Nature conservation and cultural diversity: the relation between religion, images of the human-nature relationship and nature conservation efforts

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Master thesis

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Preface

I wrote this thesis for my Master Forest and Nature Conservation. Previous to this study I followed the lectures by Matthijs Schouten on cultural diversity and perspectives of nature, which inspired me to do this research.

I really enjoyed doing this research, but it was also the most challenging exercise of my study. I learned a lot about the nature conservation in Bhutan, Turkey and Israel from the interviews and nature policy documents. I even had the opportunity to go to Israel for two weeks and perform the interviews there face to face. At first, the interviewees in Israel were sceptical of a connection between religion and nature conservation. They raised the question: "how could there possibly be a link between religion and nature conservation?" After the data collection I was not sure if I could continue my research, as it seemed that there was no connection possible. After a discussion with my thesis supervisors (Marjanke Hoogstra-Klein and Matthijs Schouten) I learned that the interview results provided a new insight in this field of research.

I want to thank several people for their help with this research; My first supervisor, Marjanke Hoogstra-Klein for her continuous support during the research. Our regular meetings were a great help when I was stuck and motivated me to keep going. My second supervisor, Matthijs Schouten for inspiring me during the research. I really enjoyed our discussions at your home office in Utrecht. Cathrien de Pater for helping me to better understand the topic and learning from your many years of experience in this field. My parents, for their support and final check of my research. The interviewees, for their time and expertise that they were willing to share.

I have included for a picture of Bhutan, Turkey and Israel on the next page, to visualise how these countries look like.

Duco Bijleveld
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Tigers nest (also known as Paro Takstsang) is a well-known Buddhist monastery in Bhutan located on a steep cliff (Johnston, 2017). The monastery is only accessible by foot. In the background are the forested hills visible.

Kure Mountains National Park is one of Turkey's forest hotspots (Lise, 2017). In the background is a rural village visible.

The Hula Valley is the first national reserve in Israel (Kahana, 2013). The wetlands are an important location for migratory birds. In the background is Mount Herschel visible.

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Summary

The public awareness on the environmental problems increased since the 1960's-1970's, which made scientists question how the human-nature relationship could have become distorted. Since then, literature has expanded on the human-nature relationship, focussing on how humanity positions itself regarding the natural environment. The various positions that humans take, are classified as 'images of the human-nature relationship' (from now on the abbreviation IHNR is used). Studies have shown that the IHNR is strongly determined by the religious context. However, knowledge is lacking on how religiously inspired IHNR relate to nature conservation practices. The results from this research create a better understanding of how the religiously inspired IHNR relate to nature conservation efforts. Researchers have studied in the Netherlands the relationship between IHNR and nature policy to explain differences in recreational behaviour and landscape preferences. However, for non-western countries there is limited or no literature available. This research focusses on the following countries as case-studies Bhutan (for Buddhism), Turkey (for Islam) and Israel (for Judaism). The objective of this research is "*to explore how religion is connected to IHNR and nature policy in Bhutan, Turkey and Israel, with the aim of examining a possible correlation between religiously inspired IHNR and nature conservation efforts.*"

The theoretical framework gives an overview of the theoretical background of the connection between religion, IHNR and nature conservation efforts. The IHNR is described following the classification by Zweers (1989; 1995) in four classifications, structured from anthropocentric (utility) orientation to ecocentric (nature) orientation: Ruler/Owner; Steward; Partner; Participant. For Buddhism, Islam and Judaism is illustrated what interpretation is used for this study. The connection between religion, IHNR and nature conservation efforts is described using the social theory, duality of social structures by Giddens (1984), which illustrates how social structures (i.e. religion, IHNR and nature conservation efforts) can overlap and influence each other.

The methodology discusses the case-study analysis. For each religion, a country is selected with a dominant religion as case study. Buddhism is represented by Bhutan, Islam by Turkey and Judaism by Israel. The qualitative data collection method used for this research is content analysis. There are two sources of data from each country, namely nature policy documents and interviews. Both sources are used to analyse the IHNR present in nature policy. The IHNR classification is adapted, based on the collected data, to enable a more specific analysis. The new IHNR classification, structured from anthropocentric (utility) to ecocentric (nature) orientation, is human well-being (HW), secular stewardship (SS), religious stewardship (RS), intrinsic value (IV) and interconnectedness (IC). The nature conservation efforts are described and divided in two quantitative (percentage protected area and forest cover) and two qualitative (environmental sustainability and natural resource) indicators. The indicators illustrate the actions that have been taken by each country to protect the natural environment.

The results from this study show that the dominant religion is not necessarily represented in the IHNR of a country. It is clearly represented in Bhutan, with its leading ecocentric (nature) motivation for nature conservation, based on the IHNR: intrinsic value (IV) and interconnectedness (IC). At first sight, it is not so obviously present in Turkey and Israel, which have an anthropocentric (utility) motivation, based on the secular stewardship (SS) IHNR.

Bhutan scores high for its nature conservation efforts, illustrated by its relatively high percentage of protected area and forest cover in comparison to Turkey and Israel. The cultural identity is connected to Bhutan's natural environment. The results show that the Bhutanese people are proud to have a large amount of forest cover, which is even mentioned in Bhutan's constitution to have 60% forest cover at all time.

The results of this study show that religiously inspired IHNR do not to necessarily have to be dominant for a country's nature conservation efforts. There are other factors that should be considered as well. Several socio-economic factors are observed in this study, of which population density is notable. Bhutan has, in comparison to Turkey and Israel, a low population density, which creates low pressure on competition for space with nature. This could explain party the connection between the ecocentric oriented IHNR and the high success score of Bhutan's nature conservations measures. In Israel, the population density is relatively high. These conditions indicate that the connection between humans and nature may depend on a complex combination of factors.

Whereas the religion factor is not so obviously present in Israel's IHNR, the results show that in Israel the Jewish ethnic component nevertheless plays an important role in its motivation to protect the natural environment. The Jewish people feel that they are closely connected to the Jewish homeland and its natural resources. The Jewish ethnic component may form a less visible, but strong incentive in addition to Israel's official utility motivation to keep and protect its natural resources sustainable for the present and future generations. There is a remarkable religious difference between Israel and Bhutan. Buddhist majorities can be found in more countries than Bhutan, whereas the Jewish ethnic component is specifically and only connected to Israel, the Jewish homeland, which uniqueness is likely to create an extra incentive for protection of the natural environment.

As a secular state, Turkey does not incorporate religious motivations in its IHNR. Turkey's nature policy is mainly focused on the utility value of nature, with the motivation to protect and manage the natural resources sustainably for the present and future generations. Nevertheless, with its vast Muslim majority, it could be expected that a Muslim undercurrent would show up in further research for Turkey's nature conservation motives. However, such connection could not be found.

1. Introduction

1.1   Background

The natural environment provides many benefits for the well-being of humanity, commonly known as ecosystem services (MEA, 2005). The term ecosystem services became more popular because of the global scientific ecosystem assessment report from 2005, called the Millennium Ecosystem Assessment (MEA). The MEA grouped the ecosystem services into four broad groups: 1) provisioning, such as production of food; 2) regulating, such as the control of climate; 3) supporting, such as nutrient cycles; 4) cultural, such as spiritual and recreational benefits. Ecosystem services illustrate the utmost importance of the environment for humanity. However, the environment is under enormous pressure. Environmental problems as ozone depletion, deforestation, loss of biodiversity and climate change reach wide geographical areas (Stern et al., 1992). The causes to these problems are complex and interdependent, which make their solutions difficult and uncertain (Stern et al., 1992). Researchers have studied the causes of the environmental problems for decades and since the midpoint of the twentieth century the environmental problems became publicly known.

The publication 'Silent Spring' by Rachel Carson in the 1960's put the environmental problems at the centre of the attention. The book described the devastating effects of pesticide use in agriculture on public health and the environment (Carson, 1962). Carson's book was, among others, followed by the 1970's publication 'The Limits to Growth', by researchers of the international think tank, the Club of Rome. They claimed to foresee a population decline of humanity by the middle or end of the 21st century, due to increased pollution and depleted natural resources (Meadows et al., 1972). The publications received major international attention (Jenkins, 2009). The increase of global environmental issues in policy-making symbolizes the growing awareness of the environmental crisis in the public and political arena.

The first major policy event was held at around the same time of the publication of the report 'The Limits to Growth'. The 1972 UN Conference on Human Environment in Stockholm. The conference brought for the first time world leaders and scientists together to discuss the importance of the environment (Seyfang, 2003). In 1987 the World Commission on Environment and Development (WCED), also known as the Brundtland Commission, published the report 'Our Common Future'. In this report, the term 'sustainable development' was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987; Mebratu 1998). The report responded to the need to address global environmental challenges, through uniting countries to bring the concepts of economic development and environmental protection together (Seyfang, 2003). The 1992 UN Conference on Environment and Development (UNCED) in Rio, also known as the "Earth Summit", built further on the foundations of 'sustainable development' (Seyfang, 2003). An important achievement of the "Earth Summit" was the agreement on the Climate Change Convention, which in turn led to the Paris Agreement in 2015.

All in all, the mentioned publications and major policy events together exemplify the growing awareness of the importance of the environmental problems. The MEA report

(2005) made clear that nature provides many services for the human well-being. The publication by Carson (1962) and the Club of Rome (1972) predicted that a fundamental change is needed towards more appropriate ecological actions, to overcome the ecological problems (Mebratu 1998). However, despite the increased attention on this topic since then, the environmental problems are still a problem today, and it is a threat to the ecosystem services that nature provides for the human well-being.

1.2 Problem statement

For many people, the environmental crisis is not only the result of economic, political and social factors. It is also a moral and spiritual crisis, which requires a broader philosophical understanding of how humanity relates to nature. The awareness of the environmental crisis made scientists question how the human-nature relationship could have become distorted. These questions were the beginning of a new branch within philosophy, namely environmental philosophy. With this change, literature expanded on environmental ethics, focussing on how humanity positions itself within the natural environment and what attitudes they hold towards nature. The recognition that human activities are altering the natural environment on which our existence depends and the acknowledgement of the necessity of sustainable development suggests that people are re-evaluating the human-nature relationship. Especially suggestions towards a more ecologically sound human-nature relationship have gained attention (Dunlap et al., 2000).

The ethical discussion of the human-nature relationship is mainly concerned with the decision between right and wrong. For example, is an ecocentric (nature) oriented human-nature relationship better than an anthropocentric (utility) oriented? Philosophers and scientists classified various positions that humans take towards nature as 'images of the human-nature relationship' (from now on the abbreviation IHNR is used). IHNR are defined as "the view that people hold of the proper relationship between humans and nature" (Van den Born et al., 2001). Researchers constructed various classifications of the IHNR to identify the different positions towards nature (Passmore, 1974; Barbour, 1980; Zweers, 1989; De Groot, 1992; Kockelkoren, 1993). The IHNR are formed through personal experiences, sense of place and, historical and cultural contexts (Corbett, 2006). The focus of this research is mainly on the cultural context, in which religion forms the inspiration for the IHNR. The IHNR is in many religions linked to the image of God (Schouten, 2005). Religions provide stories which can be interpreted to who we are, what nature is, where we come from and where we are going to (Eckel, 1997). Moreover, religions provide a suggestion of how we should treat other humans and how we should position ourselves towards nature. These values give orientation to the human-nature relationship of different cultures. Several studies were conducted to link religiously inspired IHNR to the origin of the environmental problems.

One possible explanation was brought forward by Lynn White (1967) in his essay 'The historical roots of our ecological crisis'. The essay expressed that the cause of the crisis can be found in the Judeo-Christian tradition, as passages in Genesis, command humanity to have dominion over nature (White, 1967). White's ideas initiated an extended debate on the role of religion in the Western destructive attitude towards nature, and many people critically questioned his view. For example, Boersema (1997)

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argued against White (1967) and stated that the Western attitude towards nature is influenced by Greek philosophy rather than the Judeo-Christian tradition. Moreover, several researchers have empirically studied the statement of White (1967) on the relationship between Judeo-Christian tradition and environmental attitude, with diverse outcomes. Some found that religion has a negative impact on environmental attitudes (Eckberg & Blocker, 1989; Guth et al., 1995; Hand & van Liere, 1984), while others found that religion may generate a positive effect (Kanagy & Willits, 1993; Shaiko, 1987; Shibley & Wiggins, 1997). The diverse conclusions from the empirical studies illustrate the difficulty to measure concepts like religion and environmental attitude (Sherkat & Ellison, 2007). However, many researchers have not accounted for the complexity of the relationships between religion and environment, which is likely the cause of these inconsistencies (Sherkat & Ellison, 2007). Irrespective of the complexity, the publication by White (1967) is still very influential in the discussion on the connection between religion and the human-nature relationship.

Moreover, the publication by White (1967) inspired the thought that each religion has their own perspective on the human-nature relationship. White (1967) mentioned, for example, that Eastern religions promote a sense of harmony between humans and nature, which is in contrast to the Judeo-Christian tradition (Eckel, 1997). He did not explain in detail what he meant by Eastern religions, but he clearly understood them as the opposite of Western tradition. This notion inspired others to investigate the diversity of religious influences on the attitude towards nature (Eckel, 1997). Buddhism for example, approaches nature from a perspective of respect for all living creatures (Schouten, 2005). In Islam, the Koran makes it clear that humanity should take the responsibility of stewardship over nature (Schouten, 2005). This also applies to Judaism as the Bible explains that humanity should take the role as steward over nature for the owner, which is God (Schouten, 2005). These illustrations show that each religion has its own perception of the human-nature relationship.

However, knowledge is lacking on the connection between the religiously inspired IHNR and nature conservation practices. In the Netherlands, several studies have been conducted to describe the relationship between IHNR and nature conservation efforts. Keulartz et al. (2000) studied the relationship between IHNR and nature policy in the Netherlands, both at the national and local level. Kloek et al. (2015) studied the recreational behaviour of immigrants and non-immigrants in nature areas. This research showed that immigrants have, depending on their cultural background, different IHNR and behaviour. Buijs et al. (2009) studied differences in culturally inspired IHNR and landscape preferences. The results show that there are differences between immigrants from Islamic countries and the native Dutch in IHNR and landscape preferences. Altogether, literature is limited to Western countries on the relationship between religiously inspired IHNR and nature conservation practices. Therefore, this research focusses on the connection between religiously inspired IHNR and nature conservation efforts of other than Western-countries, namely Bhutan, Turkey and Israel. The nature conservation efforts are included, to describe the actions that have been taken by each country to protect the natural environment. The research objective and -questions are outlined below.

1.3 Research objective and research questions

The objective of this research is to explore how religion is connected to IHNR and nature conservation efforts in Bhutan, Turkey and Israel, with the aim of examining a possible correlation between religiously inspired IHNR and nature conservation efforts.

From the objective, the following main research- and sub-research questions are derived.

Main research question:
- How do the differences between religiously inspired IHNR correlate to the nature conservation efforts of Bhutan, Turkey an Israel?

Sub-research questions:
- What are the religiously inspired IHNR of Bhutan, Turkey and Israel and what are the differences and similarities?
- What are the nature conservation efforts of Bhutan, Turkey and Israel and what are the differences and similarities?

1.4 Structure of the report

This report is structured the following. Chapter 2 describes the theoretical framework, in which religion, IHNR and nature conservation efforts are explained and connected. Chapter 3 outlines the methodology of this research. The research approach is a case-study analysis of Bhutan, Turkey and Israel, with interviews and nature policy documents as data collection method. Chapter 4 reports the results of the interviews and nature policy documents and describes how the differences and similarities relate to the nature conservation efforts. Chapter 5 describes the main conclusions based on the findings of this research and the research questions. Chapter 6 discusses the results, theoretical framework and mythology of this research.

2. Theoretical Framework

The aim of this chapter is to explore the theoretical background of the connection between religion, IHNR and nature conservation efforts. It starts with an exploration of the IHNR (2.1), followed by the relation between religion and IHNR (2.2), and finally the influence of religion on the IHNR and nature conservation efforts (2.3).

2.1 Images of the human-nature relationship (IHNR)

The term IHNR has been defined by Van den Born et al. (2001) as "the view that people hold of the proper relationship between humans and nature". The theory of IHNR has been studied extensively, but not all philosophers used the same terminology. Other terms used in literature are environmental worldviews (Passmore, 1974) or attitudes towards nature (Barbour, 1980). "Worldviews can be understood as inescapable, overarching systems of meaning and meaning-making that to a substantial extent inform how humans interpret, enact, and co-create reality" (Hedlund-de Witt, 2013). An attitude is defined in social psychology as the tendency to act or think in a particular way (Allport, 1935).

The theory of IHNR is linked to the concept of ethics (Van den Born et al., 2006). Ethics is mainly concerned with the decision between right and wrong, contributing to the question why we should conserve nature at all. For example, is it morally wrong for humans to pollute and destroy the natural environment and use many of its natural resources? If that attitude is wrong, then it is because a sustainable environment is important for the human well-being? Or is it wrong, because the natural environment has certain values which should be respected and protected? These examples illustrate two important concepts used in relation to IHNR: anthropocentric and ecocentric. The first example bases its argumentation on the importance of human well-being, in which nature has an instrumental value towards humanity and therefore is referred to as anthropocentric. The second is based on the idea of nature having an intrinsic value (for itself), instead of instrumental value (for us) and is therefore referred to as ecocentric. Both concepts show the distinction between instrumental value and intrinsic value, which forms the basis for classifying IHNR (Van den Born et al., 2006).

Literature shows that philosophers have produced several different classification systems for the IHNR. Among the first who made classifications are Passmore (1974) and Barbour (1980). Passmore (1974) distinguishes between three (anthropocentric) images: 'despot', 'co-operation with nature' and 'stewardship'. Barbour (1980) adds an ecocentric image: 'unity with nature'. Apart from Rodman (1983), the rest of the philosophers and scientists were Dutch who further developed the classifications of IHNR (Zweers, 1989; De Groot, 1992; Kockelkoren, 1993). Zweers (1989) is the first in the Netherlands to publish his classification. He distinguishes between seven images: Ruler, Owner, Passive Steward, Active Steward, Partner, Participant and Unio Mystica. The Dutch researchers who published after Zweers use variations of his classification (for an overview of different classifications of the IHNR see Van den Born, 2006). The classification of Zweers (1989) captures much of the rich variation in IHNR, but the list is somewhat long to handle. Less detail is preferable for this more practice oriented research. Therefore, some

of the images have been condensed in order to form a shorter list with four images (presented in Box 1). The shorter list of Zweers (1989) has a similar format to the classification of Kockelkoren (1993), who has also distinguished four images. However, Zweers (1989) is the founder of the IHNR classification in the Netherlands, he describes every image elaborately and therefore his classification is used for this research.

Box 1: Classification of IHNR (Zweers 1989; 1995)

The *ruler/owner* is characterised by the idea of human dominion over nature and shows an image of exploitation of its resources. This is demonstrated by the idea that nature only exists for the sake of humanity. Nature serves human purposes and therefore has an instrumental value. But the ruler/owner is constrained by his knowledge on the dependency on nature, the limitation of natural resources and limited carrying capacity of ecosystems. The careful dealing with nature is mainly for human self-interest.

The *steward* does not have dominion over nature, but manages nature for the 'owner' to whom he owes accountability. From the Christian (and Jewish and Islamic) perspective the owner is God, in the worldly perspective this is humanity. A Christian is accountable to God for a good management of his creation. He does not have dominion over nature and to do with it as wanted. From the secular (non-religious) perspective, the focus is more on the responsible management of natural resources. As compensation for their work, humanity may use the earned interest for their own purposes. But the steward is not allowed to use the overall capital, as this would have an impact on the interest of the next generations. This model can play an important role in limiting the use of natural resources. However, the focus of the steward is still on the instrumental value of nature, namely its usefulness for humans.

The *partner* is, in contrast to the models described above, on the same level with nature. Nature and humanity are partners of each other. They both have the same value and can co-exist next to each other. In this model, nature is not merely seen as a material commodity with instrumental value to serve human needs. But it also has a value for itself, an intrinsic value. Which is based on the idea that nature has the capability to regulate and maintain itself, in an autonomous way and on the idea that it has a right to exist.

The *participant* feels part of nature. Central in this model is the intrinsic value of nature, which is different from the partner model. The partner takes care of nature for its intrinsic value, through distancing itself from nature. As a participant, there is no distance between human and nature, because it stresses the importance of solidarity and interconnectedness.

2.2 Relation between religion and IHNR

Religion and IHNR are often linked with each other in literature, but there is no consistency in the use of terminology. Both religion and IHNR have many variations in which it is referred to. Two important examples are: *culture and perception of nature* (Kloek et al., 2015) and, *religion and environment* (Sherkat & Ellison, 2007). I will explain, for both examples, how the relations are described in literature, and illustrate how parts thereof will be applied for this research.

Kloek et al. (2015) describes the relation between culture and perception of nature. The view that people have of nature is formed, on the one hand, by their personal experiences with nature. The location (environment) where you grow up, i.e. in the city or countryside, is very important. As well as, the way how you experienced nature. If you walk your dog daily in the forest nearby, then this impacts the way you look at nature. However, on the other hand, your view on nature is also formed by shared cultural understandings. People who hold the same values and share the same language perceive nature in a similar manner (Kaplan & Kaplan, 1989). These images of nature are passed on to you by your parents, teachers or through media. Altogether, the view that people have of nature can vary per individual, but has also origin in the large differences between cultures. Kloek et al. (2015) discusses that the perception of nature can be subdivided in three dimensions: the cognitive –cognitions of what nature is; the normative – the value of nature and IHNR; and the expressive – the experience of nature (Keulartz et al., 2004). The three dimensions of the perception on nature give opening to a large body of literature, but this research is limited to the IHNR, which is part of the normative dimension. Kloek et al. (2015) uses culture to refer to the shared understandings of nature. This research differentiates itself from Kloek et al. (2015) as it focusses on religion, to understand the different IHNR. Religion is part of a cultural inheritance. However, two people can share the same culture, but practice different religions. Religion is more specific and to understand its meaning, it helps to go back to the basic definition. The Cambridge Dictionary states religion as "the belief in and worship of a god or gods, or any such system of belief and worship." Religious resources, like the Bible or Koran, are an important reference point for the IHNR from where certain images originate. The definition of religion by Geertz (1993) illustrates the specific elements, which can be used as a reference: "a cultural system of behaviours, worldviews, sacred texts, holy places, ethics and societal organisations that relate to humanity". This research can use sacred texts, holy places and ethics as a reference point for each religion. In the rest of this study the term religion, and not culture, will be used as a fundament for the analysis and explanation of differences in IHNR.

Sherkat and Ellison (2007) describe the relation between religion and environment. With environment, they refer to nature and the natural environment. It is important to go back to the basic understanding of social research. In social science, the natural world can only be interpreted through using some kind of social frame. The concept of duality of social structures by Giddens (1984) can be used to explain the relation between religion and environment. The social structures that Giddens (1984) refers to, are composed of two elements: rules and resources. First, rules are informal understandings, beliefs and preferences. Just like the rules of a game in social practices. Second, resources consist of actual objects, interactions and formal teachings. Resources have influence on people's understandings and actions of the world around them, and

resources influences and/or supports rules. There are many forms of social structures that can be applied in social life, i.e. education, politics, religion, art and family. Each social structure has its own rules held by individuals and a range of resources. Important to know is that social structures overlap, resulting in resource sharing as well as transportation of rules from one structure to another.

Following this perspective, religious structures and environmental structures will be explained, as well as their overlap. Religious structures have rules (i.e. beliefs, understandings and preferences) and resources (i.e. buildings, books and formal teachings). These rules and resources are formed by interaction in religious buildings, like churches. When the rules and resources of religion are adopted, they can influence other social structures. Environmental structures have rules (i.e. beliefs of the IHNR) and resources (i.e. organisations or objects that affect nature, like nature policy). These social structures of religion and environment can overlap, which can be exemplified with the theory of White (1967). White (1967) describes that in the Western tradition the Bible commands humanity to rule and dominate over nature. The structuration theory shows that religious rules (e.g. beliefs of dominion over nature) can be transported into environmental rules (e.g. IHNR) and environmental resources (e.g. nature policy). The example of dominion over nature is based on the religious authority of the Bible, a religious resource. Alternative religious resources, such as the Koran for Islam and the Hebrew Bible for Judaism, can result in different associations with environmental structures. As well as, different interpretations of the religious resources, which can result in different associations with environmental structures.

For this research, it is important to give a general interpretation of the religious resources for Buddhism, Islam and Judaism, based on multiple literature sources. As followers of the same religion can have completely different interpretations of the religious resource. The general interpretations of each religion are described for this study in the subchapters 2.2.1 for Buddhism, 2.2.2 for Islam and 2.2.3 for Judaism. The aim of the subchapters is not to describe the religions in its entirety, as there are too many aspects to each religion and therefore the general interpretations are limited to what is relevant for this research.

2.2.1 Buddhism

Buddhism offers man a simple and moderate lifestyle. The Buddha preached the path to inner peace. He said that this inner peace could be realised when eradicating selfish desires. The one who can live without longing and desire will experience deep inner peace (Schouten, 2005). This can be achieved through loving kindness and compassion towards all living beings. "Just as the mother protects her only child even at the risk of her own life; even so let one cultivate boundless thoughts of loving-kindness towards all being." (Buddha's quote is cited from: Harvey, 2000). As well as, through developing insight into the fact that nothing and no-one can exist on its own; that all phenomena are interconnected.

For Buddhism, humans are just one of many different creatures; it does not give an absolute distinction between different creatures (De Groot & van de Born 2007; Schouten 2005). The Buddhist teaching of rebirth and karma can be used as examples that all beings are interlinked. From the perspective of interconnectedness all human actions

have effects, not only on the individual level but also on other beings and on the world around the individuals. The Buddhist ethics proceeds from the principle of 'no harm', living in such a way that no suffering is brought to other living beings (Schouten, 2005).

Not all scholars agree with this view of Buddhist ethics and some critically question if it is correct (Eckel, 1997). For example, should Buddhism be ecological friendly, or is it a product of the western imagination? Buddhism is a religion cultivated in diverse regions of the world and therefore many variations exist (Eckel, 1997). The description in this paper is limited to the aim to provide a general idea of how nature is perceived in Buddhism.

2.2.2 Islam

Allah, the Arabic name for God, is in Islam the same God as in Judaism and Christianity. Islam is also closely connected in religious aspects to the Judaic and Christian traditions. In Islam, all elements of the environment are created by God. All living things are created with different purposes, of which one is to serve humanity, but that does not mean that the human use is the sole purpose of all that God created (Gottlieb, 1996). Humans do not stand above the plants and animals, because all are coming from the same source of life. Other things than humanity also have a purpose and therefore have an intrinsic value.

"God created every animal out of water: of them there are some that creep on their bellies, others that walk on two legs and others on four" (Koran 24:25).

God places humanity on earth to take the role as steward, which is declared in the Koran as Khalifa (Schouten, 2005). Humanity can use nature for its own purposes, but does not own nature. Muslims are also confined by the Koran in the use of nature. Dietary laws state that Muslims cannot eat the blood of animals and therefore there are rules on how they should be slaughtered. The dietary laws also forbid Muslims to eat pork meat. The Koran is complemented by the Sunnah, which is the verbally transmitted record of the life of the Prophet Muhammad. Both the Koran and the Sunnah played a role in the creation of Islamic law, the Sharia. The Sharia is a literature body of moral and religious laws.

Both the Koran as well as the Prophet's traditions speak about the environment and steer towards the role of stewardship. But to put it in perspective, by large the Islamic duties are mainly focussed on the socio-economic domain of our world and only to a limited extent on the natural environment (Parvaiz, 2009).

2.2.3 Judaism

According to the Thora, the first books of the Hebrew bible, the creation belongs to Yahweh, the Jewish name for God. God created the world in six days, by bringing order in chaos (Schouten, 2005). The seventh day was a day of rest. The Jewish perspective on nature is best explained with the use of specific texts and commands, of which none is more important than Genesis 1:28 in which God commands humanity to subdue the earth:

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"And God blessed them (Adam and Eve); and God said unto them, be fruitful and multiply, and replenish the earth, and subdue it and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moved on the earth."

This passage of Genesis is used by White (1967) in the discussion on the influence of religion on nature. White (1967) uses it to support his view that humanity looks at nature from the idea of utility and usefulness, legitimizing exploitation of the environment. But the Thora limits the human right to "subdue" and use nature. The relation between God and humanity shows that humanity should rule as God did, without the use of violence and loss of blood (Schouten, 2005; Katz, 1993). Humanity was originally even restricted to a vegetarian diet, according to the next line in Genesis 1:29:

"And God said: 'Behold, I have given you every herb yielding seed, which is upon the earth, and every tree in which is the fruit of a tree yielding seed – to you shall it be for food."

The passage illustrates that humanity was in first place a vegetarian and not a meat eater. But eating meat was tolerated after the deluge, in the Covenant of the Rainbow, as a compromise to humanity (Genesis 9:3-4). But there are restrictions in the Judaic tradition. The Kashrut (dietary laws) forbids to eat the blood of animals, as this represents the 'soul' of the animal. This is a reminder to the original order of creation during which humanity was vegetarian (Schouten, 2005). The dietary laws dictate which animals can and cannot be eaten. In the Thora, humanity is positioned as highest in the order of creation and humans are the ones who give animals a name, which demonstrates that they are above the animals. But the Thora also shows that God constantly cares for all he created. This implies that humanity should similarly care for creation (he was created to 'tend and till the garden'). As such the passage of Genesis, where humanity is said to have dominion over nature, is put in a different perspective. Humanity is positioned by God as ruler to take care of what God created, but with limitations. Humanity can use the earth for its own life support. But it also needs to take its role as steward for the owner, God. The Jewish stewardship role, shows that the creation should be handled carefully by humanity.

2.2.4 Hypotheses
The above interpretations of the religious resources of Buddhism, Islam and Judaism include a certain IHNR. According to the duality of social structures theory by Giddens (1984) religion can overlap with IHNR and nature conservation efforts. For each religion, a hypothesis is formulated to illustrate the potential connection with a specific IHNR. In Chapter 6 Discussion will be reflected upon these hypotheses, based on the results from this study. The hypotheses connect with the following sub-research question: *"What are the religiously inspired IHNR of Bhutan, Turkey and Israel and what are the differences and similarities?"*

- Hypothesis 1: Buddhism has an ecocentric (nature) orientation, based on intrinsic value and interconnectedness, which connects with the participant IHNR of Zweers (1989, 1995).

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- Hypothesis 2: Islam has a combination of an anthropocentric (utility) and an ecocentric (nature) orientation, which connects with the religious stewardship IHNR of Zweers (1989, 1995).

- Hypothesis 3: Judaism has similar to Islam, a combination of an anthropocentric (utility) and an ecocentric (nature) orientation, which connects with the religious stewardship IHNR of Zweers (1989, 1995).

2.3 Religion, IHNR and nature conservation efforts

How do religion, IHNR and nature conservation efforts relate to each other? The relationship between these concepts is a complex one. In the previous chapter, the theory of duality of social structures shows that individuals can perceive religion and IHNR as social structures, which can overlap. These social structures, according to Giddens (1984), form the basis for human behaviour, or more specifically nature conservation efforts. First human behaviour is explained and can be illustrated best with the following dilemma: do people actively control the conditions of their own lives and decide for themselves, or are their actions controlled by social structures? Van den Born et al. (2006) states that human behaviour is not pre-determined, as it is always possible to act differently. However, not all actions are the consequence of pure random creation, and that is why the idea of structure cannot be abandoned. The structuration theory centres around the fact that structures are both the cause and the result of human action. Structures exist in our memory and in the moment we act. Structures do not only constrain and limit the range of actions, but they enable us to act in the first place. So, the idea of seeing religion and environment as social structures is helpful to get a better understanding of what elements influence the individual human behaviour.

The second step is to explain how human behaviour can be linked to nature conservation efforts. Nature conservation efforts are an example of an environmental resource. It resembles how people act and behave. In nature policy, there are guidelines to what people can and cannot do. Nature policy is formed by for example governments, with the aim to influence the behaviour of their citizens. But the behaviour of citizens can also influence nature policy. Both elements, human behaviour and nature policy, influence each other. These examples show that it is difficult to disentangle both elements from each other, as there are multiple ways how one influences with the other. The structuration theory enables one to describe how social structures interact and creates awareness of the complexity of the connection between religion, IHNR and nature conservation efforts. Further research is needed to better understand how these concepts are connected.

3. Methodology

In the previous chapter the theoretical concepts: religions, IHNR and nature conservation efforts are explained. In this chapter I will discuss how these concepts are applied in the research project. This starts with the research approach (3.1), followed by a description of the case studies (3.2), the data collection (3.3) and ends with the data analysis (3.4).

3.1 Research approach

To explore the influence of IHNR in Buddhism, Islam and Judaism on nature conservation efforts, a qualitative research is done. Qualitative research is about getting a better understanding of meanings, concepts, definitions, characteristics, metaphors and descriptions of things (Berg, 2001). This study has an explorative research design, which enables one to adapt the design, when new data and new insights are revealed (Berg, 2001).

The epistemology of this research is interpretivism. Epistemology means how the relationship between the researcher and the reality is defined (Berg, 2001). There are two major traditions: positivism and interpretivism. Positivism focusses on objective research in which the researcher is detached from the participants of the research, to stay emotionally neutral and to be able to make clear distinctions between reason and feeling (Berg, 2001). This philosophy focusses only on measurable facts and rejects all knowledge, like ethics, which is not measurable in facts. Positivism relies on statistical and mathematical techniques and structured research design. Interpretivism is more applicable to this study and focusses on multiple realities, which is socially constructed, rather than objectively determined (Berg, 2001). Interpretivism has a more flexible research design than positivism and captures meaning in human interaction. From this epistemological point of view, the researcher can adapt during his study to new knowledge.

In this study a cross case study analysis is done, which is a good method to provide in-depth information on a topic (Berg, 2001). For each religion one country is selected as a case study, which is described more detailed in Chapter 3.2. A disadvantage of a case study analysis is that the results do not represent a wider social setting, because of the specific characteristics of the case study (Berg, 2001). However, the aim of this research is not to make inferences from the case studies about the religions. The aim is to better understand how religions relate to IHNR and nature conservation efforts and therefore the cross case-study analysis is suitable for this research.

3.2 Case studies

In this chapter is discussed which countries are selected as case studies, starting with the country selection (3.2.1), followed by a brief introduction to the case studies (3.2.1 – 3.2.3). I am aware that the relationship between religion, IHNR and nature conservation efforts is complex and has many influencing factors. Several selection criteria are used to guide selection of the case studies.

3.2.1 Country selection

For the religions, the country selection is based on the following criteria:
- The country has one dominant religion (more than 50% of the population has the identical religion).
- The country has national nature policy documents available in English.
- The country has preferably close contacts with citizens living in the Netherlands. This benefits the access to people, with knowledge about nature policy and nature conservation efforts of their own country, for interviews.

The fact that a country has a dominant religion, does not mean that it is the state religion. A state religion is the religious body that is officially approved by the state. There are various types of state religions, ranging from authorization (with or without financial support), to practicing other religions than the dominant religion of the country, or even blocking any competing religions from operating and persecuting their religious followers. In contrast to countries with a state religion, there are countries which have a secular state, which means a separation between religion and state. A country with state religion would in theory be more likely to have a relation between religion and nature conservation efforts. And in a secular state it is more likely to have a separation between religion and nature conservation efforts. These statements are mere assumptions of how religion and nature conservation efforts relate to each other. These assumptions should be considered in the assessment of selecting countries as case-studies.

Table 1: Countries with Buddhist and Islamic majority in 2010 in percentage of their total population (Hackett et al. 2012)

#	Buddhist countries	%	Islamic countries	%
1	Cambodia	96.9	Morocco	99.9
2	Thailand	93.2	Afghanistan	99.8
3	Myanmar	87.9	Tunisia	99.8
4	Bhutan	74.7	Iran	99.6
5	Sri Lanka	70.2	Western Sahara	99.6
6	Japan	67.0	Mauritania	99.2
7	Laos	66.0	Turkey	99.0
8	Mongolia	55.1	Tajikistan	99.0
9			Yemen	99.0
10			Iraq	98.8

For Buddhism, there are eight countries with a Buddhist majority in 2010, see Table 1 (Hackett et al., 2012). A quick scan for English language on the website of the Convention of Biological Diversity for nature policy documents shows that all eight countries have their documents available in the English language. Bhutan is one of the eight countries with a Buddhist majority and was recommended by my thesis supervisor Matthijs Schouten to investigate. Bhutan has kept to its origin and remained relatively unaffected by foreign (Western) influences. Also, Bhutan has nature conservation mentioned as a priority in their national policy, which is interesting to learn more about.

For Islam, there are 49 countries in the world with a Muslim majority in 2010, which means that more than 50% of the population is Muslim (Hackett et al., 2012). See Table 1 for the top ten countries with Islamic majority in percentage of their population. Within this pool, it was determined which countries have many immigrants in the Netherlands

and if their nature conservation documents are available in English. In the Netherlands, the largest groups of immigrants from Islamic-majority countries are from Turkey and Morocco (Centraal Bureau voor de Statistiek, 2016). Turkey is the best option based on the English language used in nature policy documents, retrieved from the website of the Convention of Biological Diversity. Morocco has many of their policy documents written in French.

For Judaism, there is only one country with a Jewish majority in 2010, which is Israel (Hackett et al., 2012). This makes the choice for Israel relatively straightforward.

The subchapters 3.2.2 Bhutan, 3.2.3 Turkey and 3.2.4 Israel provide a brief description of the countries and their nature conservation agendas. It was not easy to find similar information about the nature conservation agendas of the countries, therefore the information in each description is somewhat limited.
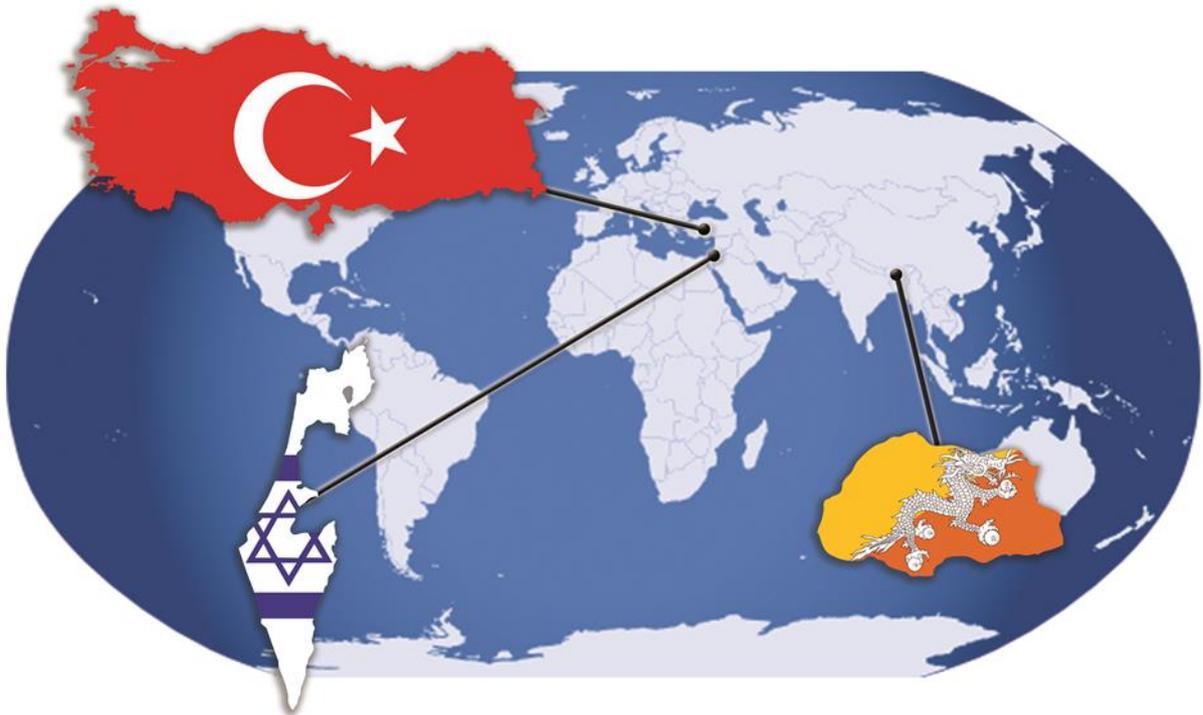

Figure 1: The world map with Bhutan, Turkey and Israel highlighted (Boersma, 2017)

Table 2: The indicators for socio-economic status of Bhutan, Turkey and Israel. See box 2 for definition of the indicators, measurement year and sources

Indicator	Bhutan	Turkey	Israel
Total territorial area[1]	38.394 km^2	780.576 km^2	22.072 km^2
Total population[2]	730.000	72.750.000	7.420.000
Population density[3]	19	93	336.17
Population growth rate[4]	1.3%	1.5%	2.0%
Religious[5]	74%	98%	75.6%
GDP per capita[6]	$ 2.843	$ 9.437	$ 35.406

Box 2: Definition of socio-economic indicators, measurement year and sources

The socio-economic indicators are similar for all three case studies. Total territorial area is measured for year 2015 (Food and Agriculture Organisation, 2015). Total population for Bhutan, Turkey and Israel is measured in year 2010 (Hackett et al., 2012). Population density is a measurement of population per unit area, based on the figures in the table, of which the decimals are not shown. Population growth rate is the rate of number of individuals by which a population increases over a given time, expressed as a part of the total population for year 2015 (World Bank, 2017b). Religious is defined as percentage of total population that is part of dominant religion in year 2010 (Hackett et al., 2012). Gross Domestic Product (GDO) per capita is a measure for average income per person in a country in year 2015 (International Monetary Fund, 2016).

3.2.2 Bhutan

Table 2 provides an overview of the socio-economic status of Bhutan. This country has a small population size of 730,000 citizens in 2010 of which 74% is Buddhist (Hackett et al., 2012). Buddhism is the state religion in Bhutan. Bhutan is a country with an area of 38,394 km^2, which is about one tenth smaller than the surface area of the Netherlands. The population density is low with 19 citizens per km^2. The population growth rate is considerable with 1.3% (India has 1.2%). The country is situated in southern Asia, bordering China to its north and India to its south, east and west. Bhutan is mountainous with altitudes reaching 7,500 meters above sea level. The Gross National Happiness is the development philosophy of Bhutan, which has environmental conservation as one of its four pillars. The Gross Domestic Product (GDP) per capita of Bhutan is low with $ 2.836 per capita, which means the level of welfare is modest.

Furthermore, there are several marking points in the history of nature conservation in Bhutan. The official nature conservation programs started in 1961 with the Five-Year

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[1] Food and Agriculture Organisation, 2015
[2] Hackett et al., 2012
[3] Measurement of population per unit area, based on figures in Table 3
[4] World Bank, 2017b
[5] Hackett et al., 2012
[6] International Monetary Fund, 2016

Plan, which resulted in the designation of the first protected area in 1966. This plan was followed by the Forest Act of Bhutan in 1969, which stated the requirement of a minimum of 60% of the total land area under forest cover. In 2010 the total land under forest cover was 70.46% (National Biodiversity Centre, 2014). In 2014 Bhutan had 47.3% terrestrial protected area (World Bank, 2017).

3.2.3 Turkey

In Table 2 an overview is shown of the socio-economic status of Turkey. This country has 72,750,000 citizens of which 98% is Muslim (Hackett et al., 2012). Turkey became a secular country after its 1920 revolution and Ataturk's reforms. Turkey has a land area of 780,576 km^2, which is about twenty times the size of the Netherlands. The population density is 93 citizens per km^2. The population growth rate of 1.5% is ample. The country is situated on the continents Asia and Europe. It borders Bulgaria and Greece to the west, Georgia, Armenia, Azerbaijan and Iran to the east, and Iraq and Syria to the south. More than half of the land surface is located at altitudes of 1,000 meters and more above sea level. The Gross Domestic Product (GDP) per capita for Turkey is moderate.

Nature conservation in Turkey started with the concept of protection of endangered species, which was brought into legislation in 1937 and is still enforced today. In 1982 the Constitution of Turkey adopted an article stating that the government should protect the historical, cultural and natural values of the country. In 2014 Turkey has 0.23% of its terrestrial territory assigned as protected area (World Bank, 2017).

3.2.4 Israel

Table 2 provides an overview of the socio-economic status of Israel. This country has 7,420,000 citizens in 2010 of which 75.6% is Jewish (Hackett et al., 2012). Israel is defined in several of its laws as a Jewish state, which determines the relation between religion and the state. Israel has an area of 22,072 sq.km, which is about half the size of the Netherlands. The country is situated at the eastern end of the Mediterranean Sea, bordering Lebanon to its north, Syria to its northeast, Jordan and the West Bank to its east, and Egypt and the Gaza Strip to its southwest. The State of Israel was declared in 1948.

The national recognition for the protection of natural resources in Israel was achieved in 1963 with the National Parks and Nature Reserves law, revised in 1992 and it remains fundamental in nature conservation. The National Masterplan for National Parks, Nature Reserves and Landscape Reserves, approved in 1981, is a legally binding plan with the purpose to designate areas for nature conservation. In 2014 Israel had 19.85% of its terrestrial area protected (World Bank, 2017).

3.3 Data collection

This research focusses on two sources of data from each country: nature policy documents and interviews. The triangulation of data facilitates validation through cross verification from multiple perspectives, and provides a more thorough understanding of the subject, than when it is analysed from a single perspective (Berg, 2001). Besides

triangulation there are several other strategies incorporated in the methodology of this research to ensure credibility and trustworthiness of the findings. There is a respondent and researcher bias, which have been considered for this research (Berg, 2001). The respondent can have a bias through being overly positive, social desirability to be accepted and habituation through providing the same answers to similar asked questions. The researcher can have a bias through confirming the hypothesis by selectively using the respondents' information, judging another culture based only on values of own culture, influencing the response with question-order and asking leading questions. The respondent- and research bias is partly filtered out in the design of the research questions. The researcher bias of selectively using the respondents' information to confirm the hypothesis is difficult to disentangle, as the research design is continuously reshaped. However, this research is not aimed at finding proof to accept or reject the hypothesis, it is rather to find information to get a better understanding of the issue. The research design is transparent, as such that decisions and interpretations of the data are consistently reported in Chapter 3.4 data analysis, i.e. how data is analysed with the use of consistent coding. Further, the interviews are transcribed into text documents so that the words used in the interview can be traced back to support the findings.

The collection of material during the interviews is in the form of audio-recordings. These recordings are transcribed into text documents per interview. The text documents are saved with the case study area and number to which is referred in the rapport for each interviewee (for example "Bhutan, respondent 1"). These documents are used in the data analysis process.

3.3.1 Nature policy documents

The nature policy documents provide the main content for the first research question. The documents are written for the public audience by governmental organisations and environmental NGO's. All available nature policy documents of each country were collected from the internet. Also, the interviewees were asked for recommendations where I could retrieve relevant nature policy documents. The topics of the documents are broad but relate to nature conservation or the natural environment. An overview of the sources of the documents per country is provided in Appendix A, which includes the organisation, publication year, title and website. The number of documents collected varies per country and is mainly influenced by the fact that many of the documents are not available in English. From the total number of documents per country a selection of useful documents was made. In Table 3 an overview is given of the total available- and useful nature policy documents per country.

Table 3: Overview of total available- and useful documents (with percentage of total) per country

	Bhutan	Turkey	Israel
Total documents	42	19	75
Useful documents	30 (71%)	6 (32%)	9 (12%)

Nature policy documents that mention a certain IHNR are useful for this research. Each IHNR is represented by a list of keywords, which formed a good method to scan through the nature policy documents. In Chapter 3.4.2 the list of keywords is discussed in more detail. Table 3 shows that Bhutan has a high percentage of useful documents. My expectation was to find IHNR in the foreword or introductory chapter of the documents. For Bhutan, this was true. However, I rarely found these chapters to be useful for Turkey and Israel. In most cases I scanned the entire text to find relevant parts about the human-nature relationship. An overview of the useful documents in provided in Appendix C with specifications of title, topic, year, author, type, nature conservation efforts and IHNR. Appendix A shows the list of all nature policy documents that I found, including documents that were not useful for me.

3.3.2 Interviews

I performed several semi-structured interviews, which provide the main content for the third research question. Semi-structured interviews are characterised using open questions and the high flexibility. A structured interview has, on the contrary, a fixed set of questions, which cannot be changed. The flexibility of semi-structured interviews offers the following advantages for research: when conducting the interviews the interviewer can change the order of questions when necessary, the questions do not have to be stated literally, the interviewer can explain questions which are unclear and the interviewer can ask additional questions to get more information from the interviewee (Berg, 2001). This semi-structured interviewing is most relevant for this study. I made a guideline for the topics that need to be discussed during the semi-structured interviews. The order of questioning was flexible; therefore, I could adjust the questions to the story of the interviewee and if necessary ask extra questions to get more detail, so that the information is thorough and understandable.

The respondents were selected through a snowball sampling strategy, which means that I made use of people's social network to acquire more interviewees. I started with contacting people from the network of my thesis supervisors Matthijs Schouten and Marjanke Hoogstra-Klein and developed on further through the network of the interviewees. My aim was to find experts within the work field of nature policy from the respective countries. For each country, this worked out differently and resulted in five interviews for Bhutan, four interviews for Turkey and eight interviews for Israel. See Appendix B for an overview of the interviewees per country and their background. I managed to visit Israel in January for two weeks and conduct several interviews there with experts in the field of nature conservation face to face. This was a great help in understanding the situation with respect to nature conservation in Israel. I did not visit Bhutan or Turkey, which made it more difficult to find expert interviewees and to get a better understanding of the situation there. I conducted several skype interviews with people in Bhutan and Turkey who are nature conservation experts. Furthermore, I interviewed Dutch people face-to-face with specific knowledge about Bhutan and Turkey and several non-professionals from Bhutan and Turkey through skype.

3.4 Data analysis

The data is analysed through content analysis. It is a technique for systematic analysis of texts through the process of coding, which means searching for words or concepts related to a topic, which is for this research, IHNR (Berg, 2001). Through content analysis large amounts of literature can be quickly reviewed, including the analysis of changes over time (Berg, 2001). Content analysis can be used to analyse various types of data, ranging from interviews to nearly any written document (Berg, 2001). For this research, there are two sources of data: documents and interviews. The interviews are processed before they could be analysed. The raw interview data, the recorded interviews, were transcribed into text documents. This was done semi-literally, which means that not every 'uh' and 'ehm', expressed by the interviewee during the interview, was used in the transcription. These transcribed documents were used in the analysis.

3.4.1 Analysis of interviews and nature policy document data

The documents were analysed through a combination of deductive and inductive coding. Inductive coding provides the advantage that the coding strategy can be adapted during the analysis, while deductive coding benefits the validity of the research. I applied deductive coding at first, which is 'top-down coding' through using common concepts from the research as an analysis frame to look at texts. This means that a coding scheme, a list with predetermined keywords and – categories, is used to analyse the documents. I tested the IHNR classifications by Zweers (1989, 1995) for my initial coding scheme to scan the nature policy documents. With the analysis, I anticipated to filter out the reasoning behind the human-nature relationship. Who is responsible for the protection of nature? Is it, for example, our role to protect nature as stewards for God's creation? How are we connected to nature? Has nature only a utility function for us humans or has nature also a value for its own? With these questions in mind I scanned through the documents. However, I found that this classification was insufficient for my research. I needed codes, which were more specific and narrowed down, to fit the content of the nature policy documents. Through inductive coding, or 'bottom-up coding', I created a better fit. Inductive coding uses specific observations from the texts to make broad generalisations. I can give a few examples, why the classification by Zweers (1989, 1995) did not fit. In the nature policy documents the utility function of nature was expressed in terms of ecosystem services for the human well-being. This connected to both the ruler/owner and steward IHNR, but I created a separate class for it. Furthermore, I distinguished the steward IHNR in a religious and a secular class. Both classes are oriented on the instrumental value of nature. However, the religious perspective includes also an ecocentric orientation, as it acknowledges the value of the earth and all its life forms as God's creation. Besides, the nature policy documents mentioned the intrinsic value of nature, which is present in both the partner and participant IHNR by Zweers (1989, 1995), for which I created a separate class. Finally, I filtered from the participant IHNR the interconnectedness of life on earth, which appeared specifically in several nature policy documents. With these examples, I adapted the classification by Zweers (1989, 1995), and used these specific elements from his classification to create my own IHNR classification, see Table 4 for the overview.

Table 4: Overview of the new IHNR classification and its orientation between anthropocentric and ecocentric

IHNR	Orientation
Human well-being (HW)	Anthropocentric
Secular stewardship (SS)	Anthropocentric
Religious stewardship (RS)	Anthropocentric and ecocentric
Intrinsic value (IV)	Ecocentric
Interconnectedness (IC)	Ecocentric

A short description of the new IHNR classification is given below in box 3, which emerges rather directly from the IHNR classification by Zweers (1989, 1995) in box 1. From now on the new IHNR classification will be used.

Box 3: Classification of IHNR

Anthropocentric oriented
'Human well-being' (HW) is based on the knowledge that humanity is dependent on nature for its survival. Nature has primarily a utility function, which is expressed in ecosystem services. This IHNR is based on the classification by Zweers (1989, 1995) on IHNR of 'ruler/owner' and 'steward'.

'Secular stewardship' (SS) emphasizes the responsibility of humanity to take good care of the earth's natural resources, for present- and future generations. This IHNR is based on the classification by Zweers (1989, 1995) on the IHNR of 'steward'.

Anthropocentric and ecocentric oriented
'Religious stewardship' (RS) uses the frame of religion to express the importance for humanity to take good care of the earth, which is their inheritance from God. This IHNR is based on the classification by Zweers (1989, 1995) on the IHNR of 'steward'.

Ecocentric oriented
'Intrinsic value' (IV) acknowledges that nature has an existence value, which is independent of the value it has for humanity. This IHNR is based on the classification by Zweers (1989, 1995) on the IHNR of 'partner' and 'participant'.

'Interconnectedness' (IC) focusses on the relation between life on earth. It shows that all life on earth is dependent on each other and all creatures need each other to survive. This IHNR is based on the classification by Zweers (1989, 1995) on the IHNR of 'participant'.

From the deductive and inductive coding combined I created a list of keywords to search for each IHNR. The keywords are the following for each IHNR. Human well-being (HW): ecosystem services, benefits and well-being. Secular stewardship (SS): stewardship, steward, future generation, responsibility, responsible management, natural resources protection, values, Gross National Happiness and secular. Religious stewardship (RS): stewardship, steward, God, Bible, Koran, religion, Buddhist and Islam. Intrinsic Value (IV): intrinsic value, value for its own, respect all life forms and Gross National Happiness. Interconnectedness (IC): interconnectedness, harmony, compassion and Gross National Happiness. The list with keywords was a good way to search through the nature policy documents and to see if they were useful for the analysis. In the end, I scanned and read most of the nature policy documents to make sure I did not skip accidently important parts.

After coding all the documents, conclusions are drawn from testing the (identified) categories against the data. For the study to be replicable, the analytical procedures and processes are reported as completely and truthfully as possible (Patton, 2002). This includes the decisions made concerning the coding process and methods used. Quotations are used to justify conclusions, nest to graphs for data display (Patton, 2002). The content analysis is supported by the computer program ATLAS.ti, with basic functions such as editing text, taking notes, coding and retrieving text.

Furthermore, the analysis of nature policy documents does not focus on comparing the content between countries. I learned from the interviews and documents analysis, that the nature policy documents differ in content. For example, the National Biodiversity Plan of Israel from 2010 (Israel, document 3) lacks operationalization, including objectives, indicators, priorities, timetables, delegation of responsibilities, budget and participation of stakeholders (source: Israel, document 4; Israel, respondent 5). However, the National Biodiversity Plan of Bhutan from 2014 (Bhutan, document 5) does include such operationalization. The limited time set for this research did not allow for further analysis of the variation in content of the selected nature policy documents.

There is no differentiation between nature policy documents for how often a certain IHNR was present. The aim is to show with illustrations which IHNR are present and how they are described. It is about qualitative research. The same applies to the interview data, from which quotes are used in the results section. The quotes are included to provide a more thorough understanding of the IHNR. They do not represent how often a specific IHNR was mentioned or how many respondents spoke about it. I.e. when an interviewee did not speak about a certain IHNR then this is not specifically mentioned in the results.

3.4.2 Analysis of nature conservation efforts

Nature conservation efforts describe the actions that have been taken by each country to protect the natural environment. There are four indicators used to measure the nature conservation efforts, of which two quantitative and two qualitative. These indicators are described below and include at the end, an argumentation for why these indicators are chosen.

Terrestrial protected areas (% of total land area) is a quantitative indicator, which is defined as a protected area of at least 1,000 hectares and that are designated by

national authorities (World Bank, 2016). Protected areas include scientific reserves, national parks, natural monuments, nature reserves and protected landscapes (World Bank, 2016). Terrestrial protected areas were measured in 2014 (World Bank, 2017a). The percentage of terrestrial protected areas is compared to the Aichi target, which is an important international measurement scale. The Aichi target is set by the UN convention on the Conservation of Biological Diversity (CBD), namely that each member state should have 17% of its terrestrial area protected for nature conservation by 2020. The percentage marine protected areas is not included in this study, as the countries have large differences in coastline. Bhutan has no coastline, Turkey a long coastline and Israel a relatively short coastline.

Forest cover is a quantitative indicator, expressed relatively to the total area. Forest cover is defined as an area larger than 1 hectare with a canopy density of 10 percent or higher. Forest cover was measured in the year of 2015 (Food and Agriculture Organisation, 2015).

Environmental sustainability is a qualitative indicator; it represents a sub-index of quantitative environmental indicators related to travel and tourism policy. The sub-index indicators are not shown in Table 8, but will be examined separately for each country to give additional detail. The sub-index consists of the following: environmental regulations, sustainability of tourism, CO_2 emission, threatened species, forest cover change, environmental treaty ratification, baseline water stress, wastewater treatment and coastal shelf fishing pressure. The environmental sustainability score is between 1 (low) and 7 (high), and was measured in 2015 (World Economic Forum, 2015).

The n*atural resources* indicator is a qualitative indicator as well, based on a sub-index of quantitative environmental indicators related to natural and cultural resources. The sub-index indicators are not shown in Table 8, but will be examined separately for each country to give additional detail. The sub-index consists of the following: number of World Heritage natural sites, total known species, total protected territorial areas, natural tourism demand, quality of natural environment. The natural resources score is between 1 (low) and 7 (high), which was measured in 2015 (World Economic Forum, 2015).

Altogether, these indicators have been chosen to support for each country their performance on nature conservation efforts. The quantitative indicators are chosen as they are easy to understand and give a good overview of the situation, without having to show a long list of complex sub-indicators. These indicators will form the main point of reference, when discussing the connection between religion, IHNR and nature conservation efforts in Chapter 4 Results. The qualitative indicators provide more detail to the nature conservation efforts of each country. They are based on a list of sub-indicators, which shows on different topics how much attention is given to nature conservation. The qualitative indicators are included to support a broader understanding of each country's performance on nature conservation, but they play a minor role in the discussion of the results on the connection between religion, IHNR and nature conservation efforts, compared to the quantitative indicators. As a side note, it should be mentioned that also other indicators have been considered for this study to represent the nature conservation efforts. However, it was difficult to find indicators that are easily

comparable between the three countries. For example, marine protected area is a quantitative indicator, which is not applicable for comparison as Bhutan is landlocked.

4. Results

The results describe in Chapter 4.1 the IHNR found per country, based on the nature policy documents and interviews, as well as an analysis of the differences between the countries. Chapter 4.2 gives a description per country of the nature conservation efforts and an analysis of the differences. Chapter 4.3 links the IHNR with nature conservation efforts.

4.1 IHNR per country and analysis of differences

This chapter describes the IHNR found for Bhutan, Turkey and Israel, and provides an analysis of the differences between countries. Appendix C shows for each country an overview of the nature policy documents that are analysed, with specifications of title, topic, year, author, type, nature conservation efforts and IHNR.

4.1.1 Bhutan

The results are derived from nature policy documents and interviews, which are discussed below separately.

4.1.1.1 Nature policy documents

I had access to a total of 42 nature policy documents in relation to Bhutan. Of which, thirty documents are useful as they describe an IHNR. The other twelve were not useful and did not describe any IHNR. Table 5 provides an overview of the IHNR found in the thirty documents.

Table 5: Overview of the number of Bhutanese nature policy documents that refer at least once to the specific IHNR. Legend: RS = religious stewardship; SS = secular stewardship; HW = human well-being; IV = intrinsic value; IC = interconnectedness

	RS	SS	HW	IV	IC
Nature policy documents	0	19	8	27	11

For each IHNR found in the nature policy documents, a quote is highlighted in text that represents this IHNR. The most important quotes are discussed below for each IHNR to give a better understanding of how the human-nature relationship is framed in Bhutanese nature policy documents.

Secular stewardship (SS) is addressed in several nature policy documents with the exact same quote by the king of Bhutan. The quote conveys the following message: *"We must all accept our individual responsibility to conserve the rich diversity of Bhutan's plant and animal species for the benefit of both the natural world and our children's future"* (Bhutan, documents 16, 18-23 and 25). In this quote the argument 'for the benefit of our children's future' is directly related to secular stewardship (SS), the argument 'for the benefit of the natural world' is related to intrinsic value (IV).

Human well-being (HW) can be illustrated with the following quote: "*It has become increasingly recognized that biodiversity is absolutely basic to human survival and*

welfare. The role of biodiversity in human affairs, and therefore as values to mankind can be described as ethical, cultural, aesthetic, utilitarian, and ecological" (Bhutan, documents 1 and 2)*.*

Intrinsic value (IV) is strongly linked to Buddhism and Buddhist ethics in several quotes. The Buddhist ethic, respect for all life forms, was mentioned most often: *"Buddhist teachings and practices have fostered a respect for all life forms and a deep reverence for nature"* (Bhutan, documents 1, 2, 4, 8, 10, 12, 16, 27 and 30). Followed by harmony among all sentient beings: *"Buddhism, with its simple values of peace, compassion and harmony among all sentient beings….."* (Bhutan, document 14).

Interconnectedness (IC) is connected to Buddhism: *"The crux of the Buddha's teaching is 'Tendrel Gi Choe' or the interdependence among all life forms"* (Bhutan, document 1).

All in all, in the Bhutanese nature policy documents refer to several IHNR. The secular stewardship (SS) and human well-being (HW) IHNR are both present. However, the analysis indicates that the intrinsic value (IV) and interconnectedness (IC) play a more important role. Both IHNR mention in the quotes the relation to Buddhism. Also, the intrinsic value (IV) is mentioned in more than 90% of the nature policy documents of Bhutan and is supported by its authoritative king.

4.1.1.2 Interviews
I had access to a total of five interviewees for Bhutan. The interviews reveal three IHNR of main importance, which are discussed hereunder with quotes as illustration: human well-being (HW), intrinsic value (IV) and interconnectedness (IC).

Human well-being (HW) is part of the consciousness of the Bhutanese people. *"Bhutanese are very conscious about what nature can provide to us and it is very important and we take it very serious to protect nature"* (Bhutan, respondent 3). *"We think nature should remain as it is, and not destroy it because of economic reason"* (Bhutan, respondent 3). However, not many of the local people use the term ecosystem services to refer to the human dependency on nature, though. *"The local people do not use ecosystem services, but they use local terms. They don't know it means ecosystem services, but they know in general terms what it is all about"* (Bhutan, respondent 4).

The intrinsic value (IV) of nature has a firm foundation in Bhutan and Buddhism. *"Buddhism is not only about human life, but it talks about all sorts of life, and includes nature as well. Nature is important for all the animals that live in the forest. We as human beings are so dependent on nature. There is so much life that depends on nature. I think and I do believe that many Bhutanese know this"* (Bhutan, respondent 3). This statement shows that the human dependency on nature is part of the cognitions of the Bhutanese people. *"To live in harmony with other beings is something that you learn at school already as a Buddhist value"* (Bhutan, respondent 2). Furthermore, the Bhutanese people assign specific areas in nature where gods and spirits live, which cannot be disturbed by humans. *"In many villages, it is believed that mountains and water ponds are the place of local gods. You don't cut trees there, because it will bring a bad fortune."* (Bhutan, respondent 5.

Interconnectedness (IC) is part of the Bhutanese culture, the people are conscious of how they should treat other beings. Buddhism has a strong connection with nature and many Bhutanese are aware hereof. *"We as human beings are so dependent on nature. There is so much life that depends on nature. I think and do believe that many Bhutanese know this…. There is a famous Buddhist story about four friends, illustrating the interconnectedness. The story teaches about harmony with other beings, that they share the fruit from the trees with other animals from different backgrounds and sizes. It is very much connected to Buddhism"* (Bhutan, respondent 3).

Altogether, the results from the interviews indicate a similar IHNR profile as in the nature policy documents. The intrinsic value (IV) and interconnectedness (IC) have a strong connection to Buddhism and are integrated in the Bhutanese culture. This is illustrated as: "In Bhutan in every step you take, Buddhism is part, you cannot skip from Buddhism, you constantly learn about interconnection" (Bhutan, respondent 3). These IHNR are framed as such that humans and nature are equally important. Nature is not only there for utility, but has an existence value. Secular stewardship (SS) was present in the Bhutanese nature policy documents, but in the interviews this IHNR was not mentioned in relation to nature conservation or Buddhism. To conclude, the results from the nature policy documents and interviews, and the context in which they are placed, show a strong focus on both ecocentric oriented IHNR.

4.1.2 Turkey

The results are derived from nature policy documents and interviews, which are discussed below separately.

4.1.2.1 Nature policy documents

In total nineteen Turkish policy documents were available for analysis. Only six documents of the total nineteen describe IHNR, of which the analysis is set out below. The remaining 13 documents did not mention IHNR and are not included in the analysis. Table 6 provides an overview of the IHNR found in the six documents.

Table 6: Overview of the number of Turkish nature policy documents that refer at least once to the specific IHNR. Legend: RS = religious stewardship; SS = secular stewardship; HW = human well-being; IV = intrinsic value; IC = interconnectedness

	RS	SS	HW	IV	IC
Nature policy documents	0	6	2	0	0

The most important quotes from the nature policy documents are discussed below per IHNR.

Secular stewardship (SS) is illustrated with the following quote: *"To protect the rich biodiversity of our country and to hand it down to future generations is the responsibility of all of us"* (Turkey, document 5). But this is clearly framed in a utility perspective as shown in the following quote: *"Turkey is one of the fortunate countries in the world, which possesses vital resources for food security and thus has the responsibility to*

protect and use this important wealth rationally for the welfare of future generations" (Turkey, documents 3 and 4).

Human well-being (HW) is illustrated the following: *"The rapid decrease in biological diversity is threatening the ecological, economic, moral and cultural benefits we currently derive from the living resources of the earth"* (Turkey, document 3).

The results from the limited amount of nature policy documents show secular stewardship (SS) and human well-being (HW) as the only IHNR present. The documents illustrate that nature and its ecosystem services must be protected for future generations. There is not mentioned that this must be done from a religious perspective. The nature policy documents perceive nature from a utility perspective, to protect the ecosystem services on which we depend, which connect to the anthropocentric orientation.

4.1.1.2 Interviews

In total, four interviews were taken for Turkey. See Appendix B for an overview of the interviewees and their background. The results from the interviews revolve mainly around two IHNR, which are important for Turkey: religious stewardship (RS) and human well-being (HW). Both IHNR are illustrated with quotes hereunder.

Religious stewardship (RS) is not mentioned in the nature policy documents, since Atatürk declared Turkey a secular state in 1923 and eliminated religion from state policy. However, the interviewees mention that Islam does play an important role in Turkey, as it is integrated in the people their lives and it is part of their culture. *"The people in Turkey do care about religion and follow the Koran and the Hadith"* (Turkey, respondent 3). There is a strong religious commitment in Turkey (98% of Turkish population follows the dominant religion; Hackett et al., 2012). The interview results show that religious stewardship (RS) is present in Turkey. *"In the Islam, you as a human being need to accomplish two tasks, you worship God and you fulfil your role as steward for God on earth, as Khalifa of Allah"* (Turkey, respondent 4). Yet, the religious argument of being a good steward over God's creation is certainly not always used to the benefit of nature conservation in Turkey (Turkey, respondent 2). The Turkish people may embrace the religious ethical norms and IHNR, but do not know what is said in the Koran and Hadith about the attitude towards nature (Turkey, respondent 4). *"When a donkey carries too much weight for what it can handle, then this is because of necessity. But if these people would know how the Prophet would deal with this situation, then they would act differently"* (Turkey, respondent 4). The Turkish people in general do not know how to be a good steward of God. There is a rich heritage of the connection between Islam and nature in the Koran and the Hadith of Mohammed, of which many people in Turkey are unware. *"If people would know how the prophet Mohammed deals with nature, and first learn what is mentioned in the Islamic tradition, then people would act differently. In the Koran, there are chapters named after animals. Allah mentions the bee in the Koran and He describes it so extensively. God has created so much life that is dependent on each other….. Why would God name animals as proof of his creation in the Koran, if they were not important?..... Both the Koran and the Hadith of the prophet Mohammed are seen as the absolute truth by every Muslim"* (Turkey, respondent 4). These illustrations show that there is a rich heritage of the connection between Islam and nature. However, the results

from the interviews show that this knowledge is not actively shared or focussed on by the Turkish religious community. *"In Turkey, we pray five times a day, you can do this at home or in the mosque, actually you can do this anywhere. But Friday you must go to the mosque. All the Muslims come together and the Imam, the head of this people, he speaks about what we can do in life. How religion told us to do. The Imam speaks sometimes about nature, but it is not a lot. Sometimes. But if he does then it would be better, because the people care about what the Imam says and the people care about religion"* (Turkey, respondent 3).

Human well-being (HW) is used in the context of utility and nature. Forests are an important part of the nature conservation focus in Turkey, of which 99% is owned by the government (Turkey, respondent 2). Most of the forests are production forests, but the management strategy is changing, in the last four to five years sustainable forest management is upcoming (Turkey, respondent 1 and 2). Which means that other ecosystem services are included like clean water, aesthetics, soil protection and non-timber forest products. Two interviewees say that nature conservation has never been a high priority on the agenda of the Turkish government. Recently an advertisement was published of the president of Turkey, Erdogan, who spoke on the 21st of March at the international day of the forests, with the motto: *"forests for people, forests for the economy"* (Turkey, respondent 2). The utility oriented motto of the Turkish government summarizes their approach towards forests and nature in general (Turkey, respondent 2). One interviewee placed the utility perspective in a religious context as well. *"People in Turkey greatly value religion, but only for things that are relevant, human lives are relevant, money is relevant. For money, we know what is halal (allowed) and haram (forbidden)"* (Turkey, respondent 4). However, further elaboration on the value of nature from a religious perspective is missing in the results.

Concluding, the interviewees mention that Islam forms an important part of the Turkish culture, which is not accounted for in the nature policy documents. The stewardship role is present in all six nature policy documents, from a secular perspective. The results from the interviews show that the stewardship role is rooted in Islam, which is their source of inspiration and truth. The current nature conservation policy of the Turkish government is dominated by a utility perspective, which is visualised with the quote by Erdogan on forests. In short, Turkish nature policy is written from a secular perspective and an anthropocentric (utility) orientation.

4.1.3 Israel

The results are derived from nature policy documents and interviews, which are discussed below separately.

4.1.3.1 Nature policy documents

In total 75 policy documents were retrieved for Israel. Only nine of them mention IHNR, of which the results are discussed below. This leaves 66 documents unused. Table 7 provides an overview of the IHNR found in the nine documents.

Table 7: Overview of the number of Israeli nature policy documents that refer at least once to the specific IHNR. Legend: RS = religious stewardship; SS = secular stewardship; HW = human well-being; IV = intrinsic value; IC = interconnectedness

	RS	SS	HW	IV	IC
Nature policy documents	3	8	6	3	0

The most important quotes will be illustrated below, which is similar to the previous discussed case studies.

Religious stewardship (RS) is illustrated the following: Genesis 2:15, "*God took Adam and placed him in the Garden of Eden to work it and guard it*" (Israel, documents 1 and 4). As well as, Ecclesiastes Rabba 7:13, "*When the Holy One Blessed Be He created the first man, He took him and warned him about all the trees of the Garden of Eden, saying: See My works, how beautiful and perfect they are, and all I created--I created for you. Beware lest you spoil and destroy My world, for if you will spoil it, there is no one to repair it after you*" (Israel, documents 1 and 6). Besides quotes that represent religious stewardship there are several quotes from the Jewish religious heritage that are used as references in nature policy documents. For example, several biblical passages are used to illustrate the historical presence of tree species in Israel: Isaiah 41:19, "*I will plant in the wilderness the cedar… I will set in the desert the cypress*" (Israel, document 8).

Secular stewardship (SS) is illustrated in Israeli nature policy documents as the influence of humanity on earth. This is not without consequences and can impact the future. "*The resolve to preserve and enhance the world environment for the benefit of present and future generations has led to new initiatives which crystallize the responsibilities of humankind towards the global environment*" (Israel, document 6).

Human well-being (HW) is often integrated in the term ecosystem services, to show and quantify the importance of nature to humanity. "*The importance of biodiversity to the people in Israel has increased in recent years, as part of the realization of the scarcity of various ecosystems and their services in providing areas for leisure activities, recycling of nutrients and water, food provision to meat and milk production, and other key components for cultural services*" (Israel, document 5).

Intrinsic value (IV) was mentioned rather directly in the nature policy documents. This is shown by the quote: "*All life forms have an intrinsic value*" (Israel, document 1).

The results from the nature policy documents show that there is diversity present of IHNR.
The stewardship role of the Israeli people is discussed from both the religious as secular perspective. Religious stewardship (RS) IHNR is supported by descriptions from the Jewish Bible and Thora, to show that nature should be protected for God who created all this. Nature has an intrinsic value. In the secular perspective nature is protected for its utility value, which is also true for human well-being (HW). All in all, the nature policy documents have a combination of an anthropocentric (utility) and ecocentric (nature) orientation.

4.1.3.2 Interviews

In total eight interviews were conducted for Israel. See Appendix B for an overview of the interviewees and their background. The interviews reveal three IHNR which are important for Israel, which are discussed hereunder with quotes as illustration: religious stewardship (RS), secular stewardship (SS), human well-being (HW), and intrinsic value (IV).

Religious stewardship (RS) is quoted in the nature policy documents with sources from the Jewish religious heritage (the Bible and rabbinical literature). However, the interviews indicate that these references are meant as a historical reference and not as a religious commandment. *"The people and scientists who have shaped policy in Israel use the Jewish heritage as historical antecedents, but not religious spiritual values"* (Israel, respondent 7). In general, Jewish religious people are not actively involved with nature conservation in Israel. "*The classic very religious world today, it is amazing how little relationship there is with nature conservation and rights of animals"* (Israel, respondent 6). Furthermore, the link between Judaism and environment is not very well known to the Jewish society. "*There isn't a very well developed body of teachings or centralised system about the link between Judaism and environment, it is scattered to all kinds of different places"* (Israel, respondent 8). However, other societal values in Israel, in contrast to environmental values, have a stronger connection with Judaism. *"Some issues like poverty for instance, I don't think you need to write a book about Judaism and Poverty because you will find a very well-known ethos for this"* (Israel, respondent 8). Besides, Judaism is not an effective frame to promote environmental awareness. "T*he Israeli society is very polarised, it's becoming a little bit less so, but still is polarised between those who consider themselves religious, the orthodox and those who consider themselves non-religious, which is secular*" (Israel, respondent 8). Yet, there are other societal values in Israel which are very Jewish but are not necessarily labelled as such. *"The Hebrew words Tsa'ar Ba-alei Chayim mean literally 'the pain of living things'. Or the prevention of pain to living things, and this is a Jewish value, phrased from the Jewish Bible. Which is developed later on in the Talmud and rabbinical literature, as a whole network of laws and norms of things that you are allowed to do or not allowed to do. Because it creates suffering among animals"* (Israel, respondent 8). Many of the present-day norms and values in Israel which originate from the Jewish religious heritage can be linked to this. Like, kosher slaughter as prevention of pain, to not overload your pack animals, to not work your pack animals too hard and to feed your animals before you feed yourself (Israel, respondent 1, 6, 7 and 8). Moreover, the fact that Jews don't hunt is the most direct link to nature conservation in Israel. *"It is just unbelievable, Jews have never hunted, primarily because animals that are killed in a hunt are not kosher and you need a kosher slaughter. So, it is just blood sport or entertainment and that is considered animal cruelty….. I don't say it is forbidden to hunt, the government has not outlawed hunting, it is regulated like in most other countries, you need a licence, but the general population looks at it pretty distastefully"* (Israel, respondent 8).

Secular stewardship (SS) was mentioned by several respondents. Nature conservation today is mainly influenced by secular Jewish values and not by religious Jewish values. *"The component that is very strong in developing environmental consciousness is not religion, but the ethnic component. These are our flowers, these are our animals, we are going to give them Hebrew names…. It is stamping our ownership on it"* (Israel,

respondent 7). Within this ethnic frame nature conservation through planting of trees fits well as an example. *"For every Jewish kid in the world a tree is planted in Israel with its name… planting trees was taming nature, cultivating the land and a tool for land control. It is a type of ownership"* (Israel, respondent 6). Nature conservation and the Jewish identity are very much intertwined with each other.

Human well-being (HW) was mentioned by several respondents. In Israel, the majority of the people do not feel dependant on nature, which is in contrast to what the nature policy documents mentioned: *"For example if I take the water problem, the public saw that we can solve it with technology, with desalination. If I talk about climate change, people don't feel it… So, it is hard to connect people to climate change for example"* (Israel, respondent 2). However, the attitude towards nature is mainly from the utility perspective in Israel, which does correspond with the outcome from the nature policy documents. *"If it is useful, keep it, conserve it and protect it. If it is not useful forget about it. So, everything is seen in terms of utility. An animal that has no known use has no value. That is very different from the attitude of the Europeans, that things, living organisms have an inherent value. No matter if they are useful or not"* (Israel, respondent 7). Though, the Israeli people do not use the term ecosystem services to express the utility value. *"The translation of ecosystem services is very bad in Hebrew, it is the same word for toilet in Hebrew"* (Israel, respondent 2).

The intrinsic value (IV) in Israeli nature policy documents is borrowed from European countries. In Israel, there is a different attitude towards nature than in Europe when it has no value to humans. For example, the open spaces and deserts in Israel have no value, as the general population sees it as land that needs to be developed (Israel, respondent 3).

The results from the interviews show that nature policy in Israel is not focussed on the ecocentric (nature) orientation. This contrasts with the nature conservation policy documents, which are supported by religious stewardship (RS) and intrinsic value (IV). The interviewees illustrate that these arguments are not valid for Israel. Nature policy is based on secular Jewish values, which are part of the Jewish identity. Nature conservation is not a religious commandment and the intrinsic value mentioned in the nature policy documents is borrowed from European countries. The results from interviewees show that Israeli nature policy is focussed on the anthropocentric (utility) value of nature, which is supported by secular stewardship (SS) and human well-being (HW) IHNR.

4.1.4 Analysis of differences

The previous subchapters describe for each country extensively which IHNR are present in nature policy documents and the interviews. This chapter discusses the differences between the nature policy documents of the countries, as well as the differences between the interviews of the countries.

4.1.4.1 Nature policy documents

The differences between the nature policy documents of the countries are illustrated in Figure 2.
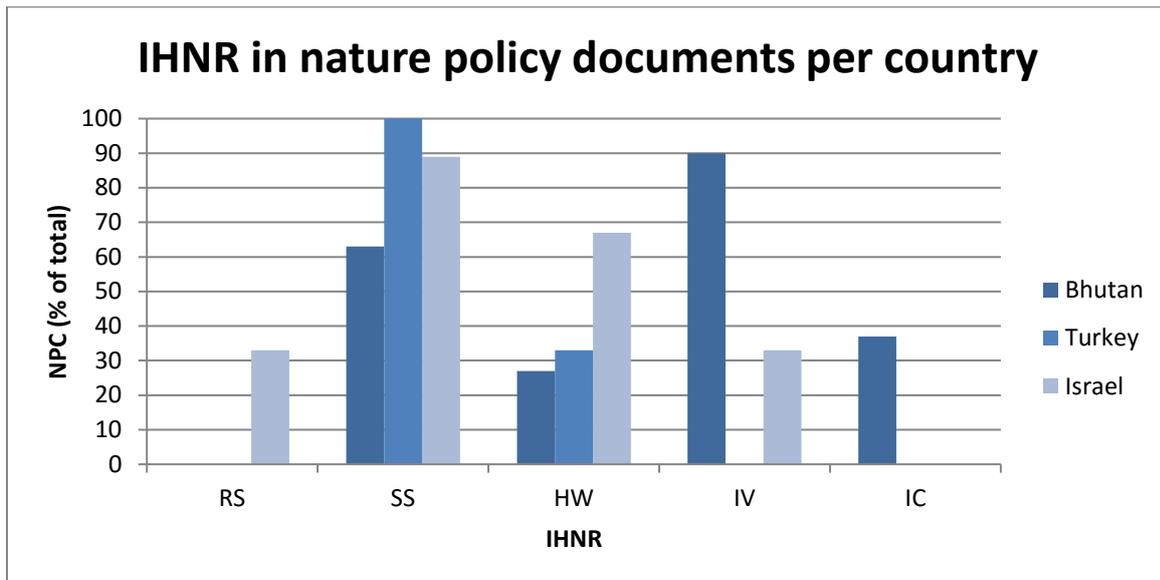
Figure 2: Overview of the IHNR found in the nature policy documents per country. Legend: NPC = nature policy documents; RS = religious stewardship; SS = secular stewardship; HW = human well-being; IV = intrinsic value; IC = interconnectedness

Figure 2 shows the IHNR found in the nature policy documents for the different countries. The presence of IHNR is expressed relatively to the total number of nature policy documents, which allows for comparison between countries. The total number of nature policy documents per country are: Bhutan thirty documents, Turkey six documents and Israel nine documents (see Appendix C for details).

Clearly, secular stewardship (SS) scores high in all three countries (all more than 60%). That is, as Figure 2 shows, the only similarity. For all other IHNR, the scores differ largely between the countries. Israel, for example, is the only country that scores on religious stewardship. Interconnectedness (IC) is only present in Bhutan. Intrinsic value (IV) shows in both Bhutan and Israel; however, the score is only high for Bhutan (90%). Human well-being (HW) is present in all countries, but only Israel scores high (with nearly 70%).

Altogether, the results show that the nature policy documents differ in distribution of IHNR per country. Bhutan is unique in its high score on both ecocentric IHNR, which corresponds with the partner IHNR. Turkey scores high on secular stewardship (SS), which coincides with the steward IHNR. However, Turkey shares this score (above 60%) with Bhutan and Israel. Israel is the only country with religious stewardship (RS) and has a high score on human well-being (HW). This together with secular stewardship (SS) connects with the steward IHNR.

4.1.4.2 Interviews
The IHNR in the interview are more difficult to compare than the nature policy documents. In the nature policy documents the IHNR can be counted if they are present or not. The analysis of differences of the interviews is more based on where the interviewees themselves put the focus.

For Bhutan, the interviewees highlight the importance of Buddhism for the Bhutanese people. The Buddhist ethics are very much connected to the ecocentric (nature) oriented IHNR. In which, nature has a value for its own and people know that their life is interconnected with nature. This contrasts with Turkey, where Islam plays an important role, but religion is not visible in nature policy like in Bhutan. The people who practice nature conservation in the field are religious and follow what is said in the Koran. However, when you discuss nature conservation at the national level, the religious part is not there in policy. Nature policy is dominantly based on anthropocentric (utility) values. In Israel, religion is present in nature policy. There are direct citations from the Jewish Bible. However, the interviewees highlight that nature conservation in Israel is driven by secular Jewish values and not Jewish religious. Similar to Turkey, nature is seen in terms of utility and has an anthropocentric orientation.

4.2 Description of nature conservation efforts per country and analysis of differences

This chapter describes the nature conservation efforts for Bhutan, Turkey and Israel, see Table 8 for an overview of the results. See Chapter 3.4.3 for the definition of the indicators, measurement year and sources. The chapter continues with an analysis of the differences between countries.

Table 8: The indicators for nature conservation efforts per country. See Chapter 3.4.3 for the definition of the indicators, measurement year and sources

Indicator	Bhutan	Turkey	Israel
Terrestrial protected areas[7]	47.30%	0.23%	19.85%
Forest cover[8]	70.4%	15.0%	7.0%
Environmental sustainability score (1-7)[9]	4.1	3.8	3.8
Natural resources score (1-7)[10]	3.1	2.8	2.5

4.2.1 Bhutan

Bhutan is a small country that scores high with terrestrial protected area (47.3%) and forest cover (70.4%). Bhutan is far ahead of the Aichi target (17% terrestrial protected area). The environmental sustainability score for Bhutan is 4.1, which corresponds with rank 73 out of 141 countries. Additional information from the sub-index shows that Bhutan has exceptional good scores for enforcement of strict environmental regulations, sustainability of tourism and forest cover change; and on the other hand, low scores for wastewater treatment and CO_2 concentration (World Economic Forum, 2015). The natural resources score for Bhutan is 3.1, which corresponds with rank 58 out of 141 countries. The sub-index shows that Bhutan has very good scores for quality of natural environment and total terrestrial protected area; but low scores for natural tourism

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[7] World Bank, 2017a
[8] Food and Agriculture Organisation, 2015
[9] World Economic Forum, 2015
[10] World Economic Forum, 2015

demand (World Economic Forum, 2015). To sum up, Bhutan plays an outstanding role with regard to their percentage of high quality protected area and forest cover.

4.2.2 Turkey
Turkey has a very low percentage of terrestrial protected area (0.23%). As a result, Turkey is not able to meet the Aichi target for terrestrial protected area. However, the forest cover (15%) is considerable. The environmental sustainability score for Turkey is 3.8, which corresponds with rank 95 out of 141 countries. The additional information from sub-index shows no specific high or low scores (World Economic Forum, 2015). The natural resources score for Turkey is 2.8, which corresponds with rank 73 out of 141 countries. The sub-index shows a very low score for total protected area. In summary, Turkey has a low percentage of terrestrial protected area, but the area with forest is significant.

4.2.3 Israel
Israel has 19.85% of its terrestrial area assigned as protected area, which is above the Aichi target. The forest cover is low with 7%. The environmental sustainability score for Israel is 3.8, which corresponds with rank 101 out of 141 countries. The sub-index shows a good score for wastewater treatment, but low scores for baseline water stress and environmental treaty ratification. The natural resources score for Israel is 2.5, which corresponds with rank 99 out of 141 countries. The sub-index indicators have an average low score. To conclude, Israel is doing well with their nature conservation efforts in terms of percentage terrestrial protected area, but there is still room for improvement to increase the qualitative indicator scores.

4.2.4 Analysis of differences
Table 8 shows the different scores for the nature conservation efforts of each country. Clearly, Bhutan scores high on both terrestrial protected area (47.3%) and forest cover (70.4%). Israel follows with 19.85% terrestrial protected area, which is above the Aichi target (17%). The percentages on terrestrial areas are based on the figures presented by the World Bank (2017a). However, these figures are lower than the percentages mentioned in the interviews, the nature policy documents and relevant scientific literature (sources are mentioned in the following examples). According to Bhutan's National Biodiversity Action Plan from 2014 and an interviewee the terrestrial protected area, including biological corridors, is 51.44% (Bhutan, document 5; Bhutan, respondent 5). As reported by the Turkey's National Biological Diversity Strategy and Action Plan from 2007, an interviewee and an article on Biodiversity and Protected Areas in Turkey from 2013 the total protected area in Turkey is 7.2% (Turkey, respondent 1; Anonymous, 2007; Kucuk & Erturk, 2013). As stated in an article on Biodiversity and Conservation of Turkish Forests from 2001 the forest cover in Turkey is 26% (Kaya & Raynal, 2001). According to Israel's Fourth National Report on the Convention of Biological Diversity from 2009, Israel's National Biodiversity Plan from 2010 and an interviewee the terrestrial protected area is 20% in Israel. (Israel, document 2 and 3; Israel, respondent 5). The variation in percentages for terrestrial protected area depends on the definition of terrestrial protected areas. The World Bank has one clear definition applicable for all three countries. The same accounts for the percentage forest cover

which is defined by the Food and Agriculture Organisation. The environmental sustainability and natural resources scores are high for Bhutan, which corresponds with a high position in the ranking (out of 141 countries). Both Turkey and Israel score relatively low on environmental sustainability and natural resources, which result in a low position in the ranking (out of 141 countries). All in all, the indicators for nature conservation efforts show that Bhutan is far ahead of Turkey and Israel.

4.3 Linking IHNR and nature conservation efforts

This chapter describes the connection between the results of the IHNR and nature conservation efforts per country. This is followed by an analysis of the overall link between IHNR and nature conservation efforts.

4.3.1 Bhutan

The results from the interviews and nature policy documents show for Bhutan its particular focus on ecocentric (nature) oriented IHNR, which are closely linked to Buddhism. The King of Bhutan highlights the importance of the nature in the National Environmental Strategy Plan of 1998: *"our Kingdom can meet the challenges of the 21st century without sacrificing that which is most vital to our national well-being: our unique cultural heritage and the integrity of our environment and natural resources"* (Bhutan, document 9). This perspective on nature is supported by the people of Bhutan, who respect their king. *"People from all ages look up to him, it is like he is our father and he tries to solve our problems. We can even write the king a letter and if the problem is serious enough he will grant you audience….. Our king believes in simplicity and is a true follower of Buddhism"* (Bhutan, respondent 2). The king's message is clear; it is our responsibility to protect nature. These nature oriented IHNR are found back in nature conservation practice as well. At the local level, the communities have decision-making power about projects in their area when it comes to planning of projects. *"Before any project can take place we have to get an endorsement from the general public. Stating that they are okay with that project coming there in that area. Anything that starts comes up from the grassroots, meaning the local- and community level"* (Bhutan, respondent 4). If for example, a road is planned through the area of a community, then the impact on nature is considered as well. If necessary, the damage to the natural environment is compensated. This originates from the Buddhist ethics that all life forms are valued and unnecessary harm to these life forms should be prevented. In Bhutan, there are even areas which are the domain of the spirits and gods. In these areas, human intervention is not allowed and at certain times humans are not even allowed to enter them. These areas are dominated by the natural world and not by humanity. These ecocentric (nature) IHNR that are present in Bhutan to protect nature, could be reflected by the relatively high scores and the leading position of Bhutan on percentage protected area and forest cover. The word could, is intentionally put in the last phrase, as there are also other influencing factors that should be accounted for, when trying to explain the link between IHNR and nature conservation efforts. Bhutan can afford to have a large area assigned for nature conservation, because the country is scoring low on several socio-economic factors. In Chapter 3.2.2 several socio-economic indicators are provided for Bhutan, of which two are indicative. Bhutan is relatively sparsely populated and has little thread from economic growth. With a low population density, there is limited

competition for space with nature conservation. However, the quote of the king (mentioned above) illustrates well how Bhutan is challenged by the developments of the 21st century, while protecting what is valuable for them: the natural environment.

4.3.2 Turkey

The IHNR results for Turkish nature policy show essentially an anthropocentric (utility) orientation, of which the stewardship role is the main driver. In the nature policy documents this is only illustrated in the secular (non-religious) perspective. The interviewees add that the stewardship role of humanity has a strong connection to Islam. They have in common that the natural resources need to be management responsibly for the present and future generations. The responsible management of the natural resources is visible in the forestry activities of the Turkish government. The government has a big influence in the forestry sector and has being doing so for a long time. *"Forests are an important part of nature in Turkey of which 99% is government owned. The forest has been in the hands of the government and it has protected the forests well compared to other ecosystems…. The government directorate on forestry is a strong organization with more than 10.000 people working for them."* (Turkey, respondent 2). Forest provide clear products, like wood, that are useful for the economy. In recent years, the perspective of the Turkish government has broadened to other products that are provided by forests. *"In the last 4-5 years we are working with Sustainable Forest Management, to do besides logging also protection of nature"* (Turkey, respondent 1). *"So the forests are not managed just for wood, but also for other services, such as water, aesthetics, soil protection and non-timber forest products"* (Turkey, respondent 2). The percentage of forest cover in Turkey is moderate (15%) relative to the other countries. However, when comparing it to the enormous land area of Turkey, this amount is still considerable. The percentage of protected area is low (0.23%) relatively to the other countries. This raises questions to why the level of protected area is so low. Furthermore, there are several socio-economic factors that could influence the nature conservation efforts of Turkey. The most eye catching is the substantial population density, relative to the other case studies, which could give additional pressure on the land available for nature. All in all, these examples show that the Turkish government has a stewardship motivation to protect nature, especially in the forestry domain, which has a high utility value for humanity.

4.3.3 Israel

The IHNR results for Israel's nature policy indicate predominantly an anthropocentric (utility) orientation towards nature. The nature policy documents illustrate both the religious and non-religious (secular) perspective. But, the interviewees steered away from Jewish religion and focussed more on the connection between the Jewish identity (secular perspective) and nature conservation practices in Israel. The Jewish identity is connected to Israel and this connection is built on the Jewish religious resources (i.e. Jewish Bible and rabbinical literature). When the Jewish people returned to Israel after the diaspora (exile), also known as the return to Zion, they felt they had returned to their home land. The Jewish people started to develop their land and connect with the natural environment of Israel. *"It was important to make the desert bloom again and to make land arable for agriculture"* (Israel, respondent 6). *"The component that is very strong in developing environmental consciousness is not religion, but the ethnic*

component. These are our flowers, these are our animals, we are going to give them Hebrew names…. It is stamping our ownership on it" (Israel, respondent 7). These illustrations show how the Israeli people put effort to protect the natural environment, mainly from the utility perspective. The intrinsic value of nature, which is mentioned in the nature policy documents, is not connected to Israel (Israel, respondent 7). The intrinsic value is borrowed from the international nature policy domain. However, there are examples where nature is protected for its intrinsic value in Israel. Nature conservation organisations in Israel put effort to protect open spaces from human development, which is clearly a more ecocentric oriented approach. The presence of an ecocentric motivation for nature conservation are an addition to the results from the interviewees, who claim a focus on utility in Israeli nature policy. Altogether, the nature conservation efforts of Israel can be reflected with a relative high percentage of protected areas (19.85%) and a relative low percentage for forest cover (7%). The level of protected area indicates that Israel has put considerable effort to protect nature, through assigning large amount of land for it. However, the low forest cover, does not reflect the focus of Israel on the utility value of nature. This could be due to the dry climate, and irrespective of this difficult environment Israel puts effort to reforest their (desert) land (Israel, respondent 2). There is even a Jewish holiday Tu-BIshvat, in which the new year of the trees is celebrated and this is used as an opportunity to plant trees in Israel. However, there are other aspects (socio-economic factors) that need to be considered, in order to properly explain the nature conservation efforts of Israel. Israel has a relatively high Gross Domestic Product and a relatively high population density, which illustrate the pressure from human development on efforts to protect the natural. There are also factors that need to be mentioned, which support nature conservation efforts. The advance on the peace process with Palestine support water rehabilitation projects (for the simplicity of this example the conflict between Israel and Jordan is left out of the discussion). In Israel and Palestine water is available in limited amounts, this valuable resource is something tangible that both countries can work together on. "*Rehabilitation of the river Jordan was difficult, but with combined effort from both parties it is happening now…. Several water treatment plantations have recently been built in Israel to filter the sewage water, which previously was flowing unfiltered through the rivers*" (Israel, respondent 4). All in all, these examples show that Israel's nature policy mainly has a stewardship perspective on nature conservation and a focus on the utility value.

4.3.4 Analysis of connection between IHNR and nature conservation efforts

The previous subchapters describe for each country what IHNR are present in nature policy and how these images are reflected in their nature conservation efforts. The results indicate a predominantly ecocentric (nature) IHNR for Bhutan, which link with high percentages for protected area (47%) and forest cover (70%). Turkey has an anthropocentric (utility) oriented IHNR, which matches relative lower percentages than Bhutan for protected area (0.23%) and forest cover (15%). Israel has similar to Turkey an anthropocentric oriented IHNR, which is linked to relative lower percentages than Bhutan for protected area (19.85%) and forest cover (7%). However, other variables should be considered as well, besides IHNR and nature conservation efforts. For each country, several socio-economic factors are observed, of which the population density is notable. Bhutan has relative to Turkey and Israel, a low population density, which

decreases the competition for space with nature. This could partly explain the high scores for conservation efforts in Bhutan compared to Turkey and Israel.

Furthermore, the results show for Israel that the Jewish ethnic component plays an important role in explaining their nature conservation efforts. The Jewish people feel that they are closely connected to the Jewish homeland and its natural resources. The Jewish ethnic component offers a strong motivation for nature conservation, which could be stronger than the utility motivation to protect and manage the natural resources sustainably for the present and future generations. In Bhutan nature is also part of their identity. The Bhutanese people are proud of the high level of forest cover in their country. But there is a differentiation between Israel and Bhutan. The Jewish ethnic component is solely connected to Israel, which is the Jewish homeland. Buddhism is connected to many more countries, as illustrated by the fact that 8 countries have a Buddhist majority population. For Turkey, the results do not show a connection between the Turkish identity and their motivation for nature conservation. Turkey's nature policy is mainly focused on the utility value of nature, with the motivation to protect and manage the natural resources sustainably for the present and future generations.

5. Conclusion

This chapter describes the answers to the research questions, which are addressed in this study. The main research question of this study is:
- How do the differences between religiously inspired IHNR correlate to the nature conservation efforts of Bhutan, Turkey an Israel?

The sub-research questions are:
- What are the religiously inspired IHNR of Bhutan, Turkey and Israel and what are the differences and similarities?
- What are the nature conservation efforts of Bhutan, Turkey and Israel and what are the differences and similarities?

The results from this study show that the dominant religion is not necessarily represented in the IHNR of a country. It is clearly represented in Bhutan, with its leading ecocentric (nature) motivation for nature conservation, based on the IHNR: intrinsic value (IV) and interconnectedness (IC). At first sight, it is not so obviously present in Turkey and Israel, which have an anthropocentric (utility) motivation, based on the secular stewardship (SS) IHNR.

Bhutan scores high for its nature conservation efforts, illustrated by its relatively high percentage of protected area and forest cover in comparison to Turkey and Israel. The cultural identity is connected to Bhutan's natural environment. The results show that the Bhutanese people are proud to have a large amount of forest cover, which is even mentioned in Bhutan's constitution to have 60% forest cover at all time.

The results of this study show that religiously inspired IHNR do not to necessarily have to be dominant for a country's nature conservation efforts. There are other factors that should be considered as well. Several socio-economic factors are observed in this study, of which population density is notable. Bhutan has, in comparison to Turkey and Israel, a low population density, which creates low pressure on competition for space with nature. This could explain party the connection between the ecocentric oriented IHNR and the high success score of Bhutan's nature conservations measures. In Israel, the population density is relatively high. These conditions indicate that the connection between humans and nature may depend on a complex combination of factors.

Whereas the religion factor is not so obviously present in Israel's IHNR, the results show that in Israel the Jewish ethnic component nevertheless plays an important role in its motivation to protect the natural environment. The Jewish people feel that they are closely connected to the Jewish homeland and its natural resources. The Jewish ethnic component may form a less visible, but strong incentive in addition to Israel's official utility motivation to keep and protect its natural resources sustainable for the present and future generations. There is a remarkable religious difference between Israel and Bhutan. Buddhist majorities can be found in more countries than Bhutan, whereas the Jewish ethnic component is specifically and only connected to Israel, the Jewish homeland, which uniqueness is likely to create an extra incentive for protection of the natural environment.

As a secular state, Turkey does not incorporate religious motivations in its IHNR. Turkey's nature policy is mainly focused on the utility value of nature, with the motivation to protect and manage the natural resources sustainably for the present and future generations. Nevertheless, with its vast Muslim majority, it could be expected that a Muslim undercurrent would show up in further research for Turkey's nature conservation motives. However, such connection could not be found.

6. Discussion

This chapter provides a reflection on the results, theoretical framework and methodology.

The aim of this research is to describe how religiously informed IHNR connect with nature management. In Chapter 5 Conclusion an answer is given based on the results of this study. However, these results can be reflected against three hypotheses. The hypotheses are based on this research's literature study of the religious resources of Buddhism, Islam and Judaism, which is mentioned in the theoretical framework.

- Hypothesis 1: Buddhism has an ecocentric (nature) orientation, based on intrinsic value and interconnectedness, which connects with the participant IHNR of Zweers (1989, 1995).

- Hypothesis 2: Islam has a combination of an anthropocentric (utility) and an ecocentric (nature) orientation, which connects with the religious stewardship IHNR of Zweers (1989, 1995).

- Hypothesis 3: Judaism has similar to Islam, a combination of an anthropocentric (utility) and an ecocentric (nature) orientation, which connects with the religious stewardship IHNR of Zweers (1989, 1995).

For this study a case study analysis is done for each religion, for Buddhism in Bhutan, Islam in Turkey and Judaism in Israel. When comparing these three countries with each other, it is interesting to look at the differences. The results of this study show that for Bhutan the outcome of the IHNR is in line with the expectation for Buddhism. However, the results of this research for Turkey and Israel vary from the expected IHNR for Islam and Judaism. In Turkish nature policy, the religious stewardship (RS) image is not present. This is in conformity with the fact that Turkey became explicitly a secular state, since Ataturk formed the republic of Turkey in 1920. The results from the interviews indicate that religion does play a motivating role in Turkey, but this is not visible in nature policy. Only a secular form of the stewardship IHNR is present in Turkish nature policy, which could be derived from the religious perspective. In Israel, the situation is similar to Turkey, where religious stewardship (RS) is not part of nature policy. The results from the interviews show that nature conservation in Israel is rooted in the Jewish identity and is less so motivated by religious Jewish values. Israel is the Jewish homeland, as mentioned in the Jewish religious resources (Bible and rabbinical literature) and the Jewish people want to protect their homeland and the natural resources.

The results of the nature conservation efforts show that Bhutan has a leading role in comparison to Turkey and Israel for the percentage of protected area and forest cover. From these results, the question arises: does an ecocentric IHNR provide a stronger motivation for nature conservation than anthropocentric IHNR? This question cannot be easily answered. However, this study may support a better understanding of the connection between both.

Apart from the IHNR and nature conservation efforts, there are other influencing factors that should be considered. For Bhutan, Turkey and Israel, the results are specifically used for the case studies in this thesis and cannot be extrapolated for all Buddhist, Islamic and

Judaic countries. In Bhutan, the population density is relatively low, which lessens the competition with nature conservation activities. In Israel, however, the population density is relatively high. These conditions suggest that the connection between humans and nature is complex and that the nature conservation output is most likely not only motivated by the religiously inspired IHNR. One of the interviewees gives his perspective on the complexity of the relationship: "*I don't think that Eastern people are different from Western people. Their environmental philosophy may be really nice, but I don't believe the very nature of humans is different. That people really hold themselves accountable as a society to reduce their consumption and reduce the way they use nature just because they believe in that. Without a strong legal system, you cannot hold everything together*" (Israel, respondent 5). Besides the complexity of the connection, it is important to consider the fact that every individual, irrespective of its background, has a connection to nature. "*There is an American scientist Edward Wilson, he is famous for his study of ants and he wrote a book called Biophilia. According to Wilson people have a natural connection or affinity, affection to the biosphere, to nature, that human beings become unhealthy in various physical and psychological ways when they are completely cut off from natural sources. Even just weekend recreation or something. So, I would say there is a universal thing that connects us to nature*" (Israel, respondent 8). However, the motivation from the universal connection with nature is not solely responsible for the outcome of nature conservation efforts. "*I think that everyone wants the same thing, in theory. We all would like to see Israel's ecosystems in a sustainable format, biodiversity increase, open spaces. We all want that, but does not mean anything. But when this comes in conflict with other societal values, what do you decide? It is not that the government does not care about nature, it is not that they want to destroy nature, but the question is what do they choose …… The outcome of nature conservation policy is the outcome of clashing interests, which policymakers have to weigh.*" (Israel, respondent 3). These examples show that there are many factors that should be considered in the explanation of the connection between the religiously inspired IHNR and nature conservation efforts in Bhutan, Israel and Turkey. The results of this study help to better understand this relationship.

The theoretical framework of this study is based on a literature study to identify the connection between religiously informed IHNR and nature conservation efforts. For the IHNR theoretical frame, the classification by Zweers (1989; 1995) is used, as he is the founding father of this classification in the Netherlands. After him, other scholars in the Netherlands use variations of his model (De Groot, 1992; Kockelkoren, 1993). For this study the classification by Zweers (1989; 1995) is adapted, as a result of the findings in nature policy of Bhutan, Turkey and Israel, to fit the purpose of this research. The classification is adapted to enable a better categorisation between anthropocentric (utility) and ecocentric (nature) orientation. The theoretical foundation or content from the classification by Zweers (1989; 1995) remains the same for this study. Besides the IHNR literature, there is a theoretical underpinning for the connection between the religiously inspired IHNR and nature conservation efforts. The theory of Giddens (1994) on duality of social structures describes how religion and environment as social structures can overlap. It facilitates to oversee and understand the connection. However, the connection remains complex and difficult. Other studies offer different models to account for the relationship between religion and environment (Tanner and Mitchel 2016; Greeley

1993). These studies can be used in further research to understand and create a more detailed theoretical framework of the connection.

When looking back at the methodology, the determination of the research design has consequences for the outcome of the results. For this study a case-study analysis is used to analyse the data from the interviews and nature policy documents. Bhutan, Turkey and Israel are chosen as case-studies for Buddhism, Islam and Judaism. However, for Buddhism and Islam the output could have been different, in case one of the other seven Buddhist- or other 48 Islamic were chosen. Furthermore, less interview data could be collected on Bhutan and Turkey than on Israel, as I visited Israel for two weeks to conduct the interviews myself. During the two weeks, I was able to conduct even more interviews than expected, because I was introduced to additional professionals. Regarding Israel, I conducted all the interviews face-to-face. With regard to Bhutan and Turkey, I contacted my interviewees mainly through skype, which made it more difficult to connect and get into the topic. The data of nature policy documents were not equally accessible to me for my case-studies; Israel provided the most documents. On the other hand, Bhutan provided for the highest number of nature policy documents that I could use for my content analysis. Furthermore, I had to deal with the fact that all three countries supplied documents that were sometimes too technical or factual or did not include information that could be linked to an IHNR. Also, a number of nature policy documents happened to be only available in the own language of the country, which made it inaccessible to me. The nature conservation efforts used in this study are largely based on quantitative indicators: percentage protected area and forest cover. Quantitative indicators are useful however, as they support information about the nature conservation efforts per country. I would have liked to use additional quantitative and qualitative indicators to give a comparison per country in more detail. However, it was difficult to find measurable indicators that can be used for the countries. An example is: can one use environmental education as a qualitative indicator that supports a country's effort for nature conservation.

Furthermore, for my data analysis, I used a coding scheme based on a combination of deductive and inductive coding. The deductive coding, based on the classification by Zweers (1989; 1995), benefits the validity of the research. The inductive coding, based on generalisations made from the nature policy documents, has a higher level of interpretation from the researcher and is more difficult to repeat by another researcher. The researcher bias is also present in the interviews, as the interviewees have been selectively chosen (without randomisation). The flexible design fitted better with this qualitative research. My aim was not to make inferences of the findings in Bhutan, Turkey and Israel for all Buddhist, Islamic and Judaic countries. My object was to collect information that was previously unpublished and share this with other scholars to better understand the connection between religiously inspired IHNR and nature conservation efforts of Bhutan, Turkey and Israel.

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Appendix A: Nature policy document source list

The tables below show for each country an overview of all nature policy documents that are found. The tables include the source, publication year, name and website of the documents. Appendix C has a more specific list of nature policy documents, which includes only the documents that were used in the analysis for this research.

1. Bhutan

#	Source	Year	Name	Website
	Convention on Biological Diversity, National Reports, Bhutan			http://www.cbd.int/reports/search
1		1998	National Biodiversity Strategy and Action Plan	
2		2002	First National Report	
3		2002	National Biodiversity Strategy and Action Plan, version 2	
4		2006	Third National Report	
5		2009	Fourth National Report	
6		2010	National Biodiversity Strategy and Action Plan, version 3	
7		2012	Action Plan for Implementing the Convention on Biological Diversity's Programme of Work on Protected Areas	
8		2014	National Biodiversity Strategy and Action Plan, version 3	
9		2016	Fifth National Report	
	United Nations Framework Convention on Climate			http://unfccc.int/national_reports/non-annex_i_natcom/submitted_natcom/items/653.php

	Change, National Reports, Bhutan			
10		2000	Initial National Communication	
11		2011	Second National Communication	
	Royal Society for the Protection of Nature in Bhutan, Resources, Annual Reports			http://www.rspnbhutan.org/annual-reports/#
12		2006	Buddhism and Environment	
13		2007	RSPN annual report	
14		2008	RSPN annual report	
15		2009	RSPN annual report	
16		2010	RSPN annual report	
17		2011	RSPN annual report	
18		2012	RSPN annual report	
19		2013	RSPN annual report	
20		2014	RSPN annual report	
21		2015	RSPN annual report	
	Ministry of Agriculture and Forestry, Downloads, Publications			http://www.moaf.gov.bt/download/Publications/#wpfb-cat-7
22		2014	Review of Community Forestry and Analysis of its Strengths and Weaknesses for Future Directions	
23		2016	State of Climate Change Report for the RNR sector	
	World Wildlife Fund Bhutan, Downloads			http://www.wwfbhutan.org.bt/downloads/
24		2005	Tiger Action Plan	
25		2016	WWF Bhutan Annual Report	

				http://www.nec.gov.bt/nec1/index.php/publications/
	National Environment Commission, publications			
26		2000	Environment Assessment Act	
27		2002	Road from Rio, National Assessment of Agenda 21 Bhutan	
28		2004	State of the Environment Report	
29		2006	Bhutan National Adaptation Programme of Action	
30		2007	National Environment Protection Act	
31		2007	Bhutan Water Policy	
32		2008	Bhutan Environment Outlook	
33		2011	The Water Act	
34		2012	National Strategy and Action Plan for Low Carbon Development	
35		2014	Water Regulation of Bhutan	
36		2016	Bhutan State of Environment Report	
	Gross National Happiness Commission, five year plan			http://www.gnhc.gov.bt/five-year-plan/
37		1983	Five year plan 1983-1988	
38		1988	Five year plan 1988-1993	
39		1993	Five year plan 1993-1998	
40		1998	Five year plan 1998-2003	
41		2003	Five year plan 2003-2008	
42		2008	Five year plan 2008-2013	
43		2013	Five year plan 2013-2018	

2. Turkey

#	Source	Year	Name	Website
	Convention on Biological Diversity, National Reports, Turkey			http://www.cbd.int/reports/search
1		1998	First National Report	
2		2000	Thematic Report on Alien and Invasive Species	
3		2001	Thematic report on Access and Benefit Sharing	
4		2004	Voluntary Report on Implementation of Expanded Programme of Work on Forests	
5		2006	National Biodiversity Strategy and Action Plan	
6		2007	Second National Report	
7		2007	Third National Report	
8		2009	National Biodiversity Strategy and Action Plan, version 2	
9		2010	Fourth National Report	
10		2015	Fifth National Report	
	Ministry of Energy and Natural Resources, publications			http://www.enerji.gov.tr/en-US/Strategic-Plan
11		2015	Strategic Plan 2015-2019	
	United Nations Framework Convention on Climate Change, National Reports, Turkey			http://unfccc.int/national_reports/items/1408.php
12		2013	Turkey's Fifth National Communication	

13		2016	Sixth National Communication of Turkey	
14		2016	Turkey's Joint First and Second Biennial Report	
	United Nations Development Programme in Turkey, Research and Publications, Climate Change and Development			http://www.tr.undp.org/content/turkey/en/home/library/environment_energy.html
15		1999	National Environment Action Plan of Turkey	
	Doga Koruma Merkezi "The Nature Conservation Centre" (DKM), Publications, Books			http://www.dkm.org.tr/yayinlar/9/books
17		2011	National Biodiversity Monitoring Report	
18		2011	Red Book of Butterflies in Turkey	
19		2011	Conservation Strategy for Butterflies in Turkey	

3. Israel

#	Source	Year	Name	Website
	Convention on Biological Diversity, National Reports, Israel			http://www.cbd.int/reports/search
1		1997	First National Report	
2		2001	Thematic Report on Forest Ecosystems	
3		2001	Thematic Report on Alien and Invasive Species	
4		2001	Second National Report	
5		2004	Report on the Implementation of GTI Work Programme	
6		2005	Third National Report	
7		2009	Fourth National Report	
8		2010	National Biodiversity Strategy and Action Plan	
9		2016	Fifth National Report	
	Israel Ministry of Environmental Protection, Research, Reports, Publications			http://www.sviva.gov.il/English/ResourcesandServices/Publications/ResearchReportsPublications/Pages/default.aspx
10		2000	National Report: Sustainable Development in Israel	
11		2000	Israel National Report on Climate Change	
12		2002	Initial Risk Survey of the Pollution of Soil, ground water and Air in the Tel-Aviv Region	
13		2003	Oil Tank Farms Sealing Practices	
14		2003	SUTRA: Sustainable Urban	

			Transportation	
15		2006	National Report for CSD	
16		2008	Watershed Modelling	
17		2008	Solid Waste Management in Israel	
18		2008	The Path Toward Sustainable Development in Israel	
19		2008	National Report on the Implementation of the Ramsar Convention on Wetlands	
20		2009	A Carbon Cost Curve for Israel	
21		2009	Environmental Protection Ministry's Green House	
22		2009	Greenhouse Gas Abatement Potential in Israel	
23		2010	Prediction of Climate Change in Israel to 2030	
24		2010	Israel's Second National Communication on Climate Change	
25		2010	Breathing Clean Air	
26		2010	Reporting and Registering System for Greenhouse Gas Emissions in Israel	
27		2010	Development of heat disinfections technology for dates varieties in packing houses as alternatives to the use of methyl bromide	
28		2010	The path toward Sustainable development in Israel	
29		2010	River Rehabilitation and its Economic Feasibility	
30		2010	Survey and Examination of Thermal Treatment of Municipal Solid Waste and	

			Comparison of Alternatives for Thermal Treatment of Scrap Tires	
31		2011	Setting the Foundations for Climate Change Adaptation Strategy for Israel	
32		2011	Greenhouse Gas Registry in Israel	
33		2011	Climate Change Policy in Israel	
34		2011	Where City and Stream meet	
35		2011	Climate and Local Anthropogenic Drivers and Impacts for the Tunisian Coastal Area	
36		2011	The Occurrence and the Chemical-Physico fate of Selected Pharmaceutical Residues in Wastewater Sludge	
37		2011	State of the Environment in Israel	
38		2011	The Impact of Climate Change on Mediterranean Intertidal Communities	
39		2012	One Environment One Ministry: a review of Act ivies in 2012	
40		2012	Growth Sustainability and Well-Being Indicators 2000-2010	
41		2012	Climate Change Adaptation in Israel	
42		2012	Climate Change Mitigation in Israel	
43		2012	Israel Adaptation to Climate Change: Policy Recommendations	
44		2012	Israel's Waste Revolution	
45		2012	Toward Sustainable Consumption in Israel	
46		2012	Beyond GDP: Complementary Indicators for Israel	
47		2012	Toward Green Growth in Israel	

48		2012	Sustainability Outlook 2030 for Israel	
49		2012	Climate Change & Forest Fires in the Mediterranean Basin: Risk reduction & Management	
50		2013	Reduce & Save: Energy Efficiency and Greenhouse Gas Reduction in Israel	
51		2013	Rehabilitation of the Jordan River	
52		2013	Israel's Least Wanted Alien Ornamental Plant Species	
53		2013	EU-Israel Twinning Project on Implementation of the Integrated Pollution Prevention and Control Directive and the Pollutant Release and Transfer Register Protocol	
54		2013	Ambrosia confertiflora – Burr Ragweed: Information Booklet	
55		2013	Environmental Research Completed in the Years 2011-2012: Abstracts	
56		2013	The Israel National Monitoring Program in the Northern Gulf of Aqaba	
57		2013	Israel's Least Wanted Alien Ornamental Plant Species	
58		2014	Climate Change: Turning Challenges into Opportunities	
59		2014	Energy Recovery from Biomass Waste: Research Abstracts and Insights	
60		2014	Environmental Research 2012-2013, Abstracts	
61		2014	Annual PRTR Report	
62		2014	Well-Being Indicators for Israel	

63		2014	Green Growth: Connecting the Economy and the Environment in Israel	
64		2014	Israel National Monitoring Program at the Gulf of Eilat	
65		2014	Adaptation to Climate Change in Israel	
66		2014	Guide to Reliable Environmental Claims	
67		2015	Israel's First Biennial Update Report to the UNFCCC	
68		2015	Assessment of Greenhouse Gas Emission Reduction Potential And Recommended National Target for Israel	
69		2015	Report on Measurement of Sustainability	
70		2016	National Plan for the Implementation of the Paris Agreement	
	Keren Kayemeth LeIsrael Jewish National Fund, Afforestation in Israel			http://www.kkl-jnf.org/forestry-and-ecology/afforestation-in-israel/
71		2011	Afforestation in Israel, reclaiming ecosystems and combatting desertification	
72		2011	National Masterplan NOP 22	
73		2014	Forest Management Policy of Israel	
	Society for Protection of Nature in Israel			The documents were retrieved from SPNI through e-mail correspondence
74		2013	Wither the Nature in Israel? Israel's Preparedness for Biodiversity Conservation: OECD recommendations	
75		2014	Ecological Effects of Afforestation in the Northern Negev	

Appendix B: Interview source list

The tables provide an overview of the interviews conducted for this study. The interviews are ordered per country and have a number assigned to it. In the report the interviews are referred to as: for example, "Bhutan, respondent 1". The table shows the nationalities of the interviewees, how the interviews were conducted (face to face or skype) and a short description of their background. The names of the interviewees are excluded for anonymity.

1. Bhutan

#	Nationality	Interview	Gender	Age	Background interviewee
1	Dutch	Face to face	Male	± 40	Currently WWF in the Netherlands, in past developmental work for 8 years in Bhutan related to forestry
2	Bhutanese	Skype	Female	± 18	High school student in Bhutan, volunteer WWF Bhutan
3	Bhutanese	Skype	Male	± 25	Exchange student at University in Amsterdam, the Netherlands
4	Bhutanese	Skype	Female	± 40	District officer, National Environment Commission in Bhutan
5	Bhutanese	Skype	Male	± 40	Works for WWF in Bhutan

2. Turkey

#	Nationality	Interview	Gender	Age	Background interviewee
1	Turkish	Skype	Male	± 40	Works for Doga Koruma Merkezi, an environmental organisation in Turkey
2	Turkish	Skype	Female	± 30	Works for WWF Turkey
3	Turkish	Skype	Male	± 25	Student at Istanbul University in Turkey
4	Dutch	Face to face	Male	± 25	Religion teacher Islamic primary school in the Netherlands, second generation Turkish immigrant

3. Israel

#	Nationality	Interview	Gender	Age	Background interviewee
1	Dutch	Face to face	Male	± 45	Rabbi at Jewish Synagogue in the Netherlands
2	Israeli	Face to face	Male	± 40	Works for Society for Protection of Nature in Israel
3	Israeli	Face to face	Male	± 40	Professor environmental science and policy, Tel Aviv University in Israel. Author of several books related to Judaism and Ecology
4	Israeli	Face to face	Female	± 40	Works for Eco Peace in Israel

5	Israeli	Face to face	Male	± 45	Works for Israel National Parks Authorities
6	Israeli	Face to face	Male	± 50	Former employee of Society for Protection of Nature in Israel
7	Israeli	Face to face	Female	± 45	Former employee of Israel National Parks Authorities
8	Israeli	Face to face	Male	± 45	Works for Heschel Centre for sustainability in Israel, author book on Judaism and Ecology

Appendix C: Nature policy document analysis

The nature policy documents that I analysed are in the form of text documents. The documents are ordered per country and have a number assigned to it. In the report the documents are referred to as: for example, "Bhutan, document 1". In the tables below the documents are also ordered by topic in alphabetic order. For each document is shown what IHNR are found, with a short description of the context in the document. Furthermore, the tables show the information found about nature conservation efforts.

1. Bhutan

#	Title	Topic	Year	Published by	Type	Nature conservation efforts	IHNR
1	Bhutan's national biodiversity action plan	Biodiversity	1997	NEC	Policy	72,5% forest cover. 26,23% protected area. - Sustainability preference vs short term economic gains.	Buddhist ethics: -Intrinsic value: respect for all life forms. Gods: mountains, rivers, streams and rocks domain of spirits - Interconnectedness: In cycle of birth and death there is not a single being that has not been. - Stewardship towards future generations. Continue live in harmony with nature - Human well-being: survival humanity depends on biodiversity and ecosystems. Ecosystem services, big emphasis on cultural/ethical/aesthetic values in Buddhism. But also other utility values.
2	Bhutan's national biodiversity action	Biodiversity	2002	NEC	Policy	Similar as 1997 but limited to 11 pages:	-Intrinsic value respect for all forms of life

	plan						- Human well-being: dependence on biodiversity for survival
3	Tiger Action Plan	Biodiversity	2005	Ministry of agriculture and forestry	Report	60% forest cover 26% protected areas 9% biological corridors	- Buddhist identity: tiger is symbol of reverence in Bhutanese society. Tiger is one of the four power animals of Buddhism
4	Bhutan's national biodiversity action plan	Biodiversity	2009	NEC	Policy	Long term and short term objectives - GNH: not only economic growth, emotional and environmental well-being as well	- Interconnectedness: environment as source of all life - Buddhist ethics: -Intrinsic value live in harmony with nature. Ultimate purpose is inner happiness. - Stewardship: pass heritage to future generations - Human well-being: dependant on nature - not chapter included with Buddhist ethics like in 1997
5	Bhutan's national biodiversity action plan	Biodiversity	2014	NEC	Policy	- 70.46% forest cover 2010. - From 26% in 1994 to 51.44% in 2008 protected area and biological corridors - 9% biological corridors. - 2.3% community forests of forest area - 6.4% SFM of forest area - humans part of protected area landscape - direct threat to nature conservation: land use	- Interconnectedness: environment as source of all life - Stewardship: Live in harmony with nature and pass rich heritage on to future generations - Intrinsic value : respect for all life forms, harmony - Human well-being: nature conservation important for human well-being.

						change, forest fire, overgrazing, unsustainable agriculture - indirect threat: climate change, population growth, poverty.	
6	Bhutan's fifth national report CBD	Biodiversity	2015	NEC	Report	- hydropower and tourism contribute 20% to GDP	-Intrinsic value : Harmony with nature
7	Initial national communication, UNFCCC	Climate Change	2000	NEC	Report	- 72% forested. 60% policy - Average family size is 6.5. Proportion younger than 15 years is 43%. Resulting in expectation of increase population (1998) - More than 85% still involved in agriculture (1996)	- Buddhist ethics: -Intrinsic value Live in harmony with nature and protect for future generations. - Interconnectedness: natural environment source of all life - Stewardship: Live in harmony with nature and pass rich heritage on to future generations
8	National Strategy and Action Plan for Low Carbon Development	Climate Change	2012	NEC	Report	- 60% under forest cover	- Human well-being - Intrinsic value (harmony with nature)
9	Bhutan's national environmental strategy plan	Environment	1998	NEC	Policy	None	Buddhist ethics -Intrinsic value respect all life forms. gods: conservation of environment as nature is seen as place where gods, goddesses, protective deities and mountain, river, forest and underworld spirits. Disturbance or pollution of these sites result in death,

							disease and famine. - Interconnectedness: give back to earth what you have taken away. the acts of this life will be rewarded or punished in the next, provides motivation for sustainable use of natural resources. - Stewardship: in order to raise the living standards of the present population without compromising the country's cultural integrity, historical heritage or the quality of life for future generations.
10	Environment Assessment Act	Environment	2000	NEC	Policy Act	Focus on long term vs short term economic gain. Reverence of nature.	Buddhist ethics: -Intrinsic value: harmony with nature. - Stewardship: in order to raise the living standards of the present population without compromising the country's cultural integrity, historical heritage or the quality of life for future generations.
11	Buddhism and environment	Environment	2006	RSPN	Report	None	Buddhist ethics -Intrinsic value: respect all life forms, give back what has been taken away from nature. Respect for places like mountains, lakes, rivers, streams, cliffs, which are the homes of spirits and gods, and remain free from human contact and pollution. - Stewardship: Since we in Bhutan can still boast of a rich environment,

							which we should preserve and hand down to our future generations, this book is an attempt to show how Buddhism too emphasizes the importance of preserving nature and environment - interconnectedness
12	National Environment Protection Act	Environment	2007	NEC	Policy Act	- 60% under forest cover	-Intrinsic value live in harmony with nature - GNH
13	Seventh five year plan	GNH	1993	GNHC	Report	Traditional values guide Bhutan towards sustainable development	- Buddhist ethics: -Intrinsic value respect all life forms and preservation of natural resources.
14	Eights five year plan	GNH	1998	GNHC	Report	72% forested 26% protected area	- Buddhist ethics: - Interconnectedness nature as source of all life. Buddhism believes in preserving nature and giving back to earth what one has taken. - Intrinsic value Live in harmony with nature, including for future generations.
15	Ninth five year plan	GNH	2003	GNHC	Report	- 72% forested 26% protected area	- Buddhist values: - Intrinsic value peace, compassion, harmony among all sentient beings - Buddhist identity: inner spiritual development is of same importance as focus on material development. Both are important for human well-being. - Interconnectedness: Gods and

							spirits have specific areas attributed with minimal human interference. Sacred mountains and lakes are not accessible as resource, showing that the people have serious environmental consciousness.
16	Eleventh five year plan	GNH	2013	GNHC	Report	None	- Buddhist values: - Intrinsic value peace, compassion, harmony among all sentient beings
17	Conservation in Bhutan	Nature conservation	1994	NEC	Report	- sustainability vs short term economic growth - 23% protected area of total land area, representing all ecosystems - 90% of population is engaged in agriculture - 16% of land is permanently cultivatable, therefore slash and burn practices and overgrazing, fuelwood	- Intrinsic value respect all life forms and deep reverence towards nature. Respect for natural world is strong Buddhist ethic. Live in harmony with nature. - Stewardship: Our nation will soon face a question that other already confront: whether we can maintain a development path that allows us to meet pressing current needs without compromising the prospects of future generations. This is the challenge of sustainable development: to raise the material well-being of all our citizens and to meet their spiritual aspirations, without impoverishing our children and grandchildren. - Interconnectedness
18	Annual Report	Nature Conservation	2007	RSPN	report	None	- Stewardship: We must all accept our individual responsibility to conserve

							the rich diversity of Bhutan's plant and animal species for the benefit of both the natural world and our children's future " - Intrinsic value - Interconnectedness: conservation of biodiversity is important for survival of life on earth
19	Annual Report	Nature Conservation	2008	RSPN	Report	RSPN has 22 employees	- Stewardship - Intrinsic value: personal responsibility: to protect environment
20	Annual Report	Nature Conservation	2009	RSPN	Report	60% forest cover	- Stewardship - Intrinsic value
21	Annual Report	Nature Conservation	2010	RSPN	report	60% forest cover	- Stewardship - Intrinsic value
22	Annual Report	Nature Conservation	2011	RSPN	Report	60% forest cover	- Stewardship - Intrinsic value
23	Annual report	Nature conservation	2012	RSPN	Report		- Stewardship: king urges to take responsibility over the environment for benefit of nature world and future generation. - Intrinsic value
24	Annual report	Nature conservation	2013	RSPN	Report	51% protected area	- Stewardship - NOT mentioned intrinsic value
25	Annual Report	Nature Conservation	2014	RSPN	Report	None	- Stewardship - Intrinsic value
26	Annual Report	Nature Conservation	2015	RSPN	Report	None	- Stewardship - NOT intrinsic value
27	National Assessment, Road	Sustainable development	2002	NEC	report	72.5% forest cover 26.2% protected area	- GNH more important than GNP - Buddhist ethics:

	from Rio					9% biological corridors 60% forest cover 1961 Bhutan opens doors to outside world 1998 power from king to ministers	- Intrinsic value respect all life forms, protect gods - Stewardship: This is the challenge of sustainable development: to raise the material well-being of all our citizens and to meet their spiritual aspirations, without impoverishing our children and grandchildren. The key is to find a development path that will allow the country to meet the pressing needs of the people, particularly in terms of food, health care and education, without undermining the resource base of the economy.
28	Bhutan Water Policy	Water	2007	NEC	Policy	Overview of water policy and situation in Bhutan. No clear goals or targets.	Stewardship: Water is the most important natural, economic and life-sustaining resource and we must ensure that it is available in abundance to meet the increasing demands. Present and future generations will have assured access to adequate, safe and affordable water to maintain and enhance the quality of their lives and the integrity of natural ecosystems Interconnectedness: nature, water and human life are interdependent - Intrinsic value live in harmony and balance. - Human well-being: water provides

							services to humanity and is basic human need for survival.
29	Water Act of Bhutan	Water	2011	National Assembly Bhutan, parliament	Policy act	None	- Buddhist ethics - Intrinsic value protect environment, as in Bhutan we live in harmony with nature
30	National Integrated Water Resources Management Plan	Water	2016	NEC	Policy	None	- Buddhist ethics: - Intrinsic value respect for nature - Human well-being: water is important resource for people of Bhutan, their livelihood, economy, environment.

2. Turkey

#	Title	Topic	Year	Published by	Type	Nature conservation information	Values
1	Turkey's first national report CBD	Biodiversity	1998	MEF	Report	- 4.9% of country area protected area	- Stewardship: Maintain biodiversity for future generations - Human well-being: hard to say that local people are aware of importance of biodiversity, as they do not realise the direct relationship between life and biodiversity. Example: colours used for traditional clothes come from plants, and change with biodiversity.
2	Turkey's national biodiversity action plan	Biodiversity	2001	MEF	Policy	- 20% of Turkey has forest land use in 1995	- Stewardship: development without compromising ability of future generations
3	Turkey's national biodiversity action plan	Biodiversity	2007	MEF	Policy	- updated version of 2001 - 31% of population is under 15 - 2004, agriculture accounts for 11.2% of GDP - 65% live in cities. 35% in rural sector. 6% protected area of country's total land area	- Human well-being: living resources are important for food and agriculture. Ecosystem services as ecological, economic, moral and cultural benefits derived from living resources, are under threat. - Stewardship: turkey has responsibility to protect resources for food security for welfare of future generations.

4	Turkey's fourth national report CBD	Biodiversity	2009	MEF	Report	- 72 million people in 2009 - 26.4% is under 15 - 75% of population lives in cities, 25% in rural areas.	- Stewardship: protect natural resources for food security and has responsibility to protect and use this important wealth for future generations
5	National Biodiversity Monitoring	Biodiversity	2011	MFWA	Report	Brief overview of biodiversity situation in Turkey. Not very detailed report.	- Stewardship: protect biodiversity and hand it to future generations is the responsibility of all of us
6	Turkey's OECD environmental performance review	Environment	1999	OECD	Report	- population in Turkey is one of the fastest growing in OECD - 99% of Turkey's forest area is State-owned and managed by ministry of Forests. From monoculture with clear cutting in 1980's, changed to natural regeneration. - Most protected areas are under Ministry of Forests 800.000 hectares of national parks, nature parks and nature reserve areas. 400.000 additional special protected areas by Ministry of Environment. 452 protected natural sites by ministry of Culture. Protected area is 3.8% of Turkeys total land area - management plans exist	- stewardship: environmental law 1983, conservation for the sake of future generations

					only for 14 of the 32 national parks, and some are outdated. - Environmental impact assessments are under responsibility of Ministry of Environment, the regulations should be more strictly enforced.	

3. Israel

#	Title	Topic	Year	Published by	Type	Nature conservation information	Values
1	Israel's implementation of CBD	Biodiversity	1997	MEP	Policy	- 10% of each ecosystem protected - 20% of all open spaces protected - Establish data base of species and ecosystems - Criticism: No clear definition of the above mentioned targets, by specifying on date or budget. Also no indicators.	- Intrinsic value of all life forms. - Stewardship (religious): obligation of humanity to protect nature is mentioned in Jewish heritage. Work it and guard it. If you spoil this world, there will be no one to repair after you. - Stewardship (secular Israel's national biodiversity strategy is based on a national vision in which society appreciates and respects all life forms and sustainably uses natural resources while preserving and conserving the country's rich biological diversity for the benefit of future generations. - human well-being: survival of humanity dependant on biodiversity conservation
2	Israel's fourth national report CBD	Biodiversity	2009	MEP	Report	- 10% of each ecosystem protected - more than 20% of total land area is protected area - Criticism: Not all ecosystems equally represented	- Stewardship (secular): The conversion of open landscape to build land conveys economic damage through the loss of ecosystem services, as well as having adverse effects on the cultural heritage and the general

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						- Criticism: lack of financial resources, lower priority on national agenda and lack of measurable targets and indicators to assess progress	well-being of present and future generations: - human well-being: biodiversity loss decreases benefits of ES
3	Israel's national biodiversity action plan	Biodiversity	2010	MEP	Policy	- Criticism: existence value of biodiversity has no market value - Document summary only available in English: but in that there are no targets/operationalisation of targets.	- Intrinsic value: biodiversity has existence value and therefore must be protected - Stewardship (secular): The conversion of open landscape to build land conveys economic damage through the loss of ecosystem services, as well as having adverse effects on the cultural heritage and the general well-being of present and future generations: - Human well-being: biodiversity important for human survival
4	Israel's biodiversity preparedness	Biodiversity	2014	SPNI	Review	- Criticism on biodiversity plan (2010): lacking objectives, indicators, priorities, timetables, delegation of responsibilities, budget, participation of stakeholders, legislation preventing alien species, integration of	- Stewardship (secular): The goal of the CBD is the conservation of biological diversity in all its aspects (genetic diversity, species diversity, and ecosystem diversity) while ensuring socially just distribution of the resources of biological diversity as well as sustainability for future generations of humanity.

						environmental factor in decision making and promotion of economic instruments - AICHI target to have 17% terrestrial and 10% marine areas protected is not followed.	- Stewardship (religious): obligation of humanity to protect nature is mentioned in Jewish heritage. Work it and guard it
5	Israel's fifth national report CBD	Biodiversity	2016	MEP	Report	- Implementation of national action plan by 2017 - no specific targets mentioned	- Intrinsic value: biodiversity has own value - Stewardship (secular): It is envisioned that by the year 2040 biodiversity in Israel will flourish and become respected by the public for its own value and importance to human wellbeing, thus it will be protected, restored and managed sustainably for the benefit of present society and future generations - human well-being: biodiversity important for well-being of humanity
6	Israel's national report on climate change	Climate change	2000	MEP	Report	Targets: difficult to define from document. -> look for review maybe? Couldn't find it initially	- Stewardship (religious): Jewish heritage. If you spoil this world, there will be no one to repair after you. - Stewardship (secular): to preserve and enhance the world environment for the benefit of present and future generations has

							led to new initiatives which crystallize the responsibilities of humankind toward the global environment.
7	Israel's national report on climate change	Climate change	2010	MEP	Policy	Targets for renewable energy in November 2002, to have 2% in 2007 and 5% in 2016.	- Stewardship (secular): "The policy of the Government of Israel shall be based on the principles of sustainable development practice, that combine a dynamic economy, wise use of natural resources, protection of ecosystems, and the granting of equality of opportunity to all, in order to respond to the needs of the present and future generations..." The aim of the law is: "to improve air quality and prevent and reduce air pollution, inter alia, by establishing prohibitions and obligations according to the precautionary principle, in order to protect human life, health and quality of life and to protect the environment including natural resources, ecosystems and biodiversity, for the public and for future generations, while considering their needs."
8	NOP 22 for forests	Forest policy	2011	KKL-JNF	policy	Targets. Not specific in	- Human well-being. vegetation

	and afforestation					numbers.	contributor to quality of life. woodlands are symbol of national landscape and expression of culture and quality of life. - Bible as historical reference: prevalence of forests. Population growth responsible for decline in forests. Settlement and rebirth. Talmud mark earliest laws and regulations regarding forests. Planted forests reflect history and heritage, which mark sites of settlements and regions mentioned in Jewish sources.
9	Afforestation in Israel	Forest policy	2011	KKL-JNF	Book chapter, forestry and people	Targets: not specific in numbers	- Human well-being: ecosystem services from planted forests. - Stewardship (secular): In 2002 KKL assumed the strategic mission of improving the development and management of community forests in and near urban areas. The work is guided by the principle of partnership between residents and local authorities, increasing the likelihood that communities will maintain the forest for themselves and future generations.