end Chapter 3 with describing how I analyzed the collected data.

**Chapter 4** presents the results found from document analysis which was meant to identify worldwide developed discourses on linking forests and nature to human health. In this chapter two discourses revealed from the document analysis are introduced, namely 'ecosystem health for human health' discourse and 'exposure to nature for human health' discourse. The two discourses are respectively described according to storylines constituting them. At the end of the chapter the two discourses are contrasted one to another on the base of their respective storylines.

In **Chapter 5** I reveal the storylines held respectively by Staatsbosbeheer and the Dutch health sector towards the idea of linking forests and nature to human health on the base of the interviews I had with the respective actors. In so doing, I examine their adherence to the discourses revealed earlier from the document analysis. The findings from this chapter are considerably important as a base for analyzing a struggle for

discursive hegemony in case that both groups of actors respectively hold different discourses. In fact at the end of this chapter I conclude that both Staatsbosbeheer and the Dutch health sector adhere to the same discourse which is the 'exposure to nature for human health' discourse, yet they interpret the meaning of the detailed storylines differently.

**Chapter 6** explores how the differences in interpreting the detailed storylines influence engagement between respective actors with the Staatsbosbeheer's policy of linking forests and nature to human health issues. Through this chapter I evaluate how respective actors have taken up the 'exposure to nature for human health' discourse and into what extent it has led to concrete decisions and actions. Furthermore, any opportunity and constraint for further refinement of the Staatsbosbeheer's policy of linking forests and nature to human health issues are looked over.

The final chapter, **Chapter 7**, provides overall conclusions and recommendations of the entire thesis report, including practical recommendations for Staatsbosbeheer as well.

## Chapter 2: Theoretical Framework: Discourse Analysis

When Hajer in 1993 exposed his study on environmental politics through the case of acid rain in the UK he showed that whether or not a situation is perceived as a political problem depends on the narrative in which it is discussed (Hajer 2002). People may see dead trees as the product of ‘natural stress’ caused by cold, drought, wind, or may see them as the victims of pollution (Ibid.). Accordingly, meanings given to the phenomenon affect the outcomes including political interventions which then are adopted; when the dead trees have become ‘victims’, thus there are ‘perpetrators’ that should be corrected (Hajer & Versteeg 2005; Hajer 2006). In such cases where various actors are likely to hold different perceptions of what the problem really is a discourse-analytical perspective is appealed, whereas the single problem-single answer model of politics is criticized (Hajer 1995). The basic assumption of discourse analysis is that “language profoundly shapes our view of the world and reality, instead of being merely a neutral medium mirroring it” (Hajer 2006: 66). Besides influencing formation of interests and preferences, language enables and limits the range of practices and interactions in which actors can engage (Feindt & Oels 2005). Taking the view of social constructivism, discourse analysis assumes that rather having a fixed identity, a particular problem has multiple meanings which are continuously contested. The approach characteristically takes a critical stance toward ‘truth’ and puts emphasis on the communications through which knowledge is exchanged (Hajer & Versteeg 2005). Hence, the study of discourse opens up new possibilities for studying the political process as the mobilization of bias where the analysis of meaning becomes central (Hajer 2002; Hajer & Versteeg 2005).

Discourse analysis, in fact, is not one homogenous approach. There are many varieties of discourse analysis which can be categorized as, either Foucaultian or non-Foucaultian discourse analysis (Wood & Kroger 2000; Jorgensen & Philips 2002; Feindt & Oels 2005). Discourse analysis which follows non-Foucaultian concept of discourse focuses on the linguistic and pragmatic production of meaning largely limited to text and conversational levels, while Foucaultian discourse analysis takes a more critical approach that it is more interested in studying rules underlying the statements that are accepted as meaningful in specific social, historical, and political conditions (McHoul & Grace 1993; Jorgensen & Philips 2002; Feindt & Oels 2005). Taking a close look at how Staatsbosbeheer and the Dutch health sector actors respectively perceive forests and nature with regard to addressing human health problems makes this study draw mainly on Hajer’s discourse analysis which was built on Foucault’s theory of discourse.

Hajer (1995: 44) defines discourse as “a specific ensemble of ideas, concepts, and categorizations that are produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities”. By this definition discourse analysis then has a clear institutional dimension, i.e. the content and the context of a discourse “to make sense of the regularities and variations in what is being said (or written) and try to understand the social backgrounds and the social effects of specific modes of talking” (Ibid: 44). Discourses consist of structures embedded in language (Hajer 2006). However, it does not necessarily mean that they only can be traced in what people say. It is also possible to trace discourses in what

people write literally or as symbols, or in any other ways conveying people's utterances. This is in accordance with Foucaultian concepts which basically see analyzing discourse as studying language use; not only verbal language, but also "a graph, a growth curve, an age pyramid, a distribution cloud ..." (Foucault 1972 cited in McHoul & Grace 1993: 37). To put it broader, Hajer (2006) defined discourse analysis as the examination of argumentative structure in documents and other written or spoken statements as well as the practices through which these utterances are made.

Despite the fact that Hajer largely shares the view of Foucault including that "interests cannot be taken as given a priori but are constituted through discourse" (Ibid: 51), some valuable additions of Foucault's theory were made by Hajer's social-interactive discourse theory that puts the role of the discoursing subject under the lens. The main argument of the theory is that human interaction is related to discursive practices; persons are constituted by discursive practices since human interaction is conceptualized as an exchange of arguments, of contradictory suggestions of how one is to make sense of reality (Hajer 1995). In the light of this argument actors (whether they are organizations or persons) are seen as subjects actively involved in the (re)production and transformation of discourse not only "to make others see the problems according to their views but also to position other actors in a specific way" (Ibid: 53). Understanding discursive practices as the interdiscursive transfer points where actors exchange positional statements and new discursive relationships and positioning are created, Hajer (Ibid.) introduced the so called 'storylines' as discursive practices that fulfill an essential role in the clustering of knowledge, the positioning of actors, and, ultimately, in the creation of coalitions amongst the actors of a given domain. Through storylines specific ideas of 'blame' and 'responsibility' and of 'urgency' and 'responsible behaviour' are attributed as well.

According to Hajer (2006) storylines have some important roles as follows:

1. Summarizing complex narratives. In a problem that is complex to understand mostly people do not tell the whole story but use short cues represented in storylines that can be used as 'short hand' in discussions. By using the storylines in discussions people assume that the other will understand what they mean; actually the assumption of *mutual understanding* is false. Yet, this is where interesting social effects start to occur on the discussed problem and result in meaningful political interventions produced by involved actors that actually not fully understand one another.
2. Concealing the discursive complexity by combining elements of the various discourses into a more or less coherent whole. This makes the 'communicative miracle' possible to happen that people from widely varying backgrounds still find ways to communicate. Like for example in this study that two groups of actors from different backgrounds – Staatsbosbeheer and health sector actors – can communicate on the topic of linking forests and nature to human health.
3. Organizing social interaction where complex problems are discussed. In this situation storylines are drawn on by involved actors to convey meaning. In such cases the involved actors are *experts of some sort*, yet they still depend on other experts for a full understanding.

Those above-mentioned important roles of storylines are interrelated to one another when discursive interaction is in process. To put it simply, Hajer (2005: 451) declared that "narratives have the capacity to be 'read' and understood by different

audiences; they can help convey meaning across the boundaries of particular backgrounds”.

Hajer (1995: 62) defined storylines as “narratives on social reality through which elements from many different domains are combined and that provide actors with a set of symbolic references that suggest a common understanding”. This definition gets its meaning especially in the debates on environmental issues that are inter-discursive in nature which means that many different discourses are involved. In this case there is a struggle for discursive hegemony in which involved actors try to secure support for their definition of reality and thus storylines play important role as a base in the formation of a discourse-coalition as well as the discursive cement that keeps the respective discourse-coalition together (Hajer 1995). A discourse-coalition itself refers to a group of actors that, in the context of an identifiable set of practices, shares the usage of a particular set of storylines over a particular period of time (Hajer 2005).

In this research I explored how a particular discourse on linking forests and nature to human health to which Staatsbosbeheer and the Dutch health sector actors adhere has influenced these actors. Hajer’s discourse analysis offers a two-step procedure for measuring the influence of a discourse, namely: (i) if many people use it to conceptualize the world (discourse structuration); and (ii) if it solidifies into institutions and organizational practices (discourse institutionalization). If these two conditions are fulfilled then we can argue that a particular discourse is hegemonic (dominant) (Hajer 2006). In another way Hajer (Ibid.: p.71) described that a discourse can become dominant in a given political realm when these two following conditions are fulfilled: “(i) central actors should be forced to accept the rhetorical power of a new discourse (condition of discourse structuration); and (2) the new discourse should be reflected in the institutional practices of that political domain; that is, the actual policy process is conducted according to the ideas of a given discourse (condition of discourse institutionalization)”. Related to the first condition mentioned above, it is important to notice that Hajer’s social-interactive theory considers discursive dominance as an essentially socio-cognitive product (Hajer 1995). In such cases respective actors can accept a new discourse because they are convinced by plausibility of the arguments, while the plausibility itself is the product of persuasion, which is not a purely cognitive process (Ibid.). Furthermore Hajer (1995; 65) said that “the influence of the new policy discourse depends on the cognitive power of its story-lines, but also on its attractiveness”. The important role of socio-cognitive process also appears in the power of storylines that according to Hajer (1995) is essentially based on the idea that ‘it sounds right’. This allows different actors from various backgrounds who may not understand the detail of the storylines’ argument, then, adhere to the given storylines. Hajer called this way of explaining coherence and understanding as “*discursive affinity*: arguments may vary in origin but share a similar way of conceptualizing the world” (Hajer 2006: 71). Hence, by using Hajer’s discourse analysis it is possible to understand how interests are played out in the context of specific discourses and organizational practices, in addition it illuminates how different actors and organizational practices help to reproduce or fight a given bias without necessarily orchestrating their actions or without necessarily sharing deep values (Ibid).

## Chapter 3: Methodology

### 3.1. Character of the thesis work

Concerning its objective this research is a descriptive research. According to Kumar (2005: 10) “a descriptive research attempts to describe systematically a situation, problem, phenomenon, service or program, or provides information about the situation/object under research”. Using discourse analysis this research describes the adherence of Staatsbosbeheer and the Dutch health-sector actors to a particular discourse on linking forests and nature to human health, and how that adherence influenced their engagement with the Staatsbosbeheer’s policy of linking forests and nature to human health issues. In so doing, any opportunities and/or constraints to improve the policy will also be looked over.

### 3.2. Data Collection

To be able to answer the research questions formulated above, this research work needs to investigate discourses / story-lines held by the Staatsbosbeheer and the Dutch health-sector actors around the Staatsbosbeheer’s policy of linking forests and nature to human health issues. According to Hajer (2006) discourses consist of structures embedded in language either spoken or written. Therefore data (discourses) for this research were collected mainly through interviews and document analysis.

#### 3.2.1. Document Analysis

As the first attempt to identify discourses on linking forests and nature to human health I conducted document analysis over 25 written documents which were published in international scientific journals which are available in the internet. The articles were collected by using four electronic databases which are available under the service of Wageningen UR digital library, namely Scopus, Web of Sciences, CAB Abstracts, and Biological Abstracts. For the query within each database, I used (forest\* AND “human health”)<sup>4</sup> as the search profile with time range from 2000 up to now (2008) to cover as much as possible any development of discourses on linking forests and nature to human health. Finally I selected only the articles written in English which address the relation between forests / nature and human health. In addition to the articles found from the four databases, I also looked at related publications from COST Action E39.

#### 3.2.2. Interviews

Thirteen semi-structured face-to-face interviews were conducted within Staatsbosbeheer and the Dutch health sector. The selection of interviewees initially was

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<sup>4</sup> I did not use ‘nature’ as my key search concept since the word ‘nature’ has many definitions that would retrieve too many query results including those which are irrelevant with this study. Therefore to narrow my search I used key search concepts ‘forest’ and ‘human health’ and combined them by Boolean operator AND. Furthermore the search profile was used for searching not only articles’ titles, but also keywords, abstracts, and topics, so that at the end I was able to get articles addressing a link between human health and forest and other nature areas as well.

based on the list of prospective interviewees given by John van den Berg. I considered the list as a reference of persons who are relevant with the topic of this research, and especially as a reference to the actors in Dutch health sector at whom Staatsbosbeheer directed its interests in developing its policy of linking forests and nature to human health issues. Still, appointments for the interviews were needed. First, I sent to each prospective interviewee an email describing briefly my research and how the interview will be conducted; moreover I also attached my research feature to the email. Afterward the confirmations were made by phone.

Among all interviews I conducted, four were made within Staatsbosbeheer, while the rest were within the Dutch health sector that can be classified into five groups of actors as follows:

#### *Ministry of Health, Welfare, and Sport*

Ministry of Health, Welfare, and Sport (*Ministerie van Volksgezondheid, Welzijn, en Sport*; in Dutch) is the ministry which is responsible in developing national health policy in The Netherlands. In addition, the ministry is also responsible in developing policy on social support and sport (Ministry of Health, Welfare, and Sport 2008).

#### *Municipal Health Services*

In Dutch, municipal health service is commonly called '*Gemeentelijke Gezondheidsdienst*' abbreviated to GGD. In general a municipal health service carries out the municipal functions in the public health care for all residents of the respected municipality (GGD Nederland 2008).

#### *Health insurance companies*

I conducted interviews with two health insurance companies. The first one is De Friesland Zorgverzekeraar which puts special focus on the six provinces in the northern part of the Netherlands namely Friesland, Groningen, Drenthe, Flevoland, Noord-Holland, and Overijssel (De Friesland 2008). And the other one is CZ Actief in Gezondheid whose its head quarter office is in Tilburg in the southern part of the Netherlands (CZ 2008).

#### *NIGZ*

NIGZ stands for *Nationaal Instituut voor Gezondheidsbevordering en Ziektepreventie* that is translated to its English name as the Netherlands Institute for Health Promotion and Disease Prevention. It focuses on promoting healthy behaviour and healthy environment. NIGZ especially assists local authorities, local health promoting institutions and companies in developing, implementing and assessing health policies. NIGZ also gives practical support to health professionals through information, training, educational methodologies and materials, counseling and coaching (NIGZ 2008b).

#### *RIVM*

RIVM stands for *Rijksinstituut voor Volksgezondheid en Milieu* that is translated to its English name as The National Institute for Public Health and the Environment. RIVM is an organization with expertise in the fields of health, nutrition and environmental protection. It mainly works for the Dutch government by conducting research, monitoring, modeling and risk assessment to be used to strengthen policy on public health, food safety and the environment (RIVM 2008).

For the list of interviews in detail including information about the date of each interview and the name, job, and organization of each interviewee can be seen on Annex 1.

Two different question lists have been made, one was for the interviews within Staatsbosbeheer and the other one was for the interviews within health sector (see Annex 2.). Every interview was recorded using voice recorder and subsequently was transcribed to enable me to analyze it.

### 3.3. Data Analysis

Hajer (2006) offers a quite comprehensive set of steps in doing discourse analysis. The descriptions of each step are presented briefly as follows:

1. *Desk research*: general survey of the documents and position in a given field
2. *Helicopter interview*: interviews with three or four actors ('helicopters') that are chosen because they have the overview of the field from different positions.
3. *Document analysis*: analyzing documents for structuring concepts, ideas and categorizations; employment of storylines, metaphors, etc
4. *Interviews with key players*: to generate more information on causal chains or to get a better understanding of the meaning of particular events for the interviewees.
5. *Sites of argumentation*: searching for data not simply to reconstruct the arguments used but to account for the argumentative exchange.
6. *Analyse for positioning effects*: put eyes on interplaying actors that might try to force others but then try to refuse it when they are noticed.
7. *Identification of key incidents*: to understand the discursive dynamics in the chosen case. More detail is sought to gain more insights in which determined their political effects.
8. *Analysis of practices in particular cases of argumentation*: Go back to data to see if the meaning of what is being said can be related to the practices in which it was said.
9. *Interpretation*: To find a discursive order that governed a particular domain in a particular time.
10. *Second visit to key actors*: as a way of controlling if the analysis of the discursive space made sense.

Hajer (2006) offers this ten-step procedure especially if one wants to conduct what he calls as argumentative discourse analysis (ADA) that specifically examines of what being said to whom, and in what context. It emphasizes argumentation as interplay in the context of practices, and the setting in which some things are said is also considered in the analysis. Therefore ideally an argumentative discourse analysis is based on the detailed analysis of accounts interactions in which involved actors react to one another in uttering statements in observed setting(s) (Hajer 2006). Thus, materials like video-monitoring of political process, a public inquiry, and a hearing for a committee are very useful to conduct argumentative discourse analysis (Ibid.). To know more about argumentative discourse analysis some Hajer's work may be useful to take a look at, for instance the case of assassination of Theo Van Gogh, and the British BSE (mad cow disease) case (can be accessed on line from <http://www.maartenhajer.nl>).

For this study I did not have a chance to have such rich materials like a discussion meeting or a presentation meeting. This is mainly because of my limitation on language; *unfortunately* I cannot speak Dutch. So even if I had a chance to be present in a meeting between Staatsbosbeheer and Dutch health sector, most probably I would miss most, if not all, of important points. Nonetheless, the document analysis and (one-to-one)

interviews I conducted gave me enough materials to be able doing Maarten Hajer's discourse analysis. According to Hajer (2008) there are three elements in carrying out discourse analysis, namely (i) the study of the terms of policy discourse, i.e. the (new) vocabularies, storylines and generative metaphors, and the various 'positionings' for the actors and stakeholders involved; (ii) the analysis of the formation of particular discourse coalitions around these story lines; and (iii) the analysis of particular institutional practices in which discourses are produced. It is important to notice that issues of classification and interpretation are at the core of discourse analysis (Hajer & Laws cited in Hajer & Uitmark 2007)

To end this chapter, briefly I would like to describe practically how I conducted my research. There were three stages. The first was document analysis of international literature which was meant as the first attempt to identify discourses on linking forests and nature to human health which have developed worldwide; the second was interviews within Staatsbosbeheer; and the third was interviews within the health sector which consists of Ministry of Health, Welfare, and Sport, municipal health services, health insurance companies, the Netherlands Institute for Health Promotion and Disease Prevention (NIGZ), and the National Institute for Public Health and the Environment (RIVM). In the second and the third stages I also conducted document analysis on any accessible relevant documents.

In the first stage I used four main questions as guidance to identify the different discourses on linking forests and nature to human health. The questions are: What kind of health benefits can be gained from natural environment? How can these benefits be gained (through what activities)? Who will benefit most from the health effects of natural environment? And, how can these health benefits be promoted? These questions are essential when forests and nature and human health problems are talked over together in a discussion. Most likely, people will immediately agree that human health problems need to be solved. People also might right away agree that forests and nature that have existed since long time ago are important for human life. But when forests and nature are offered to address health problems, instead of just taking it for granted people need to discuss on ideas or concepts related to the four questions. Since discourse is defined as an ensemble of ideas, concepts, and categories through which meaning is given to phenomena (Hajer 2002) therefore giving answers to those questions considerably means revealing storylines which constitute the discourses on linking forests and nature to human health issues. In the first stage I looked for the answers in all analyzed documents, considered the regularities and variations, and finally drew discourses on linking forests and nature to human health.

Both the second and the third stages were meant to investigate discourses held respectively by those actors. The same four questions were used in analyzing interviews I have conducted with Staatsbosbeheer and the Dutch health sector actors to reveal storylines of the discourse held respectively by those actors. In analysis work I also examined the adherence of Staatsbosbeheer and the health sector to the discourses revealed earlier from document analysis. Subsequently, if both groups of actors respectively adhere to different discourses I analyzed the struggle for discursive hegemony to get answer which discourse gets dominance over the other(s). In any case I examined how the discourse(s) held respectively by Staatsbosbeheer and the Dutch health sector influenced their engagement with the Staatsbosbeheer's policy of linking forests and nature to human health issues. In so doing, any opportunities and/or constraints to improve the policy will also be looked over.

## **Chapter 4: Two discourses on linking forests and nature to human health: A document Analysis**

In this chapter I want to present the results of the document analysis I did to look for discourses on linking forests and nature to human health which have developed worldwide. Links between natural environment and health have been observed for a long time and in many different cultures, and in the last 26 years this idea of linking natural environment - including forests and nature areas - to human health has re-emerged as a topic of interest in the field of human health (Velarde et al. 2007). Many researches have been conducted and consequently many rich literatures have been generated to explain the ways in which natural and other environments have an effect on human health. Through many different kinds of studies, researchers tried to answer the following questions as follows: What kind of health benefits can be gained from natural environment? How can these benefits be gained (through what activities)? Who will benefit most from the health effects of natural environment? And, how can these health benefits be promoted? Most of the findings were published in international scientific journals, the media in which researchers commonly publish their findings. I did document analysis covering 25 articles from international scientific journals with the time range from 2001 up till 2007 to cover as much as possible any development of discourses on linking forests and nature to human health. Considering discourse as an ensemble of ideas, concepts, and categories through which meaning is given to phenomena (Hajer 2002) I use the four questions mentioned above as guidance to identify different discourses on linking forests and nature to human health issues. By so doing, I made finding answers to those questions as a way to reveal storylines that constitute the discourses.

In general, all analyzed documents reach the conclusion that forests and nature have a positive link to human health. Nevertheless, two discourses can be made out by examining the language used in the documents on answering the questions above. I labeled these discourses 'ecosystem health for human health' and 'exposure to nature for human health'. Respectively, each discourse will be described below.

### **4.1. 'Ecosystem health for human health' discourse**

This discourse refers to the completeness of ecosystems as something that is necessarily needed to sustain life. Here an ecosystem is defined as a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit (UNEP 1992). Using this definition, 'ecosystem health for human health' discourse considers integrity of ecosystems as something essentially important for human health. Any change on one single element of ecosystems will affect (an)other element(s) and bring consequence(s) to human health. Concerning global environment crisis Chivian and Bernstein (2004: A12) uttered a criticism toward policy makers:

*[They] do not understand that their health and lives are ultimately dependent on other species and on the integrity of the planet's ecosystems, they do not appreciate the urgent need to protect the natural world.*

The main storyline of this discourse is that healthy ecosystems bring out health benefits for humans; whereas the health of an ecosystem is greatly influenced by the degree to which it is resilient to stress and degradation, and maintains its organization, productivity and autonomy over time (Constanza 1992 cited in Rapport et al. 1998). Hence, this storyline leads to an implication that ecosystems threatened in their health will bring negative consequences to human health as well. Furthermore, in order to reveal the detailed storylines of this discourse in more extensive way, below I will present how this discourse consecutively answers the four questions as follows:

#### *4.1.1. What kinds of health benefits can be gained from natural environment?*

From their work, Rapport et al. (1998) concluded that stress on ecosystems results in reduced resilience, increased disease prevalence, reduced economic opportunity and risks to human and animal health in addition to biotic impoverishment, impaired productivity, and altered biotic composition to favor opportunistic species. This reasonably may happen because according to ‘ecosystem health for human health’ discourse, ecosystems which include marine systems, agroecosystems, freshwater, and forests have the so-called ‘health functions’ like mentioned by Huynen et al. (2004: 14) citing De Groot et al. (2002):

*First, ecosystems provide us with basic human needs like food, clean air, clean water and clean soils. Secondly, they prevent the spread of diseases through biological control. Third, they provide us with medical and genetic resources, which are necessary to prevent or cure diseases. Finally, biodiversity also contributes to the maintenance of mental health by providing opportunities for recreation and cognitive development.*

#### *4.1.2. Who will benefit most from the health effects of natural environment?*

In turn, people living in and near the ecosystems are identified according to this discourse as the first beneficiaries of the health functions mentioned above. Colfer et al. (2006) distinguished five different groups of people living in and near the forest on the base of the importance of forests in their daily life. Hunter-gatherers and swidden farmers are the ones who most fundamentally dependent on forests for their subsistence. The next ones in order are forest in-migrants, permanent field farmers, and the last are urban dwellers. Forests fulfill their needs of food and nutrition as well as providing many forest plants and animal which have medicinal use, especially for the first two groups (Ibid.). Urban dwellers also benefit from the urban forests and other green spaces in their living environment that may ameliorate air pollution, and the urban heat island effect (Whitford et al. 2001 cited in Tzoulas et al. 2007). Actually, all humans are claimed to benefiting from nature especially when tropical forests’ functions are taken into account as stated by Colfer et al. (2006: 8): “Tropical forests also provide essential foods, medicines, health care and mental health benefits to people all over the world”. Accordingly, these also bring implication that those groups of beneficiaries will also suffer negative influences on their health if the ecosystem health decreases.

#### 4.1.3. *How can people gain these health benefits from natural environment (through what activities)?*

Keeping the definition of ecosystem health in mind, the ‘ecosystem health for human health’ discourse points to the degradation of ecosystems as a substantial factor bringing extensive negative influences to human health; therefore ecosystem degradation should be minimized to keep ecosystem healthy to deliver health functions for humans. Among others, land use changes including deforestation are frequently mentioned as human activities potentially degrading ecosystem health (Chivian & Bernstein 2004; Huynen et al. 2004; Colfer et al. 2006; Wilcox & Ellis 2006). Those activities cause biodiversity loss resulting in compromised ecosystem functions which in turn could bring out human infectious diseases and other potential consequences such as the spread of human diseases, loss of medical models, diminished supplies of raw materials for drug discovery and biotechnology, and threats to food production and water quality (Grifo & Rosenthal, 1997 cited in Huynen et al. 2004). This is supported by argument that diversity is one of the most important indicators of ecosystem health (Rapport et al. 1998).

Moreover, population growth and social-economic developments are indicated as the main driving forces behind the increasing scale of human pressure to ecosystems. These particularly refer to unsustainable way of life as addressed by Chivian and Bernstein (2004: A12): “All these factors [degradation, reduction, and fragmentation of habitats] are the result of human activity and are driven by unsustainable consumption, especially in the industrialized world ...”, but also to local people who live in poverty as indicated by argument made by Peden (2002: 5): “health is conditioned by poverty, which in turn is accentuated by stresses on those ecosystems”.

#### 4.1.4. *How can these health benefits be promoted?*

Hence, ‘ecosystem health for human health’ discourse puts forward protecting nature and improving ecosystem management as ways to reduce health risk coming from ecosystem degradation. The urgency to improve ecosystem management is uttered by Wilcox and Ellis (2006: 17) when addressing the role of forest management in disease emergence:

*Forest land use changes and practices, particularly when unregulated and unplanned, frequently lead to increased prevalence of zoonotic and vector-borne diseases, and occasionally boost the prevalence of diseases capable of producing catastrophic pandemics.*

In addition, the complexity of the issue is also acknowledged and therefore collaboration of related actors, e.g. local communities, scientists, conservationists, health professionals, and policy makers, is suggested (Peden, 2002; Chivian & Bernstein, 2004; Colfer et al., 2006; Wilcox & Ellis, 2006).

## 4.2. **‘Exposure to nature for human health’ discourse**

The main storyline of this discourse is that engagement with nature can give positive effects to human health. This is indicated by Kaplan and Kaplan (1989) as quoted by Maller et al. (2005) in their article:

*People with access to nearby natural settings have been found to be healthier than other individuals. The longer-term, indirect impacts (of 'nearby nature') also include increased levels of satisfaction with one's home, one's job and with life in general.*

Different scholars examined health effects of having contact with different kind of nature varying from gardens until forests. They agree that vegetation, especially trees, and water are crucial elements of nature that bring health benefits to humans (Bordin & Hartig 2003; Pretty et al. 2005; Velarde et al. 2007).

To make clear what this discourse means by engagement with nature I would like to start revealing the detailed storylines of this discourse by giving answers for the question of "How can people gain health benefits from natural environment (through what activities)?" and then followed consecutively by giving answers for the questions of "What kind of health benefits can be gained from natural environment?", "Who will benefit most from the health effects of natural environment?" and "How can these health benefits be promoted?"

#### *4.2.1. How can people gain health benefits from natural environment (through what activities)?*

From analyzed documents there are some activities by which people can gain health benefits from their engagement with nature. Those activities can be divided mainly into two groups, namely 'viewing nature' and 'being in the presence of nature'.

The first one which is '**viewing nature**' was claimed by Velarde et al. (2007: 200) to have positive effects to human health since a long time ago:

*The belief that viewing vegetation, water and other natural elements can ameliorate stress and is beneficial for patients in healthcare environments dates as far back as the earliest large cities in Persia, China and Greece.*

From recent studies, the health benefits coming from viewing nature are evidential, even greater than those of built environment (Van den Berg et al. 2003; Maller et al. 2005; Pretty et al. 2005; Velarde et al. 2007). Viewing nature itself can be various from seeing rural photographs to watching an environmental video (Van den Berg et al. 2003; Pretty et al. 2005). Concerning the positive effects of viewing nature in various ways to human health Velarde et al. (2007) gave their conclusion as follows:

*[Positive health] effects have been addressed by means of viewing natural landscapes during a walk, viewing from a window, looking at a picture or a video, or experiencing vegetation around residential or work environments.*

The second type of engagement with nature that is promoted by this discourse is '**being in the presence of nature**'. This could be visiting urban forests and parks just for relaxing and observing nature, or incidental to some other activities, such as walking or cycling to work, reading on a garden seat, or talking to friends in a park, or even exercising dogs (Pretty et al. 2005; Townsend 2006; Hansmann et al. 2007). Like viewing nature, the importance of contact with nature for human health and wellbeing has been understood for thousands of years (Frumkinn 2001; Townsend 2006). Some evidences of health benefits coming from being in the presence of nature are also presented in the analyzed documents. Mostly the health effects of being in the presence

of nature to humans were examined in relation to physical activities that people were doing in the nature such as gardening, walking, running, cycling, and camping (Herzog et al. 2002; Bodin & Hartig 2003; O'Brien & Snowdon 2007). Through adapting physical activities while at the same time being directly exposed to nature, greater positive health effects may be gained than only doing physical activities (Bodin & Hartig 2003; Pretty et al. 2005; Hansmann et al. 2007). The document analysis also shows that natural environments positively influence people to exercise, especially natural environments with high levels of greenery, accessibility, and opportunities (Rutten et al. 2001; Bodin & Hartig 2003; Ellaway et al. 2005; Maas et al. 2006; Maller et al. 2007; Tzoulas et al. 2007). This is in line with the evidence shown by Van den Berg et al. (2003) that people perceive natural environments as more attractive than built environments. Further, according to O'Brien and Snowdon (2007) and Townsend (2006) the health effects may be amplified if physical activities in nature are conducted in social settings in which people do the physical activities in nature not individually, but in social engagement with other people, for example walking and cycling together in a group in a forest and actively undertaking in a group involved in voluntary conservation activities. Through these kinds of activities, people can gain also one additional health which is social health benefits as an addition to physical and mental health benefits.

#### *4.2.2. What kind of health benefits can be gained from natural environment?*

According to 'exposure to nature for human health' discourse, people may derive physical, mental, and social health benefits from their engagement with nature. The first two health benefits are extensively revealed in the analyzed documents. Physical health benefits include reduced blood pressure which is important for cardiovascular health, less obese due to more exercise, faster physical recovery from illness, reduced incidence of physical illness, and improving physical well-being in elderly people (Ellaway et al. 2005; Maller et al. 2005; Pretty et al. 2005; Velarde et al. 2007). Not necessarily separated from physical health benefits, mental health benefits can also potentially be gained from exposure to nature, among others are reduced-subjectively-experienced acute stress of various intensities, recovery from stress and mental fatigue, better concentration, positive changes in mood, beneficial emotional changes, and higher self esteem (Bordin & Hartig 2003; Van den Berg et al. 2003; Maller et al. 2005; Pretty et al. 2005; Hansmann et al. 2007; Van den Berg et al. 2007; Velarde et al. 2007). Even the presence of nature itself is proved to increase people's self perceived health (Rutten et al. 2001; Maas et al. 2006).

Finally, as already mentioned earlier, according to 'exposure to nature for human health' discourse people may also gain social health benefits when they do physical activities in nature in social engagement with others. From his study on health benefits from taking part in a group involved in voluntary conservation activities, Townsend (2006) reported a number of social health benefits gained through membership of the group, namely new friendships, opportunities for fun, and an increased sense of belonging to the local community that may results in a greater sense of security within the neighbourhood. Moreover, children taken by their parents to these activities were also benefited with widened social circle and higher confidence; whereas elderly people got opportunity to contribute to sustaining the environment. Likewise, O'Brien and Snowdon (2007) reported social health benefits gained from walking, cycling, and school visits programs of Chopwell Wood Health Project in the UK by which the adults

got increased social networks, while the children experienced more confidence. In turn, through these kinds of activities nature may also benefit from the people due to the increased environmental awareness among them.

#### 4.2.3. *Who will benefit most from the health effects of natural environment?*

Regarding health beneficiaries, ‘exposure to nature for human health’ discourse mainly addresses people living in urbanized environments. The necessity of having engagement with nature for urbanites is articulated by these three following utterances:

*In the hectic society in which we live there is a growing need for nature as a source of relaxation and recreation (Maas et al. 2006: 15)*

*[U]rban settings by definition have less nature than rural ones. And less green nature means reduced mental well-being, or at least less opportunity to recover from mental stress (Pretty et al. 2005: 320)*

*Urban green spaces provide opportunities to ameliorate a situation characterized by an increasingly sedentary population, increasing levels of mental stress related to urban living and contemporary work practices, and hazardous environments. (Sanessi et al. 2006: 121 citing Tabbush & O’Brien 2003)*

Particularly, according to this discourse engagement with nature could also help urban dwellers from physical health problems including obesity and coronary heart disease which are really related to sedentary and indoor life styles (Pretty et al. 2005). Further, Health Council of The Netherlands and RMNO (2004) stated that as nature facilitates social contact thus urban dwellers may benefit from their engagement with nature to address social health problems they are dealing with.

#### 4.2.4. *How can these health benefits be promoted?*

Finally, this discourse proposes several ways to promote the health benefits of nature for people. First, taking into consideration the health benefits of nature in urban planning in order to provide nature with better availability, accessibility, as well as quantity and quality for urban dwellers (Rutten et al. 2001; Maas et al. 2006; Verlande et al. 2007). Second, promoting a wide range of ‘green exercise activities’ such as healthy walk projects, exercise on prescription, healthy school environments, healthy travel to school projects, green views in hospitals, city farms and community gardens, urban green spaces, conservation work and outdoor leisure activities in the countryside (Pretty et al. 2005; O’Brien & Snowdon 2007). For this purpose, the collaboration between policy makers, environmental management sector, health professionals, community groups, environmental psychologists, and urban nature conservationists is considerably important (Rutten et al. 2001; Maller et al. 2005; Maas et al. 2006; O’Brien et al. 2006; Maas & Verheij 2007; Tzoulas et al. 2007)

### 4.3. **Conclusion**

From the document analysis two discourses on linking forests and nature to human health can be drawn, namely ‘ecosystem health for human health’ discourse and ‘exposure to nature for human health’ discourse. In view of their respective storylines, the two discourses can be distinguished from each other. One main storyline can be

made out for each discourse to be used in discussions as ‘short hand’ that summarizes complex narratives of the respective discourse (Hajer 2006). For the ‘ecosystem health for human health’ discourse the main storyline is ‘healthy ecosystems bring out health benefits for human’, whereas for the ‘exposure to nature for human health’ discourse the main storyline is ‘the engagement with nature gives positive effects to human health’. In detail, each discourse on linking forests and nature to human health revealed from this document analysis respectively has four storylines describing the discourse while at the same time they distinguish it from the other one. The Table 1. below briefly presents the conclusion of this chapter as I have explained above.

Table 1. Two discourses on linking forests and nature to human health

	<b>Discourses</b>	
	<b>Ecosystem Health for Human Health</b>	<b>Exposure to Nature for Human Health</b>
<b>Detailed Storylines</b>	<p><b><u>Main storyline:</u></b> <i>Healthy ecosystems bring out health benefits for human.</i></p> <ol style="list-style-type: none"> <li>1. Healthy ecosystems deliver ‘health functions’.</li> <li>2. The benefits can be gained by keeping ecosystems healthy.</li> <li>3. People living in and near the ecosystems are the main beneficiaries.</li> <li>4. The benefits can be promoted by: <ul style="list-style-type: none"> <li>– Protecting nature.</li> <li>– Improving ecosystem management.</li> <li>– Collaboration of all involved actors.</li> </ul> </li> </ol>	<p><b><u>Main storyline:</u></b> <i>The engagement with nature gives positive effects to human health.</i></p> <ol style="list-style-type: none"> <li>1. Contact with nature results in physical, mental, &amp; social health benefits</li> <li>2. The benefits can be gained by viewing nature &amp; being in the presence of nature</li> <li>3. People living in urbanized environments are the main beneficiaries.</li> <li>4. The benefits can be promoted by: <ul style="list-style-type: none"> <li>– Taking into consideration health benefits of nature in urban planning</li> <li>– Promoting ‘green exercise’ activities</li> <li>– Collaboration of all involved actors</li> </ul> </li> </ol>

The next chapter will expose and look over statements uttered by Staatsbosbeheer and Dutch health-sector actors to reveal storylines held by respective actors and subsequently to examine their adherence to the discourses revealed in this chapter. For this purpose, the findings above have been used as a basis for identifying discourses on linking forests and nature to human health that are held respectively by Staatsbosbeheer and Dutch health sector actors.

## **Chapter 5: Storylines on linking forests and nature to human health within Staatsbosbeheer and Dutch Health Sector**

In this chapter I will reveal the storylines held respectively by Staatsbosbeheer and the Dutch health sector toward the idea of linking forests and nature to human health on the base of the interviews I had with the respective actors. In so doing, I examine their adherence to the discourses revealed earlier from the document analysis, namely ‘ecosystem health for human health’ discourse and ‘exposure to nature for human health’ discourse. Whether the respective actors hold storylines constituting the discourses can be recognized from their answers on the following questions: What kind of health benefits can be gained from natural environment? How can these benefits be gained (through what activities)? Who will benefit most from the health effects of natural environment? How can these health benefits be promoted?

### **5.1. Staatsbosbeheer’s storylines on linking forests and nature to human health**

Regarding the idea of linking forests and nature to human health, Staatsbosbeheer very much adheres to the ‘exposure to nature for human health’ discourse whose main storyline is that engagement with nature gives positive health effects to human health. Forests and nature reserves are seen as places which are potentially beneficial to people for their health, especially for people with obesity, overweight and stress-related diseases.

*Obesity is one of the main issues. We think we can make a combination with nature; and we can help to solve a little part of this problem. And another thing has to do with stress. People are depressive; it is also a part that we think we can help to solve a little bit, and we think nature can help.*

*- Angelique van Helvoort -*

Furthermore, Staatsbosbeheer sees being in the presence of nature as the way by which people can gain the health benefits mentioned above. Just being outside in nature or in combination with doing some exercises, especially the exercises whose facilities are available in Staatsbosbeheer sites, is seen beneficial for people’s health.

*The basic thing that we can do [and] we can offer in health improvement has to do with movements, like the bicycle paths. That your health is boosted by regular movements, sport, [...]. So we have a large network to offer for walking and cycling.*

*- Mascha Brouwer -*

*The most important thing we can offer is walking facilities. There is a problem with overweight in the Netherlands due to the combination of too much food and too little exercise. And we are enhancing people to go out into nature or forests and to walk around, or to cycle, or horse riding, or mountain biking, for enjoying nature, but in the meantime, they’re also exercising.*

*- John van den Berg -*

Forests and nature are also perceived as important for health prevention especially related to stress-related diseases just like expressed by these following two statements:

*[A]nd then everything that is green is there to alleviate stress, and that area [also] gives the opportunities for prevention.*

- Debbie Kamphuis -

*[There is] a lot of depression [and] illness in Holland. Being outside, being in forests, in nature can be really helpful to do something, well, prevention but also maybe curing that sort of illnesses”.*

- Mascha Brouwer -

It is also related to the Netherlands which is an urbanized country with dense population that all of the interviewees agree on the importance of forests and nature for the health of Dutch people, especially for those who face stressful life.

*We are a hard working nation, stress is a serious issue. Stress and burn-out, especially for the generation of people between 30 and, let say 40 [years old], when they have to do several things. They have to make a career, they have to raise their children, and they have to earn their money. That life is pretty stressful, then I think that nature gives the opportunities to recover. When people suffer from burn-out or other stresses, they can recover in our nature.*

- Debbie Kamphuis -

In addition they also see that more people can benefit from forests and nature for their health due to the fact, as stated by Mascha Brouwer, that in the Netherlands during the last four years there are so many people live in cities, and the number of people with obesity is increasing.

It is important to notice that in promoting the health benefits of forests and nature Staatsbosbeheer refers particularly to those forests and nature under its management. In other words, Staatsbosbeheer offers its areas as places where people can come and gain benefits for their health. This was clearly articulated in 2007 when several newspapers published a short article exposing that Staatsbosbeheer urged Dutch general practitioners to prescribe exercise in a green environment to their patients as a strategy to combat obesity.

*“We would like to suggest ‘green exercise’ as a recipe for overweight”, says spokesman Angelique van Helvoort of Staatsbosbeheer. “Doctors do prescribe that people have to exercise, but they don’t mention that they can do this in the forest. Obesity is a growing problem in the Netherlands and we [Staatsbosbeheer] have space enough”.*

- De Stentor October 9, 2007 -

In addition, to promote the health effects of being in the presence of forests and nature all interviewees agree that Staatsbosbeheer needs to work together with others. Rather than mentioning many other actors, at this moment the cooperation is focused on raising public awareness and working together with the health sector.

*[F]or the coming years we [Staatsbosbeheer] are looking at roughly three levels. So we have to maybe communicate our regular offer of all those parks and in which areas you can walk and cycle, et cetera. Maybe we can*

*more specifically communicate the health connection. The second level is together with the health sector looking at what possibilities we can develop together or maybe some really interesting ideas [...] And the third level is about [having] a specific project that can really help to establish this improving health by nature as a regular part of the work of Staatsbosbeheer.*

*- Mascha Brouwer -*

Staatsbosbeheer prioritizes working together with the health sector since it is considered as necessary with regard to Staatsbosbeheer's image as a 'green' organization that now wants to involve in a 'white' world's affair on which Staatsbosbeheer has no expertise.

*I think the awareness about the connection between nature and health is more present in 'the green world' than in 'the white world' where all health organizations are working there. [...] we have spent a lot of time in creating that awareness in what we called 'the white world'.*

*- Debbie Kamphuis -*

*[W]e have to cooperate with organizations and persons within the health sector. There are two main things that make this is important, the one thing is legitimation, like Staatsbosbeheer who is seen by everyone as a green organization and has no credits in working in the field of health so we have to get the credits from health organizations to legitimate that we are claiming that there are health benefits. And the other important thing in collaborating with health sector, with health organizations is that they are aware of the health needs of the civil society which Staatsbosbeheer hasn't got a clue about. So that's the other main reason to work together with the health organizations.*

*- John van den Berg -*

I also found that Staatsbosbeheer in some extent holds the 'ecosystem health for human health' discourse as well. Forests and nature are seen to be important for human health because they deliver health functions, just like explicitly expressed by the statement below:

*Our forests and nature reserves provide clean air and provide clean water for society. So those are also health benefits.*

*- John van den Berg -*

Furthermore, considering nature conservation as a main task of Staatsbosbeheer, the health benefits of forests and nature are regarded as an additional value of nature that increases the importance of nature protection.

*It is good that people have more things, more reasons why nature is good. We are for the nature in Holland, so if health is another reason to protect nature, well that's good. That helps nature we think.*

*- Angelique van Helvoort -*

*Because we are a little bit afraid that if people are not aware of the value of nature and green environment for their lives – that they don't get that awareness if they don't learn to appreciate and to be in it – then in the future*

*we will have people and the government deciding over our country and over our people that don't even realize that it is important to protect what we have.*

*- Debbie Kamphuis -*

According to all interviewees, the development of the policy of linking forests and nature to human health issues in Staatsbosbeheer is much related to the nature of Staatsbosbeheer as a public organization that has responsibility to work for Dutch society and to take part in contributing to the wellbeing of Dutch people.

*We are also an organization works for the Dutch society. So if there are problems in society we can help to solve, nature can help to solve, we think we have to do so, because we are a social organization. And that's what we also do with health. Health is a big problem in society.*

*- Angelique van Helvoort -*

*So for us it's almost natural in a way that we are not only there to take care of the plants and animals, but that we are also there for the people living here. So we create a sustainable environment and want to deliver contribution on the wellbeing of the Dutch people. Then it's quite logic if you consider wellbeing not only a matter of feeling good, but also being healthy, being fit, that we provide people the opportunities to stay healthy and to recover in our areas.*

*- Debbie Kamphuis -*

Linking forests and nature to human health was also seen as an opportunity by which Staatsbosbeheer can give a new meaning to nature for society and also to broaden Staatsbosbeheer's meaning for society more than only conserving nature and producing timber, especially after it became an independent authority (*zelfstanding bestuursorgaan*; in Dutch) in 1998.

*[S]ince 10 years ago we are put at more distance from the Ministry. We have in our mission that we should create a close connection between nature and the areas that we take care of and the people that live in our country. So our assignment was to bring people and nature closer together and to find a [new] natural position for nature in Dutch society.*

*- Debbie Kamphuis -*

*Once we were 100% state, but now we have a different position, we call it zelfstanding bestuursorgaan [...] so we are more on our own. And then it was essential to become more involved with society needs, broader than only producing timber or conserving nature.*

*- John van den Berg -*

More explicitly John van den Berg said that the Staatsbosbeheer's policy of linking forests and nature to human health is about:

*finding new ways of giving meaning to nature for our society; because the main purpose of Staatsbosbeheer is managing nature and forests, and offering recreation facilities, and producing timber, but we thought that we*

*should broaden our social impact, our meaning for society. And we figured out that linking nature to health would be an important issue, an achievement.*

*- John van den Berg -*

Purposively Staatsbosbeheer connected its policy of linking forests and nature to human health issues with the goals of the Ministry of Health, Sport, and Welfare.

*[W]e started wondering what was the health policy of the Ministry of Health. And we tried to get acquainted with their goals and tried to see to which of those goals we could contribute. Because if Staatsbosbeheer is able to contribute to the health policy goals of the Ministry of Health then we benefit the national health in the Netherlands and then that will be beneficial for Staatsbosbeheer because we contribute to goals which are wider than only nature conservancy or producing timber. There are two goals [Staatsbosbeheer could contribute to] one is reducing the number of people with overweight, and the other one is reducing the number of people who are severely stressed or suffer from burn-out.*

*- John van den Berg -*

However the vision of the policy has not been clearly formulated in a way that it can be made operational, especially on the field level<sup>5</sup> of Staatsbosbeheer.

*In our policy plan, in our ondernemingsplan, there is stated that health is one of the main topics within Staatsbosbeheer to develop. So this is a new one, innovation, and there is a small amount of money and hours which can be spent on it. [...] The vision has not been written down, only the notion that you have to combine nature and health. That's the main thing which is written down [on Staatsbosbeheer policy plan], but everything less strategic and more operational isn't yet written down.*

*- John van den Berg -*

*[How to operationalize the policy is] not completely [clear]. We've been struggling with this. Is it an extra task or is it a part of our regular offers and we have to incorporate it. Because of this struggle, it hasn't been clear for everyone inside the organization what it is about.*

*- Mascha Brouwer -*

*There has to be more clarity about the policy also to the people in the field, so they really know what is expected from them. [...] We thought people in the field know about it but [actually] they have other ideas, [...] so that makes it more difficult to get projects really work and done.*

*- Angelique van Helvoort -*

There is one pilot project named 'Natuur Sprong' (Nature Jump) that was referred to as an organizational practice related to Staatsbosbeheer's policy of linking forests and

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<sup>5</sup> The term 'field level' I used in this report refers to management units (*beheerseenheden*; in Dutch). Management units are the smallest Staatsbosbeheer organization units within which practical activities are performed (Staatsbosbeheer 2008b; see also organizational information of Staatsbosbeheer in Chapter 1).

nature to human health issues. In fact the project was meant not only to address health problems, particularly obesity in children, but also at the same time to get children closer to nature.

*We do a pilot with the national institute for sports and movements – NISB – and Jantje Beton, an organization who works for children. The [project is] mostly for children who live in cities who are unable to play outside. And we make a program with them to get children out of the cities into nature areas to move, to get a program of moving and learn nature. And there are also a lot of children with obesity or other health problems, and we think we can help them.*

- Angelique van Helvoort -

*[T]here are some things we already do for example this Natuur sprong – jumping into nature [project] – where we bring children from cities. That surprises me enough on last week it was sound that for some of those children it was the first time to be in a forest*

- Mascha Brouwer -

## **5.2. Health Sector’s storylines on linking forests and nature to human health**

This section will show that based on the interviews, in general the Dutch health sector, like Staatsbosbeheer, very much adheres to the ‘exposure to nature for human health’ discourse. Nevertheless, they approach the storylines differently.

### *5.2.1. Ministry of Health, Welfare, and Sport*

My analysis of discourse held by Ministry of Health, Welfare, and Sport is based on my interview with Eddy L. Engelsman, Ambassador for Diet, Physical Activity and Health. From the interview it was not so obvious if the ministry perceives forests and nature as solutions to address health problems. In answering the question on how the ministry sees the connection between health and nature, instead of directly mentioning what kinds of health benefits people may gain from their engagement with forests and nature, this following statement was uttered: “Well the major relation we see is physical activity and nature”. Doing physical activities particularly walking and cycling is seen as a means by which some health problems could be overcome, or more precisely it is a way of health prevention. Related to this, green environment or nature in general is considered as an appropriate setting that is potentially attracting and encouraging people to do physical activities.

*[N]ow prevention has become much more important. We also identified a couple years ago some diseases: smoking, drinking, overweight, diabetes type 2, and depression. And it happens that depression, overweight, diabetes type 2 are all related to physical activity.*

*Next week, [on] Monday there is a workshop on ‘fietsen naar werk’ – cycling to work. [...] There will be a panel, I will be in the panel, and I will again say how important it is. And that is not just cycling, but also cycling in green is nicer. Cycling itself has to be attractive also. If it is not attractive you don’t cycle. If it is not attractive you don’t walk. So walking in a nice*

*scenery and with different stimuli that's nice. And then people do that more easily.*

Furthermore, encouraging people to do physical activities is considered as something that the health sector needs to take up together with other sectors as well.

*So if you want people to move more don't do just sports, but trying to establish contacts with the people from transport, the people of spatial planning who plan what we do, what we can do, and [offer places where] the kids can play, take care of playgrounds, take care of green.*

This is in line with the fact mentioned by Eddy L. Engelsman that the Ministry of Health, Welfare, and Sport is now giving more attention to intersectoral approaches in health policy which acknowledges the important role of other sectors in promoting the health of Dutch people, as articulated by statement below:

*Because in essence a health ministry cannot change health or cannot promote health, it's mainly others. Like we started in the 19<sup>th</sup> century by creating better drinking water which was one of the reasons why the health status of the people went up, and that's nothing to do with health [ministry]. Health ministry themselves cannot do much on health. It's education, it's transport, it's a lot of other things.*

In the light of this, the Ministry of Health, Welfare, and Sport welcomed Staatsbosbeheer's idea of linking forests and nature to human health as expressed in this following story about how the ministry took the idea into its prevention policy document titled 'Being Healthy Staying Healthy: A Vision of Health and Prevention the Netherlands'.

*About two years ago I had a first contact with a guy from Staatsbosbeheer. [Earlier] my secretary general had spoken to the director [of Staatsbosbeheer] and then he said [to me] "Eddy go there and speak to them, because they wanted someone to speak with". [...] So I went to Staatsbosbeheer and I spoke to [some persons] including John van den Berg and I said "I'm very positive". In those days [actually] we didn't know much about the real effect, the scientific-evidence-based effect because nature is good for health, but what is it, what kind of health, is it just [because] you are in a green "o it's nice, it makes you happy or happier people are more healthy", [or] is it about physical activity. So I said "What do you expect from me? Because I'm glad you do everything you want to do. You don't need me as a Health Ministry". They said "well, it would help if your minister when he makes his speeches, or opens congresses, or when he writes his memoranda and policy papers that he also indicates how important nature is for people." Well, that's what he did later on in this prevention policy paper.*

The ministry also considered that cooperation with Staatsbosbeheer on developing the idea of linking forests and nature to human health into a concrete practice can be

potentially accommodated in the programme named ‘beweegkuur’<sup>6</sup> or ‘medication through exercise’ which is now being developed.

*[W]e stimulate also people from the health insurance department in our ministry to get the doctors prescribe physical activity, for instance for people with diabetes or overweight. We call it ‘beweegkuur’. It is working now in some cities, for instance different types of pilots in Rotterdam [and] The Hague. And now we try to combine the best of all these pilots [...] And one of the issues is we say now [that] not all people like to go to sport club or whatever, and I say “if you want to have [a link] to a group of people who like to go walking in the green that’s something which is important”. So for that [reason] that’s why we also said to Staatsbosbeheer “try to [have a] link with NISB to make, well, the beweegkuur also [as] a green beweegkuur”.*

### 5.2.2. Municipal Health Services

In contrast to Staatsbosbeheer, the interviewees from municipal health services interchangeably used terms ‘green’, ‘green space(s)’ and ‘green environment’ with regard to nature. They perceived green environment as a potential benefit to people’s health because it stimulates people to do physical activities, it facilitates social contacts, and it alleviates stress. Hence, by these qualities people may gain physical, social, and mental health benefits from nature as explained below:

*[T]hen we found that green can have a positive health effect in several ways. The most important way in which it can have positive health effect is by making people quiet, relaxed, getting the stress away, and this has a general positive effect on health in many respects. [...] There are also some other benefits. You see that in a green environment people show more exercise, they move more, and more moving [or] more exercise has also certainly a positive health effect. And then you see that in a green environment people in general have somewhat, well, the evidence is not large, but there is some evidence that people have more social interaction and especially for people who are lonely or do not have much social support, it can be very important to have the opportunity to meet other people and to come into contact. [...] Then, you see that children develop in a green environment; their psychosocial development is better, so, well of course what they do is they play, they climb so their physical development is better, but also their mental development seems to be better when they grow up in a green environment. Then lastly you see that also green, maybe connected to this quieting effect, can have a positive effect on the way people deal with problems with difficult circumstances in their life or giving meaning to the things they encounter in their life. So it is a sort of, well, a spiritual is maybe the word is too much, but the way they are balance in life*

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<sup>6</sup> *Beweegkuur* is a programme for inactive and semi active people especially those with (a high risk of) type-2 diabetes, who are keen to start exercising and have not yet reached the Dutch standard (30 minutes 5 times a week); it is a temporary professional and personal guidance within primary care in order to adopt an active lifestyle, prescribed by the general practitioner (NISB 2009). *Beweegkuur* is a new programme initiated by the Ministry of Health, Welfare and Sport and is being developed in co-ordination with partners (Ibid.).

*or counter grip with problem in their life can be helped with if they live in a green environment. These are the main effects of the green.*

*- Fred Woudenberg, GGD Amsterdam -*

All interviewees mainly agree that the positive effects of nature to human health can be gained through doing physical activities while 'being in the presence of nature'. However, 'viewing nature' was also mentioned as a way by which people may also gain some health benefits, especially people who have psychological problems as expressed by this following statement:

*[I]t's good when you are depressed or you have problems with the stress or something, then you see green or you are in a green environment, or you look at a picture of green it helps. And they do it also in hospitals [...] when you see green or you see trees it helps you to recover from illness, I have read. And I think it's relaxing for people to see the nature and the seasons, you see a bit of green.*

*- Marianne van der Hoorst, GGD Utrecht -*

Considering the distance of forests which is usually far away from cities, utilizing the existing nature or even creating nature in a city is more favored. This is also because the fact as stated by Marianne van der Horst that many people who have health problems such as obesity are the people with low income. Responding the idea of prescribing physical exercise in forests for overweight people as published in the 2007 newspaper article, she uttered this following statement:

*[T]he people don't have cars, they don't have much money, they don't buy a ticket for the train, they stay in the cities and they stay there and they don't go holidays or something, they are always in the urban situation. For those people this [idea] is not a solution. You have to create a situation where they have easy access to the environment, easy possibilities; and it's around the corner and it's in their own neighborhood. There you have to stimulate it, they can move and they can enjoy nature, because they don't go on the train and they don't have cars and the people who are overweight a lot of them are in the neighborhoods which have problems.*

*- Marianne van der Hoorst, GG&GD Utrecht -*

Otherwise, the people should be facilitated to be able to go to forests and nature outside the city where they live so that they may gain health benefits from those areas. Reind van Doorn gave an example about this as follows:

*When a general practitioner says to a patient "you have to start moving in a forest and a green environment" then of course there have to be facilities where the person can go to. Not only that, there also have to be possibilities to go there on the cheap and simple way, because otherwise people won't go there. So when it is expensive to go there people won't go there.*

*- Reind van Doorn, GGD Rotterdam-Rijnmond -*

Thus, good accessibility of nature for people living in cities is considered important to promote the health benefits of nature for city dwellers as also articulated by the statement below:

*These three things: playing ground for children, or sitting places for the elderly close to their house; a park in a walking distance; and natural area at a bicycling distance, we regard these as basic needs of the people in the city; and in any which way we try to improve these.*

*- Fred Woudenberg, GGD Amsterdam -*

Thus, it can be understood that taking into consideration the health benefits of nature in urban planning is put forward to promote health benefits of nature, particularly green environment in cities. Therefore, all interviewees also have the same point of view that health sector needs to cooperate with other policy sectors.

*Now we try to make a link from the several departments in the communities. That we have an officer for health care and we have an officer for welfare in the city hall, we have an officer who is responsible for playgrounds in the city, we have officers who are responsible for the path for the bicycles, and they do their own job: the one for bicycle path, the one for playgrounds, the one for the welfare, the one for the health care. And now we say to the four members of these departments "come and join us".*

*- Ans Engelsman, GGD Gooi & Vechtstreek -*

*[W]e work together with the city planners and with the urban planning department. Because we don't do it alone and we have to cooperate, because they are the planners of the city and we are the health [sector] and we have to cooperate on the subject.*

*- Marianne van der Horst, GG&GD Utrecht -*

Reind van Doorn put the importance of cooperation with others in a short statement as follows:

*We are not the organization which can actually construct green surroundings. We depend on other parts of municipality.*

*- Reind van Doorn, GGD Rotterdam-Rijnmond -*

### *5.2.3. Health Insurance Companies*

Both of the two health insurance companies I had interviews with, namely De Friesland Zorgverzekeraar and CZ Actief in Gezondheid, see the health benefits of forests and nature mainly because forests and nature have characteristics which are better than those of other places - particularly fitness centers - in encouraging people to do physical activities.

*The forests or the heath, everybody can go there when he wants. There is always a piece of nature in a neighborhood or you can go in Friesland [province] we have a lot of water, you can go to the water. It's relaxing, people get more and more relaxed then. So you can walk you can do it when it fits you. You don't have to need a special date to go then or then or then. No. You can go whenever you want. And I think that's a very big plus when you compare it with a fitness center.*

*- Tjisse Brookman, De Friesland Zorgverzekeraar -*

*When you go out in nature like in the woods, every season has its own temperature, winds, rain, and color. Every time it is different, it is changing. [...] So when you say “Ok we are going to walk in the woods. It is a nice weather we have today”, it is never boring to be out in nature. This is the big plus from active in nature by bicycle, by foot, running, whatever.*

*- Syb Tilstra, De Friesland Zorgverzekeraar -*

*I think it's really important that the possibilities of the nature are encouraging preventive activities. It's mostly always available. People can have a walk there, do sports, go outside, and it makes people often feel really good. [...] It's a really good environment to work on health.*

*- Janneke Kaper, CZ Actief in Gezondheid -*

From quotations above, it is clear that forests and nature are also considered to benefit people mainly in their mental health. In addition, related to better movement in forests and nature some other health benefits were also mentioned, as follows:

*[R]eduction of obesity by moving, some more reduction of symptoms of diabetes, cardiovascular reduction; and also depression, I think it's a main problem in the Netherlands. I think forests and nature can help also when you are outside or when you have an active living. I think that helps to make people feel better.*

*- Janneke Kaper, CZ Actief in Gezondheid -*

Furthermore, considering the characteristics of health insurance companies all interviewees perceived that health benefits of forests and nature can be promoted by integrating forests and nature into customers' daily activities to suit the customers' needs and by working together with other organizations.

*we mainly focus on the health centers where the health care takes place and the difficult part is how to integrate health with daily living and to make a step to the forest and nature, but we have to have partners in that, like the government or Staatsbosbeheer or NISB. So we can only do that with partners.*

*- Janneke Kaper, CZ Actief in Gezondheid -*

*That depends on what customers want, what the customers are ready for. Sometimes you have to help them a bit; otherwise you have to wait until the time is ready. And then it depends on the possibilities the Staatsbosbeheer offers us. It is a mixture of things.*

*- Tjisse Brookman, De Friesland Zorgverzekeraar -*

Customers are really matters for health insurance companies in developing activities for their customer's health, especially if health insurance companies want to elaborate forests and nature that are considered as places far away from cities.

*[W]e don't want to push people “you have to go in the forest”. No. We offer them the possibilities to make use of it “you can have it”. We don't want to push them.*

*- Syb Tilstra, De Friesland Zorgverzekeraar -*

*Then again [about] Nordic Walking Program, you have to look from where you can do it. I can take my Nordic walking stick and I can go here on the street and do it as well. I don't necessarily have to go to woods. We have to be very careful how we do, because when you put extra [unnecessary] steps in it, it makes the participation of people less. So that's the way of, at this moment we are looking for opportunities to do things and where. [...] when you have to say "ok I can go somewhere for a therapy of 10 minutes or half an hour" you don't get into your car and drive half an hour to get there and then do 10 minutes of the therapy and go back for half an hour. People don't do that. So that's a problem how can you [make a right program] for this.*

*- Tjisse Brookman, De Friesland Zorgverzekeraar -*

*[F]rom the health perspective it's difficult to put the intervention there [in forests and nature areas] so you have mostly the [intervention] activities that are centered around the health centers and not in the outside environment, because the interventions are linked to the health professionals who work at the centers and not in the countryside.*

*We really try to offer only the evidence-based [interventions] so we know that they are effective. There are also health insurance companies that overflow their customers with lifestyle information preventive activities, but we choose not to [do that], but only to make choices in what to offer to make sure that the [customer's] money is well invested.*

*- Janneke Kaper, CZ Actief in Gezondheid -*

This characteristic of insurance companies thus in some extent limited cooperation they could make with other organizations including the cooperation with Staatsbosbeheer on the topic of nature and health.

*I think that is really a good idea to work on that green [exercise] on recipe, but also I think there are two worlds: the health insurances' world and Staatsbosbeheer [world]. We do not know each other very well.*

*- Janneke Kaper, CZ Actief in Nederland -*

*There is a gap between health insurance companies and Staatsbosbeheer, because Staatsbosbeheer is a public organization which is working for public goals while the health insurance companies are private companies who are working for private goals.*

*- John van den Berg, Staatsbosbeheer -*

#### *5.2.4. Nationaal Instituut voor Gezondheidsbevordering en Ziektepreventie (NIGZ - Netherlands Institute for Health Promotion and Disease Prevention)*

My analysis of discourse held by NIGZ is based on my interview with Inge D. Verdonk, Senior Project Manager. She preferred to use 'green' with regard to nature. According to her, the green potentially benefits people's health, especially in addressing obesity and psychosocial diseases, because a green environment stimulates people to move more and it reduces stress.

*I think there are two main relationships. One is for obesity, because we like people to move more. And as far as we know green will stimulate people to move more and more often and for a longer period of time. So if the surroundings are more green probably people will move more. And for the other problem which I mentioned psychosocial diseases: stress, et cetera, it's also known [that] green has a kind of stress reducing property, so people will be less stressed.*

Thus, the health benefits of the green can be derived mainly by having direct contact with nature, like also expressed in the following utterance stating that the green is beneficial for children development: “they can play in a more diverse way in forests than behind the computers so it will really develop their movements, et cetera”.

Further, promoting health benefits of forests and nature is considered as an advantage especially for people with low income:

*We are looking for ways to promote the health of people. To stimulate them to make more use of the green and nature in their area is a good opportunity. This is especially appropriate for poor people because forests are free of entrance, so for them it is an affordable way to promote their health.*

Nevertheless, rather than suggesting the people to go to forests, creating green with good accessibility and acceptability as near as possible to the houses of the low income people is suggested. In other words, to promote health benefits of nature she suggested to take into consideration the health benefits of nature located in urban planning:

*First of all, green has to be near the houses especially for people with lower income, the poor people. They don't go very far away to enjoy the green, so it has to be close to their houses. So for promoting health through green it is very important that enough green is near the houses of the people; it has to be accessible for them and acceptable so they can really be able to use the green in the way they like.*

In addition, Verdonk also mentioned two other ways to promote the health benefits of forests and nature, namely changing the perception of people through training, and taking outdoor activities into the medical treatment.

Finally, NIGZ also favors cooperation among different policy sectors in order to promote the health benefits of green. In addition, linking green to health is considered as an easy way to promote health, especially in getting across the message to other sectors outside the health sector.

*We want to work more integrated in health promotion with local governments. So this is completely different sector which up to now hasn't been involved in health. So now we say “look if you are planning our city, if you make it more green, you make it more healthy”. It is a very easy message to a sector with which health sector hardly ever talked.*

From the interview it was known that NIGZ has worked together with Staatsbosbeheer in conducting a project named ‘Gezond Groen’ (Green and Health) in which they explore health benefits of nature for people.

*At the moment we have one project together with Staatsbosbeheer that is 'Green and Health' so we have this project together. [...] Because we are different sectors, so we wanted to know more about green, and they wanted to know more about health. So that's our relationship that we can understand from each other the other sector. [...] Staatsbosbeheer, they wanted that more people make use of their forests that there is more value for the whole population, especially in the health sense. And we are looking for ways how we can promote health of people.*

#### 5.2.5. *Rijksinstituut voor Volksgezondheid en Milieu (RIVM - National Institute for Public Health and the Environment)*

On November 19, 2008 I interviewed Lea den Broeder, account management advisor in Public Health Services Division, RIVM. In the interview she used also 'green space', 'green environment', and 'natural environment' besides forests and nature. She considered these places as parts of physical environment where people live and by which their behavior is influenced. Through this mechanism then RIVM sees living environment including nature as an important factor which considerably determines people health as well.

*We wanted to make an integral picture of the environment where the people live. And if you look in an integrated way we saw that there would be different aspects at work together changing people's behavior or keeping people behavior as it was. And the green space is one part of that.*

*You have to do something in the environment where people live especially since the main causes of death are all lifestyle-related ones, then it's almost a natural development [that] you can't close your eyes, you can't say people need to change their behavior and not look at what makes it easier or more difficult for people to change.*

Nature is considered as an environment that could help people to overcome their health problems, particularly mental health problems and obesity, because of the reason that nature stimulates people to do physical exercise more and gives opportunity for recreation.

*People who are more in a green environment they can be expected much more strongly to move, to walk, and to cycle. Some people said that there is a link between mental wellbeing and natural and green environment. These are things that need to be focused on. And also in the Netherlands green environment is seen as a very good place to go for recreation. And if you would say people have a lot of mental health problems and they might need to relax their mind a little bit, that might be a good way to do that.*

Yet, RIVM still does not feel assured about the health benefits of forests and nature mainly due to the lack of proper evidences just as Lea den Broeder said:

*[S]ince there are very little high quality clinical evidences of the benefits of a green space to people it's really hard for us to say "this is good for people's health".*

Accordingly, the lack of evidences together with the view that nature is just one part of the whole integrated environment which determines people's health has caused the organization does not get into this topic of nature and health very much.

*[N]ature issue only as part of the environment of the people and it's relatively a small part; most people don't live in green areas, most people don't live close to green areas, so we wouldn't make the idea very big because there are so many other topics to think about as well. And of course as long as the evidence is so weak [therefore] it is not so attractive for us to get highly connected with the idea.*

Nevertheless, RIVM sees the importance of working together among different policy sectors to promote the potential health benefits of nature especially by improving the accessibility of the nature for people. In the frame of this idea, nature is not merely something that is far away outside cities, but also including green spaces within cities.

*I think perhaps the access to a green space could be improved for some people, for instance by making this better accessible, to get there by ways of transport, for instance public transport or bicycles instead of only by cars. So that might be something which might be helpful. But also perhaps it might be also a good idea to bring more green space into the place where the people actually live. And what we see now is that cities are getting less and less green, and perhaps another movement is needed to make them greener and provide more space for people. So it might not be just a matter of the Ministry of Agriculture and Nature, but might also be a matter of the Ministry of Transport to be involved, or the Ministry of Economic Affairs.*

Moreover, by giving obesity as an example of health problems faced by Dutch people, Lea den Broeder showed that RIVM sees cooperation among different policy sectors is considerably important to promote public health.

*Because our view is that public health is dependent on many factors that cannot be influenced by health care field alone. For instance, when you think about a topic like obesity, it's a big health problem in the Netherlands. [...] It doesn't help if you tell people that they should move more, so that they should take public transport or they should take a bicycle or walk instead of going by a car, while at the same time the Ministry of Transport promoting car use for instance. So you need to work together. They [the related ministries] should provide the infrastructure for people to develop healthy behavior. This is just a very small example, but a lot of determinants of health are influenced by other policy fields, and so if you want to change these determinants you need to work together with other policy fields.*

### **5.3. Conclusion**

Based on the interviews conducted within Staatsbosbeheer and the health sector, it can be concluded that both two groups of actors much adhere to the same discourse which is 'exposure to nature for human health' in a sense that they take the discourse's main storyline which is that the engagement with nature gives positive effects to human health. Nevertheless they differently approach the detailed storylines. This kind of

situation is possible to happen just as Hajer and Versteeg (2005) stated that when actors share a specific set of storylines, still they might interpret the meaning of these storylines rather differently. To make it easy and clear I want to present the differences in Table 2. below to compare one to another.

Table 2. Comparing storylines held by Staatsbosbeheer and Dutch health sector.

<b>Exposure to Nature for Human Health Discourse</b>			
<b><u>Main storyline:</u> <i>The engagement with nature gives positive effects to human health</i></b>			
		<b>Staatsbosbeheer</b>	<b>The Health Sector</b>
<b>Detailed Storylines</b>	1. Contact with nature results in physical, mental, & social health benefits	Especially overweight, obesity, & depression.	Depression, overweight, obesity, other lack-of-exercise related illnesses, etc.
	2. The benefits can be gained by viewing nature & being in the presence of nature	By being in the presence of <b>forest and nature</b> (especially those of Staatsbosbeheer) & doing physical activities there.	By viewing & being in the presence of <b>greens</b> (nature in general including green spaces in cities)
	3. People living in urbanized environments are the main beneficiaries.	People living in urbanized environments are the main beneficiaries.	People living in urbanized environments are the main beneficiaries.
	4. The benefits can be promoted by: - Taking into consideration health benefits of nature in urban planning - Promoting ‘green exercise’ activities - Collaboration of all involved actors	Focusing on establishing collaboration with health sector actors	Collaboration with other involved actors, including those who take part in urban planning.

In the next chapter I will analyze further about these different interpretations and how they influence engagement between respective actors with the Staatsbosbeheer’s policy of linking forests and nature to human health issues. Furthermore I will also discuss how the policy development in Staatsbosbeheer has been influenced by the fact that in linking forests and nature to human health Staatsbosbeheer in some extent also adhere to ‘ecosystem health for human health’ discourse which puts forward the importance of forests and nature protection on account of that forests and nature are perceived to deliver health functions as well.

## **Chapter 6: Evaluating Staatsbosbeheer's policy of linking forests and nature to human health issues**

In this study I hardly saw a struggle for discursive hegemony since as I have showed in Chapter 5 that both Staatsbosbeheer and the Dutch health sector actors adhere to the same discourse which is the 'exposure to nature for human health' discourse. There would be a struggle for discursive hegemony in political debates on linking forests and nature to human health if different discourses, i.e. the 'ecosystem health for human health' discourse and the 'exposure to nature for human health' discourse, are involved in the debates. In such struggle involved actors try to secure support for their definition of reality (Hajer 1995) for instance actors who adhere to the 'ecosystem health for human health' discourse would eagerly support establishment of restricted nature reserves, whereas other actors who adhere to the 'exposure to nature for human health' discourse would enthusiastically invite people to come to nature. In this example the actors represent differently what can be done and what should be done to promote a positive link between nature and human health.

In the case of Staatsbosbeheer and the Dutch health sector studied here, both of them adhere to the 'exposure to nature for human health' discourse, yet the adherence is primarily on the level of the main storyline of the discourse which is that engagement with nature gives positive effects to human health, whereas they interpret the meaning of the detailed storylines differently. It is interesting to see how the differences in interpreting storylines influence engagement between respective actors with the Staatsbosbeheer's policy of linking forests and nature to human health issues. Therefore in this chapter I want to evaluate how respective actors have taken up the 'exposure to nature for human health' discourse and into what extent it has led to concrete decisions and actions. With this purpose in mind I would like to use the two-step procedure for measuring the influence of a discourse, namely discourse structuration and discourse institutionalization (Hajer 2006).

### **6.1. Discourse Structuration: How Staatsbosbeheer and the Dutch health sector use the 'exposure to nature for human health' discourse.**

According to Hajer (1995) discourse structuration occurs when a discourse starts to dominate the way a given social unit conceptualizes the world, or, in practical way, discourse structuration occurs if many people use the discourse to conceptualize the world (Hajer 2006). Based on my interviews just as presented in Chapter 5, like Staatsbosbeheer, the health sector actors also see that people can benefit from their engagement with forests and nature, especially by doing physical activities there, which potentially advantage their physical health and their mental health. However the sources where all actors took the idea were varied. The insurance company CZ Actiev in Gezondheid and the Ministry of Health, Welfare, and Sport pointed to Staatsbosbeheer, whereas the other health sector actors mentioned researches, journals, reports, internet as sources from where they took idea. Even Staatsbosbeheer confirmed that actually they adopted the idea that had already existed before, as expressed by these two statements below:

*[L]ike there was something in the air and that you just pick it up and you create something new.*

*- Debbie Kamphuis, Staatsbosbeheer -*

*So it was like we call it “it’s in the air”; if you are attentive enough then you can smell it or you can be aware of it.*

*- John van den Berg, Staatsbosbeheer -*

In similar way, Inge Verdonk from NIGZ said: “It’s a normal idea” when she commented on Staatsbosbeheer’s idea to offer forests and nature for people to come and do physical activities there for their health. The fact that all actors did not specifically refer to a source from which they adopted the ‘exposure to nature for human health’ discourse has indicated that this discourse has completely structured discussions on the link between forests and nature and human health among different actors, including city politicians, city boards, and the building department which were also mentioned in the interviews I conducted; for example, the importance of green spaces in Amsterdam has been put forward by an alderwoman (*wethouder*; in Dutch) from GreenLeft party (F. Woudenberg, personal communication, November 14, 2008), and the building department of Rotterdam that suggested 2008 as the green year for Rotterdam city (R. Van Doorn, personal communication, November, 12, 2008).

In addition, considering that Staatsbosbeheer and health sector are two groups of actors with different backgrounds, but actually then they found the way to communicate about the topic shows the evidence of what Hajer (2006) calls as the ‘communicative miracle’. The difference between them was represented by identifying Staatsbosbeheer as part of ‘the green world’, while the health sector as ‘the white world’. In the case of linking forests and nature to human health, both of them are experts of *some sort*, yet they still depend on each other for fully understanding (Ibid). And it is the fact that the mechanisms of how nature can give positive effects to human health are quite complex and not completely understood yet. Several researches have been conducted; still more scientific evidences are demanded. However, Staatsbosbeheer has started a discussion on the topic between the two different worlds. When several newspapers in 2007 (see Annex 4.) published a short article exposing that Staatsbosbeheer urged Dutch general practitioners to prescribe exercise in a green environment to their patients as a strategy to combat overweight and obesity<sup>7</sup>, some storylines were revealed to facilitate the communication. First of all, Staatsbosbeheer recognized that obesity is a growing problem in the Netherlands, and that doing physical activities is the proper way to help people with this problem. Finally, Staatsbosbeheer promoted the forests as places that are better than fitness centers or gyms in encouraging people to do the physical activities (De Stentor 2007). In other words, Staatsbosbeheer invited people with overweight or obesity problem to come to or to engage with forests and nature areas, especially those under its management, to recover by doing some physical activities there. This is the main storyline of the ‘exposure to nature for human health’ discourse that engagement with nature can give positive effects to human health.

Viewing uttering discourse as a strategic behaviour, it can be concluded that Staatsbosbeheer has been acted as a discoursing agent who actively tried to make others see problems according to its view and to position other actors in a specific way (Hajer

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<sup>7</sup> In the newspaper article such prescription in short was called as ‘green exercise on recipe’.

1995). The newspaper article in 2007 has been used as a means by which Staatsbosbeheer intentionally tried not only to make others see that overweight and obesity could be better addressed by doing the physical activities in forests and nature, but also in particular to position general practitioners as actors responsible to make prescription/recipe sending their obese patients to forests and nature, while at the same time Staatsbosbeheer positioned itself as a provider of those places (De Stentor 2007). Likewise, in the same year the same idea was publicized through a radio broadcast by which then an insurance company CZ Actiev in Gezonheid got attracted and took the idea (J. Kaper, personal communication, November 18, 2008). Staatsbosbeheer also brought the same idea of linking forests and nature to human health when it persuaded the Ministry of Health, Welfare, and Sport who then took the idea in its health prevention policy document (E. L. Engelsman, personal communication, November 20, 2008). Figure 2. below illustrates how the ‘exposure to nature for human health’ discourse has spread among respective actors.

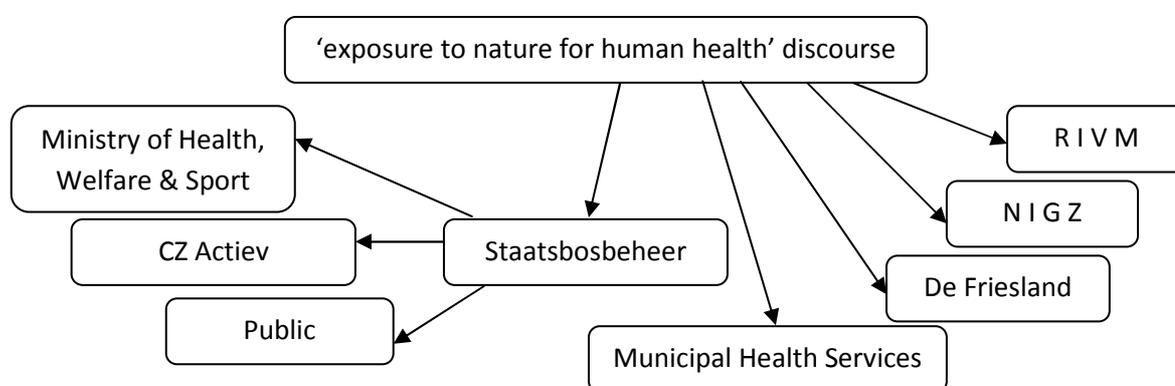


Figure 2. The spread of the ‘exposure to nature for human health’ discourse among actors in the Dutch health sector and Staatsbosbeheer.

The storylines that have promoted by Staatsbosbeheer as mentioned above can also be recognized in the interviews with actors in the health sector which means that they adhere to the ‘exposure to nature for human health’ discourse as well. Just as a reminder, here I want to (re)present the four storylines which constitute the ‘exposure to nature for human health’ discourse as I already explained in Chapter 4:

1. Contact with nature results in physical, mental, and social health benefits
2. The benefits can be gained by viewing nature and being in the presence of nature
3. People living in urbanized environments are the main beneficiaries.
4. The benefits can be promoted by taking into consideration health benefits of nature in urban planning, promoting ‘green exercise’ activities, and collaboration of all involved actors.

However it seems that the discussion between both groups of actors coming from two different worlds will still continue. According to Hajer and Versteeg (2005) even when actors share a specific set of storylines, still they might interpret the meaning of these storylines rather differently. If we look at the ‘exposure to nature for human health’ discourse in more detail, we can see that although both Staatsbosbeheer and the health sector adhere to it, but there are some differences in interpreting the meaning of its detailed storylines. I would like to discuss this in the light that actors certainly can

initiate particular social action but in a context of social structures that both enable and constraint them (Hajer 1995).

With regard to the first storyline, although Staatsbosbeheer referred to the 'Nature and Health' report (Health Council & RMNO 2004) mentioning that nature provides an incentive to take more exercise which benefits people with overweight, obesity, depression, coronary heart disease, diabetes mellitus type II, chronic obstructive pulmonary disease (COPD), osteoporosis, stroke, rheumatoid arthritis, epilepsy and cystic fibrosis, but Staatsbosbeheer has deliberately pointed out that having contact with nature will benefit people particularly with overweight, obesity, and depression problems. This was mainly related to the wish of Staatsbosbeheer to make its social impact for Dutch society broader than only conserving nature and producing timber. Accordingly Staatsbosbeheer identified itself with the health policy goals of Ministry of Health, Welfare, and Sport that has set overweight, obesity, and depression as illnesses prioritized to be addressed (Ministry of Health, Welfare, and Sport 2004; 2006). Giving contribution to the goals of the ministry was strategically seen beneficial for Staatsbosbeheer with regard to the wish of broadening its social impact for society. This kind of behaviour of Staatsbosbeheer can be understood from the social-interactive perspective that sees actors as discoursing subjects who are active, selecting and adapting thoughts, mutating and creating them in discussions/debates (Hajer 1995).

Related also to the wish of Staatsbosbeheer to broaden its social impact for Dutch society recently facing health problems particularly overweight, obesity and depression, thus Staatsbosbeheer's policy of linking forests and nature to human health issues basically promotes forests and nature under management of Staatsbosbeheer as the right places from which people with the problems can benefit. For that reason, the walking pilot project exercised in 2005 by the UK Forestry Commission as exposed in the newspaper article in 2007 was referred by Staatsbosbeheer to in order to support the argument that forests and nature of Staatsbosbeheer are worthy to be made use of in order to address the health problems Dutch society faces. The article exposed that the UK Forestry Commission did a pilot study where several fat people had to walk into forests for 13 weeks. The participants lost weight, gained a better endurance and got less complaint about for instance joint pains. After 13 weeks 30% of the people that went to the sport centre were left, while 90% of the people that went into the forest 'survived' (DePers 2007). Accordingly, Staatsbosbeheer prefers 'being in the presence of nature' rather than 'viewing nature' as a way by which people can gain the health benefits from nature. In short, Staatsbosbeheer interprets the second storyline that by being in the presence of forest and nature, especially those of Staatsbosbeheer, and doing physical activities there people may gain benefits to address overweight, obesity and depression.

Whereas for the health sector actors, the health benefits, such as addressing overweight, obesity, depression, diabetes and cardiovascular diseases, may be gained by being in the presence of 'green' and doing physical activities there; in addition some other health benefits like faster physical recovery from illness and mental health also may be gained by viewing 'green'. Green environment in general, including forests and nature, is perceived as part of physical environment which is (only) one factor determining human health. It is most likely because the Dutch health-sector actors refer to the Dutch health status assessment model (Figure 2.) which is based on the Lalonde model that puts health at the centre of four groups of health determinants, namely endogenic or person-related characteristics, lifestyle, the physical and social environment, and health care activities including preventive care (Ministry of Health,

Welfare, and Sport 2007). This also brings implication that the topic of linking forests and nature to human health, actually, is not a big issue for the Dutch health sector.

The health sector actors see forests and nature as a physical environment that has qualities to reduce stresses and to stimulate people to do physical activities more. However, they see these qualities are also present within green areas in cities, such as city parks or even in the backyard of every citizen's house. With this in mind, the health sector considers greens, including forest and nature, as beneficial for people's health.

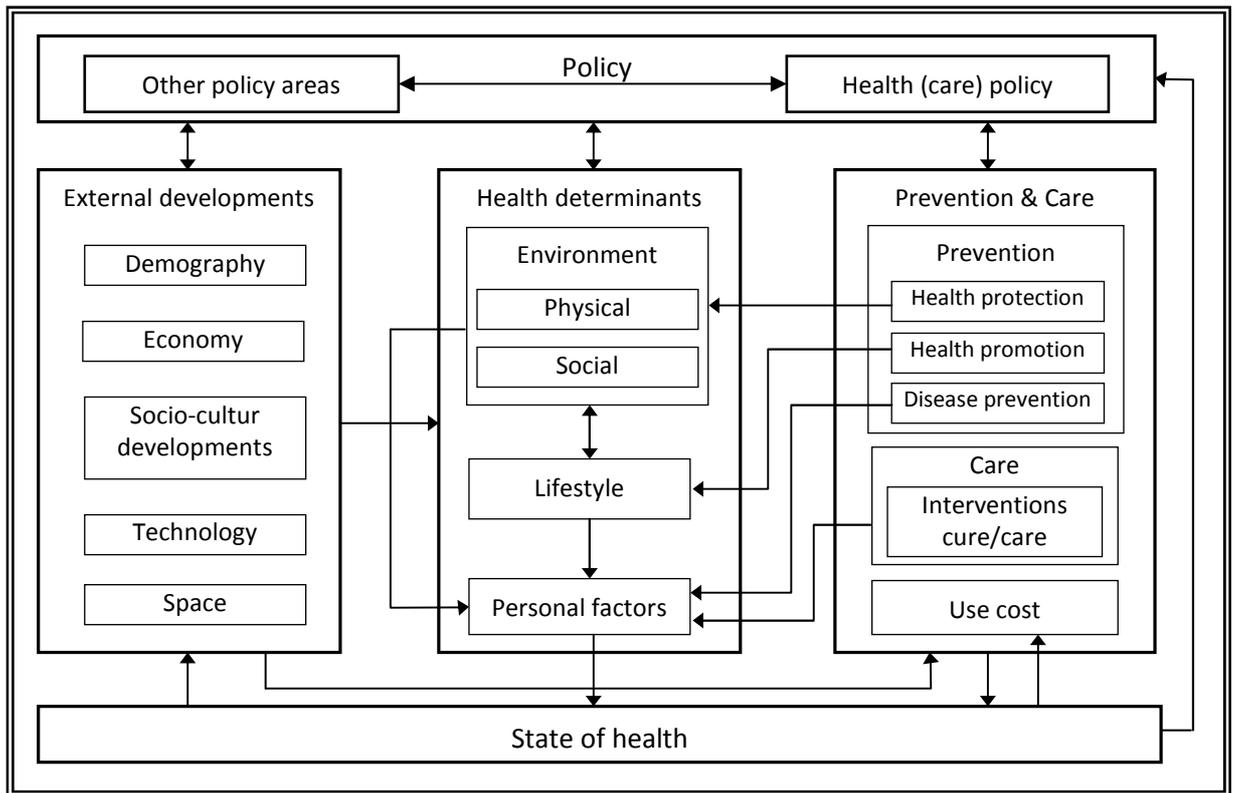


Figure 3. Dutch health status assessment model  
Source: Ministry of Health, Welfare, and Sport 2007

Based on the difference on the meaning Staatsbosbeheer and the health sector respectively gave to forests and nature as described above, consequently both groups of actors differently approach the storyline on how the health benefits of forests and nature can be promoted (the fourth storyline of the 'expose to nature for human health' discourse). For the health sector forests and nature are not seen as the only option where people can be in a physical environment benefiting their health. This is evidenced by the fact that during the interviews I conducted within the health sector, they used the terms 'green', 'green space(s)', and 'green environment' more often than the word 'forest' or even 'nature'. They consider forests and nature as far places from cities where the people with overweight, obesity, and depression problems live. Those places are considered to be not so easy to reach or not so affordable for people to make use of them, especially when considering that overweight is found more in people with a low socio-economic status (Ministry of Health, Welfare, and Sport, 2006). Alternatively, the health sector actors see that 'bringing nature into cities' as another option to provide nearer physical environment that has, just like forests and nature have, qualities to

reduce stresses and to stimulate people to do physical activities more. The term 'bringing nature into cities' itself implies that nature even though it is considered as important for human health, yet it is so far from cities, thus it needs to make nature closer from cities or even brought it into cities by improving or even creating green spaces in cities. Accordingly, the health sector considers that besides collaborating with nature organizations, it is also needed to collaborate with other policy fields, for example to improve infrastructure connecting cities with forests and nature to make them reachable by bikes, or to take into consideration health benefits of nature in urban planning in case that green spaces in cities are more favored.

Whereas for Staatsbosbeheer, it focuses to have collaboration with the health sector in order to promote health benefits of forests and nature. This is mainly because the Staatsbosbeheer's policy of linking forests and nature to human health issues basically promotes the health benefits of forests and nature under management of Staatsbosbeheer. With regard to Staatsbosbeheer as a public organization which has responsibility to work for Dutch society and to take part in contributing to wellbeing of Dutch people, the organization seeks collaboration with other actors that can convince public to come to forests and nature of Staatsbosbeheer to gain health benefits by doing physical activities there. This is what was showed by the newspaper article published in 2007 by which on one hand Staatsbosbeheer urged general practitioners to prescribe 'green recipe' for their patients to exercise in forests and nature to recover from their overweight or obesity problem, and on the other hand Staatsbosbeheer presented itself as a provider of such places (De Stentor 2007). This also reflects that Staatsbosbeheer realized the public image they have that most of Dutch people principally associate the organization with woodland, not with health (Staatsbosbeheer 2004). Likewise J. van den Berg (personal communication, December 1, 2008) stated that collaboration with health sector was motivated by realizing the fact that Staatsbosbeheer, commonly known as a green organization, has no credits in the health domain. On the other hand collaboration with health sector can also be seen as an effort of Staatsbosbeheer to capitalize on society's health needs since the status of Staatsbosbeheer as an independent authority gives more opportunities for Staatsbosbeheer to actively offer products and services that can be (co)financed by provincial authorities, municipal activities, the commercial sector or the general public (Staatsbosbeheer 2004).

So far I have showed how Staatsbosbeheer and the Dutch health sector use the 'exposure to nature for human health' discourse that they interpret its detailed storylines differently compare to each other. Further I want to continue with analyzing how these interpretations of the meaning of the storylines influence have led to concrete decisions and actions of respective actors.

## **6.2. Discourse institutionalization**

The other criterion to measure the influence of a discourse is discourse institutionalization which occurs when a discourse solidifies in particular arrangements, or in practical way, the discourse solidifies into institutions and organizational practices (Hajer 2006). Now, I would like to describe how the institutionalization of the 'exposure to nature for human health' discourse within each health sector actor. I will describe per actor since discourse institutionalization is related with how the respective actor has taken the discourse into concrete organizational decisions and actions. Later,

at the end of this chapter I will also assess the discourse institutionalization in Staatsbosbeheer.

### 6.2.1. *Ministry of Health, Welfare, and Sport*

Ministry of Health, Welfare, and Sport was persuaded by Staatsbosbeheer to put forward the importance of nature for human health, although at that moment the ministry did not know much about the scientific-based evidence effects (See quotation of Eddy L. Engelsman in 5.2.1.). For the ministry green environment or nature in general is considered as an appropriate physical setting which attracts and encourages people to do physical activities by which diseases related to physical activity, namely overweight, depression, and diabetes type 2 can be prevented or even addressed. Staatsbosbeheer more specifically persuaded the ministry to adopt the idea of ‘green exercise on recipe’ which needs cooperation from general practitioners and insurance companies. Later in 2007 when Ministry of Health, Welfare, and Sport published its policy document titled ‘Being Healthy Staying Healthy: A Vision of Health and Prevention the Netherlands’ there was a paragraph named ‘Nature and Health’ which addresses the idea. The 2004 report of the Health Council was referred to in the paragraph to support that a green environment positively influences the amount and quality of exercise people take. The paragraph also mentioned some types of green environments, namely countryside, attractive parks, and green spaces close to home or work. Having the last two green environments was mentioned as the factor most likely to encourage walking and cycling. In addition, the Forestry Commission of the UK who has worked earlier on ‘green exercise on recipe’ was also referred to in order to show how woodland can be used for the idea, and also to show how the cooperation with general practitioners and insurance companies can work (Ministry of Health, Welfare, and Sport 2007). Finally, the paragraph also explicitly mentioned that in the Netherlands now Staatsbosbeheer is exploring the idea.

The publishing of the policy document obviously is an evidence of how Staatsbosbeheer successfully persuaded the Ministry of Health, Welfare, and Sport to accept the ‘exposure to nature for human health’ discourse (discourse structuration) and then adopted the discourse into a concrete policy of the ministry (discourse institutionalization). Accordingly, it is argued that the ‘exposure to nature for human health’ discourse has become dominant within the ministry. Moreover, it is important to notice that the process could happen because it was facilitated by the discourse’s main storyline which is that engagement with nature can give positive effects to human health. Offering forests and nature as right places where people with overweight and obesity problems can recover *sounds right* for Ministry of Health, Welfare, and Sport who perceives green environment, including forests and nature, as an appropriate setting which attracts and encourages people to do more physical activities like walking or cycling, thus there is a discursive affinity (Hajer 1995) between these two actors that has made the ministry accept the ‘exposure to nature for human health’ discourse. After all, in the midst of not knowing much of scientific-based evidence effects of nature to human health, the ‘Nature and Health’ report from the Health Council was a proper reference for the ministry to justify the acceptance.

In addition, accepting the Staatsbosbeheer’s idea of linking forests and nature to human health is in line with that Ministry of Health, Welfare, and Sport recently is giving more attention to intersectoral approaches endorsing the principle of ‘parallelism interests’ by which the ministry seeks ways in which aspirations of health and those of

other policy sectors are complementary to each other (Ministry of Health, Welfare, and Sport 2007). So in this case, Staatsbosbeheer's interest which is promoting forests and nature under its management and the ministry's interest which is addressing physical-activity-related health problems in society were considered mutually supporting each other. The 'exposure to nature for human health' discourse with its storyline that people may gain health benefits from their engagement with nature has been a middle ground where the two different actors with different interests can come together.

Finally, the health prevention policy document of the Ministry of Health, Welfare, and Sport consequently legitimizes forests and nature as an option for people to make use of them for their health. Moreover, it opens up the possibility for developing such idea like 'green exercise on recipe' which needs collaboration between health professionals or health organizations and nature management such as Staatsbosbeheer. The possibility is even bigger if considering the fact that for the time being there has been developed a programme named '*beweegkuur*' or 'medication through exercise'. The programme is meant to help inactive and semi active people especially those with (a high risk of) diabetes type 2 to adopt an active lifestyle under guidance of a health professional based on prescription from a general practitioner (NISB 2009). *Beweegkuur* is still being developed and for the moment it takes place within primary care and has not explored possibilities to make use of nature as yet. Therefore, as E.L. Engelsman (personal communication, November, 20, 2008) suggested, there is a space to put Staatsbosbeheer's idea of 'green exercise on recipe' into practice by making *beweegkuur* as green *beweegkuur* also.

#### 6.2.2. Health insurance companies

##### *CZ Actiev in Gezondheid (CZ)*

The first time CZ's disclosure to the 'exposure to nature for human health' nature discourse was in 2007 through a radio broadcast about the 'green exercise on recipe' idea promoted by Staatsbosbeheer. By then CZ has been thinking about the possibility to develop the idea that engagement with nature can give positive effects to human health into its organizational practices. Promoting people to do physical activities in forests and nature for their health was seen attractive for CZ. Despite that CZ has a preference only to offer evidence-based interventions since the effectiveness will assure customers to invest their money (J. Kaper, personal communication, November 18, 2008), yet CZ was attracted to the main storyline of the 'exposure to nature for human health' discourse which is that engagement with nature can give positive effects to human health. This is in line with what Hajer (1995) said that the influence of a new discourse does not merely depend on the cognitive power of its storyline, but also on its attractiveness. For CZ, the attractiveness of the main storyline of the 'exposure to nature for human health' discourse was mainly because CZ perceives that nature is mostly always available and it is a really good environment to work on health.

However, so far the idea has limitedly solidified into organizational practice of CZ. Actually, after the broadcasting of the 'green exercise on recipe' proposition in the radio, CZ initiated to get contact with Staatsbosbeheer resulted in a meeting between the two discussing possibility to develop the idea into cooperation activities, but unfortunately no result reached. Some factors, namely the organizational shift in CZ, financial matters, and the difference between CZ and Staatsbosbeheer were mentioned in the interview with regard to the situation. In discourse-analytical perspective the third factor mentioned above is the most relevant to discuss. For CZ, the difficulty to

establish a cooperation on the 'green exercise on recipe' idea is because CZ and Staatsbosbeheer do not know each other very well, since they are respectively from two different worlds; while for Staatsbosbeheer it is not easy to bridge a gap between Staatsbosbeheer which is a public organization working for public goals and health insurance companies which are private companies working for private goals. Besides CZ also perceives forests and nature as far places from cities where mostly health intervention activities are centered around the health centers. The 'failure' that CZ and Staatsbosbeheer could not reach cooperation on the idea which was actually brought out publicly by Staatsbosbeheer can be considered as ironic, but it is also a proof of how a discourse functions as a structure that is enabling and constraining to people's behaviour (Hajer 1995). On one hand there is the 'exposure to nature for human health' discourse which has made CZ see Staatsbosbeheer's proposition of 'green exercise on recipe' as an opportunity to establish a cooperation with Staatsbosbeheer, while at the other hand there is an awareness of the identity difference that has made the two actors cannot reach the cooperation yet.

Despite the difference between the two organizations, in fact CZ still puts efforts to adopt the idea that forests and nature are an easy accessible and suitable place to promote active living into organizational practices. Together with other parties in the south of the Netherlands such as provincial institutes and local governments including GGDs, CZ setup a network to think about movement activities within the integrated approach, the approach which did not exist at the time CZ made the first contact with Staatsbosbeheer (J. Kaper, personal communication, November 18, 2008). Considering the characteristic of health insurance companies which are customer's-need oriented, working together with other parties within integrated approach is favored to incorporate doing exercises - including the ones in the forests and nature - with people's daily activities. Several new contacts with Staatsbosbeheer have been made to invite Staatsbosbeheer to join the integrated approach (Ibid). After all, the persistence of CZ to keep work on the idea shows us two things: firstly, that discourse structuration of the 'exposure to nature for human health' discourse has occurred in this organization; and secondly, 'communicative miracle' between actors with different backgrounds has been facilitated by the storyline that engagement with nature, through physical activities, can give positive effects to human health.

#### *De Friesland Zorgverzekeraar (De Friesland)*

The 'Beweeg- en Doe Festival' (Moving and Doing Festival; in English) on March 24, 2008 was mentioned in the interview as one evidence on how the idea that engagement with nature can give positive effects to human health has been taken up by De Friesland into organizational practices. The festival was organized together by De Friesland and Staatsbosbeheer to bring to the attention of people that moving outside in nature is healthy. However the De Friesland's adherence to the discourse was not necessarily caused by Staatsbosbeheer reinforcing the discourse on De Friesland. A report on the walking project conducted by the UK forestry commission was referred to as a source where De Friesland got the idea to use forests and nature as settings to stimulate people to do physical activities for their health. In addition, the health prevention policy document from Ministry of Health, Welfare, and Sport was also mentioned in the interview as a source from which De Friesland took the same idea not only for health care purpose, but also for health prevention (T. Brookman & S. Tilstra, personal communication, November 11, 2008).

Actually De Friesland did not consider the idea promoting health by the engagement with nature by doing physical activities as something really new. It was declared in the interview that before the 'Beweeg- en Doe Festival' De Friesland already had programs for people to get them moving for their health and 'unconsciously' already promoted nature as a setting for the programs (T. Brookman, personal communication, November 11, 2008). This is evidenced by the fact found in the website of De Friesland that the organization has offered some activities where nature has been linked to physical activities to promote people's health. To make it clear, those activities are presented here. During 14<sup>th</sup> September 2006 until 31<sup>st</sup> October 2006, supporting the Staatsbosbeheer's programme of walking with Global Positioning System (GPS), De Friesland offered 50% GPS rental price discount for people insured by De Friesland to join the program exploring the Drents-Friese Wold National Park, Apelscha (De Friesland 2009a). Perceiving that nature is a good and nice place for walking because it is relaxing and alleviates stress De Friesland also works together with other nature organization besides Staatsbosbeheer. At this moment De Friesland in cooperation with four nature conservation organizations, namely Waddenvereniging, It Fryske Gea, Het Drentse Landschap and Het Flevo-Landschap, is encouraging people to financially support nature conservation activities (De Friesland 2009b). Moreover, together with GoXchange an organization which promotes satellite navigation-system use in sport, recreation, and education activities, De Friesland is offering a program named ActiefMET where people insured by De Friesland may get one-year free use of the program by which people can know whether they have enough physical activities while exploring nature (De Friesland 2009c). Lastly, De Friesland will organize a programme named '3 provinciënwandeltocht' (Hiking across 3 provinces) started on 09<sup>th</sup> May 2009 to bring people walking together along the woods and on the moors. The program is referred to as not only fun but also healthy and reducing stress; in addition it is also meant as charity to support three organizations dealing with handicap people (De Friesland 2009d).

Yet, considering forests and nature as places far from cities has made De Friesland selective in offering programs to fit with their customers' interests. In the case of De Friesland the adoption of the idea of the 'exposure to nature for human health' discourse into organizational practices was mainly facilitated by the meaning De Friesland has given to forests and nature as places which are suitable and attractive - even better than fitness centre - in encouraging people to do physical activities that are beneficial for their health.

### 6.2.3. *Municipal health services*

Although municipal health services also hold the storyline that people may gain health benefits from their engagement with nature, but they give it different meaning compared to the one given by Staatsbosbeheer. They consider forests and nature as far places from cities and not so easy to reach or not so affordable for people to make use of them, especially when considering that many people who have health problems such as overweight or obesity are people with a low socio-economic status. This can be understood by considering their task as the institutions which are responsible for the health of the people living in their region which are the cities. Considering the people especially those who live in low social-economic status, green environment with good accessibility and which is affordable to reach is considered important to promote the health benefits of nature for city dwellers. So this can also be done by creating or

maintaining green spaces in the cities. Accordingly, encouraging people to make use of the city green spaces is more favored as a way on how municipal health services adopt the 'exposure to nature for human health' discourse into institutional practices. As I will present below each municipal health service has done it in cooperation with other organizations including those from outside health sector. This is also in line with the fact that in recent years the law has put forward the important role of municipalities in carrying out their local health policy responsibilities and in taking health into consideration in domains other than health (Ministry of Health, Welfare, and Sport 2007).

#### *GGD Rotterdam-Rijnmond*

The Rotterdam city has declared 2008 as the green year for the city. As part of the green year program, GGD Rotterdam-Rijnmond set up these following projects to conduct, i.e. 'Green, naturally playgrounds in the city', 'Weekdays / weekend in nature for children', and 'green-experience research'. In addition, in Rotterdam there is also one movement programme called *van klacht naar kracht* (from complaint to strength; in English) in which GGD Rotterdam-Rijnmond is also involved together with some other local parties including general practitioners to encourage Rotterdam people to do exercise (GGD Rotterdam Rijnmond 2009). It was considered that forests and nature could be elaborated within this *van klacht naar kracht* programme.

#### *GGD Amsterdam*

In the city of Amsterdam there is a programme to increase the amount and the quality of very small parks and green areas called '*postzegelparken*' (stamp parks; in English) including very small places in which children can find a place to play or places where people can find a place to sit. Using the health argument GGD Amsterdam contributes to the taking care and protection of these '*postzegelparken*', and within the programme their number will be increased (F. Woudenberg, personal communication, November 14, 2008). GGD Amsterdam also has a special project going at this moment on the same idea, not on stamp parks but on quiet places in Amsterdam. In the project an inventory involves Amsterdam citizens to name their places which they think are quiet and then those places are put on the map as a reference for GGD Amsterdam to find ways of protecting these places or maybe even increasing their number (Ibid.). Furthermore, the importance of green environment is also mentioned in the policy document for Amsterdam's public health policy 2008-2011. In the policy document the presence of greenery, such as trees, public gardens and parks, is referred to as one factor influencing the quality of living environment and indirectly the health of the inhabitants of Amsterdam (GGD Amsterdam 2008)

#### *GGD Gooi and Vechstreek*

With regard to addressing overweight problem in children GGD Gooi and Vechstreek at this moment has a project directed to identify outdoor healthy places for children to play as well as to encourage the children to do exercise more by making use of those places (A. Engelsman, personal communication, November 17, 2008). To support the establishment of the project on 4<sup>th</sup> December 2008 GGD Gooi and Vechstreek conducted a conference titled '*Ruimte voor Bewegen*' (Space for Move; in English).

### *GG&GD Utrecht*

At this moment GG&GD Utrecht takes part in a project named ‘*Gezonde Leefomgeving*’ (Healthy Environment; in English) which is now led by Urban Planning Department of Utrecht. The project includes the green policy ‘*Groenbeleidsplan*’ focusing on the relation between city and environment, and connecting recreational areas around Utrecht to the city with good routes, and on city parks (M. van der Horst, personal communication, November 20, 2008). Within the project the field workers of GG&GD Utrecht called *wijkgezondheidswerk* try to stimulate people to move and to exercise more, for instance walking in their own neighbourhood (park) to improve the health of people, especially those who live in poor neighborhoods (Ibid.).

#### *6.2.4. Nationaal Instituut voor Gezondheidsbevordering en Ziektepreventie (NIGZ - Netherlands Institute for Health Promotion and Disease Prevention)*

The ‘*Gezond Groen op de Werkplek*’ (Healthy Green in the Workspace; in English) project in 2004 was pointed out as an evidence on how NIGZ has adopted the idea that nature gives a positive influence to human health (I. Verdonk, personal communication, November 19, 2008). Having plants in workplace is perceived as beneficial to make workers feel more relax, to reduce stress, and to improve the air quality (Ibid.). The institutionalization of ‘exposure to nature for human health’ discourse into organizational practices in NIGZ was also evidenced by the fact that as a health promotion organization who gives practical support through information, training, educational methodologies and materials, counseling and coaching, NIGZ published a material on this project as part of EU campaign "Healthy Green at Work". The material referred to a study of the radiology department of a Norwegian hospital to show how the presence of plants on workplace can give contribution to less health complains and sickness which result in the decrease of absenteeism (NIGZ 2004). Interestingly, the material also recommended some plants suitable to be placed in working place, such as bamboo palm, ficus, ivy, and philodendron (Ibid).

The nature of NIGZ which is not a research institution, but translating research findings into practice to promote health, has made NIGZ to use “Nature and Health” report published in 2007 by RMNO as a reference to reestablish the idea that engagement with nature can give positive effects to human health. Later in 2008 NIGZ in cooperation with Staatsbosbeheer started a project named ‘*Gezond Groen*’ (Health and Green; in English) funded by Ministry of Agriculture, Nature, and Food Quality (NIGZ 2008a). With the aim to identify areas of Staatsbosbeheer to promote health of city dwellers, the project has involved local parties consisting of municipal health services, mental health care institutions, sports clubs, general practitioners, environment and education centers, nature managements and walking clubs to look for new initiatives in promoting the better use of nature for health, such as arrangements for more green space in the city, better transport links between the city and Staatsbosbeheer areas and activities aimed at moving into the green for specific groups with overweight problem (Ibid).

The institutionalization of the ‘exposure to nature for human health’ discourse in NIGZ most likely was stimulated by the fact that NIGZ got attracted by the handiness of its storyline that people may gain health benefits from their engagement with green. Linking green to health as articulated by expression “if it is green it is more healthy” is considered as a clear message and beneficial to support NIGZ promoting health, particularly in the frame of working in more integrated way with other sectors to create

green with good accessibility and acceptability as near as possible to the houses of the low income people. With regard to the project conducted together with Staatsbosbeheer, since forests are free entrance therefore offering forests as physical environment reducing stress as well as stimulating people to move more for their health was considered as a good opportunity to promote health of people, especially those who live in low socio-economic status. The project has been as an evidence that the ‘exposure to nature for human health’ discourse with its main storyline that engagement with nature gives positive effects to human health has made NIGZ and Staatsbosbeheer meet each other in exploring health benefits of nature for people. However, NIGZ considers the distance of forests and nature of Staatsbosbeheer as a constraint that needs to be overcome to make them more accessible for people to make use of them more.

#### *6.2.5. Rijksinstituut voor Volksgezondheid en Milieu (RIVM - National Institute for Public Health and the Environment)*

Due to the lack of high quality clinical evidences of the benefits of a green space to people the ‘exposure to nature for human health’ discourse has not really solidified into institutional or organizational practices of RIVM. This is related to the nature of RIVM as an organization which promotes public health by conducting research as well as collecting knowledge worldwide (RIVM 2008) that the randomized controlled trial research is mainly considered as the best available knowledge base. Besides, the meaning given to nature that it is just one part of the whole integrated environment which determines people’s health also has caused the organization does not get into this topic very much.

Yet, there is at least one indication that RIVM has taken the exposure to nature for human health discourse into an organizational practice. From the interview it was discovered that in 2005 RIVM published a report on how urban design can promote health. In the report the needs for green spaces was also discussed in designing an environment that is conducive for people to get enough physical exercise. (L. den Broeder, personal communication November 24, 2008).

#### *6.2.6. Staatsbosbeheer*

It is observable that the Staatsbosbeheer’s adherence to the ‘exposure to nature for human health’ discourse has led the organization to concrete actions putting forward the discourse. The 2007 newspaper article, lobbying Ministry of Health, Welfare, and Sport, meeting some other health sector actors, and other activities as presented in Chapter 1 are the evidences of institutionalization of the ‘exposure to nature for human health’ discourse within Staatsbosbeheer. Nevertheless, the interpretation given by Staatsbosbeheer to the second storyline that people may gain health benefits by being in the presence of forest and nature, especially those of Staatsbosbeheer, and doing physical activities there in some extent has obstructed Staatsbosbeheer to see that actually forests and nature of Staatsbosbeheer are competing with other nature areas, especially with green spaces in cities which are closer to places where people with health problems such as overweight, obesity, and depression live; that people tend to make such rational choice to make use of other green environments, unless Staatsbosbeheer makes its areas more attractive, reachable, and affordable. In this respect, Staatsbosbeheer would possibly consider to establish cooperation not only with

health sector, but also with governmental organizations dealing with transport, public works, and spatial planning on the national level and/or on the local level.

On the national organization level nature and health was mentioned in Staatsbosbeheer's policy plan as one of main topics to be developed with regard to Staatsbosbeheer's role as a public organization to contribute to Dutch society's wellbeing. Yet, the vision of the Staatsbosbeheer's policy of linking forests and nature to human health issues has not been clearly formulated in a way that it can be made operational, especially on the field level of Staatsbosbeheer. Linking forests and nature to human health is considered as a new topic for Staatsbosbeheer with regard to the fact that the organization spent most of its life time which is more than 100 years on wood production and stabilization of sand dunes and soil improvement. It was just about ten years ago that Staatsbosbeheer has more intensively explored multi-functional nature, including recreational and conservancy purposes, in which man can play a part as a means of stimulating a long-term relationship between man and nature (Staatsbosbeheer 2004). This is also corresponded to increasing demands of Dutch society who has become interested in forests for its nature and recreational value. For the time being Staatsbosbeheer has various recreational offers, such as the daily stroll, wellington boots route, mountain bike routes, GPS-walks, Tom-tom routes, rambling through nature, canoeing, holiday houses, out and about with park ranger, camping in the wild, and forests for playing (Vriesman 2006). This enormous development of recreational facilities was also motivated by Staatsbosbeheer's wish to contribute to health, welfare, and quality of life (Staatsbosbeheer 2004). Consequently, the emergence of the Staatsbosbeheer's policy of linking forests and nature to human health issues brings a need of clarity of what kind of distinguished organizational practices to be applied on the field level. Unfortunately, I did not have enough time to conduct interviews with people on the field of Staatsbosbeheer, however it was indicated from the interviews I had that the policy is not clear for Staatsbosbeheer's people on the field level to apply it in practices; they do not know how they should do it. For some people the policy even does not convince them that it is necessary to make a link between nature and health; "It's nonsense", they said. For some others the policy is just like a new burden to be added on their have-to-do lists. Thus, there is a gap of perceptions between the national level (Staatsbosbeheer headquarter office) and the field level of Staatsbosbeheer. More interestingly, although the policy was initiated from the Staatsbosbeheer headquarter, yet its vision has not been clearly formulated. This shows us what Hajer (1993) said that discourse formation takes place on many different levels and on many different localities. Perhaps many, if not all, people in all organizational levels of Staatsbosbeheer would agree that the engagement with nature can give positive effects to human health (the main storyline of the exposure to nature for human health discourse), but actually they would be different one to another on what they really mean by that. Subsequently, the given meanings will determine interventions that they think about. Should they be as practical solutions like what kind of physical activities Staatsbosbeheer would offer for obese people, and which ones for people with stress-related diseases? What should be done to make these activities effective in addressing those health problems? Should a project team be formed on this topic?; or probably take the more normative interventions such as promoting the link between nature and health as a way to invite more people to come and enjoy forests and nature of Staatsbosbeheer, and hopefully in turn they would like to love and respect nature more; or perhaps the given meanings would result in not taking any action at all; just as Hajer (2005: 300) said about the

capacity of language: “It can suggest we should discuss the problem in terms of operational solutions, but it might also suggest that this is meaningless, as solutions would require substantial institutional or cultural change”.

In addition, I also observed that there is a ‘structured way of seeing’ (Hajer 2005) which is hard to break that made the ‘exposure to nature for human health’ discourse has limitedly institutionalized in Staatsbosbeheer. It is related to the ‘identity’ of Staatsbosbeheer which represents itself more as a nature conservation organization. This is evidenced by statements such as “nature conservation is our core business”, “the main part of our job is still nature conservancy, producing timber, and offering recreation facilities”, “we are the largest nature conservationist in Holland”. All these utterances are corresponded with the practices they have embedded in (Hajer & Versteeg 2005). For a long time the identity of Staatsbosbeheer as a nature-conservation organization has institutionalized in organizational practices. This also explains why in linking forests and nature to human health Staatsbosbeheer in some extent adheres to the ‘ecosystem health for human health’ discourse. The health benefits of forests and nature - not only addressing overweight, obesity and depression, but also providing clean air and clean water - are regarded as an additional value of nature that increases the importance of nature protection as also showed by the ‘*Natuur Sprong*’ (Nature Jump) pilot project which was meant not only to address health problems, particularly obesity in children, but also at the same time to get children closer to nature. Reasonably, it is rather difficult to get ‘nature and health’ on the agenda of Staatsbosbeheer, even more when scientific evidences available now are considered as not enough to convince. Thus, delivering the Staatsbosbeheer’s policy of linking forests and nature to human health issues – even though relevant with a wish of Staatsbosbeheer to broaden its social impacts for Dutch society – is a big challenge.

*We [want to] create awareness with our own employees that we are there not only to protect [nature], but also to create connection between people and nature for our own future, so that we’ll make our own employees more proud of what we do. Because I think we are more meaningful than some people in our own organization think. It’s not only because the ecology that we are meaningful, but also for the other things, for giving space to people and have a contribution to the wellbeing of the Dutch population*

*- Debbie Kamphuis -*

### **6.3. Conclusion**

The fact that both Staatsbosbeheer and the Dutch health sector adhere to the same discourse which is the ‘exposure to nature for human health’ discourse obviously can be considered as an opportunity to develop further the Staatsbosbeheer’s policy of linking forests and nature to human health issues. The discourse has facilitated communication between the two groups of actors different in origin. Moreover the ‘exposure to nature for human health’ discourse with its main storyline that engagement with nature gives positive effects to human health has completely structured on account of that all actors did not specifically mention one source from which they have taken the idea. Staatsbosbeheer has succeeded as an agent actively spreading the discourse, particularly to the insurance company CZ and Ministry of Health, Welfare, and Sport that admitted took the idea from Staatsbosbeheer. Through several newspapers in 2007

Staatsbosbeheer has also put forward the ‘exposure to nature for human health’ discourse to public. However Staatsbosbeheer and the Dutch health sector actors interpreted the meaning of the storylines differently. Accordingly the discourse has solidified into organizational practices in different extent within respective actors.

The meanings given by the health sector that green environment is only one part of the whole physical environment and that particularly forests and nature are considered as places far from cities and not so easy and not so affordable to reach have been a constraint to establish concrete cooperation on the topic between Staatsbosbeheer and the health sector. Taking this into consideration Staatsbosbeheer could consider broadening the cooperation including other actors from other policy sectors who would boost up Staatsbosbeheer’s efforts to give a new meaning to nature for society and also to broaden Staatsbosbeheer’s social impact on health domain. Definitely, this is a big challenge to deal with and it starts from breaking through the different interpretations toward the Staatsbosbeheer’s policy of linking forests and nature to human health issues which now exist internally within Staatsbosbeheer.

## Chapter 7: Conclusions & Recommendations

I will start this chapter by presenting overall conclusions of this report in a way that the answers for the research questions formulated in Chapter 1 will be indicated consecutively. Afterward, I will give my personal reflection on employing Discourse Analysis as theoretical framework for this study. Accordingly some recommendations for further research will be delivered as well. Finally, as contribution for the future development of the Staatsbosbeheer's policy of linking forests and nature to human health issues I will end this chapter by presenting some practical recommendations for Staatsbosbeheer.

### 7.1. Conclusions

#### 7.1.1. *Discourses around the Staatsbosbeheer's policy of linking forests and nature to human health issues*

As discourse is formative of actors (Hajer 1993), therefore how Staatsbosbeheer and the Dutch health sector actors engage with the Staatsbosbeheer's policy of linking forests and nature to human health issues will be considerably determined by the discourse to which they respectively adhere. With this in mind I formulated the three first research questions which then I looked for the answers by firstly identifying discourses on linking forests and nature to human health that have developed worldwide, followed by examining the adherence of respective actors to those discourses. From document analysis two discourses have been drawn namely, 'ecosystem health for human health' discourse and 'exposure to nature for human health' discourse. The first one has a main storyline that healthy ecosystems bring out health benefits for human, while the other one has a main storyline that engagement with nature gives positive effects to human health. Even though Staatsbosbeheer and the Dutch health sector actors are different in origin, they adhere to the same discourse on linking forests and nature to human health which is the 'exposure to nature for human health' discourse. With regard to Staatsbosbeheer's policy of linking forests and nature to human health issues the Staatsbosbeheer's adherence to the 'exposure to nature for human health' discourse corresponded to the context that Staatsbosbeheer as a public organization wanted to make contribution on making better health of Dutch people recently facing health problems such as overweight, obesity and depression. This is also in line with the fact that since Staatsbosbeheer became an administrative body in 1998 it has had a wish to broaden its social impacts and therefore to capitalize on society's needs (Staatsbosbeheer 2001). It was also found that in linking forests and nature to human health Staatsbosbeheer in some extent also adhere to 'ecosystem health for human health' discourse by holding the storyline that puts forward the importance of forests and nature protection on account of that forests and nature are perceived to deliver health functions as well.

### *7.1.2. The influence of the 'exposure to nature for human health' discourse within Staatsbosbeheer and the Dutch health sector*

The second main research question (*which discourse got dominance over others?*) was formulated to find out which discourse has become dominant or hegemonic in discussions on linking forests and nature to human health within Staatsbosbeheer and the Dutch health sector. Considering that Staatsbosbeheer and the Dutch health sector actors are different in origin, at the beginning of this study it seemed to me that they might respectively hold different discourses on linking forests and nature to human health, and as Hajer (1995) postulated that when different discourses are involved in discussions/debates there is a struggle for discursive hegemony. In fact in this study I found that these two different groups of actors much adhere to the same discourse which is the 'exposure to nature for human health' discourse. Accordingly I hardly saw a struggle for discursive hegemony in this study. However despite their adherence to the same discourse, both Staatsbosbeheer and the health sector actors respectively have interpreted the meaning of the detailed storylines differently. Because meanings affect decisions and actions the actors prefer to take (Hajer & Versteeg 2005), therefore it is interesting to examine the influence of the 'exposure to nature for human health' discourse within respective actors: how they have used the discourse to conceptualize the link between human health and forests and nature (discourse structuration), and how it has led to organizational practices (discourse institutionalizations).

#### *How did the 'exposure to nature for human health' get structured within Staatsbosbeheer and the Dutch health sector?*

The sources where respective actors took the idea that people may gain health benefits from their engagement with nature were varied. The insurance company CZ Actiev in Gezondheid and Ministry of Health, Welfare, and Sport pointed to Staatsbosbeheer, whereas the other health sector actors and also Staatsbosbeheer itself mentioned various sources or even from 'the air'. The fact that all actors did not specifically refer to a source from which they adopted the 'exposure to nature for human health' discourse has indicated that this discourse has completely structured in discussions on linking forests and nature to human health.

This study concludes that Staatsbosbeheer has succeeded as an agent actively spreading the 'exposure to nature for human health' discourse particularly to CZ and Ministry of Health, Welfare, and Sport. Staatsbosbeheer presented the discourse especially in a way that forests and nature are promoted as places where people can go there and do physical activities for their health benefits especially with regard to overweight and obesity problems. A radio broadcast in 2007 about the Staatsbosbeheer's 'green exercise on recipe' proposition was mentioned by CZ as the source from which it took the idea of the 'exposure to nature for human health' discourse, whereas the Ministry of Health, Welfare, and Sport - the central actor in the Dutch health sector - mentioned that the idea was taken through Staatsbosbeheer's persuasion to the ministry. In addition, Staatsbosbeheer has put forward the 'exposure to nature for human health' discourse to public when in 2007 several newspapers published a short article exposing that Staatsbosbeheer urged Dutch general practitioners to prescribe exercise in a green environment to their patients as a strategy to combat obesity.

However Staatsbosbeheer and the Dutch health sector actors have used the discourse rather differently to conceptualize the link between human health and forests

and nature, and therefore it has influenced the extent to which the discourse has institutionalized within respective actors. Below I want to highlight first the discourse institutionalization, and afterward I will give my conclusions on how Staatsbosbeheer and the Dutch health sector actors have interpreted the meaning of the storylines of the 'exposure to nature for human health' discourse differently. In so doing, I will also reveal the opportunities and constraints for future development of the Staatsbosbeheer's policy of linking forests and nature to human health issues.

*How did the 'exposure to nature for human health' get institutionalized within Staatsbosbeheer and the Dutch health sector?*

Discourse institutionalization of the 'exposure to nature for human health' discourse has occurred quite significantly within Ministry of Health, Welfare, and Sport since the idea that engagement with nature - doing physical activities while being in nature - can give positive effects to human health has been accommodated into the 'Nature and Health' paragraph within the health and prevention policy document published by the ministry in 2007. Thus, using the argument of Hajer (2006) it can be concluded that the 'exposure to nature for human health' discourse gained dominance since the ministry accepted the rhetorical power of a new discourse forced by Staatsbosbeheer and then the new discourse has been reflected in the institutional practices which is the health and prevention policy document. In CZ, the acceptance of the 'exposure to nature for human health discourse' has led the organization to make contacts with Staatsbosbeheer to follow up the idea of 'green exercise on recipe' to be a concrete cooperation between the two organizations. Although no result has reached so far, yet CZ is still trying to realize the idea into practice within the integrated approach together with other organizations. For municipal health services, the meaning they gave to forests and nature as places far from cities has led them to take activities focusing more on green environment in cities in cooperation with some parties in the cities. The discourse institutionalization is also evidential in NIGZ and RIVM. An EU project named Healthy Green in the Workspace project and the Health and Green Project conducted together with Staatsbosbeheer were mentioned by NIGZ to show how the ideas that engagement with nature can give positive effects to human health has been reflected in the institutional practices. Concerning the lack of high quality clinical evidences of the benefits of green environment to people, the discourse institutionalization of the 'exposure to nature for human health' discourse has occurred in a lesser extent in RIVM.

*7.1.3. Opportunities and constrains for future development of the Staatsbosbeheer's policy of linking forests and nature to human health issues*

According to Hajer and Versteeg (2005) when actors share a specific set of storylines, still they might interpret the meaning of these storylines rather differently. Consequently the given meaning affects the decisions and actions the actors prefer to take (Ibid.). It was revealed in this study that the meaning of the second storyline of the 'exposure to nature for human health' discourse which is that people may gain health benefits from their engagement with nature, either by viewing nature or being in the presence of nature, has been interpreted differently by Staatsbosbeheer and the Dutch health sector actors. Based on the difference interpretations some opportunitites and constrains for future development of the Staatsbosbeheer's policy of linking forests and nature to human health issues can be drawn.

For Staatsbosbeheer, concerning the organization's wish to broaden its social impact for Dutch society, thus, forests and nature under its management are promoted as the right places from which people with the health problems can benefit. While for the health sector actors, green environment, including forests and nature, is perceived as a part of the whole physical environment which determines human health. Forests and nature are mainly seen as physical environment that has qualities to reduce stresses and to stimulate people to do physical activities which benefit their health. However, the health sector actors see that these qualities also present within green areas in cities. Subsequently, the given meanings affect how the respective actors differently approach the storyline on how the health benefits of forests and nature can be promoted. For the health sector actors they see 'bringing nature into cities' by improving or even creating green spaces as another option to provide physical environment that has qualities to reduce stresses and to stimulate people to do physical activities more. Hence, the health sector considers that besides collaborating with nature organizations it is also needed to collaborate with other policy sectors, for example to improve infrastructure connecting cities with forests and nature to make them reachable by bike, or to take into consideration health benefits of nature in urban planning in the case that green spaces in cities are more favored. Whereas for Staatsbosbeheer, because its policy of linking forests and nature to human health issues basically promotes the potential health benefits of forests and nature under its management, then the organization seeks collaboration with other actors that can convince people to come to gain health benefits in forests and nature of Staatsbosbeheer – an organization which is principally associated with woodland (Staatsbosbeheer 2004). On the other hand collaboration with health sector can also be seen as an effort of Staatsbosbeheer to capitalize on society's health needs since the status of Staatsbosbeheer as an independent authority (*zelfstandig bestuursorgaan*; in Dutch) gives more opportunities for Staatsbosbeheer to actively offer products and services that can be (co)financed by provincial authorities, municipal activities, the commercial sector or the general public (Ibid).

As language enables and limits the range of practices and interactions in which actors can engage (Feindt & Oels 2005), thus it can be understood that Staatsbosbeheer prioritizes to have collaboration with health sector actors, while the health sector actors themselves are more open to have collaboration with others - not only with nature organizations - who can promote health benefits of nature in a way that is as good as possible for people. If forests and nature are perceived as places which are far, not easy to reach, and costly, then cooperation with for example local organizations promoting daily active living or urban planning department or public work department to utilize or to improve or even to create green spaces in cities are more favored, especially when considering that people who have health problems like overweight and obesity are those who live in low social income. The openness of the health sector to cooperate with other policy sectors is also corresponded with the fact that the health policy of the Netherlands recently has put forward integrated policy approach which stresses the important role of other sectors in promoting the health of Dutch people (Ministry of Health, Welfare, and Sport 2007).

Breaking a 'structured way of seeing' is a challenge for a new discourse to be able to solidify into organizational practices (Hajer 2005). This was interestingly showed in Staatsbosbeheer. Although the organization actively promoted that engagement with nature can give positive effects to human health (the main storyline of the 'exposure to nature for human health' discourse), yet the vision of the Staatsbosbeheer's policy of

linking forests and nature to human health issues has not been clearly formulated in a way that it can be made operational particularly on the field level of Staatsbosbeheer. Seeing Staatsbosbeheer as a nature conservation organization has been structured in view of the fact that most of the life time of the organization is spent on conservation business. In the light of this 'structured way of seeing' it can be understood that on linking forests and nature to human health Staatsbosbeheer in some extent also holds some storylines of the 'ecosystem health for human health' discourse that puts forward the importance of nature protection. In addition, the different perceptions between people on the field level of Staatsbosbeheer and those on the national level (headquarter office), or even among people in the headquarter office of Staatsbosbeheer was also another cause of the situation; just as Hajer (1993) said that discourse is formative of actors, while discourse formation takes place on many different levels and on many different localities. Likewise, 'a structured way of seeing' with regard to identity has limited opportunity for Staatsbosbeheer to establish cooperation with others particularly with insurance companies. Staatsbosbeheer considers that it is not easy to bridge the 'gap' between Staatsbosbeheer which is a public organization working for public goals and health-insurance companies which are private organizations working for private goals. Such 'a structured way of seeing' is also present within RIVM. The exposure to nature for human health' discourse has limitedly institutionalized within RIVM because its nature as an organization which considers the randomized controlled trial research as the best available knowledge base demands more high quality clinical evidences of the health benefits of green environment.

At any rate, this study has showed that the 'exposure to nature for human health' with its main storyline that engagement with nature gives positive effects to human health has facilitated communication between actors with different backgrounds. The 'communicative miracle' (Hajer 1995) has happened on linking forests and nature to human health discussions. Moreover the storyline is quite attractive thus it has encouraged cooperation between the two different groups of actors, like CZ that got attracted to have a concrete cooperation with Staatsbosbeheer on the 'green exercise on recipe' and NIGZ that works together with Staatsbosbeheer in the Health and Green project. As explained earlier, the 'exposure to nature for human health' discourse has completely structured within the discussion on linking forests and nature to human health, and therefore it can be expected that a broader cooperation including also other policy sectors can also be established.

Finally, understanding the adherence of both Staatsbosbeheer and the Dutch health sector to the 'exposure to nature for human health' discourse, while at the same time also taking account of how each actor has interpreted the storylines of the discourse will be beneficial for the refinement of the Staatsbosbeheer's policy of linking forests and nature to human health issues. Considering that storyline functions in facilitating communication between actors with different backgrounds, it is also necessary to encourage discursive interaction for delivering process of constructing meaning of the Staatsbosbeheer's policy of linking forests and nature to human health that can be widely accepted (discourse structuration) and reflected in organizational practices (discourse institutionalization).

## 7.2. Personal reflection on employing discourse analysis

Knowing that Staatsbosbeheer - the Dutch State Forestry Service - has actively tried to address human health issues is one thing that has interested me to do this study, but employing discourse analysis as theoretical framework for this study is one thing that has made this study not only interesting but also challenging for me, especially in the first weeks of this study. Hajer (2006) clearly stated that discourses consist of structures embedded in language. That gave me a clue that I should do document analysis and interviews to collect discourses on linking forests and nature to human health. However at the time I just started this study it was still abstract for me: "how can I trace discourses? Will I find a name of a discourse complete with its set of storylines in the text of articles I analyze? Or perhaps my interviewees will tell me that they use a particular discourse, and subsequently they will describe the storyline(s)". It looks silly, doesn't it? But that was what happened to me as a new analyst in discourse analysis. Thankfully, consultation with both earlier research employing discourse analysis and my academic supervisor have helped me to give a clearer understanding on how I should apply discourse analysis approach: issues of classification and interpretation are at the core of discourse analysis! (Hajer & Laws 2006 cited in Hajer & Uitmark 2007). Therefore I left out coding which I had thought to be a means to trace the implicit discourses. Doing coding with strict predetermined categories implies that I treat the stories that people tell as the 'raw' data that need to be precisely coded before they can be interpreted further, but actually "it is the stories themselves that deserve interpretation, not the 'data' that can be inferred by 'coding' the stories" (Hajer 2002: 17). Using discourse analysis which takes the view of social constructivism demands one as an analyst to take into consideration that discourses can have multiple functions or meanings (Wood & Kroger 2000), and this has encouraged me in drawing discourses on linking forests and nature to human health.

Since then I see the issue of objectivity in this research differently. For example in formulating my question list I was once wondering whether my interviewees will give objective answers that they really give me the view of organizations they represented, but then I found that in employing discourse analysis, after all, it is about how I "make sense of the regularities and variations in what is being said (or written) and try to understand the social backgrounds and the social effects of specific modes of talking" (Hajer 1995: 44). Accordingly I understood that in discourse analysis research representativeness is not strictly limited to the number of documents or interviewees, but more to how the differences in policy domain being studied can be adequately represented by the selected number of documents and interviewees. Obviously it can be expected that by getting a large number of documents and interviewees it would be helpful to grasp a better understanding, but then it will be related also to practical matters like financial and time limitations of the research. For me during my 6 months period of this study I could manage to do 'only' 13 interviews and analyzing 25 articles. If I had taken a larger number of interviewees and documents the results of this research would have been different. Another limitation of mine in doing this study is the fact that I cannot speak Dutch. If I were able to master the language I would have included more documents written in Dutch; accordingly the results of this study would have been different. However, I feel grateful that I could find some information written in Dutch online on the internet, thus in some extent I could manage to translate it using an online translator tool. For this I think I should thank to google translator. Related to my

limitations I mentioned above, some recommendations for further research will be presented in the next paragraphs.

### **7.3. Recommendations for further research**

Based on my empirical and theoretical findings I would like to give recommendations for further research. The following recommendations are given with regard to my limitation in conducting this study, namely language and time, which then determined methodology of data collection (besides document analysis I also did interviews; all in English) and the number of interviews.

Considering that Hajer's social-interactive discourse theory conceptualized human interaction as an exchange of arguments, of contradictory suggestion on how one is to make sense of reality, and therefore persons are constituted by discursive practices (Hajer 1995), thus, in order to gain more in-depth view about this topic of Staatsbosbeheer's policy of linking forests and nature to human health issues it is recommended to include also relevant meetings on the nature and health topic which involve different actors including Staatsbosbeheer. It could be done by analyzing the meeting minutes, or even better - if it is possible - by directly attending the meetings. This provides rich materials to apply argumentative discourse analysis (ADA) which emphasizes argumentative turns by taking an axiom that in uttering statements people react to one another and thus produce meaning (Hajer 2006). By so doing, the influence of a discourse on linking forests and nature to human health will be more observable.

It would be also beneficial to have interviews with some other actors who would have direct contribution for development of Staatsbosbeheer's policy of linking forests and nature to human health issues. In every interview I conducted for this study, there was one snowballing question from which at the end I got some names (persons or organizations) suggested by my interviewees to be the next prospective interviewees, namely Staatsbosbeheer's people on the field level such as forest rangers, Netherlands General Practitioner Association (LHV), GGD Nederland, managers of various movement-for-health projects (e.g. *Beweegen op Recept* in The Hague, *Big Move* in Amsterdam, and *Van Klacht Naar Kracht* in Rotterdam), The Netherlands Institute for Sport and Physical Activity (NISB), The Netherlands walking organization (KNBLO-NL), Netherlands Environmental Assessment Agency (*Plan bureau voor the leefomgeving*; in Dutch), and urban planning departments. However during the more or less six-month period of this thesis work, I could not manage to have more interviews than the 13 interviews that I already had. By including those prospective interviewees, the further research would gain more insight on how those actors perceive the Staatsbosbeheer's policy of linking forests and nature to human health issues, and hence more opportunities and constrains for developing the policy could be revealed.

### **7.4. Practical recommendations for Staatsbosbeheer**

Based on all work I did in this research including the interviews with all actors, I would like also to give some following practical recommendations for Staatsbosbeheer as contribution for the future development of the policy of linking forests and nature to human health issues:

1. Encourage discussions within Staatsbosbeheer in order to formulate clear vision for the policy of linking forests and nature to human health issues, and even further to make the vision operational on the field level of Staatsbosbeheer.
2. Keep supporting research exploring health benefits of forests and nature, while at the same time collecting knowledge worldwide and publicly widespread it using any media, e.g. newspaper, radio, television, and internet.
3. Make an inventory of forests and nature areas of Staatsbosbeheer which can be made use of by people living in nearby cities for the benefits of the people's health. To be informative, the results can be put on a map containing also information about what health programs are offered in every site of Staatsbosbeheer as well as the practical information about every site, e.g. how near it is (instead of how far it is), how to get there, and what is so special about it.
4. Think about establishing a project team to accelerate the development of the policy
5. Develop concrete cooperation with relevant parties. Staatsbosbeheer can use the research findings and the map resulted from the inventory action to convince them, e.g. public work department for making better infrastructure connecting cities to forests and nature areas of Staatsbosbeheer, urban planning department for designing the best routes to reach those areas by bicycle, general practitioners for prescribing 'green recipe', insurance companies for covering the cost of the recipe, and any organizations and professionals promoting physical exercises for health.

Lastly, the fact that the Ministry of Health, Welfare, and Sport now gives a priority to the integrated health policy approach with its principle of parallelism interest and that the law has put forward the important role of municipalities in carrying out their local health policy responsibilities and in taking health into consideration in domains other than health should be considered by Staatsbosbeheer as a big opportunity that has to be seized to develop further its policy of linking forests and nature to human health issues.

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## Annexes

### Annex 1. The list of interviews within Staatsbosbeheer and the Dutch health sector

No	Name	Job	Organization	Date of interview
1.	Angelique van Helvort	Press Officer	Staatsbosbeheer	October 21, 2008
2.	Debbie Kamphuis	Director Manager of Head Quarter Office	Staatsbosbeheer	October 22, 2008
3.	Mascha Brouwer	Team Leader of six themes	Staatsbosbeheer	October 24, 2008
4.	John van den Berg	Senior Advisor on Nature and Health	Staatsbosbeheer	December 1, 2008
5.	Eddy L. Engelsman	Ambassador for Diet, Physical Activity and Health	Ministry of Health, Welfare & Sport	November 20, 2008
6.	Reind van Doorn	Head of the Environment & Hygiene Division	GGD Rotterdam-Rijnmond	November 12, 2008
7.	Fred Woudenberg	Head of the Living Environment Division	GGD Amsterdam	November 14, 2008
8.	Ans Engelsman	Director	GGD Gooi & Vechtstreek	November 17, 2008
9.	Marianne van der Horst	Head of the Health & Care Department	GG&GD Utrecht	November 20, 2008
10.	Tjisse Brookman	Product Manager	De Friesland Zorgverzekeraar	November 11, 2008
	Syb Tilstra	Advisor for paramedical care	De Friesland Zorgverzekeraar	the same time
11.	dr. Janneke Kaper	Program Manager of Prevention	CZ Actief in Gezondheid	November 18, 2008
12.	Inge D. Verdonk	Senior Project Manager	NIGZ	November 11, 2008
13.	Lea den Broeder	Account management advisor	RIVM	November 24, 2008

## Annex 2. Question list for Staatsbosbeheer

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### You and your job

1. What is your present job here and what are the main responsibilities of your present job?
2. How long have you been working for Staatsbosbeheer?
3. Before the present job you have now, what other jobs/posts have you held in Staatsbosbeheer?

### Linking forests and nature to human health issue

4. Regarding the Staatsbosbeheer's policy of linking forests and nature to human health, do you know about it?
  - Could you please explain what it is about?
    - *What **kind of health benefits** are possible to be gained from forests and nature?*
    - *How can these benefits be gained (**through what activities**)?*
    - ***Who will be most benefited** from the health effects of forests and nature?*
    - ***How can these health benefits be promoted?***
5. Please tell me about how Staatsbosbeheer developed this policy
  - Could you mention important events/moments in this process?
  - How formal is this policy now? (To your knowledge) is there any formal documents issued by Staatsbosbeheer?
6. I wonder if the idea to develop this policy was really inspired by the similar idea developed earlier in British just like I read in some Dutch newspapers. I bring the newspapers here with me. Can you tell me about this?
7. Where do you think the push for this policy in Staatsbosbeheer came from?
  - Was it from outside Staatsbosbeheer?
  - Was it from inside within Staatsbosbeheer?
8. What factors do you think have contributed to the move towards this policy in Staatsbosbeheer? [i.e. structural rather than individual].
9. Given the fact that Staatsbosbeheer – an organization principally is associated with woodland –has actively promoted the health benefits of forests and nature; could you tell me about your impressions of this fact?
10. How important do you think this policy compare to (the) other policies of Staatsbosbeheer?
11. Do you think there is a clear vision of what this policy is about?
12. What are the main changes this policy is trying to achieve? (by when?)
13. Whom are they mainly directed at?
  - Did Staatsbosbeheer try to communicate its idea with health sectors?
  - What actually are you trying to communicate with them?
  - What were discussed with the health sector?
  - How nature's role in human health was addressed by health sector?
14. How is Staatsbosbeheer going about achieving those changes?
  - How effective do you think they will be?
  - Are there any other possibilities?
15. What do you want to contribute?
  - Why did you decide to do it in this way?
16. Could you tell me what this policy has achieved so far?
  - What are obstacles have come up?
  - What are opportunities have come up?

### Good stories

17. What are the 2-3 most important issues in forestry today?
18. What are the 2-3 most important changes in forestry while you have been working for Staatsbosbeheer?

### Snowballing

19. If I have more time, who else do you think I should talk to?

### Annex 3. Question list for health-sector actors

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#### You and your job

1. What is your present job here and what are the main responsibilities of your present job?
2. How long have you been working for ..... ? (MinVWS or GGDs or health-care insurer companies or NIGZ or RIVM)
3. What other posts have you held here during that time?

#### Relation between Forests/Nature and Human Health

4. To your knowledge what are important-human-health issues today (the recent years) in The Netherlands?  
- *When did exactly those human health issues come about?*
5. What has your organization done to address those issues?
6. Do you think forests and nature have something to offer to address those human health issues?  
- *How can forests and nature address those human health issues?*
7. Does your organization have the same way of seeing the relation between nature and health as you have?  
- *Does your organization have policy, programs or activities promoting health benefits of forests & nature?*
8. Do you see that your organization's way of seeing the relation between nature and health in the present is different with that in the past?
9. If yes, what factors do you think caused your organization changed its way of seeing the relation between nature & health? *-if Staatsbosbeheer is mentioned in the answer then continue directly to question #12 & soon.*
10. Where did your organization take that idea from? Was it from inside or outside your organization? What were the reasons of adopting that idea?
11. What are the advantages of adopting this idea?

#### The Staatsbosbeheer and human health issues

12. What do you know about Staatsbosbeheer? Do you know that Staatsbosbeheer also addresses human health issues? When did you know it for the first time?
13. What is your 1<sup>st</sup> impression when you knew that Staatsbosbeheer addresses human health issues, for example promoting exercise in forests and nature to combat obesity?
14. At the 1<sup>st</sup> time you know it, did you see it as a new idea or concept that you had not known before?  
- *What you already knew about link(s) between forests and nature and human health?*
15. Has Staatsbosbeheer ever tried to communicate its ideas on this topic (the health benefits of forest and nature) directly with your organization? In what ways?
16. (only if the answer for question 14 is yes) Does your organization adopt SBB's idea? How this new idea or concept has been adopted by ...? (MinVWS or GGDs or health-care insurer companies or NIGZ or RIVM)  
- *Through what process(es)? e.g. meetings, workshops, etc.*  
- *Do you think this new idea is widely accepted/ adopted in your organization? Why do you (not) think so?*
17. Has the Staatsbosbeheer's idea of linking forests and nature to human health influenced you, your job, and your organization? How it has influenced you, your job, and your organization?
18. What are the main changes in your organization, if there is any, occurred after Staatsbosbeheer came up with its idea of linking forests and nature to human health?
19. Do you think the Staatsbosbeheer's idea of linking forests and nature to human health (will) support(s) any policy of your organization? In what ways?
20. How can Staatsbosbeheer be as a partner to achieve goal(s) of your organization?
21. How important do you think to develop or to keep working on the ideas of linking forests and nature to human health issues? Do you think it can be developed as part of your organization's programs?
22. How are you going to do so?
23. Why did you decide to do it in this way?

**Good stories**

24. What are the 2-3 most important changes in human health policy while you have been working for ...?  
(MinVWS or GGDs or health-care insurer companies or NIGZ or RIVM)

**Snowballing**

25. If I have more time, who else do you think I should talk to?

**deStentor**

## Stuur te dikke Nederlander bos in

door Dylan de Gruijl. dinsdag 09 oktober 2007 | 10:16 | Laatste bijgewerkt op: woensdag 10 oktober 2007 | 11:54

**DEN HAAG - Staatsbosbeheer wil dat huisartsen patiënten met overgewicht het bos in sturen. Onderzoek uit Engeland laat zien dat die groep bewegen in de natuur veel beter volhoudt dan zweten in de sportschool.**

Komt iemand met overgewicht bij de dokter, wordt die het bos ingestuurd. Een idioot idee? Helemaal niet, vindt de Nederlandse Obesitas Vereniging. "Als zo'n wandeling maar haalbaar is", zegt bureaucoördinator Susanne Kruizinga. "Een route van één tot vijf kilometer met voldoende rustpunten." Het plan om dike Nederlanders in het bos van hun zwaarlijvigheid te verlossen, werd gisteren gelanceerd door Staatsbosbeheer. Als het aan de natuurorganisatie ligt, stimuleren huisartsen mensen met overgewicht om in de natuur te wandelen of te mountainbiken. Vrijwilligers en zelfs boswachters zouden obesitaspatiënten kunnen begeleiden bij hun eerste stappen in de natuur.

Niet alleen obesitaspatiënten zijn enthousiast, ook de Landelijke Huisartsen Vereniging (LHV) wil er mee aan de slag. "Ideeën die het meest voor de hand liggen zijn vaak de beste", aldus woordvoerder Michel Slaager van de LHV. "Iemand van zestig jaar die nooit van zijn leven heeft gesport, krijg je niet naar de sportschool, maar wel de natuur in." Het idee komt overwaaien uit Groot-Brittannië. In het Noord-Engelse Newcastle is gedurende drie maanden een proef gedaan waarbij mensen met overgewicht in de natuur leerden bewegen. Dat varieerde van chai chi tot wandelen. Een andere groep werd door hun dokter naar de sportschool gestuurd.

Het verschil was overduidelijk. Van de groep die in de beslotenheid en de frisse lucht van het bos sportte, hield negentig procent het na drie maanden nog steeds vol. Een ongekend hoge score vergeleken met de groep die in de sportschool aan de slag ging.

Van hen bleef na de proef slechts dertig procent over. "Wij zouden daarom ook graag groen bewegen op recept willen invoeren", zegt persvoorlichter Angelique van Helvoort van Staatsbosbeheer. "Dokters schrijven wel voor dat mensen moeten bewegen, maar niet dat ze dat in het bos kunnen doen. Obesitas is ook in Nederland een groeiend probleem en wij hebben ruimte genoeg." De natuurorganisatie bezit bijna 250.000 hectare natuurgebied. Dat is zes procent van het Nederlandse grondgebied oftewel een oppervlakte vergelijkbaar met de provincie Utrecht. Van Helvoort: "Het wild heeft geen last van de extra bezoekers. We werken in onze gebieden met zones en de meeste bezoekers blijven in de buurt van de ingang."

<http://www.destentor.nl/algemeen/gezondenwel/1988997/Stuur-te-dikke-Nederlander-bos-in.ece>

## Send too-fat people to the forest

Translated by Anne Voorbergen

**DEN HAAG - Staatsbosbeheer wants doctors to send people with overweight to the forest. Research from England shows that people that exercise in the forest endure longer than people that got send to the sport centre.**

Somebody with overweight who is seeing the doctor, is send to the forest. A stupid idea? Not at all, finds the Dutch Obesitas Society. "If such a trip is just feasible", says the coordinator Susanne Kruizinga. "A trip of 1-5 km with enough resting points." The plan to help fat Dutch people by sending them into the forest, has been launched yesterday by Staatsbosbeheer. According Staatsbosbeheer, doctors should stimulate people with overweight to walk in nature or go mountain biking. Volunteers or even foresters should accompany them by their first steps in nature.

Not just obesitas patients are enthusiastic, also the National Society of doctors (LHV) wants to work with the concept. "Ideas that speak for itself are most times the best ones" according spokesman Michel Slaager of the LHV. "Somebody of 60 years old who never have practised any sports, you can't get him or her into the sport centre, but you do get them into nature areas." The idea comes from Great Britain. In Newcastle a test has been carried out

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<sup>8</sup> All articles were taken from respective newspapers' websites (can be accessed through URLs provided here).

Translations are only served for the two first articles which are cited in this thesis report.

where people with overweight learnt how to exercise in nature areas for three months. It varied from practising Chai chi to hiking. Another group of people got send to the sport centre by their doctor.

The difference was really clear. Ninety percent of the people that got send to the forest still went on going after three months. An obvious high score compared to the group that was send to the sport centre.

Only 30% of them kept going to the sport centre after three months. "We would like to suggest 'green exercise' as a recipe for overweight", says spokesman Angelique van Helvoort of Staatsbosbeheer. "Doctors do prescribe that people have to exercise, but they don't mention that they can do this in the forest. Obesity is a growing problem in the Netherlands and we have space enough". The nature organization possesses almost 250.000 ha nature area. That is 6% of Dutch territory or an area comparable with the province of Utrecht. Van Helvoort: "Game is not charged by more visitors. We work in our area with so called zones and most of the visitors stay close to the entrance"

## DePers.nl

### Staatsbosbeheer: stuur dikkerds natuur in



Gepubliceerd: maandag 8 oktober 2007 10:57

Update: maandag 8 oktober 2007 11:28

**Staatsbosbeheer wil mensen met overgewicht op doktersrecept de natuur in sturen om ze meer te laten bewegen. Uit Engels onderzoek blijkt dat mensen een groene omgeving beter waarderen dan een sportzaal en inspanningen daarom langer volhouden.**

Het Engelse Staatsbosbeheer hield in 2005 een pilot waarin tientallen te dikke mensen dertien weken aan het wandelen gingen over bospaden. De deelnemers vielen af, kregen een betere conditie en hadden minder last van bijvoorbeeld gewrichtspijn. Van de mensen die naar de sportschool gingen was na dertien weken nog dertig procent over. Van de personen die de natuur in waren getrokken hield negentig procent vol.

In Engeland schrijven dokters al een aantal jaren voorschriften uit voor het bewegen in de natuur. Nederlandse artsen doen dat zelden. Uit onderzoek van het Nederlands Instituut voor Onderzoek en de Gezondheidszorg, in opdracht van Staatsbosbeheer, blijkt dat artsen in 26 procent van de consulten het advies gaven om te bewegen. De natuur noemden ze daarbij niet.

Staatsbosbeheer wil dat het zogenaamde 'groen bewegen op recept' in Nederland wordt ingevoerd. Het Staatsbosbeheer ziet graag dat mensen erop uit trekken in de 'mooie' natuurgebieden.

De Raad voor Ruimtelijk, Milieu- en Natuuronderzoek overhandigt maandag het advies 'Natuur en Gezondheid' aan de ministers Gerda Verburg (CDA) van Natuur en Ab Klink (CDA) van Volksgezondheid. In het advies wordt opgeroepen om de natuur in te zetten voor de gezondheid.

<http://www.depers.nl/binnenland/110176/Dikke-mensen-bos-in-om-te-bewegen.html>

### Staatsbosbeheer: send fat people to nature

Translated by Anne Voorbergen

**Staatsbosbeheer wants people with overweight to go into nature to get them more exercised, on doctor's recipe. English research revealed that people appreciate a green environment better than a sport centre and can endure this longer.**

The English Forest State Service did a pilot study where several fat people had to walk into forests for 13 weeks. The participants lost weight, gained a better endurance and got less complaints about for instance joint pains. After 13 weeks 30% of the people that went to the sport centre were left. 90% of the people that went into the forest 'survived'.

In England doctors suggest exercising in nature already for a couple of years. Dutch doctors do this seldom. From research of the 'Dutch institute for research on health issues', for Staatsbosbeheer, it is revealed that 26% of doctors suggest exercise. Nature was not mentioned.

Staatsbosbeheer wants that so called 'green exercise on recipe' gets introduced in the Netherlands. Staatsbosbeheer wants to see people going into beautiful nature areas.

The council for spatial, environment and nature research wants to hand over the advice 'Nature and Health' to the minister Verburg (CDA) of Nature and Ab Klink (CDA) of Health on Monday. In this advice report, going into nature is stimulated.

## **Te dikke mensen moeten het bos in**

Door BART VAN ELDERT

**ROTTERDAM - Mensen met extreem overgewicht moeten op doktersrecept de natuur in. Dat zegt Staatsbosbeheer. De organisatie pleit voor een 'groen recept'. Bewegen in de natuur is daarmee het nieuwste wapen in de strijd tegen obesitas.**

Het voorstel komt naar aanleiding van een succesvol project in het Engelse Newcastle. De deelnemers boekten gezondheidswinst. "De mensen kregen geen pillen maar natuur. Bloeddruk, cholesterol en gewicht gingen omlaag", zegt gezondheidsonderzoeker Hilary Snowdon van Northumbria University.

Het Nederlands Huisartsen Genootschap (NHG) heeft interesse, aldus professor Jaap van Binsbergen. Hij is namens het NHG ook betrokken bij de uitvoering van het overheidsplan tegen extreem overgewicht. Natuur inzetten voor volksgezondheid is ook de kern van het vandaag verschenen advies 'Natuur en Gezondheid' van de Raad voor Ruimtelijk, Milieu- en Natuuronderzoek.

<http://www.ad.nl/diagnose/article1722348.ece>



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### **Staatsbosbeheer: stuur dikkerds natuur in**

(Novum) - Staatsbosbeheer wil mensen met overgewicht op doktersrecept de natuur in sturen om ze meer te laten bewegen. Uit Engels onderzoek blijkt dat mensen een groene omgeving beter waarderen dan een sportzaal en inspanningen daarom langer volhouden.

Het Engelse Staatsbosbeheer hield in 2005 een pilot waarin tientallen te dikke mensen dertien weken aan het wandelen gingen over bospaden. De deelnemers vielen af, kregen een betere conditie en hadden minder last van bijvoorbeeld gewrichtspijn. Van de mensen die naar de sportschool gingen was na dertien weken nog dertig procent over. Van de personen die de natuur in waren getrokken hield negentig procent vol. In Engeland schrijven dokters al een aantal jaren voorschriften uit voor het bewegen in de natuur. Nederlandse artsen doen dat zelden. Uit onderzoek van het Nederlands Instituut voor Onderzoek en de Gezondheidszorg, in opdracht van Staatsbosbeheer, blijkt dat artsen in 26 procent van de consulten het advies gaven om te bewegen. De natuur noemden ze daarbij niet.

Staatsbosbeheer wil dat het zogenaamde 'groen bewegen op recept' in Nederland wordt ingevoerd. Het Staatsbosbeheer ziet graag dat mensen erop uit trekken in de 'mooie' natuurgebieden. De Raad voor Ruimtelijk, Milieu- en Natuuronderzoek overhandigt maandag het advies 'Natuur en Gezondheid' aan de ministers Gerda Verburg (CDA) van Natuur en Ab Klink (CDA) van Volksgezondheid. In het advies wordt opgeroepen om de natuur in te zetten voor de gezondheid.

<http://www.trouw.nl/nieuws/nederland/article1486871.ece>

## 'Laat te dikke Nederlanders bewegen in het bos'

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door Dylan de Gruij

**Staatsbosbeheer wil dat huisartsen patiënten met overgewicht het bos in sturen. Onderzoek uit Engeland laat zien dat die groep bewegen in de natuur veel beter volhoudt dan zweten in de sportschool.**

DEN HAAG - Komt iemand met overgewicht bij de dokter, wordt die het bos ingestuurd. Een raar idee? Helemaal niet, vindt de Nederlandse Obesitas Vereniging. „Als zo'n wandeling maar haalbaar is", zegt bureaucoördinator Susanne Kruizinga. „Een route van één tot vijf kilometer met voldoende rustpunten."

Het plan om dikke Nederlanders in het bos van hun zwaarlijvigheid te verlossen, werd gisteren gelanceerd door Staatsbosbeheer. Als het aan de natuurorganisatie ligt, stimuleren huisartsen mensen met overgewicht om in de natuur te wandelen of te mountainbiken. Vrijwilligers en zelfs boswachters zouden obesitaspatiënten kunnen begeleiden bij hun eerste stappen in de natuur. Niet alleen obesitaspatiënten zijn enthousiast, ook de Landelijke Huisartsen Vereniging (LHV) wil er mee aan de slag. „Ideeën die het meest voor de hand liggen zijn vaak de beste", aldus woordvoerder Michel Slaager van de LHV. „Iemand van zestig jaar die nooit van zijn leven heft gesport, krijg je niet naar de sportschool, maar wel de natuur in."

Het idee komt overwaaien uit Groot-Brittannië. In het Noord-Engelse Newcastle is gedurende drie maanden een proef gedaan waarbij mensen met overgewicht in de natuur leerden bewegen. Dat varieerde van chai chi tot wandelen. Een andere groep werd door hun dokter naar de sportschool gestuurd.

Het verschil was overduidelijk. Van de groep die in de beslotenheid en de frisse lucht van het bos sportte, hield negentig procent het na drie maanden nog steeds vol. Een ongekend hoge score vergeleken met de groep die in de sportschool aan de slag ging. Van hen bleef na de proef slechts dertig procent over.

### Groen bewegen

„Wij zouden daarom ook graag groen bewegen op recept willen invoeren", zegt persvoorlichter Angelique van Helvoort van Staatsbosbeheer. „Dokters schrijven wel voor dat mensen moeten bewegen, maar niet dat ze dat in het bos kunnen doen. Obesitas is ook in Nederland een groeiend probleem en wij hebben ruimte genoeg."

De natuurorganisatie bezit bijna 250.000 hectare natuurgebied. Dat is zes procent van het Nederlandse grondgebied oftewel een oppervlakte vergelijkbaar met de provincie Utrecht. Van Helvoort: „Het wild heeft geen last van de extra bezoekers. We werken in onze gebieden met zones en de meeste bezoekers blijven in de buurt van de ingang."

Het ideaal van Staatsbosbeheer ziet er als volgt uit: een patiënt met overgewicht vraagt de huisarts om hulp, die adviseert om in het bos te bewegen en de zorgverzekeraar vergoedt de begeleiding. Maar zo ver is het nog niet. „Ik kan me voorstellen dat zorgverzekeraars wel eerst willen weten wat daar precies gebeurt en of dat het beoogde resultaat heeft", zegt woordvoerder Maaike Kranendijk van Zorgverzekeraars Nederland.

<http://www.nd.nl/artikelen/2007/oktober/08/-laat-te-dikke-nederlanders-bewegen-in-het-bos->