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**Religion and the Environment in
Northeast Nigeria: Dominion,
Stewardship, Fatalism and Agency**

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Abstract

This study examines religious influence on both environmental concern and behaviour, and perceptions and strategies of adaptation to environmental degradation in Northeast Nigeria. A good understanding of both dimensions of religion-environment connection is critical to theorising on the role of religion in current environmental crisis. The region provides a strong opportunity for study due to the severity of environmental degradation and the powerful role religion continues to play in all spheres of individual and community life. Drawing on sociological perspectives, the study combines statistical analysis with qualitative techniques to achieve its goals.

Lynn White's hypothesis, which proposes that religion predisposes individuals to engage in negative environmental behaviours, was used as a starting point to explore the links between religion and environmental attitudes and behaviour. While the hypothesis as formulated refers to patterns of behaviour in the Judeo-Christian west, it has been widely used in both western and non-western contexts to explore the connections between religion and the environment. This proposition was explored within the study population by using qualitative analysis of interviews with congregation leaders and statistical analysis of self-reported environmental attitudes and behaviour data, obtained via questionnaires administered to members of selected Christian and Muslim congregations. The study also analyses interviews with leaders of the participating congregations and environmental protection officials to explore how faith communities understand and respond to environmental change.

In partial support for White's thesis, analysis found endorsement of 'dominance-over-nature' theologies among both Christian and Muslim participants. However, there is no evidence to support White's thesis that Christians are more likely than non-Christians to believe in human dominion-over-nature when the principals are applied to this study context. Although dominion-over-nature was strongly endorsed in the questionnaire data and widely reported in the narratives of the clergy, its majority interpretation as an ethical responsibility and command to 'look after' the rest of nature casts doubt on the assumption that the dominion belief predisposes religious individuals to devalue and destroy nature in all contexts.

Furthermore, the findings suggest that, contrary to the binary relationship speculated in White's hypothesis, and supported in the wider literature, dominion-over-nature involves a complex set of religious principles/beliefs that are interpreted both as 'divine authority' over nature *and* stewardship of nature. Moreover, analysis reveals strong evidence of three distinct motivations for pro-environmental actions, namely 'ecocentrism', 'anthropocentrism' and 'theocentrism', and a discrepancy between the principles and practices of religious environmentalism.

The study then moves on from White's hypothesis to explore the broader factors affecting religious environmentalism. The study found religious environmentalism to be dependent on and constrained by additional factors, such as lack of material resources (poverty), lack of knowledge of religious and environmental principles and the social conditions under which environmental issues are prioritised.

Participants' understandings of the causes of environmental change include narratives that accept scientific accounts of anthropogenic environmental problems and point to institutional failures and social conditions as the underlying causes of environmental decline. Also salient are discourses that interpret environmental change from a purely theological standpoint, where environmental change is framed either as God's way of punishing humanity's wrong deeds or as a fulfilment of 'end times' prophesies. These different and conflicting understandings of environmental change have produced different narratives on the strategies of adaptation that range from activism to fatalism, adopted by different religious groups.

The study concludes with a discussion of the implications of these findings on theory and research, and environmental reform policies in the region and beyond.

Dedication

In loving memory of my father who passed away while I was working on the first draft of this thesis.

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LIST OF ACRONYMS

ADB - African Development Bank

BBC - British Broadcasting Corporation

DFID - Department of International Development

DSP - Dominant Social Paradigm

DWW - Dominant Western Worldview

ECHO - European Commission Humanitarian Aid and Civil Protection

GDP - Gross Domestic Product

GEC - Global Environmental Change

HEP - Human Exemptionalism Paradigm

IDP - Internally Displaced Person

IPCC - Intergovernmental Panel on Climate Change

NBS - National Bureau of Statistics

NEP - New Ecological Paradigm

NGO - Non Governmental Organisation

NPC - National Population Commission

REP - Religious Environmental Paradigm

TAR - Traditional African Religion

UNDP/CDSD - United Nations Department for Policy Coordination and Sustainable Development

UNEP - United Nations Environment Program

UNFCCC - United Nations Framework Convention on Climate Change

USAID - United States Agency for International Development

VBN - Value-Belief-Norm

WHO - World Health Organisation

CHAPTER 1 - INTRODUCTION

1.1. Background

In its multifaceted dimensions, severity and impacts, environmental crisis has been dubbed one of the most central problems facing humanity today (Gerten & Bergmann, 2012; Gottlieb, 2006; Leiserowitz, 2008). The suffering caused to millions of people around the world and the threats posed to earth's future and human society by anthropogenic impact on the environment have necessitated coordinated efforts towards reconciling human affairs with the dynamics of the natural world. Evidence published in research reports conducted by leading international organisations during the past decades warned about a frightening future if humanity fails to reverse the trend of environmental decline.

For instance, according to the IPCC (2014), climatic change due to human activities is primarily responsible for a rapid change in precipitation and rising sea levels that are altering the global hydrological systems and impacting on the quality and quantity of water resources across the world. The negative impact of climate change has also been observed in terms of decreasing agricultural yields in many regions across the world, a trend that raises serious concerns about food security for the growing human population. Species extinction and ecosystem shifts are also among the negative impacts of anthropogenic climatic change on the natural environment observed by the IPCC. Some of the potential and actual impacts of anthropogenic climate change on human systems include increased rates of temperature-related illnesses, diseases caused by changing quality and supply of water and so on. Disruptions in the ecosystem as a result of climate-related alterations also produce social, economic and institutional stress, especially in 'vulnerable' regions (UNFCCC, 2007). The consequences of environmental decline especially on the world's poor - whose livelihood depends directly on the physical environment and who lack the necessary resources for adaptation - are overwhelming.

While climate change is considered the most pressing environmental challenge of the contemporary world, environmental degradation attributable to human activities is also receiving increasing attention. According to the United Nations (UNEP, 2012), accelerated rates of resource use by a growing population and use of technology-driven production is exceeding the capacity of the earth to replenish depleted resources and

reduce the negative effects of wastes. Thus, like climate change, direct degradation of the environment through human activities such as excessive deforestation, land clearance for agriculture and urbanisation, and pollution from domestic and industrial wastes are among leading causes of environmental decline. Destruction of natural habitats due to such activities is already upsetting the natural balance in the ecosystem and leading to species extinction. Extensive deforestation is a leading cause of desertification and soil degradation. Land, air and water pollution are primary causes of many health problems confronting human societies (UNEP, 2012).

Over the years, experts, policy makers and the general public are becoming increasingly concerned with finding solutions to the growing challenges posed by contemporary environmental problems. Addressing environmental problems requires a shift in our social values, attitudes and behaviours. Similarly, developing and implementing an effective approach to mitigating environmental problems requires an understanding of how communities perceive environmental change and how they respond to its impacts (Leiserowitz, 2008; 2003). Social theory and research on society-environment interaction are, in part, driven by the "hope for building understanding needed to effectively alter human behaviours that contribute to environmental problems" (Stern, 2000:407). In addition to gaining the understanding required to change society's negative impact on the environment, social theory and research is also profoundly influenced by the need to understand public perception of and responses to environmental risks. This is based on the consensus that, to adapt to and mitigate environmental crisis, human society needs to positively change both public attitudes towards environmental conditions, and the actions of the billions of people that are believed to contribute to environmental problems.

Religion has a recognised role in influencing attitudes, behaviour, perceptions, modes of coping and actions in response to environmental problems, and is thus seen to be an important domain of research and policy on current environmental change (Gerten & Bergmann, 2012). Evidence from empirical research suggests that religious beliefs and experience play a key role in shaping individual environmental attitudes and behaviours, and in communities' perceptions and responses to environmental change in many societies across the world (Guth, Green, Kellstedt, & Smidt, 1995; Hitzhusen & Tucker, 2013; Keans, 1996; Smith & Leiserowitz, 2013; Stern & Dietz, 1994). This thesis seeks to contribute to current understandings on the role of religious beliefs and worldviews in contributing to and/or mitigating environmental issues. It intends to contribute to the

ongoing social scientific debates on society-environment interaction in general and religion-environment nexus in particular. Northeast Nigeria – a region of profound environmental change – was chosen as the study location to explore religion, environment and societal concerns. The study is informed by the view that for many people, religious beliefs and practices can be used to influence attitudes and behaviours towards the natural environment, and shape interpretations and adaptation to environmental changes. Using religion as an analytical lens, the study intends to contribute to a better understanding of the socio-cultural processes that shape environmental behaviour and influence adaptation and responses to environmental change, both in the Northeast region of Nigeria and regions beyond.

Commentators (e.g. BBC World Trust, 2010) have reported that, compared to the rest of the world, people living in Sub-Saharan countries like Nigeria are worst impacted by the devastating effects of environmental change. Yet, there is a dearth of empirical knowledge about public understandings and responses to environmental change in the sub-continent. Further, despite the widely acknowledged centrality of religion to social structure in Sub-Saharan Africa (Pew Forum, 2010), little is known about the connections between religion and the environment. Much of the empirical research on links between religion and environmental change were conducted in the developed societies of North America and Western Europe. Thus, by focusing on one of the areas designated as a 'hotspot' of environmental change (Boko, Niang, Nyong, & Vogol, 2007) where little research is done, this thesis seeks to contribute to the existing theoretical and empirical knowledge on the social bases of environmental problems, the role of religion in shaping human interaction with the natural environment, and to environmental policy generally.

1.2. Religion and environmental attitudes and behaviour

Theory and research on the links between religion and environmental attitudes and behaviour, and religious engagement with environmental issues are becoming increasingly vital in the wake of the unprecedented environmental challenges affecting contemporary societies. The last four decades have seen a period of intense scholarly interest in the social basis of environmental problems and the societal impacts of environmental change. Research into a wide range of issues regarding the interaction between society and the environment have produced a variety of theoretical arguments and findings that underscore the need for a better understanding of religious engagement with environmental issues.

Lynn White (1967) is one of the first analysts to examine the connections between religion and environmental change. In his famous critique of the Judeo-Christian religious tradition, White held that, by promoting a 'dominance-over-nature' orientation which is the social consciousness that influences human-nature interaction in the western world, these religions contributed to contemporary ecological crises. White's thesis suggests that an alternative environmentalist paradigm that promotes 'stewardship' is necessary to mitigate global ecological crisis. Like White, many analysts (such as Haught, 2004; Johnson, 2000; McFague, 2000) observed that, at least in the last few centuries, human-environment interaction in the western world was essentially anthropocentric. This 'anthropocentric' worldview, characterised by a 'materialist and exploitative perspective on nature' (Hayes & Marangudakis, 2001), is still being blamed for environmental destruction in contemporary societies. An opposing perspective questions White's thesis, stressing that scriptural teachings of the Judeo-Christian religions placed limits to humans' authority to exploit nature, and emphasised a 'stewardship ethic' (Hand and Van Liere 1984). According to this narrative, respect for the sacredness of nature and obligation to care for the rest of 'God's creation' is central to the theologies of these religions (e.g. Chryssavgis, 2006; Santmire & Cobb Jr, 2006).

Another point of view distinguishes between Judeo-Christian Western traditions and other religions in discussing the role of religion in environmental crises. This literature suggests that, compared to monotheistic religions, non-western religions such as Buddhism, Hinduism and other traditional religious beliefs have promoted nature-centred theologies which for many centuries have enabled indigenous peoples in many regions around the world to develop a mutual and friendly relationship with nature. For Ezzy (2004), Abrahamic faiths (Christianity, Judaism and Islam) are the major world religions that can be identified with 'mastery-over-nature' worldviews. The majority of non-Abrahamic religions (e.g. Buddhism, Paganism) in their various forms have, by contrast, developed a 'man-for-nature' or 'eco-centric' orientation (ibid 2004).

It is the contention of some analysts (eg Gottlieb, 2004; 2006) that none of the above perspectives offer sufficient explanation of the role of religion in environmental issues. The relationship between religion and the environment throughout history is characterised by both positive and negative trends. That is to say, religious beliefs and practices have throughout history contributed to both environmental destruction and management. Thus, while accepting the argument that western monotheistic traditions 'have been, at turns, deeply anthropocentric, other-worldly, ignorant of the facts or

blindly supportive of 'progress' (ibid 2006:7), Gottlieb posits that recent growth in religious environmental movements across the world offers some optimism that religious resources have a valuable role to play in combating environmental decline. Such developments, according to Gottlieb, provide proof that religions have both the capacity to mobilise the political action needed to achieve environmental sustainability and prompt hundreds of millions of their followers around the world to pursue pro-environment attitudes and behaviours.

Theoretical and empirical research devoted to evaluating these competing perspectives have largely focused on understanding religious influence on environmental attitudes and behaviour. The majority of such studies have reported some support for White's thesis, though the level of support varies. Overall then, this suggests that although the relationship is complex, there is a general negative correlation between religiosity and concern for the environment. However, there is also a substantial empirical evidence which supports the notion that religion predisposes individuals to act in environmentally responsible ways. These mixed findings from empirical research have resulted in renewed interest in exploring how religious beliefs and worldviews influence environmental attitudes and behaviour. Of particular interest to many researchers of this topic is the level of commitment to dominion-over-nature theologies and the effects of this on the attitude and behaviour of individuals toward the environment (eg Hand & Van Liere, 1984; Maltby, 2008; Wolkomir, et al., 1997; Woodrum & Hoban, 1994). Others (such as Eckberg & Blocker, 1989; Schultz, Zelezny, & Dalrymple, 2000; Sherkat & Ellison, 2007) have devoted efforts to investigating the religious basis of pro-environmental behaviour.

A major contention associated with all these empirical studies is the notion of using a causal model to analyse the relationship between religion and environmental attitudes and behaviour. This causal relationship has been largely explored using survey research, which involves measuring religiosity using indicators such as commitment to dominion-over-nature beliefs, biblical literalism, and so on. Findings from the majority of studies indicate a weak connection between religious factors and environmental attitudes and behaviour that is highly influenced by demographic and socio-economic factors. It is also evident that the relationship is too complex to be explained using a simplistic hypothesis, for example, of the kind proposed by White; nor can it be explored adequately using statistical measures.

Over-dependence on statistical techniques and relationships has prevented researchers from exploring how religious practitioners interpret religious environmental principles, how these various forms of interpretation change in the wake of environmental crisis and how these affect environmental attitudes and behaviour. Over-reliance on quantitative methods has also affected the ability of existing research to offer sufficient information on variations in the interpretation of environmental beliefs as well as individual and institutional dimensions of environmental beliefs and practices. As Proctor and Berry (2005:1575) observed, a major limitation of the current social research on religion and the environment is the "relative paucity of qualitative studies" and "the virtual absence of coordination between qualitative and quantitative research" on the subject. Their conclusion that a "fuller theoretical and methodological base" (ibid: 1575) is required to sufficiently understand the connection between religion and the environment is worth noting.

Commenting on the methodological and theoretical inadequacies of existing research on religion and the environment, Sherkat and Ellison (2007) have argued that to succeed in providing a more comprehensive analysis of the religion-environment connection, social research needs to apply existing sociological perspectives. They argue that current research appears to predominantly examine the phenomenon on the basis of White's simplistic hypothesis. In my view, while White's hypothesis can serve as an important starting point for researching the relationship, a thorough analysis may be better achieved by drawing from wider sociological perspectives and methodology to examine the complex and wide-ranging dimensions of the connections between religious factors and environmental issues.

To overcome existing methodological and theoretical shortcomings, I used a different approach to investigate the connections between religious worldviews and attitudes, and behaviour towards the environment among selected Christian and Muslim congregations in Northeast Nigeria. Unlike previous studies, my work sought to analyse both commitment to dominion-over-nature orientation and the religious basis for pro-environmental actions among the study population. In other words, I followed Hand and Van Liere (1984), to analyse 'mastery-over-nature' orientation among participants and build on earlier research (such as Shaiko 1987) to investigate 'stewardship of nature'. Both concepts offer a convenient way of exploring religiously-inspired worldviews about nature. In my investigation of these issues, I made an attempt to both analyse participants' perspectives and 'measure' relationships between religious, environmental

and socio-economic variables. Furthermore, this study differs from previous studies as it is both theoretically driven and empirically grounded. To gain a better understanding of the connection between religion and environmental attitudes, I drew from leading sociological and social psychological theories to interpret the findings of this study.

1.3. Religion and perception of environmental problems

Contemporary environmental change has provoked not only an interest in the role of religion in influencing attitudes and behaviour towards the environment, but also significant social scientific interest in understanding the role of religion and other socio-cultural forces in shaping perception and adaptation to environmental problems. This interest is informed by the realisation that global political response to environmental change, which largely seeks to institutionalise scientific solutions to environmental problems, undermines the role of socio-cultural forces in the perception of and strategies of adaptation to environmental change. Experts influenced by this viewpoint believe that policies that fail to take into account the influence of cultural factors, such as religion, risk alienating peoples who are most vulnerable to climatic and environmental change (Fromming & Reichel, 2012; Gerten, 2010; Moore & Nelson, 2010).

Given that a majority of people across the world practice one form of religious belief or another (Bergmann, 2009; Hitzhusen & Tucker, 2013), and religious beliefs and worldviews regarding the natural world continue to influence people's actions and their relationship with the natural environment (Jenkins, 2009), many experts are of the view that, of all cultural elements, religion provides a particularly important lens for understanding human worldviews and perceptions regarding major issues like social and environmental changes (Kaplan 2010; Gardner 2002; Gerten and Bergmann 2012; Wardekker, Petersen, and van der Sluijs 2009; Guth et al. 1995).

Social research has revealed some major differences in understandings of environmental change among different Christian groups. For instance, Moore & Nelson (2010) and Wilkinson (2010), have found that 'mainstream' Protestant Churches in the US have institutionally acknowledged the anthropogenic causes of environmental change and its negative consequences, and the Church's moral conviction to mitigate it. Others studies by Djupe & Hunt (2009), Keans (1996) have also reported on the official acceptance of a moral responsibility to combat environmental change and the institutional commitment to promoting environmental sustainability. Within the Catholic Church,

Hart (2006) has reported what he described as a 'reformation' of environmental thought through renewed emphasis on moral narratives that support environmental concern.

On the other hand, there are studies (such as Guth et al., 1995) that indicated that conservative protestant denominations, as compared to mainstream protestants, are more likely to reject environmental change as a problem. Smith and Leiserowitz (2013) have found evidence of disbelief and scepticism about climate change and global warming among both evangelicals and non-evangelicals in the US. Rejection of scientific accounts of anthropogenic environmental problems is associated with beliefs in 'end times' prophecies which, according to Simkins (2008), are quite popular among many American religious fundamentalists.

Attempts to explore how communities in the Islamic world perceive and respond to ecological changes have also revealed divergent perspectives on environmental problems. Some observers (such as Foltz, 2006; Nasr, 2003) have contended that the limited evidence of strong environmentalism in most Muslim communities across the world points to limited awareness of the anthropogenic causes of environmental change. Other scholars (eg Khalid, 2002:338), however, believe that there is recently an 'awakening amongst the Muslims to the realities of environmental change'.

Analysis of perceptions about contemporary environmental change in Muslim communities indicates that many people interpret environmental problems as the 'will of God' and may see no point in striving to mitigate them (Ammar, 2004; Hutton & Haque, 2003; Lindskog & Tengberg, 1994). According to Foltz (2006), there are also indications that a growing number of people in Muslim-dominated countries believe that Muslims also share the blame for ecological crisis by embracing the culture of greed, disrespect for nature and injustice. These individuals and groups accept scientific accounts on the impact of human activities on the environment and are making efforts to reintroduce Islamic environmental principles to current debates about environmental decline. Before the emergence of these environmental movements, some observers (Nasr, 2003) have noted that there is a general lack of awareness of the seriousness of ecological problems, as well as a lack of will to work towards arresting them, within Muslim communities.

These contestations regarding the role of religious beliefs in the perception and adaptation to environmental change have further revealed the complex and multi-dimensional nature of religion-environment connection. The contestations have also made obvious the need for further research to explore the phenomenon on a

comparative, cross-cultural and cross-national basis. As I stated above, although there is a fairly large body of empirical literature on the perceptions of environmental problems in the developed nations of Europe and North America, only a few empirical studies have focused on the engagement of faith communities with environmental issues in the developing countries of Africa, despite their peculiar vulnerabilities to the effects of environmental change.

As suggested above, analysts have agreed that the connection between religion and the environment is complex and multi-dimensional. However, most empirical studies tend to focus on either analysing the connections between religion and environmental attitudes and behaviour or religious influence on perception of and adaptation to environmental change. Since theorising the religion-environment connection requires a broad focus on the various dimensions of the religion-environment nexus, this study departs from previous attempts by examining both religious influence on environmental worldviews and behaviour, and perceptions and adaptation to environmental change. The study also attempts a comparative analysis of Christian and Muslim congregations in a region that has not been sufficiently studied.

1.4. Research questions

In order to examine religious influence on environmental attitudes and behaviour and on perceptions and adaptation to environmental change, this thesis addresses the following research questions:

- To what extent do religious beliefs and worldviews influence environmental attitudes and behaviour in Northeast (NE) Nigeria?
 - Is there any evidence of dominion-over-nature beliefs in the narratives and responses of the religious groups?
 - Do Christians and Muslims differ in their understanding and commitment to dominion-over-nature orientation?
 - How is the dominion-over-nature doctrine interpreted and does commitment to dominion beliefs correlate with negative environmental attitudes and behaviour?
 - What other factors influence environmental attitudes and behaviour?
- In what ways do religious beliefs and values provide an ethical basis for pro-environmental attitudes and actions?

- How are the major discourses about religiously-inspired concerns for the environment framed?
 - Do Christian and Muslim participants differ in their pro-environmental narratives?
 - Does religiously-inspired environmental concern translate into private or public sphere environmentalism?
 - What are the limitations of religiously-inspired concern for the environment?
- In what ways and to what extent do religious ideas shape interpretation of environmental change and narratives of adaptation to change in the environment?
 - What are the dominant narratives about environmental change?
 - Do Christian and Muslim participants interpret environmental problems in the same way?
 - What are the dominant narratives about adaptation to environmental change and degradation?

1.5. Thesis outline

To address the research questions and their implications, this thesis is divided into 8 chapters. The next chapter (2) reviews a broad literature that addresses the subjects of environment-society interaction, social scientific study of religion, and religion and the environment. The chapter also introduces the two theoretical models used to interpret the research findings. The discussions on environment-society interaction and social scientific study of religion address some fundamental philosophical and theoretical questions on how social scientific research can analyse environment and society, and religion in society. The review also focuses on the major debates about the appropriate focus of observation and analysis in terms of both the subject of society and environment, and religion in society. The theoretical perspectives I introduce in that section lays the foundation for subsequent discussions which focus on the theoretical and empirical literature regarding the relationship between religion and the environment. Chapter 2 also introduces the theory of structure advanced by Sewell Jr. (1992) and the value-belief-norm (VBN) theory (Dietz, Stern, & Guagnano, 1998; Stern, 2000) and demonstrates how they were used to interpret the findings of the study.

Chapter 3 provides a brief introduction to the case study region, focusing on some basic socio-economic, religious and environmental data. The main purpose of this introduction to Northeast Nigeria is to expose the reader to the broader societal and

environmental issues that shape social life in the communities under study. It is my view that an understanding of the intersection between religion and the environment requires background information on the wider social and environmental context in the area. For this reason, the chapter offers a brief overview of the political structure, physical geography, population, and ethnic and religious composition of the area. Also provided in the chapter is the basic socio-economic data about standards of living, environmental conditions and their impacts, as well as the relationship between religion, politics and violence. In the summary, I use the information about the region to demonstrate the suitability of the location for exploring the connections between religion and environmental issues.

Chapter 4 introduces the reader to the research epistemology and methodology. The chapter begins with an introduction to the critical realist philosophical tradition, and the methodological precepts it advocates. The discussion attempts to demonstrate how the philosophical and methodological assumptions advanced by this tradition informed the research strategy and methods employed in this study. This is followed by a description of the qualitative and quantitative methods of data gathering and analysis used and how they were utilised in the research process. The chapter wraps up with an account of the ethical and practical issues confronted during the study and how they were dealt with.

Having set the stage for the empirical research, Chapter 5 presents and discusses the first of three sets of findings that emerged from the thesis: religious influence on environmental attitudes and behaviour. This heading is used to explore the study's findings regarding religious beliefs about the environment, how these beliefs influence attitudes and behaviour towards the environment, and the range of other factors that determine environmental attitudes and behaviour. The findings presented emerged from analysis of both qualitative interviews with leaders of participating Christian and Muslim congregations, and questionnaire data administered to member of those congregations. The themes explored in the chapter include religious beliefs regarding human's dominance-over-nature, and how they were interpreted by participants in the interviews and how they relate to attitudes and behaviour towards the environment. This discussion of interview narratives on dominion-over-nature is followed by a presentation of results from statistical analysis of questionnaire data in which environmental worldviews, attitudes and behaviours were explored. These variables were examined against other variables, namely religious identification, gender, levels of income and education. The key findings reported in the chapter are discussed using the

theory of structure (Sewell, Jr., 1992) and the VBN theory (Dietz et al., 1998; P.C. Stern, 2000), and their possible implications for theory, research and policy are highlighted.

Chapter 6 continues the discussion on religious influence on environmental attitude and behaviour using a different subject - religious environmentalism. Like chapter 5, the discussions start with an exploration of the clergy member's interview narratives regarding religious motives for environmental concern and actions. This is followed by a presentation of statistical data on endorsement of the three varieties of religious environmental concern that emerged from the interviews by members of participating congregations. The chapter also examines the various conditions and factors that determine the practice of religious environmentalism. In the conclusion to the chapter, an attempt is made to utilise theoretical assumptions and concepts advanced by the theory of structure and the VBN theory to interpret these findings, before discussing their implications.

Chapter 7 focuses on another dimension of the religion-environment nexus - the role of religion in shaping how people understand and respond to environmental change and degradation. Here, the discussion draws exclusively from qualitative analysis of interviews with leaders of congregations. The discussion starts by exploring narratives about institutional and social factors that participants associated with environmental problems and the strategies of adaptation they proposed. The discussion then moves to theological narratives that shape participants' perspectives regarding the 'causes' of environmental problems and how communities respond to them. The possible implications of these findings on theory, research and policy - for Nigeria and beyond - are discussed in the concluding section.

In chapter 8, I conclude the thesis by summarising the major findings and contemplating responses to the research questions. The chapter highlights the possible contributions of the thesis to theory and research on the connections between religion and the environment, and outlines the limitations of the study. On the basis of these possible contributions and limitations, I give some recommendations for future research.

CHAPTER 2 - THEORY AND RESEARCH ON RELIGION AND THE ENVIRONMENT

The main task of this chapter is to review relevant literature on the connection between religion and the environment. To do so, the chapter will take a look at the broad subjects of nature-society interaction and the subject of religion in society. This review also focuses on key debates regarding wider theoretical and empirical research on the subject of religion and the environment. The central objective of the review is to critically analyse the ideas, concepts, assumptions and (in some cases) prescriptions of the existing theoretical perspectives and findings from empirical research that shaped social scientific study of the subject, and in one way or another served to guide the identification, collection and analysis of research data relating to the research problem, and interpretation of the findings of the study.

The chapter is divided into five sections. The first section presents some key theoretical ideas that have shaped social scientific understanding of the relationship between society and the environment. The theories on society-environment interactions are discussed in three subsections: understanding nature and environmental problems, perspectives on the causes of environmental problems, and theories of environmental reform. The second section takes a look at some useful theoretical and conceptual issues in the social scientific study of religion. In the discussion, the classical and contemporary theoretical ideas that shaped sociological study of religion are presented separately, followed by a brief overview of the social constructionist approach to the study of religion. The third section summarises the major debates in existing theoretical and empirical literature on the connection between religion and the environment. Discussion centres around the two principal themes of this thesis, namely, religious influence on environmental worldviews and behaviour, and the impact of religious beliefs on perception and adaptation to environmental change. The fourth section presents the two theoretical perspectives used for the purpose of interpreting the findings of the study. The fifth section concludes the chapter.

2.1. Sociological theory and the 'natural' environment

Summarising the whole body of social theoretical knowledge on nature-society relationships is neither achievable nor desirable in the context of this study. This is

partly because the vast and diverse body of literature has recently been comprehensively reviewed by different authors (Buttel, Dickens, Dunlap, & Gijswijt, 2002; Hannigan, 1995, 2006; Lockie, 2004), and to conduct another review would merely repeat their work. Rather, the following paragraphs will provide a brief background of social theorising on the environment, introduce the major debates that shaped the discipline of sociology of the environment and use those debates and the ideas they propose to justify the present study.

It has been intensely debated whether classical and 20th century sociology have generally ignored or paid little attention to human-environment relationships (Buttel et al., 2002; Catton & Dunlap, 1978; Dunlap & Catton, 1994; Ezzy, 2004; Irwin, 2001; Lockie, 2004). The emergence of environmental sociology as a sub-discipline in the late 1970s has ushered in an era of increasing scholarly interest in the phenomena of society-environment interaction and in a proliferation of theories seeking to explain this relationship. Many of these theoretical ideas were, however, said to be influenced by the classical and 20th century traditions (Buttel et al., 2002). In other words, classical theorists especially Marx, Weber and Durkheim had tremendous influence on not just some of the world leading theorists in environmental sociology but also on some of the ideas that continue to shape the sub-discipline. In this sense, one could argue that an effort to understand the relationship between human society and the environment still has a lot to gain from the conceptual and analytical tools developed by the so-called 'big three' (Marx, Weber and Durkheim). Marxist theory of Metabolic Rift, for example, is seen as methodologically important to understanding the role of capitalist production in the transformation and degradation of nature (Foster, 1999). Similarly, Dickens (2002), believes that Marx's analysis of social division of labour is another important contribution to social-environmental theorizing. Environmental theorists like Murphy (2002) were not hesitant to suggest that Weberian sociology - especially his treatment of 'formal rationalization' - remains an indispensable tradition to any good understanding of humans' tendency to pursue 'means to manipulate nature and the means to dominate others' as causal factors of environmental problems (p. 74). Catton (2002) stressed the centrality of Durkheim's concept and analysis of organic solidarity to understanding contemporary ecological crisis, a contribution that makes him (Durkheim), according to Catton, the 'precursor' of environmental sociology.

These views point to the conclusion that despite their apparent 'anthropocentric' orientations, classical sociological theories are not as dispensable as some

environmental researchers (Buttel, 1987; Catton & Dunlap, 1978; Dunlap & Catton, 1994; Krogman & Darlington, 1996) claim. Indeed, some of the classical concepts, methodological premises and propositions may still be relevant to understanding human-nature relationships.

2.1.1. Meaning of ‘environment’

Different sociological traditions have developed divergent ontologies of the ‘environment’ and, accordingly, different epistemological views on how humans develop an understanding of their biophysical ‘environment’. One of these important philosophical positions on the concept of ‘environment’ is social constructionism. The central idea behind this theoretical orientation is the view that nature is ‘socially constructed’. That is to say the ‘social processes of knowledge generation and communication’ always determine how we understand nature (Lockie, 2004: 29). Over the years, social constructionists made concerted efforts to explore the ontology of the ‘environment’. To some social constructionists (Jenkins, 2002:111), sociology has failed, from the beginning, to properly conceptualize the ‘environment,’ which has produced serious analytical constraints to the discipline's engagement with issues relating to the natural environment. Social constructionists’ effort to critically treat the taken-for-granted concept of ‘environment’ is one of their key areas of contribution to environmental sociology (Buttel et al., 2002). Their attempt to answer the fundamental ontological question of what constitutes the ‘environment’ has greatly impacted on empirical research on the social dimensions of environmental problems. Despite the significant differences in their understanding of constructionism, social constructionists pay attention to the ‘ways in which our understandings of nature, the environment, and environmental problems are shaped by intrinsically social processes of knowledge generation and communication’ (Lockie, 2004:29).

The social constructionist approach to the environment encompasses multiple different approaches, with often incompatible views of the social construction of knowledge of the natural environment. At one extreme, some social constructionists maintain that nature does not possess any material reality “outside the symbolic world-building activities of humans and no way of knowing about that reality that is better than other ways of knowing” (Lockie, 2004:30). As such, the claim that scientific knowledge of the natural environment represents the only source of valid information about nature and its state is debunked by the argument that science is not any better than other ways of knowing about the environment. A more moderate branch of social constructionism

accepts the materialist critique of the more extreme constructionist position that nature has material existence independent of humans, although it also posits that the knowledge of that reality is being shaped by human construction (Murphy, 2002). In other words, humans employ categories and concepts that aid their understanding of the environment and that these categories and concepts are shaped by social and cultural processes across time and place.

Extending this idea to the discussion of religion and the environment, we may agree with the 'moderate' constructionists that although the natural environment and its resources exist independently of humans, our understanding of them emerges from a complex process of social interaction that develop and change over time. In this sense, what is currently categorised in one society as an accepted environmental practice, may in the same society be discarded as unacceptable in future and may have a complex relationship with the past. This variation in understanding, as far as social constructionists are concerned, is a function of "socio-political" institutional processes (Yearley, 2002:277). Differences in understanding of 'nature' among various religious traditions could be explained from this standpoint as the outcome of long historical, socio-cultural processes in the evolution of those religious traditions and their associated sets of beliefs.

Another critical issue that attracted the attention of proponents of the social constructionist perspective of the environment is how individuals, groups and societies 'construct' various environmental problems (Hannigan, 2006; Murphy, 2002). Like the environment itself, environmental problems are seen to be subjected to processes of socio-cultural 'construction' that lead, for example, to categorisation of some as 'more serious' than others. The often cited debates on 'global warming', 'bio-diversity' and so on, argue social constructionists (ibid 2002; 2006), indicate how dominant interests influence what is or what is not 'constructed' as an environmental problem.

Social constructionist discourse on the ontology of the environment - in particular the claim that nature is socially constructed - has influenced many empirical researchers to be primarily concerned with analysing discourses about the 'natural world', while bracketing the autonomous natural world out of their analysis (Eder, 1996; Hannigan, 1995). Correspondingly, social constructionist cultural analysis of nature has generated strong reactions from scholars who believe in the independent existence of nature and insist in drawing a distinction between the human world and the natural world. Such materialist critique of the social constructionist perspective of nature insist on treating

nature as an objective reality which exists independent of human knowledge of it (Dunlap & Catton, 1994). Even though human knowledge of nature is socially determined, and that socially determined knowledge of nature could produce changes in its state, the material existence of nature is something that cannot be reduced to human knowledge and action. These debates about the socially constructed character of nature and independent existence of the dynamics of nature have dominated sociological study of society-environment interaction since the 1990s. However, as will be seen in subsequent discussion, the impact of sociological perspectives, especially social constructionism, on empirical research regarding the connection between religion and the environment has been very small. I shall return to the social constructionist approach in the next section.

At the heart of the argument of social theorists who are opposed to the social constructionist understanding of nature is that the reality of environmental change (Dunlap & Catton, 1994; Murphy, 2002), the attendant 'risk' (Beck, 1992, 1995) to human society resulting from changes in the dynamics and processes of the independent, external natural world cannot be reduced to human constructions. Materialists' preoccupation with the impact of human activities on the environment and the effects of environmental problems on human society has led to considerable effort being made to theorise about the possible societal 'causes' of environmental problems.

2.1.2. Understanding the societal bases of environmental problems

Since the late 1970s, realist and constructionist perspectives on society-environment relations have dominated theorising and research on the societal basis of environmental problems. Below is a brief review of these key approaches to understanding the societal basis of environmental problems. It is critical to introduce these competing perspectives and the methodological suggestions they propose, as I have combined both the assumptions and methodological precepts they advanced in developing a methodology for the present study.

The New Environmentalist Paradigm (NEP)

As stated above, the realist understanding of society-environment interaction was heavily influenced by the increasing recognition of environmental problems and their link to social factors like population growth and industrialisation. Catton and Dunlap's (1978) famous critique of traditional sociology for not giving adequate attention to human relation with the environment represents a new beginning in sociological

theorizing of environmental problems. In what is considered a leading article in environmental sociology, the duo argued that despite the characteristic diversity, there is a fundamental anthropocentric orientation in all theoretical perspectives in sociology, the 'Human Exemptionalism Paradigm' (HEP). They stressed that uncritical acceptance of the basic assumptions of the HEP made it difficult for sociologists to deal meaningfully with the ecological problems of contemporary societies. The basic assumptions of the HEP that all existing sociological perspectives uncritically accepted, according to Catton and Dunlap (1978:42-43) were:

1. Humans are unique among the earth's creatures, for they have culture.
2. Culture can vary almost infinitely and can change much more rapidly than biological traits.
3. Thus many human differences are socially induced rather than inborn, they can be socially altered, and inconvenient differences eliminated.
4. Thus, also, cultural accumulation means that progress can continue without limit, making all social problems ultimately soluble.

Because of the acceptance of these HEP assumptions, argued Catton and Dunlap, sociological analysis of modern society is built upon an 'optimistic' doctrine that exempts humans as a specie from the natural ecological processes, and promises endless progress of human society in a biophysical environment with limitless resources and capacity. The authors emphasise that acceptance of this optimistic worldview had prevented traditional sociology from paying attention to analysing environmental problems. Even though the HEP critique was originally developed to challenge the anthropocentric worldview of the mother discipline, it has become an important model for investigating how people make sense of environmental change and respond to it (Mol, 2010). That is to say the HEP and its basic assumptions have provided one useful way of analysing the attitudinal/behavioural basis of global and local environmental problems. What enabled Catton and Dunlap's initial critique of the anthropocentric orientation of traditional sociology to develop into a theoretical model for understanding the attitudinal/behavioural basis of environmental problems is their subsequent analysis of the societal version of HEP - the 'Dominant Western Worldview' (DWW). At the core of the DWW and, of course, Catton and Dunlap's environmental sociology, is the concept of 'Dominant Social Paradigm' (DSP). This concept was first introduced by Pirages and Ehrlich (1974) to summarise what they consider societal dominant values and beliefs that promote devaluing of nature, leading to a lack of concern for the quality

of the environment. Pirages and Ehrlich believed that the DSP represents a "worldview through which individuals or, collectively a society interpret the meaning of the external world... [and] a mental image of social reality that guides expectations in a society" (1974:43-44). According to them, the western society's "fundamentally anti-ecological" DSP "must be replaced by a more realistic worldview if ecological catastrophe is to be avoided" (in Dunlap & Liere, 1978:19). Catton and Dunlap (1980:17-18) have expanded the notion of DSP and the DWW to include the following assumptions:

1. People are fundamentally different from all other creatures on earth, over which they have dominion.
2. People are masters of their destiny; they can choose their goals and learn to do whatever is necessary to achieve them.
3. The world is vast, and thus provides unlimited opportunities for humans.
4. The history of humanity is of progress; for every problem, there is a solution, and thus progress need never cease.

After outlining what they described as the anthropocentric, optimistic and anti-ecological worldview dominant in western society, Catton and Dunlap proceeded to advocate a paradigm shift in societal worldview, to be preceded by an increase in the social scientific interest in studying the interaction between society and the environment, especially the challenges posed by global environmental change. This paradigmatic shift can only be achieved through the "a tacit acceptance of a set of assumptions quite different from the HEP" (1978:45).

In proposing a worldview that is opposed to the HEP for sociology, and its version in larger society (DSP), Catton and Dunlap introduced a compelling new idea, the 'New Environmental Paradigm' (NEP). The NEP advocates a re-evaluation of traditional sociological theories and also demonstrates the necessity of understanding the society-environment relationship for any good sociological inquiry. The new paradigm also introduced different assumptions, one of which contends that not only are humans one among a range of competing species in an ecosystem, but they are poised to suffer from the effects of ecological changes and the resources of the biophysical environment have limited capacity (Catton & Dunlap, 1978:45). The NEP's basic assumptions are as follows:

1. Human beings are but one species among the many that are interdependently involved in the biotic communities that shape our social life.

2. Intricate linkages of cause and effect and feedback in the web of nature produce many unintended consequences from purposive human action.
3. The world is finite, so there are potent physical and biological limits constraining economic growth, social progress and other social phenomena.

In proposing an environmentalist paradigm for sociology, Catton and Dunlap were also introducing a realist approach to social scientific study of anthropogenic environmental problems. This approach is based on the acceptance of scientific accounts on the impact of human activity on the ecosystem. According to Catton and Dunlap (1994), social scientific analysis of environmental issues should proceed with a recognition of the 'reality' and seriousness of anthropogenic environmental change, as established by the natural sciences, to investigate the societal causes, consequences and mitigation of environmental problems.

Analysing the societal causes of environmental problems, as indicated above, involves paying attention to the role of worldviews, beliefs, values and behaviour at the level of individual and collective. Proponents of this approach argue that human agency is responsible for human-induced environmental change just as it is a "potent force for influencing" the changes needed to achieve sustainability (Dunlap and Catton 1994:18). Their belief in the power of human agency in ameliorating environmental problems led Catton and Dunlap to emphasise the need for sociological analysis to focus on understanding how individual and societal environmental worldviews change over time, as well as how environmental policy could positively influence attitudinal and behavioural change.

Methodologically, the realist approach to understanding societal-environment relations as espoused by Catton and Dunlap can be summarised as follows:

- A focus on 'societal bases' of environmental problems especially the relationship between environmental worldviews and behaviour (Catton & Dunlap, 1978; Dunlap & Catton, 1994; Jones & Dunlap, 1992; Van Liere & Dunlap, 1980). This involves a special interest in analysing the role played by worldviews, beliefs and attitudes in influencing environmental behaviour (Dunlap & Van Liere, 1978; Dunlap, Liere, Mertig, & Jones, 2000).
- Using survey techniques to document levels of public awareness of environmental issues and support for environmental policy (Jones & Dunlap, 1992). This interest also includes using longitudinal studies to document

changes in issues such as "environmental concern", awareness of environmental issues and support for environmental policy (National Research Council, 2002).

Contemporary critique of world religions and their 'dominion-over-nature' theologies by environmentalists appears to argue along similar lines to the HEP model of Catton and Dunlap. Some analysts have argued that anthropocentric worldviews of Abrahamic religious traditions (Christianity, Judaism and Islam) have tended to consider human welfare as ultimate and define the rest of nature as a resource for human consumption. To them, some of world's major religions have for many centuries developed and maintained 'exemptionalist' and 'dominionist' worldviews that have promoted the destruction of nature and contributed to the current ecological crisis (Ezzy, 2004; Maltby, 2008).

Although the influence of Catton and Dunlap's concepts of HEP and NEP on discourses about the human relationship with nature within religious communities is unclear, there is a documented increase recently in the number of religious movements that advocate sustainable management of environmental resources. Religious response to the contemporary critique of Judeo-Christian traditions' dominion-over-nature theology has led to the emergence of a nature friendly theological model - 'ecotheology'. While ecotheology can be seen as a response to White's (1967) criticism of Judeo-Christian religions' contribution to environmental devastation, ecotheological discourse about the alternatives religions provide to scientific and technological solutions to environmental crisis might have been influenced by Catton and Dunlap's NEP. Poul Pedersen's (1995) coinage of 'Religious Environmentalist Paradigm' (REP) to summarise these religious environmental philosophies is a manifestation of the influence of Catton and Dunlap's environmental sociology in analysing religious engagement with environmental issues. Pedersen's term is used today to conceptualise efforts to advocate for the re-evaluation of religious principles in the light of current environmental crisis (Kalland, 2005). Instead of using the scriptures to justify exploitation of nature, REP and ecotheology stress the religious principles that teach 'stewardship', discourage reckless consumption and place limits to humans' actions in the ecosystem (Gottlieb, 2004; Gottlieb, 2006).

Catton and Dunlap's analysis of HEP is seen even by their vocal critics (Buttel, 1987; Hannigan, 2006) as an important sociological contribution to the debate about the impact of society on the natural environment. Through their conceptualisation of the DSP, the theorists have helped stimulate extensive research into the role of worldviews, values and beliefs on current environmental problems. As will be seen later, Catton and

Dunlap's analysis of the dominant western worldview has also influenced the methods used in the study of religion-environment connection since the late 1970s. Their emphasis on worldview has influenced many researchers to focus their attention on the ways in which religious beliefs and values predict environmental behaviour. Dunlap and Van Liere (1978), Dunlap et al. (2000) and Dunlap and Van Liere (2008) have used these assumptions to develop the NEP scale that, over the years, proved to be the most widely used instrument for researchers interested in measuring the relationship between religious beliefs and environmental worldviews. As will be seen later, Catton and Dunlap's realist approach has also contributed to the dominance of statistical methods of data gathering and analysis, particularly during the last three decades of research into the connection between religion and the environment. The statistical techniques they developed have helped researchers to examine changes in environmental attitudes in many religious communities across the world (eg Kanagy & Nelson, 1995; Kanagy & Willits, 1993).

A Social constructionist approach to society-environment interaction

The Realist approach to understanding society-environment interaction and in particular Catton and Dunlap's model of environmental sociology has generated a heated debate since the late 1970s, especially with constructionists who propose a different (cultural) approach to the subject. I have indicated in the preceding section that social constructionists are critical of realist assumption of the existence of environmental problems as established by the natural scientists. As such, they maintain a critical stand on the realist approach towards the societal causes and consequences of such problems as advanced by realists such as Dunlap and Catton. In line with their emphasis on the socially-constructed character of the natural environment discussed earlier, social constructionists have argued that environmental problems also undergo personal and institutional scrutiny before they are 'constructed' (Hannigan, 2006). Social constructionists are opposed to the research agenda advanced by realists (such as Dunlap and Catton) which uncritically accepts scientific claims about the existence of ecological problems produced by human activities. This perspective was successful in reducing the influence of realist epistemology in environmental sociology (Buttel et al 2002). As stated earlier, some social constructionists (Hannigan 1995) claim that 'there is no way of knowing about social reality that is, in principle, better or worse than other ways of knowing' (Lockie 2004:30). Catton and Dunlap (1994), insist that the knowledge claims of environmental scientists about Global Environmental Change

(GEC) are ‘real’ and that sociologists are under obligation to utilize these claims in their studies of human dimensions of environmental problems. Failure to do that, they argue, confirms the historical ‘exemptionalist’ tradition of the discipline. To the contrary, social constructionists maintain that ‘bestowing *absolute* certainty solely on the basis of a scientific head count is surely perilous’ (Hannigan 2006:30). Hannigan cited examples of instances and situations which demonstrate that scientific claims about the nature and scale of environmental problems are products of social construction which do not necessarily carry ‘equal weight’. Hence, he argued that to assess the validity of a scientific claim, researchers should take into consideration the historical context within which the claim was made.

Drawing from the sociology of scientific knowledge, Lockie (2004:34) critiqued Dunlap and Catton’s realist assumption that science provides undeniable evidence of the existence of environmental problems. Stressing the central notion that science itself is ‘socially constructed’, he noted that the problem of objectivity in science and scientific research remains an important philosophical issue that poses a serious limitation to the extent to which sociology will accept scientific claims about environmental problems. He argues that:

When choosing to observe, scientists are influenced by what they believe already to be theoretically and socially relevant. When collecting data, they filter the infinite range of things that potentially could be observed through existing theory and experience. Patterns are observed in the data with which scientists are already familiar, and therefore scientific observation tends to support existing theory and existing solutions to social and environmental problems.

Commenting on the efficacy of the natural sciences knowledge claims about the environment, Proctor (1998:353) argues that:

what biophysical science reveals is less a glimpse into the workings of the natural world than the culture and politics of scientific knowledge; or, conversely, that nature is not simply something out there that scientific knowledge more or less faithfully mirrors.

Social constructionism, therefore, provides a framework for understanding the processes through which human groups, through ‘re-definition’, come to acknowledge the existence of certain realities such as environmental problems. The social constructionist perspective is also believed (Hannigan, 2006) to be capable of facilitating contribution to environmental policy by situating environmental problems within appropriate social and political contexts.

The assumptions and philosophical positions stated above have generated further questions regarding methodologies of researching social problems in general and specific environmental problems in particular. Social constructionism introduces some

fundamentally distinctive ways of conceptualizing the human world and techniques of researching it. On the basis of the epistemological claims highlighted above, social constructionists concentrated on introducing research practices that succeeded in re-positioning sociology towards more radically empirical approaches. Hannigan (2006) was explicit on the methodological significance of social constructionism to researching environmental problems. Sociological research on environmental problems should, rather than concentrating on causes and effects of human-induced environmental problems as advocated by Catton and Dunlap, focus on examining the processes through which certain environmental conditions become socially categorised as unhealthy and undesirable. Researchers are supposed to pay more attention to the process of 'claims-making' than evaluating the validity of the claims themselves, whether they are true or false. Activities of claims-making groups in generating and sustaining particular claims about environmental conditions are crucial areas of research on environmental problems. Hannigan draws from Best (1989:250) to show how social constructionism can be used as an analytical tool in studying social problems. Best highlighted three main focal points for researching social problems from the standpoint of social constructionism: the claims themselves, the claim makers, and the claim-making process.

- Claims: Defined as 'complaints about social conditions which members of a group perceived to be offensive and undesirable' (Hannigan 2006:64), claims are fundamental to 'construction' of a social problem. Researching these problems requires a close look at the nature and content of claims. Researchers are encouraged to pay attention to key questions such as: What is being said about the problem? How is the problem being typified? What is the rhetoric of claims-making? How are claims presented so as to persuade their audiences?
- Claims makers: Social constructionist research of social problems is also required to understand the role of interest groups and individuals who are responsible for manufacturing claims about social problems. Here, activities of 'Nodal Institutions' (Buttel et al., 2002:26) such as government agencies, organizations, social movements, the mass media, and 'epistemic communities' (Haas, 1992; Meyer & Molyneux-Hodgson, 2010) of experts are critical to creating environmental problems.
- Claims-making process: Best (1989:251) demonstrated that a good analysis of the social construction of social problems requires the addressing of questions regarding the process of claims-making. Specific questions include: Who did the

claims-makers address? Were other claims-makers making rival claims? What concerns and interests did claims-makers' audience's bring to the issue, and how did these come to shape the audience's responses to the claims? How did the nature of the claims or the identity of the claims-makers affect the audience's response?

This methodological approach, as stated earlier, largely favours the use of qualitative techniques that aim at producing rich and detailed accounts of 'real-life' situations in a fashion that is sensitive to the social context of the study.

Strong criticisms of the social constructionist perspective on the environment came from many quarters, especially the realist 'camp'. Among the most passionate critics are environmentalists who argue that social constructionists undermine or even deny the existence of environmental problems like the Global Environmental Change. Dunlap and Catton (1994) and Murphy (1998, 2002), for example, have criticised social constructionists for encouraging environmental sociologists to concentrate on the processes through which environmental problems are constructed and to be cautious about the validity of the claims. By so doing, social constructionists limit the task of environmental sociology to demonstrating that 'environmental problems are mere products of a dynamic social process of definition, negotiation and legitimation' (Hannigan 2006:31). Further, these realists criticised social constructionists for neglecting the 'fundamental subject matter of environmental sociology', Global Environmental Change (GEC), in favour of 'claims-making, definitional or constructionist dimensions of environmental problems.

In their reaction, social constructionists (Yearley, 2002) maintain that, contrary to realists' criticisms, social constructionism 'encourages the analyst to open up questions that are overlooked or regarded as 'nonquestions' by realist authors and provides a sound basis for empirical social scientific inquiry'. Others (Buttel et al 2002:25) see social constructionism and related perspectives as handicapped by lack of theoretical rigour which makes them appear more like a "set of concepts and methodological conventions than they are a full-blown theory".

Given all these debates about the potentials and limitations of social constructionism, especially within the sociology of environmental problems and environmental sociology, I would argue that the perspective is compelling in explanatory terms. It enables us to understand the role of human activity in creating the realities of the human world. In other words, social constructionism helps us understand that social realities develop

from a complex process of social interaction that develops and changes over time. Another vital contribution is that social constructionism helps us appreciate the fact that interaction within different social contexts is an indispensable factor in the creation of knowledge about the human world. And finally, social constructionism goes a long way in helping us situate our primary activity of exploring the human world within the proper boundaries of social scientific research. In addition, criticism of science provides a very good understanding of the limitations of scientific claims to providing valid and reliable information about the natural world.

In chapter four, an attempt will be made to explain how I used a critical realist approach to develop a strategy for this study that draws on both realist and constructionist ideas to explore the connections between religious beliefs and environmental attitudes and behaviour, and understandings of environmental problems within faith communities.

Neo-Marxist analysis of environmental problems

As I mentioned earlier, the growing societal awareness of environmental degradation in developed nations has also led to increased interest in the application of classical sociological perspectives to analysing environmental changes. A number of theorists studied the link between social factors like population growth (Ehrlich & Ehrlich, 1972; Ehrlich, Holdren, & Ehrlich, 1978), modern technology (Commoner, 1977) and environmental decline. Others (such as Beck, 1992) used the 'risk society' theory to explain environmental degradation as part of the 'risks' produced by the industrial society. Allan Schnaiberg's influential 'Treadmill of Production' theory provides another useful framework for understanding the links between economic factors and environmental degradation. Schnaiberg's theory began with a critique of theories that attribute environmental decline to population growth and technological advancement before proceeding to provide his political-economy analysis of the social causes of environmental degradation. According to the treadmill theory (Gould, 2004; Schnaiberg & Gould, 1994; Schnaiberg et al., 2000; Schnaiberg, 1980), environmental decline is a necessary outcome of the growth of global capitalism which is characterised by an ever increasing desire for profit, increase in levels of production and demand for natural resources, and ecosystem depletion. Schnaiberg concluded that since contemporary environmental problems are deeply rooted in the structure of the industrial capitalist system, an unrelenting political advocacy is needed to reverse the trend.

Like other political economy perspectives, the treadmill theory emphasises the impact of social systems on the ecosystem, downplays the environmental impacts of attitudes

and behaviours, and puts forward a research strategy that focuses on environmental justice movements (Gould, Pellow, & Schnaiberg, 2004). Although Schnaiberg's initial treadmill theory has ignored the relationship between ecological decline in developing nations and capitalism in developed nations, Schnaiberg and Gould (1994) have attempted to apply the treadmill model to environmental issues in developing nations. Despite this attempt, the theory has failed to provide a satisfactory analysis of the links between global inequalities, poverty and environmental problems. This particular shortcoming has made the treadmill model less applicable to understanding environmental problems in developing nations like Nigeria. Similarly, Schnaiberg's disregard for the role of worldviews and behaviour in environmental destruction has rendered the treadmill theory less relevant to this study.

Poverty-environmental degradation nexus

Theoretical literature on the economics of environmental degradation is dominated by the controversy surrounding the relationship between poverty, inequality and environmental degradation. Initially, the dominant narrative suggested that consumption patterns of the wealthy and affluent people in urban centres, especially of developed nations, resulting from increasing production, are responsible for environmental pollution and degradation. However, with publication of the widely cited and institutionalised Bruntland report (1987) by the World Bank, the majority of analysts and policy makers seem inclined to the notion that poverty in developing countries is a major cause of some ecological problems. Another perspective argues that poverty is both a cause and an effect of environmental degradation. Scholars who see poverty as a contributing factor to environmental degradation often argue that in their effort to meet short-term survival needs, poor people in developing countries engage in unsustainable exploitation of the environment. Way (2006:30) argues that poverty is a key factor in environmental degradation as follows:

...the poor may be forced to extract more from their lands than can be sustained in the long term. Faced with the imperative of short-term survival, poor people may have no other choice but to act against their long-term interest by degrading their lands as they strive to meet their short-term basic needs for food, shelter, and livelihood.

Analysts who insist that poverty is a major cause of environmental degradation maintain that policy initiatives that aim at combating environmental problems need to begin by addressing the issue of poverty (Bruntland, 1987; World Bank, 1992). Scholars on the other side of the debate (Duraiappah, 1998; Scherr, 2000), however, maintain that recent improvements in environmental management capacities of poor communities, as well as

the increasing effectiveness of policy interventions, have called into question the popular assumption that poverty is a cause of environmental degradation. Duraiappah (1998), for instance, concedes that 'institutional and market failures', not poverty, are the major causes of environmental degradation.

Both the views that identify poverty as a cause of environmental degradation and those that reject it are relevant to understanding some of the themes discussed in chapter 6 of this thesis. In the same vein, the discourses that emerged from my data analysis will also provide some additional insights on the poverty-environment nexus from an actor-oriented perspective.

2.1.3. Addressing Environmental Problems

Having looked into some theoretical viewpoints on the 'meaning' of environment and the causes of environmental problems, attention will now be paid to the so-called theories of environmental reform. Another integral objective of social theorising is to contribute, through information, to understanding the nature of human social conditions that have been identified as undesirable and offering prescriptions on how to address them. As a 'problem-oriented' sub-discipline, environmental sociology has for the few decades of its existence been concerned with theoretical 'construction' or explanation of the environment and environmental problems as well as proffering social scientific solutions to such problems. Among the influential theoretical traditions that provide prescriptions for environmental policy is John Dryzek's theory of 'deliberative communication'. Dryzek, (1996) focused on the role of communication, 'citizen participation and democratisation' in addressing contemporary environmental problems. Drawing on Habermas, Dryzek emphasised the instrumentality of 'rational deliberation' among individuals and groups in finding acceptable and practical solutions to the problems of the environment. The strength of this view is exemplified in situations where communities achieve sustainable management of natural resources by developing effective 'communicative rationality'. Unsustainable management of the environment on the other hand is characterised by the absence of 'effective communication and interaction'. The role of the social sciences, therefore, is to stimulate and promote "communicatively rational deliberation" by "advocating greater participation of citizens in the decision-making process and supporting deliberations over goals, impacts and management of proposed change" (Dryzek, 1996:38).

The theory has been criticized as lacking in terms of specific guidelines on how sustainability can be achieved through discursive communication (Lockie, 2004).

However, this democratic approach to environmental problems could be effective in solving major issues in sustainable resource management in different socio-cultural settings (see Djupe & Hunt, 2009; Djupe & Gwiasda, 2010). The recent attempts by experts and religious leaders to develop collaborative networks to 'save' the earth from the catastrophe of environmental degradation are good illustrations of 'deliberative communication' as summarised by Gottlieb (2006:469):

Religious environmental movement is a worldwide movement of political, social, economic, logical, and cultural action. As expressions of a particular religion, in ecumenical alliances with other traditions, through loose networks of spiritually committed activists, and in coalitions with secular environmental organizations, hundreds of groups have resisted global warming, destructive economic 'development', dangerous toxic waste dumps, reckless resource extraction, mindless consumerism, and simple waste. In a wonderful pattern of interfaith cooperation, believers have shown that they are capable of actively working with people whose theologies are quite different from their own. Contrary to widespread secular belief that religion is inherently antidemocratic, religious environmentalists have shown both a broad openness and a deep civic concern.

Ecological Modernisation theory has also made important contributions to the analysis and conceptualisation of the environmental reform processes. The perspective emerged from numerous empirical studies in the mid-1980s and 1990s that focused on the nature and pattern of institutional responses to ecological problems in western societies. According to Mol (2010:23), the basic idea of ecological modernisation is that modern societies have recently witnessed a "centripetal movement of ecological interests, ideas, and considerations" that led to "constant ecological restructuring" and transformation of central institutions of societies. Like the modernisation theories of development of the mid-20th century, ecological modernisation gives a detailed analysis of the characteristics of modern ecological societies. Key characteristics include development of governmental organisations and departments that deal with environmental matters, formulation of environmental laws as well as emergence of green political parties. In the ideological realm, ecological modernisation results in, for example, the emergence of environmental NGOs, 'environmental values systems' and so on. Economically, the era of ecological modernisation is characterised by institutional changes that attach importance to environmental impacts of economic production and consumption such as introduction of eco-taxes, natural resources saving and recycling, among others (Mol, 2010:24).

Ecological modernisation approaches the issue of environmental reform by explaining the role of science and technology in the process. Science and technology according to the theory should not only be understood in terms of their role in the creation of environmental problems but also for their 'potential' contribution to achieving

sustainability and preventing environmental crisis. Also crucial to environmental reform is ecological 'restructuring' of the economic system of production and consumption that will adapt to the changing role of the 'environmental state'. The 'environmental state' is characterised by an active involvement of state and non-state actors in environmental decision making among other things (Mol, 2010:25-26).

Ecological Marxists and other critics of ecological modernisation (Buttel, 2000; Hannigan, 1995) have invested considerable effort trying to oppose the ideas of ecological modernisation. While accepting the fact that ecological modernisation has provided strong alternative views to radical environmentalism, in addition to the 'hope' it brings to the environmental crisis debate, Buttel maintains that the theory is essentially 'Eurocentric' in that much of the literature from which it is produced was generated in Northern Europe. Furthermore, ecological modernisation's uncritical acceptance of modern capitalism and its 'transformative potentials', as well as its view of transformative technology are, according to Buttel, serious theoretical shortcomings (Buttel, 2000:64).

Since exploring the subjective views of religious communities on the possible role of religious resources in addressing environmental degradation in Northeast Nigeria is one of the objectives of this study, deliberative communication theory has helped provide useful ideas to this thesis. For instance, Dryzek's theory provides a useful guide to understanding the role of environmental information within faith communities and congregations in facilitating religiously-inspired pro-environmental attitude and actions. That is not to say that neo-Marxist theories and ecological modernisation are completely irrelevant. Some of their views, for example on the role of technology such as mass media in facilitating environmental reform have also provided valuable ideas for understanding the constraining factors to environmental education in the congregations studied.

2.2. Religion in social theory

This section discusses some foundational and contemporary social theoretical ideas, concepts and debates on the subject matter of religion. Religious beliefs and practices are very important domains of sociological inquiry since the inception of the discipline (O'Dea, 1970). The interest is directly connected to the significant role religion plays in both traditional and modern societies (Mills, 1983). Sociological theories of religion attempt to provide an understanding of beliefs and practices, the effects of such religious beliefs and rituals on society as well as how other societal forces affect them

(Hamilton, 2002). As an important institution of human society, religion has received special attention from classical social theorists notably Durkheim, Weber and Marx. Although each of the three theorists approached the subject of religion and spirituality from a different vantage point, their ideas have in common a belief that religion constitutes a critical aspect of human social life in both traditional and modern societies (Aldridge, 2007; Beckford, 1990). As Gollin (1970) contends, a good understanding of social life requires an examination of the role of religion in human societies. Most of the early social scientists who held profound interest in religion as a sociological phenomenon maintained that religion enables human communities to come to terms or cope with the problem of disorder and disruptions such as ecological problems. This view underscores the importance of sociological analysis of the role of religion in contemporary environmental problems. A thorough analysis of the role of religion in environmental change needs to draw from the classical sociological analysis of religion, as these classical theories constitute the foundation upon which contemporary analyses of religion are built.

From the classical perspectives emerged the secularisation theory which predicted the decline or possible waning of religion, as societies advance economically. The secularisation theories enjoyed wider acceptability among leading sociologists of religion, a situation that contributed to a decrease in scholarly interest in the phenomenon of religion among sociologists (Sherkat & Ellison, 1999). However, recent developments suggest a growing influence of religion and resurgence of religiously oriented movements in many societies across the world, necessitating a critical re-examination of the role of religion in modern society (Berger, 1999; Lundskow, 2008). Also characteristic of the contemporary trend is what Sherkat and Ellison (1999:364) described as surging “theoretical and empirical connections between the sociology of religion and other areas of sociology” which led to “reviving interest in the sociology of religion”.

Since a proper understanding of the role of religion in contemporary societies is difficult if not impossible without reference to the classical traditions (Furseth & Repstad, 2010), an attempt will be made in the following sub-sections to introduce some relevant foundational sociological and anthropological analyses of the subject of religion in society. The discussion essentially focuses on sociological ideas about the meaning of religion and its 'social functions' and an overview of the social constructionist approach to religion which I adopted in this study. It is worth noting that

only theories that I consider relevant in understanding the relationship between religion and the environment are presented here.

2.2.1. Defining 'religion'

Sociological study of religion has for a long time been characterised by debates and disagreements over what constitutes 'religion' (Aldridge, 2007; Furseth & Repstad, 2010). These largely derive from the 'ethical and logical' implications of defining religion and its functions within society. (Aldridge, 2007). Thus, while some analysts think that a good working definition of the concept of religion is necessary for any sociological study of the subject, others are of the view that such an effort is not only undesirable but also impracticable.

For those who accept that a sociological definition of religion is possible and desirable, religion is broadly categorised according to two basic definitions: substantive and functional. Substantive definitions, also termed 'exclusive', explain the contents of religion, while functional (inclusive) definitions focus on the utility or function of religion for the individual and/or society (Furseth & Repstad, 2010; Hamilton, 2002:16). Some theorists such as Durkheim, however, attempt to capture both substantive and functional elements of religion in their definitions.

Emile Durkheim is a leading classical sociologist whose work on religion remains very influential today. Unlike Max Weber who felt it impossible to define religion from the onset, Durkheim believes that the concept needs clear and unambiguous definition for any meaningful analysis of its social role. Thus, one of his theoretical legacies is this often cited but contentious definition of religion:

a unified system of beliefs and practices relative to sacred things. That is to say, things set apart and forbidden – beliefs and practices which unite into one single moral community called a Church, all those who adhere to them. (Durkheim, 1982:47).

In this definition, Durkheim tries to represent all elements of religion by including beliefs, aspects and practices, and by differentiating the sacred and profane, as well as stating its social character and outcome – social integration.

This inclusive definition has attracted many criticisms (Aldridge, 2007; Hamilton, 2002; Lemert, 1975; Mol, 1979). Some anthropologists found that Durkheim's definition failed to take cognisance of belief systems such as 'Theravada Buddhism' which possess other attributes of religion but lacked any notion of supernatural being (Southwold, 1978). Others (Aldridge, 2007) criticised Durkheim for the emphasis he placed on social religion and for negating individual religiosity. Some religious

traditions like magic are largely individualised and do not form what Durkheim termed 'single moral community'. Durkheim's definition as well as his theoretical ideas about religion were derived from his extensive study of 'primitive' totemic religion of Australia. Aldridge (2007) further opines that Durkheim's distinction of religion and magic, the sacred and profane are believed to be influenced by western religious traditions and scholarship. On this note, Hamilton (2002) argues that these concepts originated from the west and may not adequately explain religious phenomena in non-western societies. Even the distinction between the sacred and profane - which is core to Durkheim's conceptualisation - was found to be inapplicable to certain traditional African religions.

Despite the limitations and analytical problems associated with Durkheim's definition, he has provided us with an insight into many aspects and dimensions of religion in both traditional and modern societies. His concepts remain useful to classifying and describing data generated for the study of religious beliefs and practices.

Following Durkheim, many authors (eg Robertson, 1970; Spiro, 1966), began to pay more attention to introducing concepts that would capture the very meaning of religion without excluding some important features of the subject. These definitions try to replace ambiguous terms such as 'sacred', 'supernatural' and 'super-human', which are culturally specific, with those that are clearer and have wider applicability (Hamilton, 2002).

One popular functional definition of religion was provided by Yinger (1970:7) as: "a system of beliefs and practices by means of which a group of people comes to terms with the ultimate problems of human life." On his part, Lensky (1963:331) pointed out that religion can be defined as 'a system of belief about the nature of forces shaping human destiny, and the practices associated therewith, shared by members of a group.' Furthermore, Luckmann (1967:49) sees religion as the "transcendence of biological nature by human organisms". These and other inclusive definitions try to show that religion is better understood by what it does than what it is. They have in common the notion that religion performs certain functions to individuals and/or groups.

Looking at religion from this vantage point implies a naïve acceptance of functionalist theory which suggests that religion is a necessary institution for functional integration of society. Critics argue that functional theorists are too biased to recognise the difference between western and non-western religions. The definitions also seem too broad to allow for drawing clear boundaries between belief systems and other ideologies

that enable human struggles with the problems of life. Similarly, problems arise regarding conceptualisation of some of these terms, such as 'ultimate problems' (Hamilton, 2002).

Addressing these shortcomings, some authors proposed a different approach to defining religion by listing certain attributes that belief systems and practices have in common and by virtue of which they are classified as religious. Refuting Durkheim's 'monothetic' approach to defining religion, Southwold (1978:370-371) presented a list of what he considers a 'bundle of attributes' that beliefs systems commonly possess. However, unlike monothetic definitions, Southwold smartly submits that a potential member of the class need not possess all the attributes but at least some number of the following:

- (1) A central concern with godlike beings and men's relations with them.
- (2) A dichotomisation of elements of the world into sacred and profane, and a central concern with the sacred.
- (3) An orientation towards salvation from the ordinary conditions of worldly existence.
- (4) Ritual practices.
- (5) Beliefs which are neither logically nor empirically demonstrable, or highly probable, but must be held on the basis of faith - 'mystical notions' but without the requirement that they be false.
- (6) An ethical code, supported by such beliefs.
- (7) Supernatural sanctions on infringements of that code.
- (8) A mythology.
- (9) A body of scriptures or similarly exalted scriptures.
- (10) A priesthood, or similar specialist religious elite.
- (11) Association with a moral community, a church (in Durkheim's sense).
- (12) Association with an ethnic or similar group.

This approach appears to have included a wide range of phenomena that were not captured by monothetic definitions. It also offers some advantage in that many of the commonly known belief systems possess at least a few of these elements. Nonetheless, questions have been asked as to how many of those attributes a system requires in order to qualify for inclusion, and how exhaustive these lists are? (Hamilton, 2002).

In sum, these debates point to the fact that defining religion sociologically remains a very difficult task as there is no one-size-fits-all definition of the subject. This could be the reason why some leading theorists, such as Weber, do not attempt to do so, while others have made unsuccessful efforts to provide an acceptable one. For this reason,

researchers are left to use concepts that suit their peculiar problems of investigation, the research setting and the methods to be used.

2.2.2. Ways forward

This thesis is about religion and the environment in Nigeria. The religions we are dealing with (Christianity and Islam) have been sufficiently captured in some of the definitions above. They share many elements of both Durkheim's and Southwold's definitions in common. Yinger's definition is also relevant to this research in that I intend to understand these religions in terms of how they influence environmental behaviour and engagement with environmental issues. Religious influence on how communities engage with environmental problems, for instance, forms part of their struggling "with the ultimate problems of human life" (1970:7). However, based on the social constructionist approach to the study of religion (Beckford, 2003:11) which I adopted in this project, these wide ranging definitions and characterisations of religion are important because they help us identify the 'social aspects' of religion that deserve attention and those that do not. Accordingly, aspects of religion such as (environmental) beliefs, priesthood and the role these play in faith communities constitute some of the key elements of religion that are explored in this study.

2.2.3. The social function of religion

As stated earlier, classical social theorists have made some important contributions to the study of religion. Among the classical scholars, the works of Durkheim, Weber and Marx were believed to have significant influence on contemporary studies of religion. Thus, a brief look at the classical roots of contemporary theories of religion is crucial at this juncture.

Emile Durkheim is credited with one of the most extensive sociological studies of religion. In one of his famous treatise, *The Elementary Forms of Religious Life* (Durkheim, 1982), Durkheim introduced his sociological theory of religion which centres on the integrative function of religion in human society. Prior to this ground-breaking work, Durkheim had provided some useful sociological insights on religion in essays such as *Suicide* and *The Division of Labour in Society*.

After analysing ethnographic materials on the Aboriginal people of Australia, Durkheim came up with the view that religion involves the distinction between the sacred and profane and as a system of practices provides the 'social cement' (Turner, 1991) that unites individuals together. Religion creates functional integration by making

individuals serve interests "beyond their personal ones" (Lundskow, 2008:11). Durkheim posits that religious practices create durable emotional states which bind social relationships within the community and provide basis for continuity of the society. By introducing this viewpoint, Durkheim has succeeded in revealing the social nature of religion. It is important to note that according to Durkheim it is the society, not god/s, that are represented in religious symbols and rituals.

Durkheim's analyses are not limited to the integrative role of religious practices. He goes further to argue that religion is an essential instrument for social control. Religion has historically played a role of regulating socially created desires by placing limits on what a person "could or could not do" (Lundskow, 2008:14). Although Durkheim was convinced that modernity has eroded the power of religion to regulate human desires such as reckless consumption, pre-modern societies were characterised by strong mechanisms of control which originated from religious conventions.

Karl Marx is another social theorist whose works have impacted significantly on the study of religion. The central argument of his perspective is that religion in capitalist society plays a role in preserving existing class relations. Religion, according to Marx, represents the idea of the dominant class in society which they use to manipulate and oppress the subordinate class (Marx, 1955b). In another essay, *Contribution to the Critique of Hegel's Philosophy of Right* (Marx, 1955a), Marx further argues that religion presents an incorrect portrait of reality. He however opined that religion can be a tool for fighting injustice. Here, Marx is referring to the dual role of religion in facilitating and impeding social change.

Marx's sociology of religion is not as elaborate as Durkheim's. Nonetheless, his approach to analysing the place of religion in modern society had profoundly influenced research on the subject.

Another leading voice in classical sociology of religion is Max Weber. Like Durkheim, his theoretical contribution to understanding religion and spirituality cannot be overemphasized. Weber's theory began with an attempt to explain the interconnection between religion and social action. He believes that religion forms a fundamental basis for some rational action (Weber 2001). People's quest for answers to problems of existence is the genesis of rational thinking that characterised the monotheistic religions of the world (Furseth & Repstad, 2010). Weber, like Marx was also interested in the relationship between religion and social change. In *Protestant Ethic and the Spirit of Capitalism* (2001), Weber discussed the relationship between religion and change.

Specifically, he contends that religious ideas of Protestants, especially Calvinism, have influenced the rise of capitalism.

2.2.4. 'Modern' sociological theories of religion

Although much of the contemporary sociology of religion is dominated by debates over secularization and, recently, 'de-secularization', there are interesting ideas about the place and role of religion in general in the writings of some exponents and critics of the secularization theory. However, unlike contemporary anthropological theorists of religion, few contemporary sociological theorists pay sufficient attention to religion in non-western societies and, thus, only a few of their theories are applicable to studying the role of religion in African societies, for example.

Talcott Parsons is a leading 20th century scholar who contributed to the analysis of religion in modern societies. As one of the major contributors to the then dominant functionalist perspective, Parsons followed Durkheim in expounding the notion that religion contributes to stability. He agrees with secularist theorists such as Peter Berger that religion, like the kinship system, has lost some of its old functions such as education, political, economic and legal order to secular institutions. The loss of these functions, according to Parsons, does not imply a decline of religion as it continues to serve its primary function of addressing the problem of 'meaning' and answering the core questions of the human condition (Aldridge, 2007:107). Religion is one of the powerful sources of motivation for individuals to contribute to the wellbeing of their society. Parsons' notion of *voluntarism* offers a useful idea to understanding the role of religious beliefs and communities in making an individual morally responsible to the society by making them pursue goals that transcend personal interests.

In this study, Parsons' concept of *voluntarism* is relevant to understanding the role of religion in environmental resources conservation. Activities of faith-based environmental conservation movements, as well as pro-environment behaviour of individuals, could be understood from this vantage point. Religious *voluntarism* helps us understand why religious values, for instance, can provide the necessary motivation to participate in resource conservation and management activities. At the level of the individual, pro-environmental behaviours such as environmental activism could be understood, in some traditions, as a religious obligation - a way of contributing to the wellbeing of one's society.

Peter Berger is another key contributor to contemporary social theorizing of religion. His influence began with a famous theoretical treatise he wrote in collaboration with Thomas Luckmann, *The Social Construction of Reality* (1966). In the book, Berger and Luckmann introduced their view of reality as a social construction. Their central argument is that “social order is a human product, or more precisely, an on-going human production” (p.52). In other words, individuals during interaction develop an understanding of themselves, their actions and roles and, as a process, produce institutionalised social patterns. This is a significant departure from the dominant structuralist theories which hold that human social behaviour is shaped by the existing social structures and institutions.

Building on this theoretical perspective, Berger develops an influential theory of religion which holds that religion provides humans with a means of understanding the world. To Berger, people need religion in order to give ‘meaning’ to the world. Berger believes that religion provides answers to fundamental questions of existence (birth, life and death) and by so doing creates *nomos* - a system of belief that explains the meaning of social life - which connects the individual to their society. Religious beliefs and practices enable humans to construct a system of meaning – a ‘sacred canopy’ under which they live, and which allows them to make sense of the world (Berger, 1990).

Viewed as a *sacred canopy*, religion performs other vital functions such as providing ‘justification of a community’s life-style and values’ as well as ‘reinforcing’ the purposes and ‘meanings’ (Lundskow, 2008:7). Religious *nomos*, according to Berger, are crucial for the continuity of society, as without them society experiences *anomie* due to absence of mechanisms that regulate social action.

It is noteworthy that Berger contends that modernity has changed the role that religion played in the past. As society experiences differentiation, religion loses some of its primary functions especially in the public sphere to other institutions, leading eventually to relegation of religion to the private sphere. Berger (1999:2) has however admitted that his secularization theory has been ‘falsified’ and, as contemporary events around the world suggest, religion remains a powerful social force.

Berger’s ideas are relevant to understanding the relationship between religion and nature. In so far as humans derive their knowledge of the natural world from religious cosmologies, their behaviour towards nature may be influenced by these cosmologies. As Freyer Mathews (1994) argues, religious cosmologies serve an important function in shaping people’s behaviour towards the world by defining the ‘place of humankind’ in

relation to the rest of nature. Depending on their cosmology, humans might have pessimistic or optimistic views about the environment and consequently have negative or positive interaction with it (Bowie, 2006).

Rodney Stark and William S. Bainbridge's Rational Choice Theory (RCT) of religion is another important theory that explains the place of religion in modern society. In reaction to secularization theory, Stark and Bainbridge (1987) argue that religion is and will continue to be an important feature of modern societies. The existence and survival of religion is due to the *rewards* and *compensation* it provides to members who need solutions to problems of reality such as death. As humans search for answers to problems of reality, religious beliefs offer *compensation* in place of *rewards* to realities like death in the form of promises and assurances of afterlife, salvation and so on (Aldridge, 2007; Furseth & Repstad, 2010). Thus, the demand for religious services by individuals and the supply of such services by faith groups are responsible for their persistence in all societies.

This explanation is not only relevant to western societies but also useful to analysing religious beliefs and practices in societies characterised by many and severe social problems. As will be seen in the discussion of religion and environmental behaviour in Nigeria and Africa later, individuals seek answers to problems such as natural disasters and ecological change and religions provide them through assurances, for instance, of a better season after certain rituals, or attribute them to supernatural forces - as God's punishment for human evil.

Drawing on the theoretical positions discussed above and alongside others, anthropologist Jack Eller (2007:10-11) presented a summary of the social and cultural functions of religion at both individual and societal level. At the level of individuals, religion functions to provide psychological and emotional needs such as comfort, hope, relief from fear, love and sense of control. Humans get answers through religion to fundamental questions of cosmogony as well as explanations on the origins and meanings of institutions like marriage, education, politics, and so on. In addition, religion provides explanation on causes of other things such as death, misfortune, sickness and natural occurrences.

At the societal level religion serves as a source of norms and rules which regulate behaviour and relationships. Societal norms and rules are also enforced through religious sanctions. These 'sanctions' according to Eller (2007) are more extensive and enduring than other means of social control. Religion also provides solutions to

individual as well as social problems. Just as they fill the needs of individuals, religions help society achieve some of its primary needs of solidarity and continuity.

2.2.5. A social constructionist approach to religion

As I indicated in preceding sections, this study utilises some key assumptions and research strategies recommended by the social constructionist approach in exploring the connection between religious phenomena and the environment in Northeast Nigeria. James Beckford (2003) is one of many social scientists who proposed a social constructionist strategy to social scientific study of religion. Following Berger and Luckmann (1966), Berger (1990), Asad (1993) Beckford advocates an approach to the study of religion that is based on the belief that complex social phenomena such as religion are best understood in the social context under which they evolve. In outlining his social constructionist approach to social scientific study of religion, Beckford begins by drawing attention to what he called the 'contestable character' of religion. According to him, what counts as 'religion' has remained a subject of 'contestation' and 'negotiation' across time and space. For this reason, Beckford argues, 'religion' can hardly fit into the generalised theoretical categories employed by social scientists. The best way to understand religion in society is to take into account the 'multifaceted and socially constructed nature' of religious phenomena. Accepting the multifaceted nature of religion involves a rejection of the idea that religion is 'generic' and 'given' in favour of a social scientific analysis that recognises variations and multiplicity in what different individuals and groups define as 'religious'. The approach also favours researching into the ways in which meanings of religious phenomena are generated, contested and modified over time, and how they vary from place to place (Beckford, 2003:14-16). Based on this point of view, the attempt by social scientists to come up with an acceptable definition and identify some universal attributes of religion, as discussed in preceding section, is unhelpful. Similarly, the attempt to theorise on the 'social function' of religion is in vain because, according to Beckford, it "masks the complexity and variety of things that count as religion", and "obscures the complexity and variety of ways in which people *use* what they define as religious". (Beckford, 2003:16). Thus, instead of a social scientific analysis of the 'social function' of religion, Beckford suggests answering questions about the 'social significance' of religious phenomena, that is, a focus on the *uses* that human actors make of religion at particular time and place. Warning against "high-level" generalisations about religion and its "generic properties", Beckford further proposes a social scientific analysis which focuses on how

notions of religion are put to use by *individuals* and *collective* agents in everyday life. Sensitivity to the role individual and collective actors play in negotiating what counts as religion in social scientific study of religious phenomena, according to Beckford, is necessitated by the fact that religion does not exist independently of human construction of its meaning. To demonstrate why social scientists need to be mindful of the actors' ability to generate and negotiate meanings of religious phenomena, Beckford gives an example of how human agency shapes religious phenomena as follows:

...human beings are capable of learning to attribute meaning to the world around them and that in this venture some of them draw from religious resources. But there is nothing necessary or automatic about this interpretive process. In other words, the use of religion is situational and highly variable. (Beckford, 2003:24-25)

By this assertion, Beckford follows cultural anthropologists to reject the idea that religions influence their practitioners in uniform ways. Beckford also underscores this view that the tendency of individuals to adopt a religious interpretation of events is likely to differ from situation to situation. In the same vein, individuals are likely to be selective in their expression of religious values and identity in social situations. Both willingness to adopt religious interpretation of events and expression of religious values and identity, according to Beckford, involve "subtle and complex choices that respond, in part, to the perceived situation, the action of significant others and the actor's stock of religious resources" (pp25). Social scientific research should investigate, with a view to interpret and explain, the processes through which social actors 'negotiate' meanings of religious phenomena, and select and apply aspects of phenomena they regard as religious in social situations. This social scientific analysis should also pay attention to how everyday conceptualisations of religious phenomena change over time.

The research strategy Beckford proposes not only stresses the agency of social actors in generating meanings about religious phenomena but also advocates for understanding the meanings attributed to religious phenomena in institutional settings. Lastly, Beckford's social constructionist approach advocates 'theoretical pluralism' in sociological study of religious phenomena. That principle involves adapting theoretical ideas and concepts from outside the discipline of sociology and employing a variety of theoretical perspectives to understanding religion.

As derived from this principle, the research strategy advocated by this social constructionist approach to the study of 'meanings and uses of religion' have six central assumptions and ideas that I found useful for this study. These ideas can be summarised as follows:

- Rejection of or at least sceptical attitude towards generalised notions of religion and emphasis on the 'contestable character' of religion or variations in the ways people make sense of what they categorise as religious.
- Focus on specific aspects of religious phenomena such as beliefs, feelings, relationships, organisations etc.
- Sensitivity to the role individual actors and collective agents play in negotiating what counts as religion in everyday life.
- Focus on both individual and institutional uses of religion and insistence that "social construction of religion is simultaneously an individual and collective process" (Beckford, 2003:203).
- Understanding of how meanings of religious phenomena are subjected to constant negotiation and renegotiation by individuals and groups.
- Adoption of theoretical pluralism, that is utilisation of a wide range of theoretical perspectives and concepts in the investigation of continuity and change in the meanings and uses of religion.

The social constructionist approach to the study of religion in society, as advocated by Beckford, has a number of limitations. A major limitation derives from his relativist approach, which is evident in his emphasis on the varieties of meanings social actors attribute to religion and how they change over time. Such an approach risks limiting study of the social phenomenon of religion to the meanings attributed to it by individuals in everyday life, and thereby overlooking the systematic and hierarchical manifestations of religion. Also, the social constructionist approach to religion advocated by Beckford is limited in that it does not present an explicit research strategy for investigating religion in society. Although Beckford has convincingly exposed the disadvantages of foundational sociological approaches to religion and proposed a context-sensitive alternative, the research strategy he advocates takes little account of how religious phenomena in its diverse and multi-faceted form can be studied. In other words, even though Beckford has devoted much effort to exploring the "points of tension" (Beckford, 2003:6) between social theory and empirical research models of religion, in advancing his social constructionist approach to the study of religion, he admits he paid little attention to issues pertaining to research strategy and methods. Similarly, the issues he explores in his attempt to develop a framework for the study of religion have limited analytical powers outside the boundaries of western societies.

Despite these limitations, the social constructionist approach Beckford advances offers some useful suggestions for my research on religion and the environment. For instance, the emphasis on how individual and collective agents *use* religion, as opposed to how religion influences individuals and groups, offers a fresh perspective for analysing environmental agency among religious individuals. As will be seen later, much empirical research on religion and the environment is predicated on the notion that religions 'program' their practitioners to behave in particular ways in their relations with nature. But, as I will demonstrate in the coming chapters, the ability of human actors to select and apply religious ideas and beliefs in particular circumstances, and in the process modify such ideas and beliefs, questions the dominant discourse about the effects religious beliefs have on environmental behaviour. Also, Beckford's emphasis on the role of interpretation, and the social processes and circumstances that warrant the adoption of particular forms of interpretation regarding religious beliefs and traditions is a useful analytical tool for exploring discourses about religion and environmental change. This study has been significantly informed by the social constructionist perspective's critical stance on generalised notions of religious phenomena. The constructionists view that understandings of religious phenomena vary from time to time, even within the same group of practitioners, provides a helpful means of re-examining taken-for-granted concepts such as dominion-over-nature and religious environmentalism. Similarly, the suggestion that in the social scientific study of religion, prominence needs to be given to both how individual actors use religious beliefs in everyday life and the processes through which religious principles are institutionalised fits methodically with the aims of this study. Finally, 'theoretical pluralism', as advocated by Beckford, has influenced the strategy I adopted in this research. Instead of grounding the study in a particular theory, I followed Beckford to draw upon a wide range of theoretical perspectives, concepts and analytical tools at every stage of the research process.

2.3. Religion and the environment: theoretical and empirical research

This section reviews some theoretical and empirical literature on the substantive topic of religion and the environment. The discussion brings together bodies of theoretical literature and empirical research on the connection between religion and environmental attitude and behaviour as well as the impact of religious beliefs on understandings and strategies of adaptation to environmental change. As I stated in the introduction, my study attempts to explore the connections between religion and the environment from a

broader perspective. This broader approach involves investigating the links between religious beliefs and worldviews and environmental attitudes and behaviour, as well as the influence of religious beliefs on understandings and adaptation to environmental change. For this reason, the literature review that follows looks at the current state of knowledge on both aspects of the religion-environment nexus.

Theory and research on the links between religion and environmental attitudes and behaviour and religious engagement with environmental issues are becoming increasingly vital in the wake of many environmental problems challenging the contemporary world. During the last four decades, scholars have succeeded in developing a variety of theoretical arguments and concepts that aid our understanding of these relationships. These theoretical viewpoints and concepts have facilitated empirical studies that test the major hypotheses on the subject of religion and the environment, as with the broader subject of society and environmental interaction.

2.3.1. Religion and environmental attitudes and behaviour

Lynn White (1967) is credited with introducing a valuable critique of the Monotheistic religions, especially the Judeo-Christian tradition for holding ‘dominance-over-nature’ orientation, which he argues is the social consciousness that underpins the ecological crises of the time. White’s thesis argues that religious beliefs deeply influence how humans interact with the environment. White argues that Biblical injunctions in Genesis 1 have encouraged anthropocentrism by giving unlimited power to humans to have dominion over nature. He concluded that the dominant view in the Judeo-Christian west is that this injunction gives license to humans to exploit nature without limit, a situation that leads to unrestricted growth in science and technology. White’s thesis suggests that an alternative environmentalist paradigm that promotes ‘stewardship’ is necessary to mitigate global ecological crisis. Many theorists (Haught, 2004; Johnson, 2000; McFague, 2000) follow White to argue that, at least in the last few centuries, the Christian world’s relationship with nature was essentially anthropocentric. In this conception, the ‘anthropocentric’ worldview is characterised by ‘materialist and exploitative perspective on nature’ (Hayes & Marangudakis, 2001) which is responsible for environmental problems of contemporary societies.

A different theoretical position emerged to critique White’s thesis, stressing that a careful look at the religious scriptures show that humans have not been accorded with unlimited power to exploit nature. To the contrary, this position argues that some scriptural teachings of the Judeo-Christian faiths emphasise ‘stewardship ethic’ (Hand

and Van Liere 1984). Proponents of this thesis (e.g. Chryssavgis, 2006; Santmire & Cobb Jr, 2006) argue that theologies in the Judeo-Christian tradition place emphasis on the sacredness of nature and human's necessary role to care for God's creation. They claim to have 'discovered environmentally positive passages in classic texts, and that Judaism and Christianity are "really" more environmentally minded than they seemed at first glance' (Gottlieb, 2004:8)

Another point of view calls for a distinction between Judeo-Christian Western tradition and other religions in discussing the role of religion in environmental crises. Like White, this point of view argues that, unlike western monotheistic religions, non-western religions such as Buddhism, Hinduism and other traditional religious beliefs are characterised by pro-environment theologies that enabled indigenous peoples in many regions around the world to develop a mutual and friendly relationship with nature. Others (Ezzy, 2004; Tomalin, 2009) hold that Abrahamic faiths (Christianity, Judaism and Islam) are the major world religions that hold 'mastery-over-nature' worldviews. The majority of non-Abrahamic religions (e.g. Buddhism, Paganism) in their various forms have, by contrast, developed a 'man-for-nature' or 'ecocentric' orientation (ibid 2004).

Recent theoretical works (Gottlieb, 2004; Gottlieb, 2006) suggest that the relationship between religion and environment throughout history encompasses both positive and negative trends. While it is arguable that western monotheistic traditions 'have been, at turns, deeply anthropocentric, other-worldly, ignorant of the facts or blindly supportive of 'progress' (ibid 2006:7), there are strong reasons to believe that religious resources have a valuable role to play in mitigating environmental crisis. Religions, from the perspective of 'ecotheology' not only have the ability to mobilise political action towards environmental protection, they are also capable of prompting hundreds of millions of people around the world to pursue pro-environment attitudes and behaviour necessary for addressing environmental crisis.

Empirical research on religion and environmental attitudes and behaviour, however, reveals a more complex relationship than previously discussed theoretical positions suggest. For example, Kanagy and Nelson (1995) and Hayes and Marangudakis (2001) found that the diversity of the Judeo-Christian traditions as well as other intervening variables such as level of education and scientific knowledge have accounted for differential levels of environmental concerns in America and Britain respectively. In Britain, the study reports a partial support for White's hypothesis that western

monotheistic tenets might have some indirect influence on environmental attitudes. However, they found that there exists no direct relationship between 'adherence to Christian belief and a domineering attitude toward nature' (ibid 2001: 152). Denominational differences within the Christian tradition according to Hayes and Marangudakis are important determinants of differential attitudes towards the environment in Britain.

Similar findings (Eckberg & Blocker, 1989; Hand & Van Liere, 1984; Kanagy & Nelson, 1995) show that fundamentalist Protestants exhibit more 'dominionist' orientation and are more opposed to environmentalism than other non-fundamentalists, Catholics and others. In Kanagy and Nelsen, White's hypothesis that religiousness and commitment to dominance-over-nature orientation are negatively associated with environmental concern among Americans has been accepted on a more general level. However, further analysis reveals a more complex relationship in that fundamentalists and non-fundamentalists report no differential support for relaxation of environmental laws. In this case, it is likely that level of education and region are more important determinants than religiousness. Another finding by Kanagy and Nelsen (ibid: 43) that questions White's hypothesis is the lack of relationship between religiosity and environmental activism. The study concludes that 'fundamentalists are no less likely to be concerned about the environment'. These studies also advocated for an intermediary model that stressed the role of denominational differences within religions in understanding the man-nature orientation of their adherents as well as other historical socio-economic factors.

A more recent study by Biel and Nielsson (2005) found that religious values and beliefs combine with other determining factors like political ideology, gender and wealth to create a culture that supports environmental exploitation. Their findings also support an earlier approach that pays attention to the extent to which 'environmental topics activate religious values and make them mentally accessible' and future judgements on environmental problems (Biel & Nielsson, 2005). This implies that different environmental issues are responded to with different religious values. In other words, religious values influence environmental attitudes in different ways depending on whether issues 'activate' religious values or not. The study followed Gardner and Stern (1996) to make an important distinction between 'church-sanctioned' religious views on nature and 'non-sanctioned' perceptions of nature.

Much empirical research on religion and environmental behaviour, such as those discussed above, were not only handicapped by methodological weaknesses - such as poor conceptualisation and measurement of religiosity and environmental concern - but are also culturally specific. A large majority were conducted in either the USA or Western Europe. In an attempt to test White's thesis in a cross-national and culturally diverse setting, Schultz, Zelezny and Dalrymple (2000) examined the relation between religion and environmental concern in 15 countries across North and South America and Europe. The study found that the pattern across the countries is consistent with White's thesis, as respondents who reported high biblical literacy expressed low ecocentric environmental concern and lower score in New Environmental Paradigm (NEP). Similarly, no significant relationship was reported between biblical literalism and pro-environmental behaviour. While this is a significant attempt to overcome culture-specific limitations of other studies, the research did not take into account denominational diversity and the role it plays, and the findings are not transferable to non-Christian societies. The approach, however, supports Kanagy and Willits (1993) method of measuring religion and environmental concern in terms of acceptance of NEP. Theoretical and empirical research on the relationship between religion and environment shows the enormous influence of the White's hypothesis on the study of religion and the environment. However, other alternative perspectives - such as those that see religion as positively influencing environmental concern - have also influenced contemporary research on the topic. Although much of the empirical evidence tends to validate White's thesis, it is clear, as stated earlier, that the relationship between religion and environmental attitudes is more complex than the various theoretical viewpoints (especially White's hypothesis) suggest.

The influence White's perspective, and other opposing perspectives, had on empirical research and theorising on religion and the environment is also evident in the interest scholars developed in the analysis of worldviews, values, attitudes and behaviour. Findings from decades of studies of worldviews, values, attitudes and environmental behaviour have produced perspectives that advocate change in environmental attitude and behaviour with a view to addressing environmental problems (Gardner & Stern, 1996).

Debates on religious influence on environmental worldviews and behaviour have demonstrated the importance of analysing commitment to dominion-over-nature theologies and how this commitment affects the attitude and behaviour of individuals

toward the environment (eg Hand & Van Liere, 1984; Maltby, 2008; Wolkomir, et al., 1997; Woodrum & Hoban, 1994). Similarly these debates have contributed to the increase in research interest in analysing the religious basis of environmentalism, "the propensity to take action with pro-environmental intent" (Stern, 2000). Such studies (eg Eckberg & Blocker, 1989; Schultz et al., 2000) also analysed a range of other sociological factors associated with environmental concern.

In this study, I built on these previous works to explore the connections between religious worldviews and attitudes, and behaviour towards the environment among selected Christian and Muslim congregations in Northeast Nigeria. However, unlike previous studies, my study sought to analyse both commitment to dominion-over-nature orientation and the religious basis for pro-environmental actions among the study population. In other words, I followed Hand and Van Liere (1984), to analyse 'mastery-over-nature' orientation among participants and built on earlier research (such as Shaiko 1987) to investigate 'stewardship of nature'. Both concepts offer a convenient way of exploring religiously-inspired worldviews about nature. As will be seen in my discussion of the findings, part of the 'problem' with existing literature has to do with the failure of analysts to give account of 'actor-oriented' perspectives of both dominionism and religious environmentalism.

Social research on the links between religious beliefs, worldviews and environmental attitudes and behaviour has given little attention to exploring how religious practitioners interpret religious environmental principles, how these various forms of interpretation change in the wake of environmental crisis and how these affect environmental attitudes and behaviour. The limited attention social scientists gave to variations in the interpretation of environmental beliefs as well as individual and institutional dimensions of environmental beliefs and practices may not be unconnected with their bias towards survey techniques and statistical analysis of relationships between religious factors and different measures of environmental attitudes and behaviour. On that note, I agree with Proctor and Berry (2005:1575) who observe that one of the major limitations of the current social research on religion and the environment is the "relative paucity of qualitative studies" and "the virtual absence of coordination between qualitative and quantitative research" on the subject. Their conclusion that a "fuller theoretical and methodological base" is required to sufficiently understand the connection between religion and the environment is worth noting.

On the obvious lack of a "theoretical base" for researching religion and the environment, Sherkat and Ellison (2007) have argued that social research could succeed in offering a more comprehensive account of the influence of religious factors on environmental behaviour if attention is given to variations in the framing of religious environmental issues. For them, such a comprehensive exploration is better done through the application of sociological perspectives, instead of simply testing a hypothesis developed by a historian. That is not to say that White's hypothesis should not be used as a starting point to examine the links between religious factors and environmental behaviour. However, in order to conduct a genuinely thorough social scientific analysis, we must go beyond simply testing White's hypothesis (use quantitative techniques to measure the relationship between individual religiosity and environmental attitudes/behaviour) but also give a much richer qualitative analysis of the connections between religious factors and environmental issues in their social and cultural contexts.

Despite the limitations of empirical research on the relationship between religion and the environment, it is clear that empirical social research has succeeded in revealing interesting perspectives on which future research can expand. Among the major issues raised by decades of empirical research and theorising is the notion of using a causal model to analyse the relationship between religion and environmental attitudes and behaviour, as can be seen above. The connection between religious beliefs and environmental concern has been largely explored using survey research which involves measuring religiosity using indicators such as commitment to dominion-over-nature beliefs, biblical literalism and so on. Individual environmental worldview, attitudes and behaviours are assessed by a wide range of variables such as endorsement or rejection of NEP (Dunlap & Liere, 1978; Dunlap et al, 2008). Researchers use different methods (such as tests of statistical significance, analysis of correlation, regression etc) to analyse the relationship between religious variables, attitudes and behaviours, as well as demographic and socio-economic variables. The diverse methods of analysis used, the variables measured and how they are conceptualised has been seen (Proctor & Berry, 2005) as being responsible for the mixed and conflicting findings researchers have reported. But overall, evidence from existing research on the relationship between religion and environmental attitudes can be summarised as revealing a weak connection that is highly influenced by demographic and socio-economic factors. Also revealed is a complex relationship that cannot be explained using a simplistic hypothesis, of the kind proposed by White. Diversities in religious environmental beliefs and denominational

sub-cultures also need to be taken into consideration, even within the Judeo-Christian traditions, and non-religious sources of environmental worldview.

2.3.2. Religion and perception of environmental problems

I have indicated in the introduction that another dimension of the religion-environment nexus explored in this study is the role religious beliefs play in shaping practitioners' perceptions of environmental problems. I have also stated earlier that increasing environmental degradation in many countries across the world has inspired decades of research on the role of religious beliefs and worldviews in shaping people's understanding of and response to environmental problems. Many observers have criticised the global political response to environmental change, which largely seeks to institutionalise scientific solutions to contemporary environmental problems (eg Fromming & Reichel, 2012; Gerten, 2010; Moore & Nelson, 2010). These authors argue that scientific approaches tend to undermine the role of cultural and social forces that shape perception and adaptation to environmental change within societies and can alienate peoples who are most vulnerable to climatic and environmental change.

In many societies across the world, religion provides an important lens for understanding human worldviews, perceptions, attitudes and behaviours regarding major issues like social and environmental change (Kaplan 2010; Gardner 2002; Gerten and Bergmann 2012; Wardekker, Petersen, and van der Sluijs 2009; Guth et al. 1995). This is so because the majority of people in the world actively practice one form of religious belief or another (Bergmann, 2009; Hitzhusen & Tucker, 2013) and religious beliefs and worldviews regarding the natural world continue to influence people's actions and their relationship with the natural environment (Jenkins, 2009). Religious beliefs and practices are currently understood to influence people's environmental worldviews and perception of specific environmental problems in either 'positive' and 'negative' ways (Gerten & Bergmann, 2012). On the one hand, religion remains a vital resource in fostering environmentally responsible behaviour (Gottlieb, 2006; Kanagy & Willits, 1993; Woodrum & Wolkomir, 1997) and, as in response to global environmental change, religiously-inspired environmental movements are gaining footholds across the modern world. Conversely, religious worldviews in some communities significantly shape people's perception of environmental problems in ways that suggest fatalism - interpretation of environmental problems as 'God-given' - and underscores the responsibility of humans in mitigating those problems (Gerten & Bergmann, 2012; Gerten, 2010). Studies of local knowledge about environmental

problems and environmental risk perception (eg Burchell, 1998; Gardner, 2003) have generated divergent theories about peoples' understanding of, and modes of adaptation to, environmental change. This diversity has in turn generated disagreements and contestations about the role of religion in global environmental change.

Studies conducted in many different parts of the world have examined how faith communities perceive and adapt to environmental problems such as climate change and global warming, draught and famine, desertification, flooding and so on, reporting a variety of findings. Some of these studies (Moore & Nelson, 2010; Wilkinson, 2010) have documented evidence of attribution of anthropogenic causes of environmental problems, acknowledgement of its negative consequences and a moral conviction to mitigate those problems among the 'mainstream' Protestant Churches in the US. Others (Djupe & Hunt, 2009; Keans, 1996) have also found that many faith communities not only accept the moral responsibility to combat environmental change but have also institutional commitment to promoting environmental sustainability. Hart (2006) has investigated the 'reformation' of environmental thought with the Catholic Church, which emphasises moral narratives that support environmental concern. Roman Catholic environmental theology, according to Hart, also stresses the belief that environmental degradation stems from anthropocentrism which is essentially 'unbiblical'. Others studies (Guth et al., 1995) have found that conservative protestant denominations, compared to mainstream protestants, are more likely to reject environmental change as a problem. Despite the official proclamation of environmental concern by the Evangelical Church (see Evangelical Climate Initiative, 2006), Smith and Leiserowitz (2013) have found proof of scepticism and even disbelief about environmental issues like global warming among both American evangelicals and non-evangelicals. Others, (Simkins, 2008) have noted that 'end times' theologies remain quite popular among many American religious fundamentalists who view contemporary environmental problems as 'signs' of 'end times'. These studies point to some major differences in understandings of environmental change among different Christian groups.

In a similar vein, studies that have discussed perspectives on environmental problems from the Islamic world have also produced a mixture of findings. Some scholars (such as Foltz, 2006; Nasr, 2003) have argued that although principles which support nature conservation and stewardship are evident in Islamic scriptures, there is little evidence of strong environmentalism in most of the contemporary Muslim communities across the world. However, there is what one observer describes as an 'awakening amongst the

Muslims to the realities of environmental change' (Khalid, 2002:338), for example one response has been the reintroduction of Islamic environmental ethics to discussions. Discourse on environmental change in the Islamic world is said by some to be dominated by debates on 'predestination' and 'human free will' (Ammar, 2004). In this worldview, Muslims who interpret environmental problems as 'will of God' may see no point in striving to mitigate them. However, there are other Muslim communities who see environmental crisis as an outcome of human free will to manipulate nature in ways that are not predestined and see a connection between human behaviour and environmental problems. These 'Muslim environmentalists' (Foltz, 2006) believe that Muslims also share the blame for ecological crisis by embracing the culture of greed, disrespect for nature and injustice. Like some Christian environmentalists, they accept scientific perspectives of environmental degradation and are making renewed efforts to revive the practice of Islamic environmental principles. Some scholars (Nasr, 2003) have also noted that there is a general lack of awareness of the seriousness of ecological problems, as well as the lack of will to work towards arresting them within Muslim communities.

Empirical studies undertaken in different parts of the Islamic world reflect the divergent positions described above. For instance, Paradise (2005) and Hutton and Haque (2003) have examined peoples' perceptions of ecological problems in Morocco and Bangladesh respectively. Both studies found evidence of deep belief in predestination, perceived lack of control and even fatalism among research participants. Their findings support earlier research by Lindskog and Tengberg (1994) who found that although indigenous people's knowledge of the physical reality of land degradation corresponded with scientific knowledge of the phenomenon, the local people's perspective of causes of land degradation differs. Lindskog and Tengberg reported that the peasants in Burkina Faso either 'ascribed the causes of land degradation to Allah or did not know' (ibid., 370). The authors further observed that a traditional explanation of the causes of land degradation and drought and famine is that 'it is God's punishment of humanity because of man's lax morals and evil behaviour' (ibid., 373). The local people regarded 'God, Allah, as the only dynamic force who exerts influence on all components, such as man, nature and the process of land degradation' (ibid., 374). By implication, this view prevents the indigenous people from perceiving themselves as actors in the ecosystem, a stance that may negatively affect their behaviour towards land resources.

2.2.3. Religion and the environment in Nigeria and Africa

As can be seen from the preceding discussion, the majority of empirical and theoretical studies on religion and environmental behaviour were conducted in the US and western Europe. The dearth of empirical evidence on the connections between religion and environmental attitudes/behaviour in developing countries has been observed by many researchers. For instance, Rice (2006:374) has noted that 'little research has been undertaken in developing countries about the citizen's attitudes and behaviour towards the environment.' In the same vein, much of the existing literature on religion and environment, as seen above, addresses topics and issues prominent in environmental debates in western nations such as environmental politics/justice (Kanagy & Nelson, 1995), population control (Hand & Van Liere, 1984), genetically modified crops and pollution from traffic (Biel & Nielsson, 2005), consumption patterns (Barr, 2003) and so on. These studies offer little insight into the attitudinal and behavioural dimensions of environmental issues in developing countries, especially of Africa, such as resource depletion, water pollution, and solid waste disposal. If we take the social construction of environmental problems thesis discussed above seriously, then those issues considered problems in the West might not be necessarily taken as problems of interest or import outside the West. The lack of attention paid to such developmental issues in African societies makes the few studies of developing societies particularly important. Specifically to confirm whether a) similar problems are indeed identified and b) what can be learnt from studies in non-western contexts. It also shows the need for further research in that area.

One key empirical study is Rice's (2006) examination of *Pro-environmental behaviour in Egypt* which, among other things, investigated the role of religious teachings and religiosity in shaping the environmental concern of the people of Cairo. Rice investigated the role of Islamic environmental ethics on pro-environmental behaviour. The data she collected from a sample of University students in Cairo reveals a significant positive correlation between religiosity and pro-environmental behaviour among the respondents. The research findings also support the views that religiously rooted environmental philosophies have significant influence on environmental behaviour, even though the environmental movement in Egypt rarely made use of the environmental ethics of Islamic Law. Rice (ibid: 388) contends that the religion of Islam contains certain principles relating to 'pollution, public health, natural resources management and ecological values' that are not adequately promoted in Egypt. Rice's

findings support categorisation of environmental behaviour by earlier studies (Stern, et al 1999; Stern 2000) into private sphere behaviour, public sphere behaviour and activist behaviour. Her results revealed higher private sphere pro-environmental behaviour than public sphere pro-environmental behaviour. Activist behaviour is the least reported form of pro-environmental behaviour among the respondents. In other words, Egyptians were more likely to engage in private environmentally beneficial behaviours like 'reflective consumption' than public sector behaviour such as talking about environmental problems. Taking action to influence others to care for the environment is uncommon, according to Rice's findings.

Rice's work is an important deviation from the studies discussed above which largely support White's thesis of a negative relationship between religion and environmental behaviour. However, the study is limited by the fact that the sample used was not representative of the Egyptian population and the tendency towards a disparity between self-reported environmental behaviour and actual activity. The survey technique she used has precluded the development of a deeper understanding of the attitudinal basis of pro-environmental behaviour and the motivation behind environmental activism.

These methodological shortcomings were partly addressed by Jerie (2010) who employed observations, surveys and in-depth interviews to investigate the role of the Catholic Church in environmental management in Zimbabwe. Jerie notes that theological basis of pro-environmental behaviour among Christians is contained in Psalm 24 'Help us keep the Lord's earth habitable for the earth is the Lord's and all that is in it' (ibid: 225). This biblical message, according to Jerie, was consented to by the Catholic Church in Zimbabwe due to certain motivations and incentives that congregational commitment to environmental protection and management bring. Such motivations include increased environmental awareness within the Catholic Church due to discourses on 'eco-theology', availability of resources to support environmental protection initiatives by church communities, and growing public disapproval of 'greed, self-centeredness, and materialism' (ibid 218) within the church. These combined to facilitate the effort of the Catholic Church in Zimbabwe to restore degraded land in some districts of the country. Although Jerie failed to discuss individual pro-environmental behaviour, it is arguable that congregational participation in environmental protection and management is becoming a common feature of the environmental protection movement in some parts of Africa. The study further supported Rice's earlier revelation that, contrary to White's thesis, Abrahamic religious

theologies contain ethics that promote 'stewardship' and other environmentally beneficial behaviours.

However, some empirical studies on religion and environmental attitudes in Africa do not lend support to the findings reported by Rice (2006) and Jerie (2010). There are contrasting findings from empirical research in some African societies which show a likelihood of negative relationship between religion and environment. A recent study by the BBC World Service Trust (2010), 'Nigeria Talks Climate', validates other findings, such as Lindskog and Tengberg (1994), where respondents attributed environmental changes to supernatural causes. The study shows that while it is common knowledge among many Nigerians that human actions are having adverse effects on the land, many people see climate change as the 'will of God'. According to these people, adverse environmental changes can be mitigated through prayers and certain rituals. However, the research also found 'a close connection between faith and environmental stewardship in Nigeria' (ibid: 4). Religious leaders interviewed in the research stressed the duty of humans to protect the environment. These mixed findings give an indication of a possible complex connection between religion and environmental attitudes and behaviour in Nigeria that needs to be explored further.

It is equally clear that the existing literature could not answer important questions regarding the levels of commitment to the doctrine of dominion-over-nature and how they relate to environmental behaviour in Nigeria. The failure of the few existing studies (Jerie, 2010; Lindskog & Tengberg, 1994; Rice, 2006; BBC Trust, 2010) to investigate the issue of the dominion worldview and how it affects environmental behaviour in Africa calls for further research.

The studies above have followed the path of some western literature in concentrating more on the role of religion in environmental conservation and management, and overlooking the possible negative role that religion plays in environmental issues. In other words, these studies have made no attempt to validate or invalidate White's thesis of a negative relationship between religion and environmental behaviour as applied to Africa and Nigeria. The nature of African environmental crises in the form of severe deforestation, and both water and land pollution demand research attention focused on both negative and positive environmental behaviours as well as their theological roots, if any. Another issue of research importance is the socio-economic conditions that affect religious environmental principles in developing societies. As Tomalin (2002) argues, many people in developing countries cannot afford to engage in beneficial relations with

the environment even if their religious worldviews have supported such ethics. This study seeks to bridge some of these gaps by examining the influence of religious beliefs on environmental attitudes and behaviour as well as the role of religion in shaping understandings of environmental problems. One of the ways I intend to overcome the methodological weaknesses of previous studies conducted in Nigeria and Africa is to combine survey techniques and interviews in exploring both dimensions of religion-environment nexus.

2.3.4. Religion and environmentalism

One of the repeated themes in the debates reported earlier is what many observers (Gottlieb, 2006; Rice, 2006; Sherkat & Ellison, 2007) see as religious contribution towards pro-environmental behaviour and environmental management. Some studies on religious communities in Africa underscored the potentials of religious environmental movement. For instance, in her analysis of pro-environmental behaviour in Egypt, Rice (2006) observed that the promotion of Islamic environmental ethics which disapproved of environmental pollution and reckless resource depletion could be more effective in achieving the objective of environmental conservation than conventional approaches. This is because religious messages are absorbed more quickly and reach a much wider audience through informal channels such as Friday prayer sermons than they do through alternative channels, such as through the mass media. Similarly, Jerie (2010) found that congregations can bring unique advantages to community-based environmental conservation actions because of their embeddedness in affected communities, and the religious incentives that are contained in their messages. The findings of their research, which investigates perspectives of religious leaders on climate change in Ghana, Golo and Yaro (2013) maintained that Christians, Muslims and practitioners of traditional African religion (TAR) have indicated "strong acceptance" of stewardship beliefs and principles of their respective traditions. However, there was no "concrete action" by these religious groups to promote stewardship values and principles. Despite numerous obstacles, religions, according to Golo and Yaro, can offer crucial avenues for promoting environmental sustainability. These conclusions correspond with the views expressed by opinion leaders who participated in the BBC World Service Trust's (2010) research, *Nigeria Talks climate change*, which led to the following research recommendation:

Local leaders from government and the community, including religious leaders, have unrivalled access to communities, and are in a position to communicate and inspire citizens to respond to climate change and implement local adaptation strategies. A faith-based approach could be particularly effective. Religious leaders are well placed to provide

information on climate change within their communities, and the strategy would build on the existing relationship between faith and environmental stewardship (ibid: 4).

Understanding the connection between religion and environmental behaviour involves a prescriptive component of facilitating the positive role of religion in fostering sustainable development. Previous studies in Africa (Jerie, 2010; Rice, 2006; BBC Trust, 2010; Golo & Yaro, 2013) have revealed useful information on the key issues, but are far from providing sufficient details on the prospects and challenges of religious environmentalism in African societies. For instance, Rice concentrated her analysis on the major provisions of Islamic environmental ethics and concluded that propagating them to a wider audience can promote pro-environmental behaviour in Egypt. However, her research instruments did not include questions as to how that can be achieved and what possible shortcomings are likely to occur. For his part, Jerie paid more attention to narrating the nature of involvement of the Catholic Church in natural resource management, but did not examine the processes by which Church leaders communicate the message of resource conservation. The BBC World Trust used in-depth interviews to get religious leaders' insights on climate change and the possible contributions of religion in responding to the challenges of climate change. However, the study fell short of examining how faith-based environmental conservation can work and the possible challenges it is likely to face. Golo & Yaro (2013) have summarised some of the key obstacles to religious engagement with environmental change and compared views of Christians, Muslims and Traditionalists. But, as they admitted, their findings are preliminary and so do not reveal the complete story of religious influence on environmental stewardship in a religiously complex country like Ghana.

It is for this reason that this study also seeks to make further contributions to the discourse on religious contributions to environmental sustainability. Since the interviews with religious leaders in some of these studies have revealed evidence of acceptance of religious environmental stewardship, further empirical research evidence is needed to validate the claims. A quantitative inquiry to assess the level of endorsement of religious environmental principles among the laity will provide further insights into the efficacy of faith-based approaches to environmental sustainability in religious communities. In the same vein, a qualitative analysis of the obstacles to what Golo & Yaro (2013) referred to as "concrete action" could also make some useful policy contributions.

2.3.5. Faith communities as units of analysis

Recent research on religion and environment have stressed the role of social/institutional factors in influencing how people perceive and respond to environmental issues (Clements, 2012; DeLashmutt, 2011; Djupe & Hunt, 2009; Lawson & Miller, 2011). Within religious communities, the clergy are seen to be particularly influential in shaping the environmental worldviews of their congregations and religiously based discourses about environmental change (Djupe & Hunt, 2009; Hitzhusen & Tucker, 2013; Simkins, 2008). Much of the existing literature, however, has either focused on individual measures of religious environmental beliefs and worldviews or concentrated on statistical analysis of religious influence on environmental behaviour and attitude. In view of the recognised role of congregational/institutional factors in determining environmental discourses in faith communities, and the centrality of the clergy to these discourses, this study seeks to understand the views of the clergy and leaders of faith communities on environmental change in the region. The study aims to extend the discussion on the role of religion in current environmental change by contributing to understanding of beliefs, worldviews and perceptions, and discourses about environmental problems within faith communities in a region that has not been sufficiently studied. The study also seeks to understand how these beliefs and worldviews influence the sustainability strategies of the people. Given the strong influence of religious organisations and religious leaders over members of faith communities in Nigeria, it is critical to understand how faith communities as 'social groups' engage with environmental degradation.

2.3.6. The need for a comparative/cross-cultural analysis

The complex and multi-dimensional nature of religion-environment connection has necessitated comparative, cross-cultural, cross-national studies in order to understand the varieties of religious environmental narratives, which generations of research on the subject have not sufficiently explored. At present, few empirical studies have examined the religion-environment nexus in non-western societies, especially Africa (Rice, 2006), who are particularly vulnerable to environmental change. Findings from mushrooming research on the subject in America and Western Europe are not transferable to societies with different socio-economic conditions. Moreover, the disparity in perception of environmental risks between high-income and low-income countries (Leiserowitz, 2008) makes researching environmental perspectives of local populations in developing societies even more crucial. As Rice (2006) observed, widespread environmental

concern in western societies is produced by increase, over the years, in the perception of environmental risk by the public, which causes people to demand more action to correct and prevent environmental damage. A better understanding of modes of interpretation of environmental change is therefore necessary to any policy aiming to develop sustainable communities. This thesis attempts to contribute to achieving a better understanding of perceptions of environmental degradation in one of the 'hotspots' of environmental change.

2.4. Analytical frameworks

In my review of theoretical and empirical literature (in section 2.3), I argued that our understanding of the complex connections between religious factors and the environment stands to benefit from the use of theoretical ideas and conceptual frameworks that years of research on human society have produced. Similarly, I have indicated my acceptance of the view that the abstract theoretical ideas and conceptual models produced by social theorists are of little importance if not subjected to testing via empirical research (Turner, 2003). One of the things I discovered from reading empirical literature on society-environment interaction is that while research on environmental attitudes and behaviour have been largely theoretically-driven, empirical research on religion and the environment have shown little interest in (social) theory. Again, I have suggested that if the social constructionist proposal for understanding society-environment interaction and religion in society is persuasive, then, as Beckford argues, we need to be open "to the possibility that social scientific studies of religion benefit from employing a variety of theoretical perspectives" (Beckford, 2003:12). I have utilised VBN theory (Stern et al., 1999; Stern, 2000) and the theory of structure (Sewell, Jr., 1992) to strengthen my analysis of the complex connections between religion and the environment, overcome the weakness of previous studies, which fail to utilise social theory to analyse their findings and empirically test theoretical ideas used in the social sciences. The following section is an introduction to the two theories.

2.4.1. Understanding the basis of pro-environmental behaviour: the VBN theory

During the past decades, social psychologists and environmental social scientists have devoted much time to exploring the causal links between environmental attitudes and behaviour. Some of the most influential theories and models that emerged from their decades of research treat environmental behaviour as emanating from either human values (Poortinga, Steg, & Vlek, 2004; Schultz et al., 2000; Schultz, 2005; Stern, Dietz,

& Kalof, 1993; Stern, 2000) or as an outcome of human worldview (Dunlap et al., 2000; Dunlap & Van Liere, 2008; Van Liere & Dunlap, 1980) or explain environmental behaviour in terms of the personal norms of the actor and their underlying motives (Schultz & Zelenzy, 1999; Schultz et al., 2000; Schwartz, 1977; Wiidegren, 1998). Many of the studies that examined the influence of religious beliefs and worldviews on environmental attitudes and behaviour were based on the social-psychological perspectives that see environmental attitude as an important predictor of environmental behaviour. Results from studies on religion and the environment have found varying degrees of support for each of these theoretical viewpoints. For instance, Greeley (1993), Wolkomir, et al. (1997), Eckberg and Blocker (1989), Shaiko (1987), among others built on the worldview theories to investigate the relationship between religion and the environment. Other studies on religion and environmental behaviour (eg Dietz et al. 1998; Schultz et al., 2000) have utilised perspectives that explain environmental behaviour in terms of general social values and have found support for the value-based theories of environmental behaviour. However, the inconclusive debate about the influence of religious beliefs, values and worldview on environmental behaviour has led to a growing interest in more robust models that incorporate the variety of possible causal factors in environmental behaviour - beliefs, values, worldview, personal norms etc.

Perhaps the most widely used model that brings together theoretical assumptions of the value-based theories, the worldview theories and other attitudinal perspectives is the Value-Belief-Norm Theory (Stern et al. 1999; Stern, 2000). According to Stern (2000:412), the VBN theory:

...links value theory, norm-activation theory, and the New Environmental Paradigm (NEP) perspective through a causal chain of five variables leading to behaviour: personal values (especially altruistic values), NEP, AC and AR beliefs about general conditions in the biophysical environment, and personal norms for pro-environmental action.

The VBN is based on a number of assumptions about the causal factors in pro-environmental behaviour. The assumptions can be summarised as follows:

- Individual personal norms predispose them to take actions with pro-environmental intent.
- Pro-environmental actions are taken when individual's personal norms are activated by beliefs that environmental conditions threaten things the individual values (AC- awareness of consequences), as well as beliefs that individuals can act to mitigate the threat (AR- awareness of responsibility).

- Pro-environmental action is not only determined by "behaviour-specific personal norms, but also social psychological factors - such as perceived personal costs and benefits of action, beliefs about the efficacy of particular actions" (Stern, 2000:413).

The VBN theory emphasises the importance of values in environmental behaviour, stresses the role of norm-activation and links both to the NEP assumptions (ecological worldview) about the adverse effects of environmental changes. Accordingly, pro-environmental behaviour is understood to result from the activation of personal norms by beliefs about the adverse effects of environmental conditions on the things and people that an individual values. Environmentalism associated with conserving endangered species, for instance, can be understood as an outcome of activation of norms that value those species threatened by environmental decline. Similarly, pro-environmental actions such as campaigns against air pollution, could be explained as emanating from activation of altruistic norms in individuals who care about the health and wellbeing of others who are perceived to be threatened by exposure to polluted air. Each of these forms of belief is further mediated by beliefs about the ability of individual actions to alleviate the threats posed by environmental conditions to the objects or people an individual values.

As I indicated, the VBN theory also presumes that a range of social psychological factors affect the individual's personal norms and their predisposition to pro-environmental behaviour. Stern (2000) specifically highlights the factors as: the information that shapes environmental beliefs, perceived personal costs and benefits of environmental actions, and beliefs about the efficacy of individuals actions as playing an important role in influencing norms and pro-environmental action. This emphasis on the effects of social psychological and situational factors makes the VBN theory sensitive to the interpretative processes that shape both how environmental behaviour is formed and how environmental issues are socially constructed.

Over the years, many empirical studies on environmental behaviour have reported strong support for the VBN theory (eg Oreg, 2006; Schultz & Zelenzy, 1999; Schultz et al., 2000; Stern et al., 1999). The strengths of the theory in accounting for a range of pro-environmental behaviours lies in its ability to propose a broad model that accounts for the links between values, attitudes and pro-environmental behaviour. Therefore, I have used the basic elements of the VBN theory in this study to interpret some of my

key findings on the connections between religious beliefs and environmental behaviour in chapter 5 and the varieties and limitations to religious environmentalism in chapter 6.

Although the VBN theory has provided a useful framework for interpreting my research findings on the connection between religious factors and environmental attitudes and behaviour, my research findings cannot be adequately interpreted by one social psychological theory. It will therefore also be useful to utilise a sociological theory to interpret aspects of my findings that require further analysis and interpretation. This brings us to structural analysis of the religion-environment connection.

2.4.2. Structural analysis of religion-environment nexus

Only a few social scientific studies on religion and the environment (eg Djupe & Hunt, 2009; Sherkat & Ellison, 2007) have utilised sociological perspectives in their analysis of how religious factors influence environmental worldviews and behaviour. This is so despite the complex interrelationships observed between religious factors and environmental issues (Sherkat & Ellison, 2007). In view of this deficiency in existing research, I built on the analysis proposed by Sherkat and Ellison (2007) to attempt a structural analysis of some of the connections found in this study between religious beliefs and environment.

The theory of structure I adopted in my analysis of religion and the environment in chapters 5, 6 and 7 is the one developed by William H. Sewell, Jr. (1992). Sewell, Jr. developed his theory of structure following a critique of Anthony Giddens' (1984) notion of duality of structure and Pierre Bourdieu's (1977) concept of 'habitus'. According to Sewell, Jr. the central aim of his theory is to attempt to "restore human agency to social actors, build the possibility of change into the concept of structure and overcome the divide between semiotic and materialist visions of structure (1992:1). Sewell, Jr. introduced his theory by emphasising both the analytical power of the concept of structure and its centrality to social scientific analysis. He then proceeds to identify what he considers the three fundamental 'problems' associated with discourse on structure in the social sciences, in particular sociology and anthropology. The first major problem Sewell Jr. identified with the use of 'structure' in the social sciences is the widespread assumption of "a far too rigid causal determinism in social life" (pp. 2) which, leads structuralist analysis to overstate the enhancing and constraining power of structures while undermining the reality of human agency. The second problem with the social scientific usage of structuralism, according to Sewell Jr., lies in the tendency of discourse to concentrate on explaining consistent social relations and patterns while

failing to give an account of how human agency transforms those social patterns over time. The third and last major problem Sewell Jr. notices in structuralist arguments has to do with the 'contradictory' way in which the term 'structure' is used in the social sciences. Citing examples of the language of structure in anthropology and sociology, Sewell Jr. notes that social scientists tend to 'see' structure in somewhat 'discrepant' and 'mutually incompatible ways' (pp. 3).

On the basis that these problems are inherent to the social scientific notion of structure, Sewell Jr. proposes a theory of structure that will "(a) recognise the agency of social actors, (b) build the possibility of change into the concept of structure, and (c) overcome the divide between the semiotic and materialist visions of structure." (pp 3-4). The starting point in this attempt to propose a new theory of structure is to critique earlier theoretical formulations, namely Giddens' notion of 'the duality of structure' and Bourdieu's habitus. On account of this critique, Sewell proposes a theory of structure whose central elements can be summarised as follows:

Accepts Giddens' notion of 'duality' which holds that structures are "both the medium and the outcomes of the practices which constitute social systems" (Giddens, 1981:27), as well as his (Giddens) view that structure comprises of 'rules' and 'resources' that are "recursively implicated in the reproduction of social systems" (1984: 377). However, Sewell Jr. draws from analyses of culture in anthropology to refine the concept of structure as composed of *schemas* (rules) and *resources* that function to produce and reproduce social systems. *Schemas*, in Sewell Jr.'s theory, include such things as beliefs, understandings, cultural norms etc which can be *generalised* or *transposed* to new situations by 'knowledgeable' actors. As building blocks of structure, Sewell Jr. conceptualises *resources* as involving human and nonhuman media - such as animate and inanimate objects, knowledge, physical strength etc - that can be used to enhance and maintain power. Resources are essential media to power and, as such, are unevenly distributed in society. Sewell Jr. further argues that, although all resources are unequally distributed among members of society, a certain amount of these resources (both human and nonhuman) are available to all individual members of society. Human *agency* is made possible by the 'empowerment' that access to structural resources brings.

Sewell Jr. continues that resources should be conceived of as outcomes of enactments of cultural schemas by social actors. Duality of structure, to Sewell Jr., implies that in addition to the fact that schemas produce resources, resources also serve to produce

structural schemas. I will attempt to illustrate how this is possible in my discussion of religious environmentalism in chapter 5 and 6.

With this brief depiction of the mutual interdependence between schemas and resources as theorised by Sewell Jr., the question that comes to mind is how does the duality of structure restore the agency of social actors and explain the phenomenon of change in structures? To answer these questions, Sewell Jr. takes a look at Pierre Bourdieu's concept of habitus. He argues that although Bourdieu has successfully illustrated the place of knowledgeable human subjects in the mutual relationship between schemas ("mental structures") and resources (the "world of objects") in his (Bourdieu's) famous analysis of Kabyle culture, the discussion fails to explain the power human agency has in producing and reproducing the habitus. Sewell Jr. believes that, like Giddens', Bourdieu's failure to explain agency prevented him from sufficiently theorising social changes that emanate from within structures. To overcome this failure to explain change resulting from internal operations of structures, Sewell Jr. introduces 5 key concepts into the theory of structures, as follows:

- *Multiplicity of structures*: Existence of different, wide ranging, multi-level structures in human societies, based on significantly varying types and quantities of resources. As a result of the multiplicity of structures within societies, social actors have access to a wide arrays of resources and the capacity to apply diverse and even incompatible schemas.
- *Transposability of schemas*: Social actors not only have access to diverse cultural schemas but also the capacity to apply them to different situations. Sewell Jr. defines *agency* as "the capacity to transpose and extend schemas to new contexts" (pp. 18).
- *The unpredictability of resource accumulation*: Enactment of schemas does produce resources, but the outcome of enactment (resources produced) is not always predictable. Because reproduction of schemas is dependent on their validation by resources, the process of which is unpredictable, schemas are validated differently when activated. The outcome of their validation determines whether schemas are enacted in the future or subjected to modification.
- *The polysemy of resources*: Multiplicity of resources implies that resources resulting from enactment of cultural schemas can be interpreted in different

ways by social actors. The likelihood of multiplicity in the interpretation of resources makes it possible for resources to empower social actors in different ways and produce different schemas. Sewell Jr. interprets agency as entailing ability to "reinterpret and mobilise an array of resources in terms of cultural schemas other than those that initially constituted the array" (pp 19).

- *The intersection of structures*: According to Sewell Jr., social actors have the capacity to interpret resources in different ways because social structures intersect and overlap. Structures intersect and overlap at both the level of schemas and resources, and for this reason, different actors can lay claim to different resources, just as they can transpose schemas from one structural complex and apply them to another.

With these conceptual expressions, Sewell Jr. hopes to demonstrate a new notion of *agency*, one in which human agency is seen "not as opposed to, but as constituent of, structure" (pp. 20). All social beings have some capacity to exercise agency - a certain degree of control over structural resources - in social relations, and by virtue of this inherent ability, they are able to transform social structures to a certain extent. Human agency is derived from and empowered by structures in the form of knowledge of cultural schemas and access to resources. Agency in social relations is therefore variable from one individual to another and from one situation to another. For Sewell Jr., variation in human agency implies difference in terms of transformative powers of social actors.

With this brief background of the theory of structure espoused by Sewell Jr. I have introduced some of the key concepts I will be dealing with in my attempt to use the theory of structure to interpret some my findings in chapters 5, 6 and 7. As I argued above, one of the things I attempt to demonstrate in the analyses that follow is how sociological perspectives can help us understand the complex relationship between religious phenomena and the environment using evidence from empirical research.

2.5. Summary

In this chapter, I have introduced some of the key issues, debates and theories in the study of society-nature interaction, religion in society, and religion and the environment. The key concepts and theories discussed in the beginning of the chapter have provided insights and analytical tools useful in researching the relationship between religious beliefs and experiences, and environmental issues. From my brief review of the key

issues and controversies in theory and research on society-environment interaction, I have shown that social constructionist and realist perspectives on society-environment interaction have offered divergent but useful precepts with which a sociological study of religion and the environment can be approached. In particular, I find it imperative to utilise the ontological and epistemological perspective of constructionism, which, among other things, calls attention to our understanding of the environment, the complex social processes by which environmental problems are shaped and by which they develop and change over time. Constructionism is also useful in understanding the variations in the ways human groups and societies 'construct' various environmental problems. From the realist perspective, I have indicated my agreement with notions that social scientific study of the environment needs to start with the recognition of the 'reality' of environmental change and its links to social factors, and that it should proceed by investigating the role of societal factors such as worldviews, beliefs, values and behaviours of individuals and collectives in 'causing' environmental change and mitigating environmental problems. As both positions offer useful perspectives, this study will take both sets of methodological assumptions into account in order to understand the 'bigger picture' of society-environment interaction.

The key debates on the 'meaning' of religion, and theoretical approaches to social scientific study of religion have revealed the difficulty of developing a universally accepted definition of religion and capturing its social function in all societies and times. With this in mind, I gave an outline of the social constructionist approach to religion, as advocated by James Beckford. I also enumerated some of the advantages of following this social constructionist approach in investigating the connection between religion and the environment. Some of the useful suggestions of the social constructionist approach to religion I highlighted include an emphasis on the role of social actors (individuals and collective) in selecting and applying beliefs and principles they regarded as religious to social situations; sensitivity to the social processes or circumstances that determine how religious beliefs are interpreted; scepticism about the generalised notions of religion; an interest in variations, over time, in meanings of religious phenomena; and openness to theoretical pluralism.

The section that discusses theoretical and empirical literature on the connection between religion and the environment draws from a wide range of sources to identify the current trends in social scientific research on the subject. In the discussion, I stressed the impact of White's thesis in influencing the direction of research towards exploring religious

influence on environmental attitudes and behaviour, mostly using quantitative methods. Although findings from many empirical studies in the west have supported White's hypothesis, evidence from existing research on the relationship between religion and environmental attitudes have generally revealed a weak connection that is largely affected by demographic and socio-economic factors. It is also clear that religion-environment connection is so complex that it cannot be explained using a simplistic hypothesis, as proposed by White. To gain a better understanding of such a complex relationship, a researcher needs to take into consideration diversities in religious environmental beliefs, denominational sub-cultures, even within the Judeo-Christian traditions, and non-religious sources of environmental worldview.

Another important theme in the literature is the role of religious beliefs and experience in shaping how individuals and groups perceive and respond to environmental problems. My discussion of this aspect of religion-environment nexus has shown that, in different ways, religious individuals and groups draw from religious beliefs and experience to interpret and adapt to different ecological problems. Also, an understanding of these variations in religious interpretation of environmental problems and the social conditions that shape such interpretations is important to theorising about the religion-environment connection. The relatively sparse empirical research on how religious communities in African societies understand and respond to increasing environmental degradation demonstrates the need for further research.

Finally, one important finding from the review of existing research is that, with few exceptions, researchers have shown little interest in utilising existing sociological perspectives and theoretical ideas to interpret the association between religious phenomena and the environment. I pointed out the possibility of achieving a better understanding of the complex relationship between religion and the environment by utilising theoretical ideas, concepts and models and applying them to empirical data. Against that backdrop I introduced two theories (the VBN theory and theory of structure) that I used in this study to interpret my findings.

CHAPTER 3 - NORTHEAST NIGERIA: AN OVERVIEW

This chapter gives a brief introduction to the study region. The chapter focuses on some basic socio-economic statistics, environmental conditions and religious data. The aim of presenting a general overview of the social context of the study area is to give the reader an idea of the broader environmental, cultural, economic, and political forces that shape everyday life in the study communities. Since both religious beliefs and environmental problems are products of much deeper social structural factors, an understanding of the social context in the study area will aid the reader in contextualising the findings of the study. Also, to understand the rationale and justification for the study, an insight into the socio-cultural, economic and environmental conditions of the study area is useful. Due to time and space constraints, it is impossible to give a background of the region that is both broad and detailed. Thus the following discussion will only outline the basic data about the region's socio-economic conditions and the elements of its complex geography, ethnography, linguistics and history that are relevant to the aims and objectives of this thesis.

3.1. Administrative structure

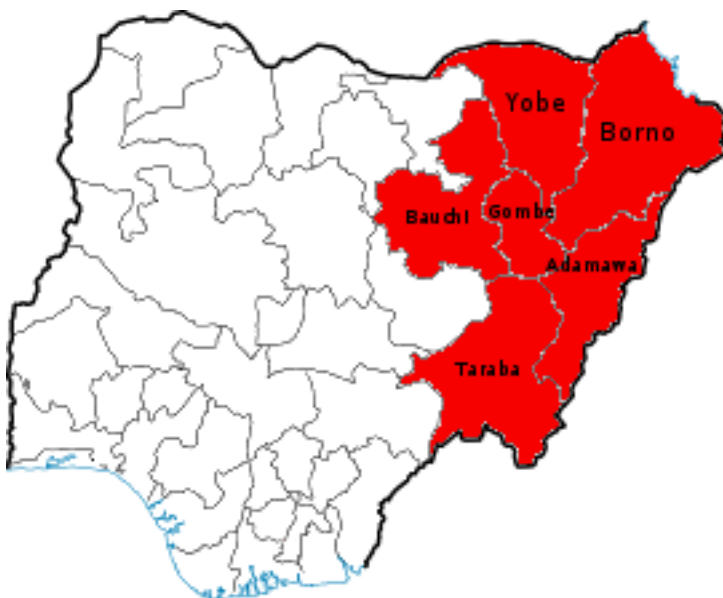


Figure 3.1: Administrative map of Northeast Nigeria (adapted from <http://commons.wikimedia.org>)

The study area, the Northeast region of Nigeria comprises 6 of the 36 states that currently make up the Federal Republic of Nigeria and together form the 6 geo-political zones of the country. These 6 states were previously under the administrative division

of North-Eastern State which was created in 1967 from the then Northern region. The North-Eastern state came under an administrative change in 1976 when it was divided into 3 states, namely Bauchi, Borno and Gongola states. This was followed by another state creation in 1991 when Yobe was created from Borno state, while Gongola was split into Adamawa and Taraba state. In 1996, Gombe state was created from Bauchi, making the number of states in the region 6 (Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe). Since the Nigerian constitution recognises only states and local governments as federating units, the 6 geo-political zones/regions (Northeast, Northwest, North-central, Southeast, Southwest, and South-South) have no constitutional role but are still being considered as extant for purposes of allocation of resources, in line with the Federal Character Act (Federal Government of Nigeria, 1997), (Mustapha, 2007).

3.2. Physical geography

The region, which is situated within 9o-14oN and 8o-15oE, forms over one-fourth of the country's land mass. Geographically, the Northeast region has varying topography ranging from "extremely rugged upland zones east and north of Gongola Hawal confluence to gentle undulating plains in the far northeast and northwest" (Berns, 1985:28). Lake Chad is an important geographic feature of the region, due to its location in the centre of the continent of Africa. Other important rivers are the Benue and its major tributary, the Gongola river, as well as Katagum, Jama'are, Keffin Hausa and Burum-Gana rivers. Rainfall data shows a variation in rainfall patterns from as high as 1800 mm annually in Gembu, Taraba state (Oruonye, 2014), to around 700 mm in Yola of Adamawa, to a low of 300 mm in parts of Borno and Yobe (Blench, 1997). This climatic variation has produced different vegetation in the region in the form of Tropical forest (Chapman & Chapman, 2001), Guinea savannah, and Sudan savannah (Blench, 1997).

3.3. Ethno-linguistic composition

Linguistically, the convergence in Northeast Nigeria of three out of four language phyla of Africa over a long period has accounted for the cultural complexity that characterized the region (Blench 1997). The major ethnic groups that inhabit the region include the *Kanuri, Kanembu, and Teda* (Nilo-Sahara); *Fulbe, Jarawan, Lunguda, Yungur* (Niger-Congo) and; *Bura, Margi, Fali, Bata, Sukur, Yedim, Shuwa Arabs* among others (Blench, 1997). There are over a hundred other ethnic groups spread in different parts of the region. During the pre-colonial period, the peoples of the region were politically divided into centralized and decentralized societies. Of the decentralized societies many

are autonomous peoples such as *Ga'and, Huna, Yungur, Tera, Bura, Kilba, Chibak, Margi, Mwona, Dadiya, Lunguda* and so on (Berns 1985). These groups are mostly found in dispersed settlements, usually on the hillsides. Other ethnic groups like the *Dera, Bolewa, Babur* had established minor centralized states. Centralized state systems were established by other ethnic groups like the *Fulani, Kanuri, Jukun* and *Hausa*. For Alkali et al. (2012:4), the Lake Chad had provided a meeting point of 4 major cultural civilisations in the world, namely the Sudanic culture of the Chadic languages speakers; the Nilo-Saharan group represented by the Kanembu-Kanuri and Shuwa Arabs; the Middle Eastern culture that came with the introduction of Islam in the 7th century AD; and the Western culture that was brought by the missionaries and British colonialists in the 19th and 20th century. Other economic, socio-political and geographic factors, according to Alkali et al. (2012), have combined to facilitate the diffusion of these different cultures, creating a unique society compared to the rest of Nigeria.

3.4. Demography and socio-economic conditions

According to the 2006 national census, the 6 states that comprise the Northeast region have a population of over 18.9 million (see figure 2), that is, 13.5% of Nigeria's over 140 million total population. Rapid increase in Nigeria's population (population growth rate estimated at 3.2%) during the last decades has been a cause of concern for the governments at various levels (National Population Commission, 2013). As in many other regions of the savannah area, it is estimated that 70% percent of the population lives in rural areas where the primary occupation is agriculture. The majority of this population engage in small scale agriculture such as subsistence farming and animal husbandry. The area remains the largest grain and livestock producing zone in the country. Vulnerability of rural agricultural production to climate change, lack of incentives and insecurity have been blamed for the increase in the rate of rural-urban migration in most parts of the country (Iruonagbe, 2009).

State	Male	Female	Total
Adamawa	1,607,270	1,571,680	3,178,950
Bauchi	2,369,266	2,283,800	4,653,066
Borno	2,163,358	2,007,746	4,171,104
Gombe	1,244,228	1,120,812	2,365,040
Taraba	1,171,931	1,122,869	2,294,800
Yobe	1,205,034	1,116,305	2,321,339
Total	9,761,087	9,223,212	18,984,299

Table 3.1: Population of Northeast Nigeria by state based on 2006 census

Despite the huge agricultural potential of the region, the economic conditions of the people of Northeast Nigeria are said to be worse compared with those of the regions of

southern Nigeria. For instance, the poverty rate in the Northeast has been estimated at 78%, the second highest among the 6 regions of the country. Compared to their southern counterparts, people living in the Northeast region are said to be 4 times more likely to have no education. Malnutrition is also highest in the Northeast and Northwest. Only 30% of the people in the region have access to safe drinking water, while access to basic sanitation is put at 45%. Also, due to lack of access to electricity, cooking gas or kerosene, 97.7% of households in the region use firewood for cooking. Estimated at 33%, youth unemployment in the region is the highest in the country. Other related socio-economic indicators such as maternal and infant mortality, income inequality etc, also remain high in the states of the region (African Development Bank, 2013; National Bureau of Statistics of Nigeria, 2012; USAID Nigeria, 2003). This poor economic situation in the area is believed to be worsening recently as a result of the growing insecurity that is affecting the entire region. The violent insurgency linked to the armed group, *Boko Haram*, is said to have caused the death of over 13,000 people since 2011, while 3.3 million are internally displaced people (IDPs) and more than 140,000 are living as refugees in Niger, Cameroon and Chad (ECHO, 2014).

3.5. Religious composition

Some experts have highlighted the dearth of reliable and accurate data about the religious composition of Nigeria (see Odumosu, Olaniyi, & Alonge, 2009; Odumosu & Simbine, 2011; Alkali et al. 2012). The National Censuses conducted since 1963 did not estimate religion due to considerations related to possible religious tensions. However, there are unofficial sources of data that can provide information regarding religious demographics and other aspects of religious life in the country. A recent survey that revealed considerable relevant information on religion in Nigeria is the Pew Forum's report titled *Tolerance and Tensions: Islam and Christianity in Sub-Saharan Africa* (Pew Forum, 2010) which covered 19 countries of Sub-Saharan Africa. This public opinion survey focussed on a number of topics concerning religion such as adherence to Islam and Christianity; persistence of Traditional African Religious (TAR) practices; presence or absence of tensions/tolerance among the adherents of the two faith traditions; support for both democracy and religious laws; and the relationship between religion and morality, among others.

According to the report, Nigeria is roughly divided between followers of Islam and Christianity. In the survey, 46% of the people identified as Christian, 52% reported that they practice Islam, while 1% described themselves as practitioners of Traditional

African Religions. The geographical spread of these religions shows that while much of the Northern region is populated by Muslims there is a significant Christian population in various states of the predominantly Muslim areas of the Northwest and Northeast. The North-central zone is generally mixed with some states of the so-called Middle-Belt having majority Christian populations (see also Odumosu & Simbine, 2011). The Southern region is home to the majority of the Christian population of Nigeria. However, while the Southeast and South-south are mainly Christian, the Southwest is roughly equally divided between Muslims and Christians. In the Northeast region, the absence of recent official census figures on religious affiliation has led to some researchers using the controversial 1963 census figures to get an insight on the religious composition of the area. The 1963 census which was said to be highly manipulated to favour Northern Nigeria, and by extension, Muslims (Ekanem, 1972) shows that the then three provinces of Bauchi, Adamawa and Borno were split unequally between Muslims, Christians and Animists. According to the figures, in Borno Muslims formed 93.1%, Christians 2.0%, and Animists 4.9%. In Bauchi province, Muslims constituted 80.6%, Christians 3.2%, Animists 16.2%. In Adamawa, Animists were the majority (51.6%), followed by Muslims (34.1%) while Christians were 14.3% (Ekanem, 1972). Analysts believe that these demographics have changed a little as a result of the conversion of most of the people defined as Animists to Christianity and Islam (Alkali et al., 2012) and an increase in the number of southerners who have settled in major cities across the region (International Crisis Group, 2010).

There is evidence of a great deal of diversity within the two major religious groups in Nigeria. Among the Muslims, the Sunnis constitute the majority: over 38%, Shia 12% and Ahmadiyyah 3%. The remaining identified themselves as neither Sunni nor Shia (Pew Forum, 2010). Within these broader categories, especially Sunni Islam, there are diverse strands such as Sufism (Quadriyyah and Tijjaniyyah), Salafi movements and so on (Alkali et al., 2012; Odumosu & Simbine, 2011).

The Christian population is divided between the major denominations of Protestants and Catholics. Here, 60% of those interviewed in the Pew Forum survey affiliate with the Protestant denomination, while 37% are identified as Catholics. Protestantism is itself diverse and Pentecostalism is found to have greater number of followers (26% of the entire Christian population). Other Protestant denominations include Anglican (9%), Baptist (8%), African Independent Churches (9%), Methodist (4), Lutheran (2%) and Presbyterian (1%) (PEW Forum, 2010:23).

According to the survey a large majority of Nigerians believe in one God and in heaven and hell, as in many other countries of the Sub-Saharan Africa. Among the survey respondents, 87% of Nigerians consider religion to be very important in their lives. This large majority believe in either the Bible or the Quran, attend worship services, fast during Ramadan or lent, and give religious alms. The survey discovered that a good number of Nigerians (11%) who claim to be deeply committed to either Islam or Christianity accept and practice some elements of TAR. This finding has validated an earlier survey by BBC World (2005) which, in addition to the overwhelming influence of religion in individual social life, further reported that 85% of Nigerians "trust religious leaders and a similar proportion were willing to give them more power".

3.6. Religion, politics and violence

The enormous influence of religion in private and public life in Nigerian society has attracted the attention of many scholars of religion since the nation's independence in 1960. Much of this scholarly interest has been directed towards documenting the historical role of religion in politics, its influence on social identity, intergroup relations and conflict.

Before the British colonial rule, the entire society of northern region (Northeast and Northwest and parts of North-central) had been dramatically changed by the political movements of the 19th century, especially the Sokoto Jihad of 1804. The Jihad led by Usman Danfodio, a Fulani preacher and his students saw the establishment of a Caliphate and 12 autonomous emirates in much of the Northwest and Northeast as well as some sections of the North-central regions of present Nigeria, with the exception of Borno which was another Islamic State. Other non Hausa-Fulani settlements in the region remained traditional until the introduction of Christianity by the Missionaries in the late 19th century. The Missionaries have succeeded in spreading Christianity to most of the non-Muslim tribes of the area. The pre-colonial political systems have undergone considerable changes during and after colonial rule. Although the colonial policy of indirect rule had recognized and maintained the traditional political systems, it nevertheless restructured them to achieve certain objectives. The restructuring involved the use of traditional rulers to administer the territories and raise revenues under the supervision of British colonial officers. This was achieved without direct disruption of the traditional social structure, especially religion and culture, of the peoples, particularly in the Muslim dominated emirates (International Crisis Group, 2010). After independence, the Native Authority system continued to serve as a means of retaining

the colonial policy, providing the traditional authorities with considerable power regarding land ownership and regulation during and after colonial rule (Pierce, 2005). Although major cultural and religious structures in the region had been maintained to facilitate colonial administration, the British had brought considerable changes in the political, judicial and cultural systems of the region (International Crisis Group, 2010).

The period after independence, like the struggle for independence, was marked by significant political developments that made permanent impact on the relationship between religion and politics in Nigeria. Extreme competition between the then regional governments (Northern, South-western and South-eastern) saw the formation of political parties based on ethnicity and regional alliances. Preservation of cultural and religious values was at the centre of the competitions between the major political parties and regional governments (Falola & Heaton, 2008; Igwara & Falola, 2001). In the Northern region, although the regional government had pursued a unifying policy of "northernisation", which aimed to give equal opportunities to all northerners regardless of ethnic and religious affiliation, promotion of Islamic culture was said to be among the top priorities of the government (Albert, 1999). The preoccupation of the Northern government with promoting Islam had raised fears of Muslim domination among the mainly Christian minority ethnic groups as well as tension between followers of the major Sufi Islamic sects. The first military coup in 1966 was believed to be a reaction of some elements within the military to the perceived religious and ethnic agenda of the political leadership of the country, especially the Northern politicians (International Crisis Group, 2010).

Some of the political reforms introduced by successive military regimes were meant to minimise the ethno-religious tension that characterised the politics of the first republic. Major among these reforms was the abolition of regional governments and their replacement with state governments, with the expectation of altering the tense relationship between minority groups and the majority (Vande, 2012). But even with the new federal system, some political structures that facilitate religious influence on Nigerian politics remained. The Native Authority (NA) system that was first introduced by the colonial government continued to provide the traditional institution the authority to exercise their religious leadership. As Alkali et al. (2012) observed, the NAs were simply extensions of the pre-colonial religious kingdoms and emirates. The 1976 Local Government reform which culminated in the conceptualization of Local Governments as third tiers of government and agents of development, especially in rural areas,

marked a change in the role of traditional rulers in the entire northern region. The changes introduced significantly reduced the influence of the traditional institutions, particularly in urban areas. They did, however, remain influential in the rural areas and as religious authorities. The Local Government system itself has gone through several reforms over the years and there are still agitations for their abolition or further reform. Critics of the local government system argue that the third tier of government has been highly ineffective in most if not all states of the federation. They identified the problems of the local governments to include, among others:

...inadequate planning, poor implementation of policies, inadequate revenue, corruption and mismanagement, lack of adequate manpower, lack of autonomy, lack of participation by the people and intergovernmental conflict (Igbuzor, 2007).

Despite these problems, the local governments are still seen as the closest tier of government to the rural masses who also hold the traditional and religious institutions in high regard. The relevance of religion is manifested in the kind of influence religious leaders and clerics have across the region.

The relationship between religion, power and politics in northern Nigeria has been explored by several scholars (such as Adeleye, 1988; Anwar, 1998; Ibrahim, 1989; International Crisis Group, 2010; Kukah, 1993; Paden, 1973, 2008; Usman, 1987) and there is consensus that religion remains a powerful force in politics and the socioeconomic life of the people. These and many other authors have concluded that politicization of religion by the nation's elites has been responsible for incessant ethno-religious conflict in the region, the most recent of which occurred in April, 2011 across the entire north, resulting in the loss of hundreds of lives. Acknowledging the competing narratives about the role of politics in religious violence and the role of religion in Nigerian politics, Campbell (2010: xvii) argues that "popular alienation and a fragmented establishment have contributed to Nigeria becoming one of the most religious and, at the same time, one of the most violent countries in the world".

It is worth emphasising that the region of Northeast Nigeria is one of the zones worst hit by the continuous violent conflicts that have been linked to the dangerous politics of religion. The bloodiest of these conflicts is the Boko Haram (which literally means 'western education is forbidden') armed insurgency which has so far claimed the lives of over 13,000 people since 2011. The brutal conflict, which originated from an unarmed campaign against western education and a struggle to introduce a strict form of Islamic legal/political system (Sharia) in the Northern region, culminated in a multinational terrorist movement that has destabilised northern Nigeria, as well as some parts of

Cameroon and Niger Republic (Pérouse de Montclos, 2014). In addition to the death of over 13,000 people in under five years, as the Nigerian president said, the group's violent campaign against the Nigerian state has led to total destruction of many towns and villages. Another terrible side of this insurgency is the kidnapping and enslavement of hundreds of women and children, including the kidnapping of 276 school girls in one incident in Chibok, Borno State (CNN International, 2014). Recently, the group has succeeded in capturing territories and establishing their own rules according to strict interpretation of Islamic codes, carrying out mass executions and amputations (Russian News Agency, 2014; Blake, 2014). This vicious conflict as indicated above has forced over 3.3 million people to leave their homes, either as IDPs or refugees in neighbouring countries, leaving the agricultural economy of the region totally devastated (ECHO, 2014).

3.7. Environmental conditions

Nigeria is currently experiencing severe and wide ranging environmental problems. These problems range from climate change to man-made environmental degradation to inefficient management of environmental resources. In 2007, the Intergovernmental Panel on Climate Change (IPCC) identified Nigeria as a "hotspot" of climate change. In the report, the Panel noted that countries of sub-Saharan Africa are among the world's most vulnerable to the impact of climate change and that vulnerability is having "huge economic" impacts (Boko, et al., 2007). The Panel cited "existing development challenges such as endemic poverty, complex governance and institutional dimensions; limited access to capital, including markets, infrastructure and technology; ecosystem degradation; and complex disasters and conflicts" as the major factors responsible for the worsening impacts of climate change on these countries (Boko, et al., 2007:435). While all the 6 geo-political regions of Nigeria are suffering from various forms of natural and man-made environmental decline, the Northeast and South-south region have been singled out as the most environment-induced conflict-prone regions of the country (Sayne, 2011). The major environmental problems affecting the Northeast region of the country can be summarised as follows:

3.7.1. Desertification and land degradation

Land degradation, especially desertification, associated with climate change, population pressure and unsustainable resource use has been identified by the Nigeria government as the 'most pressing environmental problem' affecting the country (Federal Government of Nigeria, 2010). According to the Federal Ministry of Environment, 50 to

75% of Borno, Bauchi, Yobe and Gombe State are being affected by desertification and desert encroachment stands at 0.6km per year (Federal Government of Nigeria, 1999). Based on these governmental estimates, fully two-thirds of Bauchi, Borno, Gombe, Yobe states could turn desert or semi-desert in the 21st century. Citing that report, Sayne (2011:4) observed that "already Sahel creeps south by approximately 1,400 square miles a year, swallowing whole villages; government geological data show a 400 per-cent increase in sand dunes over twenty years". In addition to climatic shifts, desert encroachment is said to be fuelled by excessive exploitation of the marginal lands by over grazing, fuel wood extraction and logging among other practices. Among the numerous human activities that combine with climatic factors to increase the severity of land degradation and desertification in the region are the following:

- **Deforestation:** According to a study by the UK-based research NGO, Maplecroft (2012), Nigeria experiences the highest rate of deforestation in the world (4% per year). The report identified "a complex mix of agricultural expansion, logging, infrastructure development and high levels of national and state level government corruption," as the major drivers of deforestation in Nigeria. One of the leading researchers, Arianna Granziera, added that "...forest protection laws are often obsolete and weakly enforced, which is compounded by a lack of resources and training. Poverty is also an important factor, as trees cleared for firewood are the only source of fuel available to the poorest in society."
- **Bush burning:** This is common practice in many parts of the savannah region. People mainly set bush fires to obtain charcoal for energy, or in their hunt for games or bush meat or in order to clear the land for farming. The practice is believed to be a major cause of destruction of savannah vegetation and a contributing factor to increasing soil degradation and desert encroachment (Jamala et al., 2012).
- **Overgrazing and unsustainable farming practices:** Land use in Northern Nigeria is characterised by an increase, over the years, in unsustainable practices and inefficient management. The most notable of such practices are overgrazing and crop land expansion and agricultural intensification. These practices are increasing as a result of population growth and ineffective land management policies, leading to soil degradation and desertification (Chianu, Tsujii, & Awange, 2006; Macauley, 2014)
- **Illegal mining:** Although occurring on a relatively smaller scale, the United Nations Commission on Sustainable Development and the Nigerian government

have both recognised unsustainable mining of solid minerals as pressing environmental issues in Northern Nigeria. Unregulated mining activities, such as gravel mining for construction, and the creation of artificial ponds are seen to be aggravating land degradation in some states of the region (UNDPCSD, 1997).

3.7.4. Shifts in temperature and rainfall patterns

Another environmental condition in the region under study has to do with changes in climatic conditions which lead to shifts in temperature and rainfall patterns. Some evidence from government data indicates a rapid increase in average temperature and reduction in rainfall in the semi arid regions of the Northeast and Northwest (Sayne, 2011). Rapid variations and fluctuations in climate and weather patterns witnessed in the region are also associated with severe weather conditions including torrential rains and windstorms. These changes are said to be affecting cropping patterns and yields and causing a proliferation of pests and diseases (Farauta, et al., 2011).

3.7.2. Flash floods and erosion

Nigeria experienced its worst flooding in more than 40 years in 2012, following severe rainfall across the country (OCHA, 2012; WHO, 2012). Before and after the 2012 floods there were many other incidences of flash floods caused by torrential rains that affected many parts of the country. Virtually every year, such floods are experienced across Nigeria and they often cause severe damages to human life and property in different communities. In most cases such floods cause deaths and internal displacement, increase the risk of diseases, while also the washing away thousands of farmlands, paralysing economic activities and destroying homes and civil infrastructure (Bashir, et al., 2012).

Another related environmental problem in the study area is erosion. Although it is more severe in the coastal areas of southern Nigeria, erosion has become a major environmental problem in many states of the Northeast region too (UNDPCSD, 1997). Despite the relatively low amounts of rainfall in most parts of the region, Splash, Sheet, Rill and Gully erosions are common in states like Adamawa, Gombe, and Taraba (Adeniji, 2003; Mbaya, Ayuba, & John, 2012; H. Usman, 1994). Like flash floods, erosion also leads to serious economic impacts notable among which are displacements, destruction of homes, depletion of agricultural lands, reduction in soil quality and productivity and so on. Vulnerability of rural and urban communities to the effects of floods and erosion is heightened by poor drainage systems, changes in vegetation due to

deforestation and desert encroachment and uncontrolled growth, among others (Bashir et al., 2012).

3.7.3. Pollution and garbage accumulation

Pollution from industrial wastes is regarded as an enormous environmental problem in the Niger Delta region and in cities like Lagos, Kano and Kaduna, while municipal solid waste heaps constitute another serious environmental challenge in virtually all major cities of the country (UNDPCSD, 1997). Population increase in urban centres, unsustainable consumption patterns of urban dwellers and inability of city officials to stop illegal dumping of commercial, industrial and household wastes is leading to a crisis of waste management in Nigerian cities (Momodu, Dimuna, & Dimuna, 2011). Much of these wastes are believed to contain non-biodegradable petrochemical productions like polythene bags and plastic containers. Added to these are oils discharged by mechanical workshops, industries and commercial houses which also contaminate the surface and ground waters (UNDPCSD, 1997).

3.7.4. Impacts

The major repercussion of increasing land degradation in the region and country is resource scarcity. Population increase and high levels of poverty are linked to over-dependence on land resources such as croplands, forests and water resources, especially in rural communities where alternative sources of these resources are often unavailable. Without effective institutional control of resource access and use, there results severe competition for increasingly scarce and degraded land resources, often resulting in violent conflicts between land users, mainly pastoralists, farmers, fishermen and fuel-wood collectors (Onuoha, 2008; Human Rights Watch, 2007). Some experts (Obhenin, 2012) are already linking growing terrorism in Nigeria, particularly the Boko Haram insurgency that is devastating the Northeast region, to environmental change.

Water shortages, water pollution and floods have been blamed for a number of health problems which include rising levels of mortality from cholera and malaria and deaths from floods. According to the United Nations (OCHA, 2012), in 2012 alone, about 431 people were killed by floods throughout the country while over 1.4 million were internally displaced. The floods have also caused colossal damage to private property as well as the already marginal civil infrastructure such as roads, bridges, schools etc (Sayne, 2011; WHO, 2012). There is also a serious concern that environmental change and degradation in Northern Nigeria is likely to trigger hunger and malnutrition. Some

recent evidence from the Northeast area indicate a possible link between "crop failures and declining yields" (Sayne, 2011:5) and climatic factors and environmental decline.

The combined impact of climatic change and human-induced environmental degradation on the economy of Nigeria is still unknown. However, an estimate by the UK DFID (2009) projects that in the absence of effective measures to mitigate the impact of climate change, Nigeria is likely to lose between 6% and 30% of its GDP, which is worth between \$100 billion and \$450 billion, by 2050. Also summarising the devastating economic consequences of desertification in Northern Nigeria, Odiogor (2010) reports that, by losing about 350,000 hectares of land every year to desert encroachment, the country is experiencing increased demographic displacements in villages across 11 states in the North. He further reveals that Nigeria "loses about \$5.1 billion every year owing to rapid encroachment of drought and desert in most parts of the north". These effects of environmental change on economic growth are expected to worsen the rate of unemployment, since a majority (over 70%) of the workforce are engaged in agriculture and related occupations (Sayne, 2011).

Successive Governments in Nigeria have come up with a number of policy interventions to mitigate the impact of environmental degradation and climate change and improve the adaptive capabilities of vulnerable communities (see Federal Ministry of Environment, 2012; Federal Government of Nigeria, 1999, 2010). However, the country's weak institutional capacity, pervasive corruption, top-down policy approach, poverty, among other governmental factors have been blamed for the failures of most of such policy responses (Onwuemele, 2011). Other factors linked to the failures of environmental policies in Nigeria include lack of funding, poor implementation, inappropriate technology and public attitudes towards the environment (Agunwamba, 1998).

Some international partners and local civil society are also part of the growing efforts to address the challenges posed by environmental change in Nigeria. Much of their interventions centre around research, environmental education and enhancement of community participation in environmental management and implementation. Despite attempts by the Nigerian government, its international partners and local NGOs to boost community participation in environmental management, some experts (eg Borokini et al., 2012) believe that community-based environmental initiatives are still very limited in Nigeria.

3.8. Conclusion

In this chapter I have introduced the reader to some vital geographic, ethnic, religious, demographic and socio-economic data on the study area. The chapter has also given some background information on the role of religion in Nigerian society as well as the levels and impacts of various forms of environmental problems affecting the region and its people. This general information shows that the study area is geographically and demographically diverse but economically poor and institutionally weak. Scholars have attributed the rise of violent conflicts to each of the following factors: extreme poverty, ethno-religious diversity, population explosion, environmental decline and state failure (Atwood, 2003; International Crisis Group, 2010; Obhenin, 2012; Sayne, 2011). Moreover, environmental degradation in some societies, as seen in the literature review, is attributed to poverty and institutional failures (Bruntland, 1987; Way, 2006). Religious fundamentalism and fatalism are also blamed for increasing environmental degradation and lack of support for environmental reform policy in some societies (Lindskog & Tengberg, 1994; White, 1967). Northeast Nigeria happens to be an area where all these structural forces - extreme poverty, environmental degradation, institutional failure, ethno-religious diversity, population explosion - intersect. The variations in physical geography, society and culture perhaps explain why myriad environmental problems become localised in the region. These variations also underscore the need for local differentiation of policy interventions to mitigate environmental problems. Thus, an appreciation of these deeper social structural factors is necessary to make sense of the nexus between religion and the environment in the area. In the same vein, the convergence of all these social forces makes it a good research setting. I have argued in chapter two that the nature of African environmental crises and the general socio-economic conditions that affect and are affected by environmental change in those societies are in many ways different from those in developed societies. These peculiarities call for localised case studies that take into account these wider social conditions, as theories and findings from studies in different social milieus may not necessarily be applicable. Thus, given the social conditions in the Northeast region, especially the severity and scale of environmental degradation, the significance of religious beliefs to both individual and community life, and weak institutional capacity to mitigate environmental decline, this region is a suitable research area.

CHAPTER 4 - RESEARCH EPISTEMOLOGY AND METHODOLOGY

As in every other piece of social scientific research, many decisions had to be taken in the process of defining my research problem and deciding on the appropriate methodology for studying it. In the process of making these decisions some philosophical assumptions had to be made about the existence of social reality and how it can be explored. In this chapter, I will highlight the theoretical and epistemological basis of the strategies and methods adopted in the study, the 'tools' that were utilised and how they were handled during the research process. Thus, in the first section of the chapter, I outline the major epistemological and methodological postulations of critical realism, the philosophical approach I adopted in this study, and also show how they informed both the choices of my research methods and the kind of knowledge claims I made from the findings of the study. In the second section, I will present both the qualitative and quantitative techniques of data gathering and analysis I used and the manner in which they were deployed in this study. The third section discusses the ethical and practical challenges encountered in the process of data gathering and analysis, and how they were overcome.

4.1. A critical realist approach

Preceding discussions in chapter 2 on the major theoretical and conceptual perspectives that inform both research on social basis of environmental problems and the connections between religion and the environment have provided us with a multiplicity of perspectives from which research of this nature can be approached. My position, like many other researchers (eg. Lokie 2004; Murphy 2002), is that neither of the two dominant sociological perspectives on environmental change (realism and constructionism) has managed to resolve all of the fundamental philosophical issues at an ontological and epistemological level. Moreover, in my view these dominant perspectives have not offered a sufficient range of conceptual and methodological tools with which to research the various dimensions of relations between society and nature this study seeks to examine. This position informs my choice of a middle-ground approach - critical realism - which, in some important ways, has addressed critical

philosophical methodological problems that other rival philosophies have failed to deal with.

An extensive literature exists on the critical realist philosophy of social science and there is no space to fully review the vast literature on this well-debated approach. However, it is crucial to summarise some of its key philosophical canons that have informed both the approach and process of my research. Originally elaborated by Roy Bhaskar (1975, 1986, 1989, 1997, 2008), critical realism provides an alternative to constructionists' and scientific realists' ways of understanding reality. Across its diverse forms, critical realism shares with the other rival approaches some basic premises that can usefully guide social scientific research. It accepts ontological realism's belief in the existence of an external reality that is independent of our thoughts, interpretations, beliefs and ideas. In critical realism, reality is seen to be irreducible to our knowledge and understanding of it (Cruickshank, 2003). Like empirical realists, critical realists hold that scientific knowledge can help us gain important understanding of that independent material reality. However, unlike empirical realists, one of the most basic ideas of critical realism is the notion that scientific knowledge claims about reality are not infallible. In other words, critical realists insist that there is a limit to the extent to which scientific claims about natural or social reality can be accepted as absolute truths, because science and its methods are not free from error and absolute 'objectivity' is not achievable. To demonstrate the fallibility of all knowledge claims, Bhaskar (1975) made an important distinction between what he considers the 'transitive' and 'intransitive' dimensions of knowledge. The transitive aspects constitute our interpretations, discourses, and theories about the natural or social phenomena, while the intransitive dimensions involve the physical realities and social processes we study using those transitive categories. While transitive knowledge is inclined to change, it does not necessarily imply changes in the intransitive dimensions they seek to explain (Sayer, 2000). By this distinction, critical realism acknowledges the role of both interpretations and experience in the production of scientific knowledge. Bhaskar (1975) further warns against 'epistemic fallacy', that is, conflating what exists and our knowledge of it.

Another important tenet of critical realism is the notion that reality is 'stratified' and that our knowledge of it is 'emergent' (Sayer, 2000:12-13). In demonstrating the notion of stratified ontology, critical realists, and Bhaskar in particular, distinguish between the 'real', the 'actual' and the 'empirical' accounts of reality. What is 'real' is what exists, be it natural or social, which can be identified by virtue of its structures and powers. 'The

actual' refers to the outcome of activation of the structures and causal powers of the real, while the empirical consists of experiences and observable things (Sayer, 2000:11-12). In their discussion of the ontology of stratified reality critical realists also emphasise the 'emergent' character of reality, which implies that the combination of two or more structures produces a new phenomenon that is different and irreducible to the original constituents (Sayer, 2000:11-13). This leads critical realists to produce a distinct analysis of 'causation'. Distinct from empirical realist 'unidirectional' notion of causation, critical realism holds that an explanation of causation is only possible if causal mechanisms and their patterns are identified and the conditions under which they were activated are determined. Using this concept of 'emergent properties' Bhaskarian critical realism further seeks to resolve the 'structure-agency' problem in the methodology of social sciences by recommending a social ontology that links structure and agency (Cruickshank, 2003). Bhaskar called this doctrine 'Transformational Model of Social Action' (TMSA) (Bhaskar, 1998). TMSA is developed from a critique of 'voluntarism'/individualism, collectivism/holism and 'dialectical' position of Berger and Luckmann (1991). According to Bhaskar, while individualism ('voluntarism') reduces reality to individuals and fails to account for the constraining or enabling power of social structures, collectivism (holism) is faulty because of its emphasis on structural determinants of actions and the negating of agent's free will. Bhaskar also rejected Berger and Luckman's 'dialectical' position which sees individuals' free will as creating external and constraining social structures for what he calls replication of individualism and collectivism (Bhaskar, 1998). As an alternative ontology, Bhaskar's TMSA conceives that individuals do not create social structures, which in turn constrain or enable their actions, but individuals 'recreate' social structures, which serve as contexts for social action. In Bhaskar's view, social structures are "always already made" (1993:33). With this, critical realism advocates a doctrine of 'naturalism' in which the natural and social sciences share a "unity of method" (1998:25). Another important proposition of critical realism that is worth highlighting is its acceptance of both interpretivist and positivist epistemology. Accepting a constructionist perspective, critical realism contends that "our knowledge of reality is mediated through conceptual schemes" (or 'categories'), even though the reality itself is beyond our perspectives, ideas or interpretations of it (Cruickshank, 2003:1). Thus critical realism recognises the necessity of interpretive understanding of the 'meaning' of social reality. In opposition to reductionism - limiting social sciences to interpretation of socially constructed meanings (Bunge, 1993) - critical realism proposes utilising some elements of

positivism, modelled after the natural sciences in the philosophy and the methodology of social sciences. By providing a third way between individualism and holism, and between positivism and interpretivism, critical realism seeks to provide a methodology for social sciences that could be useful to both methodological individualists and methodological collectivists. This pragmatist methodology, according to Cruickshank (2003), means that social research should be guided by a 'domain-specific-meta-theory'. With a domain specific meta-theory, social scientists can work with a range of methods whose choice is determined by both the nature of the phenomenon being studied and what we want to know about it (Sayer, 2000). As Cruickshank observed, one of the main aims of critical realism is to supply some general ontological precepts that would guide social research in the production of 'fallible' scientific knowledge. On this basis, critical realists hold that social sciences, instead of concentrating on how to make 'true' knowledge claims about reality, strive to make 'right' decisions about how to 'explain' and 'understand' social reality. Scholars with this philosophical view usually argue that neither positivism nor interpretivism and their methodological offsprings (quantitative and qualitative research) are exclusive and sufficient enough to provide fallible knowledge of the entire subject matter of the human world.

Moving the discussion on to the study of societal-environmental interaction, critical realism provides an integrative approach which accepts both the basic realist premise of the independence or 'otherness' of nature, and the constructionist position that knowledge of nature and perception of risks of environmental problems are socially constructed (Murphy, 2002:323-324). In critical realism, dynamics of nature are integrated into analysis not bracketed, as this allows for a sociological understanding of (anthropogenic) causal mechanisms of environmental problems, as well as an analysis of how such understanding is socially constructed on the basis of culture and other social forces. Thus, the focus of a critical realist study of society-environment interaction is broadened to incorporate a wide array of issues that are either ignored or taken for granted by other philosophical traditions. Critical realism's pragmatic approach allows for contextualisation of environmental problems, their causal mechanisms, and how they are perceived and interpreted. Investigation that incorporates these wide ranging aspects must be ready to take a middle-ground position between interpretivist/constructionist and positivist/materialist methodologies. Such a study needs also to overcome the methodological divide between individualism and collectivism (or holism) in practical terms. Furthermore, the methods to be used in investigating environment and society relations should be determined by the particular issue(s) under

study and what we want to know about them. Mindful of the fallibility of social scientific knowledge, the researcher is expected to understand the limitations of both the methods chosen and the knowledge claims they expect to produce by using those methods.

In sum, four key tenets of critical realism have been identified in this introduction:

- Recognition of the existence of external reality that is irreducible to our thoughts and knowledge of it but which can be 'fallibly' explained through science.
- Emphasis on the analysis of causation that is only possible if causal mechanisms and their patterns are identified and the conditions under which they were activated are determined.
- Recognition of the role of both structure and agency in human behaviour and rejection of both methodological individualism and holism.
- Acceptance of constructionist claims that our knowledge of reality is mediated through our perspectives, interpretations and ideas while rejecting the reduction of reality to our interpretations and constructions.
- Methodological pragmatism based on the need to complement the deficiency of both positivist and interpretivist approaches and methods through the adoption of 'domain-specific' theories that will enable the understanding of a phenomenon in its specific context.

These critical realist ontological and epistemological positions and the methodological suggestions they present, combine to inform the approach of this research - shaping the process and guiding the researcher in making choices at each stage. The following section gives insight into the first set of methodological decisions taken regarding research design and how these decisions were implemented in the research.

4.2. Research design and methods

Recall that this thesis has two principal interests: to develop an understanding of religious influence on environmental attitudes and behaviour, and to analyse the role of religious beliefs in shaping perceptions and modes of adaptation to environmental change within faith communities. These objectives present the researcher with a number of epistemological needs that are best met through a combination of multiple research approaches and methods. My earlier critique of existing literature has shown that during the past decades, researchers of religion-environment connections have extensively utilised statistical data to understand the relationship between religion and

environmental attitudes and behaviour. A major gap I identified in the literature in chapter two was the insufficient theoretical and empirical studies conducted in developing nations such as Nigeria. Another gap in the existing literature concerns the limited utilisation of non-statistical qualitative techniques in researching religious engagement with environmental issues. In line with the tradition of critical realism, I find it vital to examine whether the findings and explanations of previous studies, mostly conducted in developed nations, are applicable and transferable to the context of developing nations with their specific socio-economic realities and peculiar environmental issues. Achieving that involves an interpretive understanding of environmental beliefs and worldviews, and discourses about environmental behaviour. However, acknowledging the fallibility of all research approaches, techniques and tools, I found it imperative to complement the qualitative exploration of environmental beliefs and their influence on behaviour with quantitative analysis of such relationships. This latter analysis involved 'measuring' the environmental beliefs and worldviews of members of religious groups under study and analysing how these beliefs relate to environmental behaviour. The analysis also involves a comparative examination of environmental beliefs and behaviour among the two religious groups under investigation - Christians and Muslims and their major denominations. I accept the realist assumption of the desirability of social scientific analysis of causal mechanisms of anthropogenic environmental problems. Thus, since the first central objective of my thesis involves examining religious influence on environmental attitudes and behaviour, I found it useful to not only engage in an interpretive analysis of beliefs and worldviews regarding the environment, but also to use research techniques that allow for statistical measurement of correlations and relationships between variables.

The second objective of the study also involves understanding the perspectives of religious individuals and their communities on key environmental problems, and their strategies of adaption to those problems. The aim was to understand the extent to which interpretations of environmental problems are shaped by religious beliefs and worldviews. Qualitative research offers the best tools to access these narratives and discourses on environmental problems. Qualitative analysis of interviews, unlike quantitative techniques, allows for an in-depth engagement with narratives on how environmental change is interpreted and constructed within faith communities.

An additional factor that influenced the choice of methods used in the study was the importance I attached to both how religious institutions are shaped by individual actors'

orientations and how they influence the attitudes and actions of their individual members. I followed Bhaskar (1993) in adopting a social ontology that pays attention to both individual agents - members of the religious groups under study - and the collectives of religious congregations. Thus, the methods of study I have chosen to answer my research questions are those that enable understanding of individual members' environmental beliefs and self-reported behaviours on the one hand, and congregational perspectives of environmental problems on the other. Since it is practically impossible to directly access 'congregational perspectives', I relied on the clergy to obtain information about the 'official' positions of their congregations on a wide range of environmental issues. Some studies on congregational effects on environmental attitudes have found the clergy to be the primary source of environmental information in religious communities (see Djupe & Hunt, 2009; Djupe & Gwiasda, 2010). Here too, I find the combination of quantitative and qualitative techniques necessary to understanding the role of individual agency without undermining the enabling and constraining power of social structures such as religious congregations.

Among the diverse instruments of data gathering mainly identified with qualitative and quantitative methods, I utilised in-depth interviews and interviewer-administered questionnaires. Both techniques are established methods in the sociological study of society-environment interaction and the sociology of religion. Interviews were employed to generate data on discourses and narratives of faith communities on environmental degradation as well as religious influence on environmental attitudes and behaviour. This instrument was complemented with questionnaires administered to members of the participating faith communities. Another appropriate method of qualitative data gathering which I considered but did not employ was focus group discussion. While focus group study was feasible within time and resource constraints, the heightened religious tension and insecurity in the region made it dangerous to organise focus groups. As I indicated in my introduction to the study area in chapter 3, there is widespread militant activity across the region of Northeast Nigeria. Thus, in selecting my method of data gathering, personal safety of my participants, their confidentiality and anonymity were a major consideration. Hence, in-depth interviews were a much safer means of qualitative data gathering in that situation. Quantitative data was obtained using questionnaires which probed environmental beliefs and the behaviour of individual members of participating congregations. The following sections give a detailed description of both methods of data collection, the techniques and

procedures of data analysis and the theoretical rationale behind the use of each technique.

4.2.1. In-depth interviews

Qualitative interviews are widely used by researchers who are interested in exploring people's perceptions, interpretations and experiences (Mason, 2002). There are different theoretical perspectives and positions taken on in-depth interviews as a means of understanding the human world, advanced through personal accounts and narratives of individual 'actors' or observers. In their varied forms and approaches, interviews are informed by the belief that personal accounts of life experiences play a crucial role in the production of knowledge (Legard, Keegan, & Ward, 2003). Regardless of their philosophical underpinnings, interviews generally involve conversation with the purpose (Webb & Webb, 1932) of 'unearthing' or 'exploring' (Kvale, 1996) knowledge about the world. The exploratory approach to interviews adopted in this study is informed by a constructionist perspective that good knowledge is created and negotiated through interactive conversation between the interviewer and interviewee, in a relaxed, naturalistic atmosphere. In-depth interviews were employed in this study to understand how religious communities 'make sense' of the natural environment and how they relate to it, how they understand and interpret environmental change and their strategies of adapting to the problems of the environment. Interviews are also used in this study to generate data that will enable interpretive understanding of the role of religion in shaping environmental worldviews, attitudes, and behaviours.

In exploring this process of 'sense making', and accessing its behavioural outcomes, I subscribe to the Kvale (1996) terminology of the 'traveller metaphor' which sees the interview process as an exploratory, joint journey towards interpreting the 'stories' that the interviewees bring to the conversation. In this approach, the interviewer is seen as an active participant in the process of knowledge generation. Accordingly, as the interviewer, I engaged in a collaborative, reciprocal relationship with my interviewees during the interaction. My active engagement with the interviewees facilitated disclosure through the mutual understanding that was created during the course of the interviews. Immersing oneself in an interview does not imply total absence of detachment and taking over the role of producing the narrative or regulating the flow of their stories (Attride-Stirling, 1998). Respondents were given enough time and room to talk about their views, experiences and understanding of each of the topics contained in the interview guide. I tried to maintain some level of 'distance' from the accounts being

disclosed by the interviewees as a measure to avoid influencing the kind of responses participants gave.

Following a review of relevant literature, a flexible interview topic guide was prepared on the possible discursive themes of the interviews so as to ensure that the objectives of the study were covered during every interview. The guide was also intended to give some direction to the discussion without constraining interviewees to particular forms of answers. The idea was to make the interviews as 'exploratory', in-depth, interactive and flexible as possible. Achieving all these is necessary to meeting the objectives of the interview - generating relevant narratives about respondents' beliefs, perspectives, views and understandings about environmental issues and behaviour. As suggested above, the model of interview adopted was founded on the constructionist viewpoint that knowledge is constructed and interpreted in the course of interaction between the respondents and the interviewer. The discussion guide was initially developed by breaking down the research questions into topics and sub-topics in order to generate both wider and deeper responses on the various aspects of the research topic. The interview guide contains 3 main topics under which a number of bullet points were marked itemising key issues to be discussed (see Appendix I). The discussion guide was, however, updated and revised after the first set of interviews to accommodate emerging issues that were not included in the original guide.

Interview respondents and sample

As I was based a long way from the field, I needed a few individuals on the ground in each of the three states to start negotiating my access to the congregations and to help me in administering questionnaires to congregants during the fieldwork. Thus, the first stage of this phase of my fieldwork involved recruitment of research assistants and gatekeepers. My research assistants were colleagues I had worked with in the Department of Sociology in Gombe State University. All of them were familiar with the region and have experience in social research. As previously noted, the role of these research assistants was to aid in administering questionnaires to members of participating congregations and taking notes during in-depth interview sessions. Because I used interviewer-administered rather than self-administered questionnaires, I needed the assistants to conduct the questionnaires. In addition to these assistants, I also recruited two gatekeepers in each of the three states selected for data gathering. These gatekeepers were residents of the area who had first-hand knowledge about the participating congregation. They served as key informants and helped in negotiating

access to the participating congregations. In the selection of these gatekeepers, emphasis was placed on their familiarity with, as well as access to, the major religious groups and denominations in the area. These gatekeepers were contacted by telephone and a meeting was held to work out the modalities of the interviews. The gatekeepers helped me in identifying potential congregations and in making initial contact with each of the selected congregations. This was followed by a visit to each of the congregations to negotiate access to their religious groups for the purpose of both in-depth interviews and questionnaire administration. Before those visits, a list of major Christian and Muslim denominations in the area had been developed. For each of the listed denominations, major congregations were identified on the basis of accessibility, size (number of adherents) and location in the state capital. The selection of congregations was purposive, based on the following procedures and principles:

- Accessibility to potential participating congregations and feasibility of gathering data in those congregations was the first criterion I used in selecting from the list of religious congregations developed with the help of gatekeepers. This consideration was necessary at the time of data gathering when almost all of the six states of the NE Nigeria region were facing constant terrorist attack that focussed primarily on places of worship and military and police formations. Thus, only congregations that were found accessible and safe for data collection were selected for the interviews.
- Size was another criterion used in selecting congregations that participated in the study. Because religious congregations vary in size from very large congregations of tens of thousands of adherents to small ones with membership that runs into a few dozen, a minimum membership of 2000 was used in selecting participating congregations.
- Location in the state capital cities was another consideration in selecting congregations for data gathering. While many congregations in smaller towns and villages outside the three capital cities of Yola, Bauchi, and Gombe have the required number of adherents, and were accessible, I decided that since the security situation in the capitals was assessed to be better compared to other locations, data gathering should be limited to congregations based in those three cities.
- Another consideration was representation of each of the major denominations of both Muslim and Christian religious groups in the area. Because of a lack of official statistics on religious adherence in Nigeria, it is difficult to estimate the

population of Christians and Muslims in the region. However, estimates by some research agencies (eg PEW Forum, 2010) indicate that Muslims are dominant in the region, even though there is still a significant population of Christians spread across the area. The list of congregations I developed has reflected this religious demography with Muslim congregations constituting over 65%. Because denominational diversity was important to the study, an attempt was made to get a representation of each of the main denominations of both Christian and Muslim groups. However, while I was able to gain access to Protestant congregations, attempts to negotiate access to Catholic congregations failed because of a deadly suicide bomb attack that hit one of their Churches in Bauchi at the time. None of the other Catholic congregations contacted had agreed to participate in the study.

I assessed that applying these criteria in the selection procedure would enable data gathering with the greatest potential to generate insights into the topic under study. For this reason, four Muslim and two Christian congregations in each of the states of Bauchi and Gombe were nominated to participate in the study. In Adamawa state, where the population is roughly equally divided between Christians and Muslims, three Christian and three Muslim congregations were selected. With the help of my key informants, I contacted each of the selected congregations and drafted a formal letter containing detailed description of the study purposes and objectives, as well as participant information sheet and consent form, which were handed to their leaders or their secretaries. The denominational distribution of the congregations who finally agreed to participate in the study is as follows:

Congregation	Denomination	Number
Evangelical Church Winning All (ECWA)	Protestant/Evangelical	3
Dominion Power Assembly	Protestant/Pentecostal	3
Deeper Life Bible Church	Protestant/Pentecostal	1
Tijjaniyya	Sufi Islam	5
Salafi	Salafi Islam	6

Each of these congregations was requested to nominate one of their leading priests for the purpose of the ‘religious leader’ interviews. In almost all cases, the chief Minister of the Church or chief Imam - in the case of Muslim congregations - volunteered to be the key informants of their congregations.

Interviewing religious elites in a locality where religious leaders have the most significant influence in people's life (BBC World, 2005; Orubuloye, Caldwell, & Caldwell, 1993) is not a very easy task. I initially anticipated that the task would be made even more difficult by my dual identity as a native of the area and a researcher in a European university, which many religious fundamentalists view with suspicion and contempt. However, these attributes actually helped me gain the trust of the religious elite as evidenced by the ease with which I gained access to all 18 congregations and the narratives elicited during the interviews.

All 18 interviews with leaders of participating congregations were conducted between 24 September and 18th October 2012. Another three interviews were conducted with 3 selected environmental protection officials in Gombe with a view to gathering data on the perspectives of environmental protection officials regarding environmental problems in the region. All the 21 respondents were male. I did not collect information on age, nor did I collect other demographic data on participants. However, from my observation, most respondents were aged 45-60. Only one respondent appeared to be under the age of 40. All interviews were audiotaped with the permission of participants. Each interview session lasted for 50-70 minutes. Audio records of the interviews, mostly conducted in the local language (Hausa), were anonymised, then transcribed, then translated for the purpose of analysis and interpretation.

Approach to qualitative analysis

Before I begin to describe the process of analysing my interview data, it is important to restate my theoretical and epistemological position in relation to analysis of qualitative data. As I indicated in preceding sections, the methodological suggestions presented by the critical realist approach to social research are in conformity with the objectives of this study. That is to say, critical realist acceptance of the role of 'people's knowledge, views, understandings, interpretations, experiences, and interactions' in the construction of knowledge provide a methodological rationale with which to aim for an in-depth interpretive understanding of the influence of religious beliefs and experience in shaping environmental attitudes and behaviour as well as understandings and strategies of adaptation to environmental change. Qualitative research techniques, although diverse and complex (Braun & Clarke, 2006; Halloway & Todres, 2003), generally share certain methodological features. One of these features is that, regardless of their theoretical and epistemological orientation, the majority of approaches in qualitative analysis help researchers conduct a more in-depth exploration of respondent's narratives

than that undertaken during quantitative analysis, although how much more in-depth varies between studies (Attride-Stirling, 1998). Also, most methods of qualitative analysis seek to provide a flexible approach to organising, interpreting and reporting patterns within the data (Halloway & Todres, 2003). Furthermore, as Mason (2002:4) noted, different qualitative research traditions also share a broad 'interpretivist' philosophical position that is "concerned with how the social world is interpreted, understood and experienced, produced or constituted"; qualitative analysis techniques pay attention to elements such as social meanings, interpretations, practices, discourses or constructions. Another critical element shared by qualitative analytical approaches is their emphasis on producing contextual understanding of the problem under investigation (Halloway & Todres, 2003; Mason, 2002).

However, because distinct analytical techniques in qualitative research are products of a different history, philosophy, ontology and epistemology, each technique has a unique approach to research data and as such generates particular kinds of knowledge from analysis of the data. For instance, grounded theory approach emphasises creative conceptualisation of patterns and descriptive analysis of relationships between concepts and categories embedded in the data (Halloway & Todres, 2003) during the analysis stage, and using those concepts and categories to present a useful theoretical explanation about social interactions, events and experiences under study (Corbin & Strauss, 1990). For its part, interpretive phenomenological analysis seeks to understand how participants make sense of their actions and experiences and thus one searches for evidence in the data about such experiences and the meanings research subjects ascribe to them (Smith & Osborn, 2003). Discourse analysis sees language as a critical subject of investigation and thus focuses on understanding the role it plays in both creating and representing social phenomena (Willig, 2003).

Researchers using any of these methods have to work within the confines of the broad theoretical framework that informs their methodology. Tying their analysis to a particular theoretical position makes it difficult for them to pay attention to all important elements of the data. According to Halloway and Todres (2003:347), this attachment also undermines the "primacy of the topic or phenomenon to be studied and the range of possible research questions by finding a methodological approach and strategy that can serve such inquiry". Following an iterative review of the strengths and weaknesses of these different analytical approaches and techniques in qualitative research, and in line with the critical realist pragmatic stance to data collection and analysis, I adopted

'thematic analysis' (Attride-Stirling, 1998, 2001; Braun & Clarke, 2006) as the technique for qualitative data analysis in this study. Based on the nature of the data generated from in-depth interviews, thematic analysis offers a useful analytical tool for an in-depth exploration of narratives and discourses about environmental problems, religious environmental beliefs and behaviour, without undermining the need for flexibility, coherence and methodological rigour. Braun and Clarke (2006:79) define thematic analysis as "a method for identifying, analysing and reporting patterns (themes) within data". Although thematic analysis has wide-ranging philosophical origin, the procedure has its epistemological roots in interpretivism and social constructionism (Braun & Clarke, 2006). As stated earlier, these philosophical perspectives see social reality as 'constructed' and 'interpreted' by people in the course of their day to day interaction. Studies that are informed by these ontological and epistemological positions pay attention to the way individuals shape their society through constructing 'meanings' of their actions (Denscombe, 2010). As a method of analysis, thematic analysis not only helps in the management of research data and identifying and extracting themes embedded in the data, it also facilitates the interpretation of these patterns. Even though thematic analysis has its epistemological foundations in constructionist and interpretivist traditions, it is a method that is not necessarily glued to any one theoretical framework. What makes thematic analysis different from other methods of qualitative analysis, such as grounded theory, discourse analysis and interpretative phenomenological analysis, is the fact that thematic analysis is not a theoretically bounded method (Braun & Clarke, 2006). By virtue of its suitability to analysing data from a wide-range of theoretical and epistemological perspectives, I felt justified in choosing thematic analysis as the appropriate method to adopt in analysing my interview data. The next section presents the steps taken in that analytical process and the justification for each decision taken.

Thematic analysis

In order to make the systematic process of conducting thematic analysis of my interview data theoretically and methodological sound, flexible and coherent, an approach to thematic analysis called 'thematic networks analysis' (Attride-Stirling, 1998, 2001) was adopted and used in a way that fitted both the objectives of the study and the nature of the data. According to Attride-Stirling (2001:387-388), thematic networks are a way of conducting thematic analysis of qualitative data that uses a "web-like network as an organising principle and a representational means, and it makes explicit the procedures

that may be employed in going from text to interpretation". Thematic network's approach to generating themes and patterns in textual data systematically proceeds from the extraction of 'lowest-order' or 'basic' themes, to higher order themes that contain groups of 'basic themes', called 'organising themes, to overarching or 'global' themes that tell a particular story about the data or an aspect of the data. These different categories of themes and their interconnectivity are depicted in a web-like network that illustrates every single story, claim or argument generated from the data.

Before I explain how I utilised the thematic network approach in the analysis of my qualitative data, it is imperative to highlight some critical methodological decisions taken prior to the commencement of the analytical process. The first methodological decision made pertains to what counts as a theme in the data. In answering this question, I accepted Braun and Clarke's (2006:82) definition that a theme "captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data". The second methodological decision involves determining whether to conduct an exhaustive description of the entire data or carryout an in-depth account of certain themes within the data set. In this case, I chose the former and attempted to exhaustively analyse the entire data set at a 'reasonable' level within time and space constraints. Third, in this analysis themes are generated on the basis of both theoretical interests guiding the study as well as the 'salient' issues, ideas, and narratives inherent in the data. The combination these two interests in generating themes allows me to sufficiently extract all patterns that are useful to answering the research questions. Finally, in this analysis, themes were identified on the basis of either their 'explicit' (Boyatzis, 1998) or surface meaning, or their interpretive (latent) meaning. Accordingly, some themes were generated because of their surface meaning while others were generated on the basis of their underlying meanings. What follows is a description of the steps followed in generating and interpreting themes from the data using the thematic networks approach to thematic analysis.

Types of themes

Three categories of themes proposed by Attride-Stirling (2001:388-389) are (1) Basic Themes, (2) Organising Themes, and (3) Global Themes.

- A 'Basic Theme' refers to 'the most basic or lowest-order theme that is derived from the textual data'. This category of theme is generated from the data but has

little explanatory value unless grouped together and linked by a more abstract theme called an 'Organising Theme'.

- An 'Organising Theme' is introduced as a higher-level theme that "summarises the principal assumptions of a group of Basic Themes". Two or more related Basic Themes are connected to one another by an Organising Theme that reveals the common idea they represent. A thematic network contains two or more Organising Themes whose theoretical significance is represented by a higher-level theme called 'Global Theme'.
- 'Global Theme' is the highest-level theme that summarises the argument represented by groups of Organising Themes. Global themes are condensed representation of the central argument or conclusion of a thematic network as generated from the data.

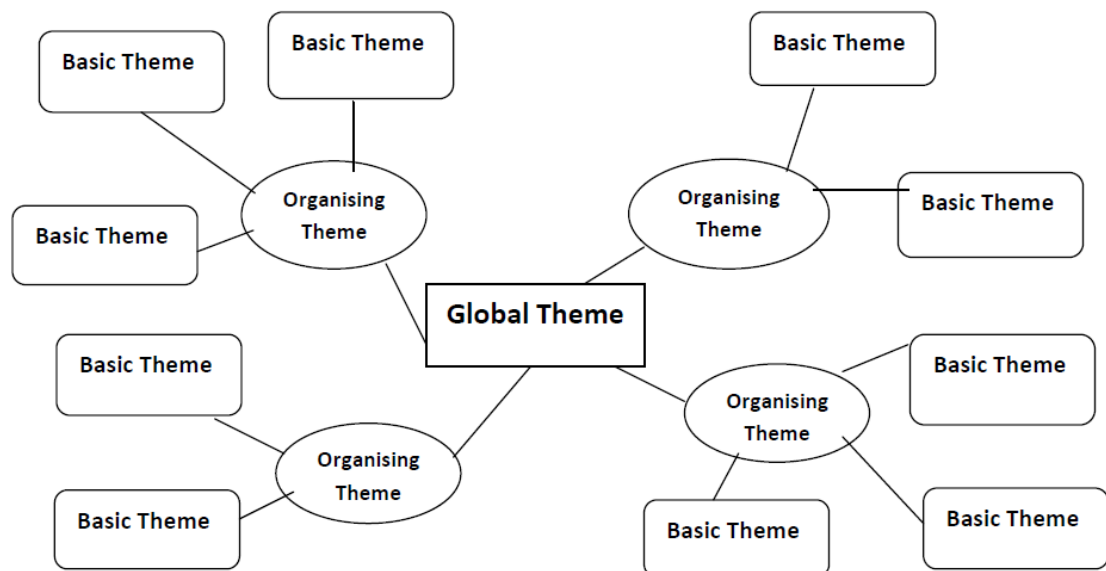


Figure 4.1: *Structure of a thematic network* (adapted from Attride-Stirling, 2001)

Analytical Steps

Step 1: Coding the text

The first step in the analytical process is dissecting the data to generate initial codes that were used to extract basic themes. In developing my coding framework, I was guided by both the theoretical interests of the research and the salient points inherent in the data. Thus, initial codes were identified in the data on the basis of either their relevance to understanding the role of religious beliefs in environmental attitudes and behaviour, or their salience or recurrence in participants' accounts of human-environment interaction

and environmental problems in the area. These codes were identified through reading and re-reading of the transcripts. All segments of the transcript that represent a phenomenon or idea that is either relevant to the research question or recurrent in participants' discourses were given a particular name (code). For example, some of the codes generated to dissect the data included 'stewardship', which is used to group sections of the data that talk about human's responsibility in preserving the environment. In all, 38 codes were generated in this first stage, to reduce the data into manageable chunks of similar 'stories', quotations, and discourses.

Step 2: Identifying themes

Having dissected the data using the codes generated, the analysis proceeded to 'abstract' themes that were salient in the transcript. This was done through line-by-line reading and re-reading of the entire transcript to get a sense of the emerging patterns in participants' narratives. As stated above, these themes were derived on the basis of either their theoretical importance or recurrence in the views expressed by the interviewees. Ideas that appeared frequently in participants' narratives as well as ideas that were viewed as theoretically important were conceptualised and classified into categories. These various themes generated were then refined to ensure that they represented significant ideas, accounts and patterns elicited in the interviews. This exercise produced dozens of concepts that represent the central ideas participants had expressed; these were grouped together under organising and global themes and represented in a thematic network.

Step 3: Constructing the networks

As illustrated in the 'structure of thematic network' above, themes that were abstracted from the data were grouped together under organising themes according to the underlying stories they share. A group of two or more organising themes were then interpreted at a more abstract level as 'global' theme which summarised the central argument represented by the organising and basic themes. In all, my analysis has produced 7 thematic networks, each summarising a distinct argument, claim or subject. The figure below is a thematic network illustration of a 'global theme' that I conceptualised as 'limitations to religious environmentalism':

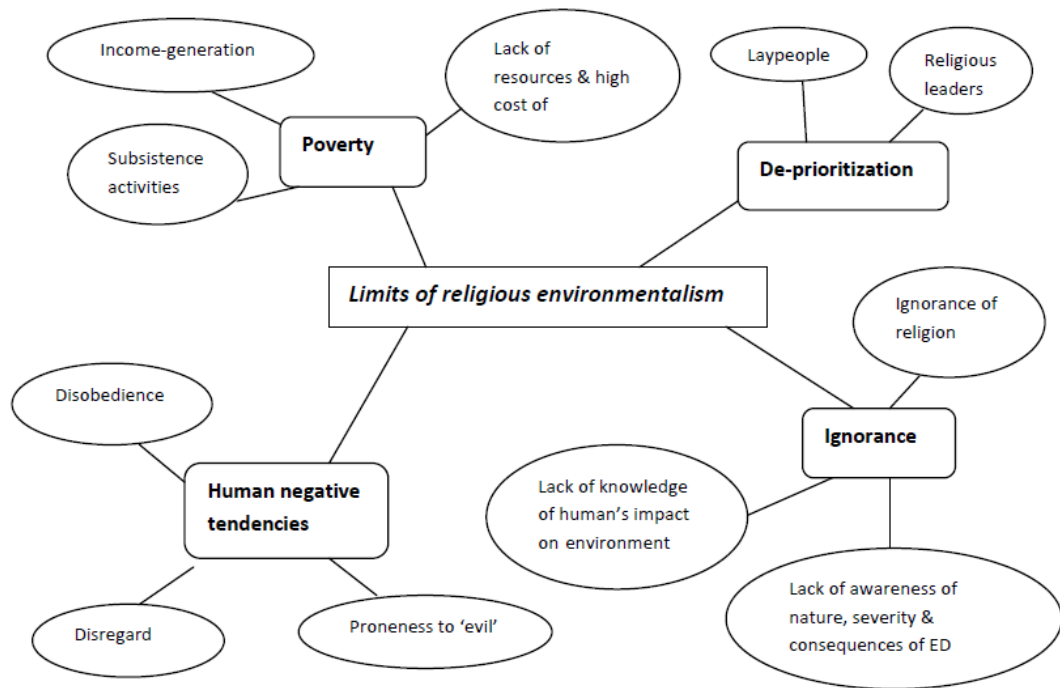


Figure 4.2: Thematic network for 'limitations to religious environmentalism'

Step 4: Describing and exploring the networks

With the representation of the 'basic', 'organising' and 'global' themes in a web-like map (network), the analysis proceeded to define, describe and explore the thematic networks. During this phase, each theme is described and explored using the data extracts (quotations) from the transcript which they represent. This exercise involved significant interpretation and analysis of the 'properties and dimensions' (Strauss & Corbin, 1998:116) of the themes represented in the network. As in the above example, each of the themes that represented participants' narratives that I conceptualised as limits of religious environmentalism were described and explained with the aid of direct quotations from participants.

Step 5: Summarising the network

The next phase of the analysis summarised key arguments of the thematic network without making reference to text segments from which they were generated. For instance, a vivid summary of how 'ignorance', 'poverty' and 'human negative tendencies' constitute barriers to the practice of religious environmentalism was presented.

Step 6: Interpreting patterns

The final analytical step was assembling all the summarised themes within the thematic networks that were produced in the analysis, and discussing these in relation to the research questions and the theoretical ideas guiding the research.

4.2.2. Questionnaires

In the preceding discussion of the philosophical orientation and theoretical interests of this study, I suggested that I adopted a methodological triangulation research strategy within the critical realist tradition to achieve the research objectives. I have argued that one of the research questions I sought to answer and the philosophical orientation I adopted in the study required a complimenting qualitative analysis of interview data with a quantitative analysis of data generated via questionnaires administered to members of participating congregations.

The first research question seeks to understand participant's environmental beliefs and their relationship with self-reported environmental behaviour. Quantitative research techniques proposed by positivist philosophy were found to be appropriate and compatible with qualitative methods. When combined with qualitative methods, quantitative techniques strengthen analysis by enabling researchers to obtain numerical data that can be used to measure patterns and relationships statistically.

As stated above, quantitative research approaches are often taken to be rooted in the positivist philosophy of social science which itself can be traced to developments in natural sciences, which began with notions of objectivity, evidence, and induction and emphasis on techniques of investigation that favour these principles. Such views were later embraced by classical social scientists such as August Comte and Emile Durkheim. Although there are quite a number of forms of positivistic methodological orientations in today's social sciences, they mostly share a common view that social phenomena can best be understood and studied through the application of natural science techniques that enable prediction, objectivity or value neutrality etc (Williams, 2006:230). Reality, according to positivism can be captured through observation by a neutral, objective social scientist in a way that would allow for prediction of behaviour. Positivists hold that the goal of the social scientist should be search for the 'truth' and explaining behaviour in terms of cause and effect. On the basis of this philosophical orientation, positivists advocate the use of quantitative research methods such as surveys, measurements and experiments that produce numerical data which can be used to make inferences or generalizations from the behaviour of a sample of the larger population (May, 2001). The epistemological and methodological orientation of positivism fits

neatly with a realist ontology which holds that social reality is regarded as something which exists 'out there' with properties that lend themselves to being objectively measured (Denscombe, 2010:131-132). Methodologically, positivist research is characterised by the use of a wide range of techniques and instruments that generate numerical data that can be used to 'explain' the relationships between social phenomena. Although using quantitative techniques is not exclusive to positivist research, my approach to quantitative data and analysis is more in tune with the assumptions of positivism highlighted above.

There are different research instruments for conducting quantitative research. The most widely used include structured interviews and self-completion questionnaires (Bryman, 2008). Self-completion questionnaires would have been more useful for this research in that they allow respondents to fill-in relevant questions under conditions of anonymity and confidentiality. However, in research settings like northeast Nigeria where the literacy level is low, this instrument might not have been workable. To minimise possible misinterpretation of the questions and increase the response rate, I found interviewer-administered questionnaires more suitable for this study.

Respondents and sampling

Respondents for this phase of data collection were selected from membership of the congregations that participated in the qualitative phase of the study. Probability sampling was thought to be the best procedure to give each individual member of the participating congregations an equal chance of being selected as subject. However, because it was not feasible to obtain a list of all worshipers who attended the congregations with which we could draw a representative sample, a non-probability sampling technique was the only option. Accepting the assertion that "sampling issues are inherently practical" (Kemper et al 2003:273), I used a purposive sampling strategy that aimed at "achieving representativeness and comparability" (Teddlie & Yu, 2007:80-81). Even though religious congregations are relatively homogeneous samples (Patton, 2002), I used convenience sampling strategy to identify and select potential respondents in each of the participating congregations for the purpose of questionnaire administration. This involved making announcements during Church services and congregational prayer sessions in mosques appealing to worshipers who were interested in taking part in the study to stay behind for a brief questionnaire-based interview. A total of 244 participants were interviewed face-to-face during the months of July and August 2013.

Measures

The questionnaire developed (see Appendix II) for this study measured self-reported environmental behaviours, anthropocentric, ecocentric and 'theocentric' environmental attitudes, general environmental attitudes (NEP) and demographics. Following Schultz, Zelezny, & Dalrymple (2000), self-reported environmental behaviours were measured by asking respondents to indicate *how often they have done each of the following behaviours during the past one year* (ibid: 580). Responses were measured on a scale of (1) *never*, (2) *rarely*, (3) *sometimes*, (4) *often*, and (5) *very often*. To provide a good measure of general environmental behaviour, respondents were asked to report both 'positive' and 'negative' environmental behaviours such as:

- Planted trees
- Used firewood/charcoal for cooking
- Discouraged others from cutting trees
- Used plastic bags
- Stopped buying products that cause environmental pollution/damage
- Disposed of plastic bags on the surface
- Encouraged others to use water 'moderately'
- Dumped garbage on refuse heaps or inside gullies

Anthropocentric and ecocentric environmental attitudes were measured using items drawn from Thompson & Barton (1994). Two other items were developed to measure 'theocentric' environmental attitudes. Some 11 items were adapted from the widely used 'New Ecological Paradigm' (NEP) scale (Dunlap et al., 2000; Dunlap & Van Liere, 2008) to measure general environmental attitudes. All items were rated on a Likert-scale ranging from (1) *strongly agree* to (5) *strongly disagree*.

Due to fear that participants in the area might find commonly used religiosity measures/questions - for instance do you believe the Bible/Quran is word of God? - ridiculous and offensive, only religious affiliation and denomination were measured. Age, gender, occupation, level of education, annual income and state of residence were the demographic measures included in the instrument.

Quantitative analysis

Because this phase of data analysis was intended primarily to complement the in-depth analysis of interviews conducted in phase 1, different statistical tests were conducted to

determine patterns in the responses participants gave to different items in the questionnaire. Frequency distribution, particularly simple percentages were used to compute the general ecological worldview of respondents, the levels of endorsement of dominion items in the scale and general ecological behaviour. In line with the objectives of the study, to determine whether there are statistically significant differences in general ecological worldviews (measured in terms of endorsement of NEP), commitment to dominion over nature, and the self-reported environmental behaviour of Christian and Muslim respondents, independent *t* tests were conducted. Same statistical tests were performed to examine the relationship between gender (males & females), levels of income and environmental worldviews, dominion beliefs and environmental behaviour. One-way ANOVA tests were conducted separately to determine whether there are statistically significant differences in general ecological worldview (measured in terms of endorsement of NEP), endorsement of dominion-over-nature beliefs, and levels of environmental behaviour between respondents with different levels of education. Pearson's *r* correlation was the statistical test I used to examine whether commitment to dominion-over-nature orientation correlated with lower levels of environmental behaviour. Chi square and Fisher's exact tests were conducted to explore differences in the endorsement of anthropocentric, ecocentric and theocentric environmental concerns among Christian and Muslim participants. All these statistical analyses were conducted using SPSS software.

4.3. Ethical and practical issues

In addition to design issues in the development of the research study, there were also many security, cultural, economic and ethical issues that I was confronted with during the course of designing the research and executing this design. Some of these challenges, as stated earlier, affected the research design itself.

The entire fieldwork was conducted during a period of heightened religious tension and ongoing insecurity that permeates the entire region. The study area has, for nearly five years, been affected by a brutal conflict caused by a militant religious insurgency that has claimed thousands of lives, according to official figures. Thus, security and safety concerns were the most important ethical and practical challenges I had to grapple with during the course of this research. Two of the six states of the region (Borno and Yobe) were assessed to be unsafe for field trips during the first phase of the fieldwork. Three (3) states (Adamawa, Bauchi and Gombe), considered to be relatively secure, were selected because they were experiencing lesser incidents of attacks by Islamist militants

compared to Borno and Yobe States during the period of August, September and October 2012. However, during the second phase of data gathering (July-August 2013), Adamawa state, like Borno and Yobe was also under emergency rule due to the worsening conflict. This conflict made it impossible for me to visit the state in the second phase of my fieldwork. As I mentioned above, the conflict also prevented me from gaining access to Roman Catholic congregations. While my inability to collect data in all the six states of the region and the rural areas has limited my data in some important respects, I am convinced that, despite these limitations, the data I collected have provided useful insights into the role of religion in environmental issues in the region.

Other ethical issues handled during the research relate to the sensitivities around religion in the research area. The historic sensitivity of religion in Nigeria coupled with the present tension between the major religious groups (Muslims and Christians) and inter-denominational rivalry and conflict was a major challenge. Discussing religion has become increasingly dangerous in Northeast Nigeria, the stronghold of an Islamist militant group that is opposed to western education (Boko Haram). The group is alleged to be behind a series of bomb blasts, gun battles and serial killings of security operatives and innocent people in all the states of the region. This situation of fear and insecurity had to be taken into account in not only selecting participants but also in designing the instruments of data collection. Certain questions about religiosity that I considered too sensitive had to be avoided in both in-depth interviews and questionnaires.

In addition to the constraints resulting from security-related issues, the perception of my role as a native of the area doing research in a European institution has also affected my interaction with some of the participants, especially the religious leaders. Mandiyanike (2009:234) and Visser (2000:64) have emphasised how the subject's perception of the researcher influences both the research process and the kind of knowledge that is produced from their relationship. In my case, the manner in which my research participants perceived me facilitated my access to their congregations and their willingness to answer my questions, and answer them honestly and thoroughly. Many of the religious leaders I was introduced to had expressed their excitement and appreciation for being selected to take part in the study. For instance, an Imam of a Muslim congregation in Bauchi stated that my visit to his congregation was "a recognition of their role in contributing to the betterment of the region". Another Pastor who was interviewed in Gombe urged me to 'publicise' their views so that policy makers

and intervention agencies would know their problems and offer "assistance". Many of them also thanked me for "reminding" them of the seriousness of environmental problems and of the possible role of religious organisations in addressing them. It appeared most of them assumed my research aimed to achieve some form of policy intervention. Despite the letters I wrote to them, the documents I attached and the verbal introduction I made during my first visits all indicating that the study was academic, some participants still insisted that I should "help" convey their "message" to policy makers. I saw this as both an advantage and disadvantage. An advantage in the sense that it aided my interaction with them, enabling free flow of information during the interviews, but a disadvantage since my research was primarily aimed at making theoretical not policy contributions. Similarly, I saw their concern, from an ethical point of view, as likely to influence the kind of information they were likely to provide. From the analysis, it was clear that they were more interested in proffering 'solutions' to the problem than revealing their understanding of the problem. Finally, despite the trust and confidence these respondents demonstrated, being a student of a Western University led some respondents to express concerns about how their congregations and region would be projected to the 'outside world' in the study. This was perhaps the reason one of the Pastors - the second person I interviewed - appealed to me not to "cast their people in a negative light" in the report. He complained that international research NGOs "always write negative stuff" about religious movements in Africa, stating that he hoped my research would not do the same. His comments prompted me to begin all subsequent interviews with a brief discussion of the ethical principles guiding my research and answering any questions they had.

4.4. Conclusion

In this chapter, I have discussed the epistemological and methodological foundation on which this study is based and the rationale for adopting a mixed-method approach. Also discussed were the qualitative and quantitative methods of data gathering and analysis that I employed as well as the ethical and practical challenges I was confronted with during the course of this research. I elaborated on the ways in which the design was developed, put into practice, and was affected by a variety of circumstances. The following chapters go on to present the outcome of the analysis of both qualitative and quantitative data and discussion of the research findings. The next chapter explores religious influence on environmental worldviews and actions using the thematic network of dominion-over-nature. The discussion draws from qualitative analysis of the

interviews with religious leaders and quantitative analysis of data generated from questionnaires administered to members of participating congregations.

CHAPTER 5 - RELIGIOUS INFLUENCE ON ENVIRONMENTAL WORLDVIEW AND BEHAVIOUR

This is the first of three chapters in which I present results of analysis of the data collected in this study. As previously outlined, one of the objectives of the study is to investigate the role of religious beliefs in shaping environmental worldviews and behaviour. I indicated in the literature review chapter that there are a number of ways this issue can be examined. One of the most commonly used starting points to understanding religious' influence on environmental attitudes and behaviour is based on White's thesis that identified religion - Judeo-Christian traditions in particular - with a social consciousness that stresses human dominion-over-nature. A commitment to this doctrine, argued White, leads to lower levels of environmental concern and even anti-environment actions. Following on from White (1967) and Hayes & Marangudakis (2001), this chapter presents results from the analysis of qualitative and quantitative data on a range of worldviews, attitudes and behaviour towards nature in the participating congregations. The aims were to understand the levels of endorsement of dominion beliefs among the participants, the various interpretations and narratives pertaining to the dominion doctrine they held and how such beliefs shape their interaction with nature.

Divided in three sections, the first section explores the thematic network of 'dominion-over-nature' generated from the analysis of interviews with religious leaders. As a starting point, I have adopted the theme of dominion-over-nature from the wider literature (see chapter 3) to explore discourses that centre on human's authority to rule over nature, the tendency to regard nature as created by God for the express purpose of serving humans, and the limits of human power to rule over nature. An emphasis was placed in the analysis on participants' narratives and interpretation of dominion theology. Also explored was the question of how these beliefs relate to environmental attitudes and behaviour. In the second section, I present the results of quantitative analysis of the questionnaire data generated from members of the congregations that participated in the study. Again, I used Lynn White's hypothesis as the starting point for examining the relationship between religious identification, dominion-over-nature orientation, and environmental attitudes and behaviour. In this section, an attempt has been made to understand whether Christian and Muslim participants differ in their commitment to

dominion-over-nature beliefs as well as in their environmental attitudes and behaviour, whether commitment to dominion orientation is associated with religious identification or with other social and demographic factors. Also examined is whether commitment to dominion belief is correlated with environmental behaviour. The third section presents a summary of the key findings of the chapter and discusses their theoretical implications.

It is worth mentioning here that in the presentation of my in-depth interviews data in this and subsequent chapters, verbatim quotations from interviews were used throughout analysis. By using a lot of verbatim quotations, I intend to not only 'give participants a voice' in the thesis, but also to give the reader a deeper understanding of the views expressed by the participants and how they are captured by the themes that emerged from my analysis. In order to enhance readability and comparisons, the serial number of the participant, their religious affiliation and denomination is indicated.

5.1. Dominion-over-nature narratives

The belief that nature is primarily created to serve as a source of livelihood for humans and that humans are created to rule over the rest of nature is a significant theme across the data. It is worth remembering that in the review of relevant literature (Chapter 2.3.), I indicated that dominion theology was often portrayed as one of the major lines of reasoning used by religious fundamentalists to justify continued exploitation of nature. However, in my interviews, dominion-over-nature theology was not presented by participants as necessarily implying a licence to subjugate nature. As will be seen in the following discussion, a majority of the respondents believed that dominion-over-nature can also be interpreted to mean responsibility to exercise stewardship of nature. Others opined that, for anthropocentric and spiritual reasons, nature needs to be exploited with moderation. Below is a thematic network pertaining to dominion-over-nature. In the network, dominion theology was built on three basic and interrelated premises, namely the belief that God primarily created nature in order to be used by humans, the belief that humans were created to exercise dominion over earth and the idea that human dominion-over-nature is meant to be a responsibility to look after ('take care') of nature. It can be observed in the quotations extracted from the respondents that all the three themes are salient in the narratives of both Christian and Muslim participants:

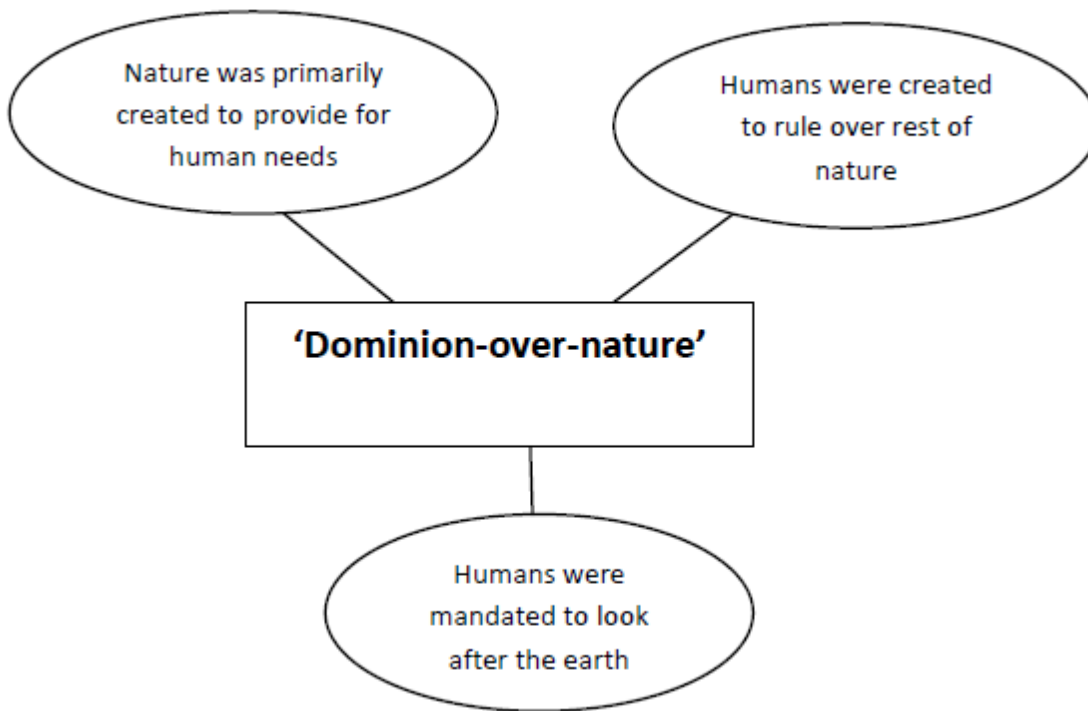


Figure 5.1: *Thematic network on 'dominion-over-nature'*

5.1.1. 'Humans were created to rule over rest of nature'

This sub-theme was adopted from the wider literature to summarise narratives that describe humans as the dominant species, specifically created to exercise authority over the rest of nature. One of the three major premises of the dominion-over-nature theology, as evident in the accounts of many participants, is the religious doctrine that God has delegated to humans the 'authority' to 'rule' or have 'dominion' over the earth and all other creatures. Participants drew from religious scriptures (Bible and Quran) as well as real life examples to support the argument that humans are created to exercise dominion over the rest of nature. Below are some examples of how participants expressed their belief in the divine authority humans have over the rest of nature:

And we equally believe that one of the purposes for which God created man was to cultivate the earth. [01: Pentecostal Christian]

Human was created to look after the earth. When God called him (human) vice-regent, He meant human is given the custody of the earth, that is to look after the earth and its resources, not to cause any harm on it. [07: Salafi Muslim]

In Genesis, the holy Bible says when God finished the creation of man, He said to man you are commanded to control and to subdue the earth. That is, man has to work on the land or the environment to cultivate it or to conserve it so that it does not affect its system (setup) the way God has planned it. So when He (God) finished the creation of the earth, He instructed man to be in-charge... [14: Evangelical Christian]

The issue of land degradation, first, from Islamic point of view, as revealed in the Qur'an, when God created human and made him to live on earth, He (God) Has created the earth so that human can have a conducive home. [03: Salafi Muslim]

From the quotations above, there is apparently no difference between Christian and Muslim participants in terms of articulation of a commitment to the belief that humans are the dominant, most important of all God's creations on earth. Four of the metaphors used by the participants - namely 'purpose', 'vice-regent', 'home' and 'custody' - in describing the basis and nature of the relationship between humans and nature are useful to the understanding of dominion orientation. First, both humans and nature were not only created by the same God, their creation, according to both Christian and Muslim participants, has a 'purpose'. For humans, the purpose, as participants espoused, is to be God's representatives or 'vice-regents' on earth. One of their (humans) primary duties as God's representatives is to exercise 'dominion' over the earth, maintain 'custodianship' of the earth, and to 'look after' the rest of creation put therein. On its side, the earth was seen as a dwelling or 'home' over which humans have a delegated right to ownership. Although participants did not reject the traditional views that scriptures contain commandments to humans to exercise authority, to 'subdue' and 'exploit' the Earth, or gain 'mastery-over-nature', their attempts to interpret such commands in terms of 'responsibility' towards the earth indicates a strong environmentalist worldview.

There is also a sense in some interviews that religious scriptural teachings were seen to provide adequate support for the worldview that humans are a 'superior' specie. In a number of interviews, direct reference was made by Christian interviewees to Genesis (Chapter 1.26) and Muslims to the Quran (Chapter 2.30) to legitimise the authority humans, as the dominant creature on earth, have over the rest of nature. Underlying this belief is an idea that both separates humans from nature and sees humans as part of nature. Perceived separation of humans from nature is evident in the views that participants have expressed which suggest that humans were 'sent' or 'made' to exercise authority over nature. On the other hand, seeing humans as a specie that is part and parcel of nature is salient to discourses that depict humans as occupiers of a position of authority in the hierarchy of species that make up the ecosystem. Although seemingly contradictory, both views were substantively represented in the beliefs shown in this interview data about humans' position in relation to the rest of nature.

5.1.2. 'Nature is primarily created to provide for human needs'

This sub-theme captures narratives that see nature from a purely utilitarian point of view. As can be noted from the quotations cited above, participants believed that humans have

been mandated to exercise dominion and authority over the rest of nature. In that respect, they (humans) were given a 'license' to exploit the resources of nature. Integral to the belief in the right of humans to exploit nature is the utilitarian perception of nature as a 'resource', 'source of livelihood' and 'repository of resources' necessary for humans' survival. Thus, dominion-over-nature involves not only the notion that humans have a divine mandate to rule over nature but also the view that nature's primary purpose is in providing the necessary resources for humans' survival and wellbeing:

Based on this, it is clear that the earth itself is primarily created to sustain human life. [03: Salafi Muslim]

In the religious scriptures, it is written that God created the earth, I mean the environment, for man to have a source of livelihood. That does not mean the earth it intended to be misused by humans. [15: Evangelical Christian]

Looking at the condition in which God created both the earth and humans, it is clear that the earth is primarily created to sustain human life. That is why in the Quran, God said to humans that 'the earth is there for you (humans) to sustain yourselves and to enjoy from its richness. [19: Salafi Muslim]

That is God's decree, as He stated in a verse of the Qur'an: "and the earth We laid [out] for the creatures and to feed from its riches". [10: Sufi Muslim]

In these statements which exemplify this position, participants were unanimous in the belief that nature primarily exists to serve humans' need for food and other resources. Like the authority to manipulate nature, this utilitarian view of nature was shared by Christian and Muslim participants alike.

However, all of the participants agreed that 'ownership', through divine mandate, of the earth does not entail a 'licence' to engage in activities that could harm the environment. They have all pointed out that the mandate given to humans by God to have dominion over nature is limited by scriptural teachings that place limits on human's activity on earth. These beliefs are necessary but not sufficient reasons for environmentally damaging behaviour:

From the Christian perspective, humans were given the authority to take care of the earth and not to ruin or mismanage it. Dominion over the earth does not mean causing harm to the environment. It is a command to us to look after the earth, as stewards. [15: Evangelical Christian]

Secondly, on the relationship between humans and the environment, it is stated in the Qur'an that God has laid (out) the earth so humans can benefit from it, so any activity that can damage or pollute the earth is prohibited in Islam. [03: Salafi Muslim]

God's command to man to keep the garden, work it, take good care of it therefore means that man was supposed not to abuse the environment in that regard. [04: Sufi Muslim]

So, we teach, as religious leaders that man should be able to actually... where you eat from, you should be able to maintain. [01: Pentecostal Christian]

These views provide further evidence of both acceptance of human's authority to rule over nature and anthropocentric beliefs that define nature in terms of its utilitarian value. However, as in the preceding sub-section, participants were prompt in following their views about nature's value to human's with a 'disclaimer' that God did not give humans 'unlimited' power to exploit nature.

5.1.3. Dominion as 'responsible custodianship'

In interpreting the dominion mandate as not implying licence to damage or harm nature, participants have provided another interpretation of the dominion theology which can be summarised as a moral responsibility to 'look after' or 'take care' of nature. This seems to be a contrasting interpretation of the dominion-over-nature doctrine. But, as shown in the quotations above, participants had presented dominion as a complex mix of mastery over and stewardship of nature. While the last two sub-themes describe humans' relation with nature as essentially anthropocentric and utilitarian, this conception of dominion stresses humans' responsibility towards nature. In the interviews, participants have spent much time trying to clarify what 'divine authority' to manipulate nature is and the limits that religions placed on humans' right to exploit nature. From their narratives, it is obvious that dominion-over-nature is also seen as involving 'responsible custodianship' of nature. 'Responsible custodianship' implies a religious ethical principle to care for nature, as ordained by God. It is based on an understanding of 'dominion' as implying taking care of nature and preventing it from damage and distortion.

Responsible custodianship also involves a recognition of what participants referred to as the 'rights of other creatures' to be spared harm and abuse by humans and to be used only in moderation. Here, the belief among participants is that licence to exploit nature is limited by religious teachings that prohibit wastefulness and unnecessary consumption as well as treatment of nature as a valuable property that deserves proper maintenance. As can be seen in the following quotations, both Christian and Muslim participants have expressed this understanding of dominion-over-nature as incorporating an ethical principle of responsible custodianship of the earth:

... so, we teach that man should actually not exploit the earth; he should equally give back to the earth. [01: Pentecostal Christian]

He (God) equally encouraged sustainable farming so as to preserve the land. If the land becomes polluted and degraded, there's no way we can live on it. [02: Salafi Muslim]

Human is created to look after the earth. When God called him (human) vice-regent, He meant human is given the custody of the earth, that is to look after the earth and its resources, not to cause any harm on it. ...He (God) encouraged us to be merciful to all living things. [07: Salafi Muslim]

Actually, as religious leaders, we try our best to make people see the reason why the land should not only be exploited but that it should be conserved not only for ourselves but for the future generations. [01: Pentecostal Christian]

Although the principle of responsible custodianship offers a contrasting perspective of human-dominion-over nature, there is no sense, in the discourses of participants, that the principle is in opposition to the dominion ideas that humans were created to rule over nature and that nature exists primarily to serve human needs. Instead, responsible custodianship of nature was seen as either another important tenet of the dominion belief or as a limitation placed by God on humans' power over nature. As reported earlier, some participants were keen to stress that dominion mandate should not always be seen as according humans an unlimited authority to exploit nature. Rather, it should be seen as both a 'permission' to engage in a 'moderate' exploitation of nature and a command to humans to engage in a 'mandatory stewardship of nature'.

5.2. Questionnaire results on ecological worldviews and behaviours

While the preceding section draws from qualitative interviews with the clergy who represented participating congregations, this section presents results of quantitative analysis of questionnaire data collected from members of participating congregations. The findings presented centre around the connections between religious identification, commitment to dominion orientation and environmental attitudes and self-reported environmental behaviours.

5.2.1. The instruments

As indicated in the preceding chapters, there are different ways of examining the role of religion in environmental concern and behaviour. In this section, I use the White's hypothesis to understand whether Christians and Muslim participants differ in their levels of endorsement of dominance-over-nature orientation and environmental concern and whether commitment to dominion theologies is associated with lower levels of environmentally responsible behaviour. Based on basic assumptions of the White's thesis, I hypothesised that Christian and Muslim respondents differ in their commitment to dominion theology and that commitment to this theology is associated with lower levels of environmental concern and pro-environmental behaviour. In order to assess the environmental worldviews of the religious individuals who participated in the study, 10 items from the revised New Ecological Paradigm scale (Dunlap et al., 2000) were adapted and modified. The theoretical background and major assumptions of this widely used and tested scale have been discussed in chapter three. In a nutshell, the scale

measures individuals' underlying environmental worldviews with a view to understanding their attitudes towards nature. The actual scale consists of 15 Likert items that focused on "beliefs about humanity's ability to upset the balance of nature, the existence of limits to the growth of human societies, and humanity's right to rule over the rest of nature" (Dunlap et al., 2000:427). Based on the objectives of this study, the 10 items adapted from the NEP scale were used to assess environmental worldviews in the form of anti-exemptionalism, anti-anthropocentrism, limits of growth, balance of nature, and eco-crisis. Because of the recurrence, in the qualitative interview data, of the belief in the power of God to take care of the earth and the conceptualisation of nature as God's creation that shares with humanity certain rights, the wordings in two of the items have been altered to capture these views. For each item, respondents were asked to indicate their level of agreement with the statements by choosing one of 5 options - strongly agree, moderately agree, unsure, moderately disagree and absolutely disagree. The five odd-numbered items were worded in such a way that agreement implies pro-DSP orientation while agreement with the five even-numbered items indicates pro-NEP orientation. Responses to pro-NEP items were scored as 5 = strongly agree, 4 = moderately agree, 3 = unsure, 2 = moderately disagree, 1 = strongly disagree. The scores were reversed for pro-DSP items to enable the computation of NEP orientation.

Consistent with the approach used by Schultz, Zelezny, and Dalrymple (2000), self-reported environmental behaviours were measured using a scale that contains items seeking respondents to state how often they have engaged in certain 'negative' or 'positive' private and public sphere environmental behaviours (see chapter 4). It is, however, worth restating that the environmental behaviours included in this scale are those that were recurrent in the qualitative interview data. They included tree planting, tree felling, indiscriminate waste disposal, wasting water and use of firewood and plastics.

Both private and public sphere dimensions of these behaviours were included in the scale to assess the frequency of both types of environmental behaviour. Responses were measured on a scale ranging from 1 (never) to 5 (very often). Accordingly, all the four negatively formulated items were reversed during coding. Responses to both NEP and self-reported behaviours were statistically analysed against demographic and religious variables.

5.2.3. General ecological worldview

The first part of the analysis examined respondents' levels of concern for the environment by investigating endorsement of NEP and determining, as hypothesised earlier, whether Christians and Muslim participants differ in their endorsement of NEP and rejection of DSP. To get a sense of respondents' level of agreement with NEP, scores for each of the 10 items of the revised NEP scale adapted (Dunlap et al., 2000) were computed to obtain an overall numerical representation of their ecological worldview. Consistent with the classifications used in previous studies (eg Kotchen & Reiling, 2000), respondents were, first, grouped into three clusters, based on the sum total of their NEP scores - out of a maximum score of 65 - as follows:

1. A total NEP score of less than 33 indicates anti-environmental worldview.
2. A total NEP score greater than 33 and less than 39 indicates moderate environmental worldview.
3. A total NEP score of greater than 39 indicates pro-environmental worldview.

Overall, the majority of the respondents (66%) held anti-environmental worldview, 25% reported moderate pro-environmental worldview, while 5% reported strong pro-environmental worldview. The NEP scores for the two religious groups (Christians and Muslims), according to these groupings indicate very little difference. First, the results of analysis suggest that 71% of Christians and 68% of Muslims hold anti-environmental attitudes, 27% of Christians and 26% of Muslims are moderately pro-environment, while 2% of Christians and 6% of Muslims are strongly pro-environment in their orientation. To determine whether there is a statistically significant difference in the levels of endorsement of NEP between the two religious groups, an independent *t* test was conducted. The result suggests that there is no significant difference between the mean NEP scores of Christians ($n = 63$, $m = 31.17$, $SD = 3.88$) and Muslims ($n = 173$, $m = 31.53$, $SD = 4.84$) $t(136.514) = -0.574$, $p = 0.567$. The effect size, $n_2 = 0.001$, was very small. This can be interpreted to mean that religious identification does not account for difference in terms of environmental concern within this sample.

Religion	Number	Percentage
Christianity	65	26.6
Islam	179	73.4
Total	244	100

Gender	Number	Percentage
Female	53	21.7
Male	191	78.3
Total	244	100

Table 5.3 Level of income		
Income	Number	Percentage
Less than £1000/year	73	29.9
More than £1000/year	62	25.4
No response	109	44.7
Total	244	100

Further analysis was carried out to determine the effects of gender, income and education on environmental attitude measured by endorsement of NEP. Tables 5.2, 5.3, and 5.4 show the percentage distribution of the sample in terms of gender, level of income and level of education respectively. These were among the key demographic variables that were frequently reported to influence environmental worldviews in a number of previous studies (Schultz et al., 2000). The results indicated that contrary to what was reported in previous studies, male respondents have reported a slightly higher pro-environmental orientation than females. 78% of females and 66% of males held anti-environmental worldviews while 18% and 4% of females compared to 28% and 5% of males showed moderate and strong pro-environmental worldviews respectively. Further analysis, however, found no significant difference between the NEP scores of females ($n = 51$, $m = 30.57$, $SD = 4.70$) and males ($n = 185$, $m = 31.67$, $SD = 4.56$) $t(234) = -1.518$, $p = 0.13$). Further, respondents who identified themselves as earning lower incomes ($< £1000/\text{year}$) have reported lower pro-environmental orientation than those with higher incomes ($>£1000/\text{year}$). 79% of lower income earners and 64% of higher income earners were found to be anti-environmental in their responses, while 21% of those earning lower incomes, compared with 27% of those earning higher incomes, were seen as being moderately pro-environmental. None (0%) of the respondents in the lower income category and only 9% of those in the higher income category reported holding strong pro-environmental orientation. The results from a test of statistical significance have also revealed that respondents with higher incomes tended to score higher in NEP than those with lower incomes, with a statistically significant difference in the mean NEP scores of respondents with low income ($n = 70$, $m = 29.71$, $SD = 4.12$) and those with high income ($n = 59$, $m = 32.46$, $SD = 3.56$) $t(127) = -4.006$, $p = 0.000$. The effect size, $\eta^2 = 0.1$ was small. The 95% confidence interval was -4.1 to 1.39. A

one-way analysis of variance was conducted to determine whether there was a difference in NEP scores of respondents based on the four levels of education in the sample. The independent variable included four groups: no formal education ($m = 38.00$, $SD = .00$, $n = 2$), primary education ($m = 31.29$, $SD = 5.31$, $n = 7$), secondary education ($m = 29.56$, $SD = 4.19$, $n = 39$) and tertiary education ($m = 31.70$, $SD = 4.56$, $n = 185$). The results showed that respondents with tertiary education tended to score higher in NEP than those with lower education. Post hoc comparisons to evaluate pairwise differences among group means were conducted using the Tukey HSD test. The test revealed statistically significant pairwise difference in NEP scores between respondents with secondary and tertiary education, $p < 0.05$. Respondents with no formal education or primary education only do not significantly differ from the secondary education grouping, $p > 0.05$. ANOVA test was significant enough to conclude that level of education, like income, is a more important predictor of environmental concern among this study's participants than religious identification.

Education	Number	Percentage
No formal education	2	.8
Primary education	8	3.3
Secondary education	41	16.8
Tertiary education	186	76.2
No response	7	2.9
Total	244	100

5.2.4. Endorsement of dominion beliefs

Following Lynn White's (1967) criticism of Judeo-Christian religious traditions of holding dominion-over-nature orientation, some researchers (see Hayes & Marangudakis, 2001) have argued that when it comes to dominion-over-nature, the main distinction is between Abrahamic and non-Abrahamic religions. Based on this characterisation of Abrahamic religions (Christianity, Judaism and Islam) as anthropocentric, the analysis here compares opinions of the Christian and Muslim respondents in relation to endorsement of dominion attitudes toward nature. As shown in table 5.5, almost all respondents reported strong endorsement of beliefs in human dominion-over-nature. However, a slightly higher number of Christians (94%) compared to Muslims (81%) reported agreement with the notion that humans were created to rule over the rest of nature. A one-way analysis of variance indicates that there is no statistically significant difference between Christian and Muslim respondents in terms of endorsement of dominion-over-nature beliefs. Although a large majority of

respondents have reported agreement with the anthropocentric idea that humans have the right to exploit nature to suit their needs, there is also a slightly higher percentage of Muslims (19%) who disagree than Christians (11%). Here too, analysis of variance results suggests no significant relationship between religion and commitment to the belief that humans have licence to exploit nature to suit their material needs.

Another pattern observable from the results of the analysis is that nearly all respondents (including those who hold pro-environmental worldviews) believed that the earth has an unlimited amount of resources to support human needs. Here, the level of agreement is slightly higher among Christian respondents (96%) than Muslims (90%). However, a significant majority of respondents (more than 80%) still agreed with NEP assertions that humans are severely abusing nature and that if this abuse continues there is a possibility of an ecological crisis. Also, a large majority of the respondents (86%) including those who reported dominion-over-nature orientation agreed with the NEP assertion that plants and animals, like humans, are supposed to be treated kindly. This confirms Dunlap and Van Liere's conclusion that "the public may hold 'inconsistent' attitude, endorsing contradictory ideas without perceiving the conflict between them" (Dunlap & Liere, 1978). The implications of these 'inconsistencies' in environmental worldviews will be discussed later.

Table 5.5 Frequency and mean distribution of the NEP scale items						
NEP items	%SD	%MD	%U	%MA	%SA	(N)
Humans have the right to exploit the resource in the land to suit their needs	10.7	6.1	2.5	23.0	57.8	244
When humans over-exploit the land it often produces disastrous consequences	2.9	5.8	1.2	12.3	77.8	243
God will always take care of the environment regardless of what humans do on it	19.8	8.7	5.8	15.7	50.0	242
Plants, animals are supposed to be treated kindly because they are also created by God	2.5	2.1	.8	8.2	86.4	244
Humans were created to rule over the rest of nature	7.0	3.3	5.0	14.5	70.2	244
Humans are severely abusing the natural environment	5.0	5.0	7.4	33.5	49.2	244
Desertification, drought, water and land pollution	15.4	7.9	15.4	31.1	29.9	24

have been highly exaggerated						4
The balance of nature is very delicate and easily upset	5.4	7.4	19.0	32.2	36.0	24 4
The earth has plenty/unlimited natural resource such as water, trees and land to support human's consumption	3.7	4.1	2.9	12.8	76.4	24 4
If we continue to exploit land resources as we have been doing, we will experience a major ecological crisis	6.6	6.2	3.3	20.2	64.0	24 4

5.2.5. Self-reported environmental behaviour

The next question addressed in the analysis was whether there are differences in self-reported environmental behaviours of respondents and whether these differences may be attributed to religious identification or other demographic and socio-economic variables as in the case of environmental attitude. To answer these questions, first, respondents' self-reported environmental behaviour was computed for each of the 9 items that constituted the scale. Based on their individual scores, which were awarded out of the total score of 49, respondents were grouped into three clusters, namely low, moderate and high pro-environmental behaviour, as follows:

1. A total score of less than 22.5 (50%) is classified as low pro-environmental behaviour.
2. A total behaviour score higher than 22.5 (50%) but less than 33.75 (75%) is considered moderately pro-environmental.
3. A total behaviour score higher than 33.4 is considered highly pro-environmental.

Scores for environmental behaviour indicate that the majority of respondents (64%) reported moderate pro-environmental behaviour, while 4% and 33% have reported high and low pro-environmental behaviour respectively. The frequency distribution for the 9-item scale shows that only about 10% of respondents indicated that they had planted trees to conserve the environment very often, while 7% reported that they often planted trees to conserve the environment. About 14% reported discouraging others from cutting down trees very often, while another 14% indicated discouraging such behaviour often. Similarly, only about 6% and 12% of the respondents indicated that they very often and often stopped buying products that cause harm to the environment, respectively. Also, 24% and 21% of respondents said they encouraged their families and friends to use water moderately, very often and often. Further, only 11% reported

picking up litter that was not their own very often and 8% percent said they often picked up litter that was not their own. These responses indicate low level of participation in both private and public sphere pro-environmental behaviour.

For the negatively worded items, the results show that the majority of respondents (72%) mentioned that they used firewood: very often (29%), often (15%) or sometimes (28%). About 65% reported that they used plastic bags, out of which 27% said they used plastic very often, 17% said they used it often, while 20% said they only used plastic bags sometimes. Similarly, fully 61% of the respondents indicated that they disposed of plastic bags on the surface instead of in bins, with 15% reporting participating in such behaviour very often, 14% often and about 34% sometimes. When respondents were asked to indicate how often they dumped garbage on refuse heaps and gullies, 18% answered very often, 22% often, while 21% said sometimes.

To ascertain whether there is a statistically significant difference in the self-reported environmental behaviour of Christian and Muslim respondents, an independent *t* test was conducted. The test found no significant difference in the reported environmental behaviour of Christians ($n = 63$, $m = 25.00$, $SD = 3.70$) and Muslims ($n = 168$, $m = 24.39$, $SD = 5.24$) $t(157.263) = 0.993$, $p = 0.322$. Since self-reported environmental behaviour was found to be the same among the two religious groupings, the analysis examined differences in terms of demographic and socio-economic variables. First, no significant difference in the mean environmental behaviour scores of males ($n = 180$, $m = 24.70$, $SD = 4.98$) and females ($n = 51$, $m = 24.04$, $SD = 4.46$), $t(229) = -0.855$, $p = 0.394$ was found. Second, there is also no significant difference in the levels of pro-environmental behaviour among respondents with higher incomes and those with lower incomes, as independent *t* test results indicate no statistically significant difference between the mean environmental behaviour scores of respondents with an annual income of $< \pounds 1000$ ($n = 66$, $m = 24.03$, $SD = 5.51$) and $> \pounds 1000$ ($n = 59$, $m = 25.15$, $SD = 4.28$), $t(120.67)$, $p = 0.204$. However, as observed with the NEP scores of the respondents in this sample, a one-way ANOVA test revealed a statistically significant difference in the levels of environmental behaviour of respondents with no formal education and those with tertiary education $p = 0.008$. Those with secondary education do not differ significantly from the other two groups. In this case also, the analysis found little support for White's hypothesis that religion has negative influence on environmental action.

Finally, I examined whether commitment to dominion-over-nature orientation correlated with lower levels of environmental behaviour. Here, the Pearson's r correlation test suggests that there is no empirical evidence in this data to support White's thesis that commitment to dominion beliefs ($M = 13.60$, $SD = 2.52$) correlates negatively with pro-environmental behaviour ($M = 24.56$, $SD = 4.87$) $r = -.027$, $p = .682$ [>0.05]. If anything, this finding calls for better understanding of religious individuals' own interpretation of dominion, which as the interview data indicates, was not interpreted as license to exploit nature as White and other observers suggested.

5.3. Conclusion

From the findings presented in this chapter, religious influence on environmental attitudes and behaviour appears complex. Findings from qualitative analysis of interviews clearly suggest that religious doctrines have a strong influence on how participants understand humans' position in relation to the rest of nature. This influence is evidenced by the prevalence of theologically rooted narratives that see humans as being created to exercise authority over nature, of nature as primarily created to provide for human needs and of humans as responsible custodians of nature. However, results from questionnaire data indicate that there is no statistically significant relationship between religious identification and environmental attitude and behaviour. There is, in the discourses that emerged from the interviews, a sense that religious influence on participants' worldviews about human relationship with nature is based on three interrelated but seemingly contradictory notions of a dominion-over-nature position. The widespread support of doctrines that emphasise humans' mastery over nature is consistent with White's hypothesis, discussed in chapter three. However, the interpretation of dominion as stewardship by interviewees and the overwhelming support of ecocentric items in the questionnaire, as well as lack of statistical relationship between commitment to dominion beliefs and lower environmental concern, contradicts White's thesis. The findings on dominion beliefs and environmental concern suggest that contrary to what is speculated in the literature on religion and environment, dominion-over-nature in this data is a complex religious principle/belief that combines attitudes of mastery over nature *and* stewardship of nature. As a complex principle, dominion belief was found to provide justification for a mastery over nature worldview, a worldview that could lead religious individuals to devalue nature. However, this predisposition to devaluing of nature is limited by an interpretation of dominion as a responsibility to look after nature. Similarly, the finding that both religious

identification and support of dominion-over-nature do not translate into difference in terms of levels of environmental concern and their behaviour contradicts White's simplistic assumption that dominion belief predisposes individuals to be anti-environment in their attitudes and behaviour.

The findings also indicate a strong endorsement of dominion-over-nature doctrine among both Christian and Muslim participants in both interview and questionnaire data, that is, at both congregational and individual levels. In other words, support for dominion-over-nature is the same between Christians and Muslims in this sample. This finding also contradicts White's assumption that Christians were more likely than non-Christians to believe in human dominion over the rest of nature. In my sample, there is no significant difference between Christians and Muslims in terms of support for dominion doctrines. This finding indicates support for theorists such as Hayes and Marangudakis (2001), who hold that a distinction needs to be made between Abrahamic and non-Abrahamic religions instead of Judeo-Christian vs non-Judeo Christian traditions.

In the questionnaire data, there was an overwhelming endorsement of anti-environmental (DSP) statements in the NEP items among both Christian and Muslim respondents. Conversely, in the interview narratives of the clergy, anti-environmental worldviews were clearly dismissed by making reference to religious doctrines that command stewardship of nature. Using the theory of structure proposed by Sewell, Jr., (1992) and Sherkat & Ellison, (2007), this discrepancy can be understood in terms of the interplay between religious and environmental schemas and resources. Based on that model, religious schemas and resources could have contradictory influences on environmental attitudes and actions. Accordingly, my interpretation of this discrepancy is that understanding of religious and environmental schemas varied between the two groups, and this variation has translated into different interpretations of environmental issues. As a result, while the narratives of the clergy tended to indicate higher commitment to NEP, the laity had reported an overwhelming endorsement of DSP. Availability of religious resources - in this case knowledge of religious and environmental schemas - might have empowered the clergy to reinterpret and transpose religious and environmental principles to the current debate about environmental problems in ways that emphasise stewardship instead of mastery over nature. As Sewell, Jr. (1992) noted, since structural resources can be interpreted in alternative ways, they can empower different actors in different ways, thereby teaching different schemas.

Individual actor's agency is determined by the amount of resources available to them at a given period. Thus, difference in resources could explain the discrepancy in environmental worldview between the religious leaders and laity in this sample. An additional interpretation of this finding is that, as Djupe and Hunt (2009) concluded, environmental worldviews of members of congregations can only be influenced by the clergy if there is an effective means of channelling environmental information. Perhaps, as can be seen in the next chapter, the lack of such avenues for environmental education within the congregations who participated in this study is responsible for the discrepancy in religious and environmental schemas reported by the two groups.

An important implication of these findings lies in their partial support for theories that stress values, especially religious values, as being important determinants of environmental attitudes. Support for such theories (eg Biel & Nielsson, 2005; Schultz et al., 2000; Sherkat & Ellison, 2007) has been found in my interviews with both Christian and Muslim clerics and is evident in the salience of religious theologies on human-environment relation throughout the data. However, when it comes to the issue of causal powers of religion to influence environmental behaviour, the findings in the second section of this chapter suggest little support for theories that see religious values as principal determinants of environmental behaviour. Rather, these findings tend to support the value-belief-norm (VBN) theory proposed by Paul Stern (2000). As seen in chapter 3, this theory brought together ideas from the norm activation theory, values theory and New Ecological Paradigm (NEP) to propose that environmentally significant behaviour is determined by a combination of causal factors such as environmental worldview (NEP), awareness of consequences of environmental action (AC), perceived ability to reduce threats (AR), and individuals personal norms. In my sample, findings are in agreement with the VBN's theoretical postulation that for beliefs about human-environment interaction to influence environmental behaviour, they have to be activated by awareness about the consequences of environmental action, individual's responsibility for taking corrective actions and individual's personal predisposition to act in environmentally responsible ways. Thus, the lack of support for the hypothesis that levels of pro-environmental environmental behaviour are associated with religious identification and support for dominion beliefs could be understood in terms of lack of activation of individuals' personal norms, ACs, and ARs.

Another support for the VBN theory of environmental behaviour is found in the relationship between income, level of education and environmental attitudes and

behaviour. These socio-economic variables were seen to have more impact on environmental behaviour than religious identification. Other researchers (eg Sherkat & Ellison, 2007) have contended that religious beliefs and values are not the only factors that influence environmental attitudes and behaviour. This conclusion has been supported by my data suggesting that, more than religious affiliation and commitment to dominion beliefs, education and income levels are the most significant factors affecting variation in environmental attitudes and behaviour.

Finally, even though both Christian and Muslim groups I studied have demonstrated strong commitments to dominance-over-nature orientation, there is no evidence to suggest that this orientation necessarily predisposes religious individuals to devalue nature and engage in a negative relationship with it. On the contrary, religious individuals themselves perceive this dominion as a divine command to preserve nature. While dominion and stewardship were treated in the wider literature as opposing religious environmental schemas, religious individuals in this sample interpreted stewardship as a component of the dominion command. On this note, even though the White's criticism of Judeo-Christian traditions has been associated with renewed efforts to promote environmental stewardship among religious conservatives (Hand & Van Liere, 1984), his hypothesis has proven inadequate to understanding religion's role in influencing environmental attitudes and behaviour. As suggested in chapter four, actors own interpretation of their beliefs and actions is critical to theorising religion-environment connection. However, due to over-reliance on statistical measures of environmental worldviews and behaviour, much of the existing literature has failed to sufficiently explore religious individuals' interpretation of the dominion command.

The salience of religiously-inspired discourses on 'stewardship of nature' in the interviews demand a more detailed examination of this belief, with a view to understanding how such orientation informs a more defined and conscious predisposition to protect the natural environment - 'religious environmentalism'. The next chapter presents discourses that not only question White's thesis but also reveal some evidence of the existence of a wide range of religious doctrines that stress human 'divine responsibility' to protect the 'rest of God's creation'. These discourses were evaluated to determine whether they have any impact on empowering religious individuals to engage in a positive relationship with the natural environment.

CHAPTER 6 - VARIETIES AND LIMITATIONS OF RELIGIOUS ENVIRONMENTALISM

This chapter presents an analysis of both qualitative and quantitative data on the theme of 'religious environmentalism'. The chapter is divided into three sections. The first section explores the thematic network pertaining to the 'varieties of religious environmentalism' which sums up discourses about religiously-inspired concern for the natural environment based on analysis of interviews with leaders of participating congregations. Integrated in this first section are the results of statistical analysis of questionnaire data on the three varieties of religious environmentalism obtained from individuals who participated in the quantitative phase of the study. It is worth remembering that statistical tests were conducted to explore patterns among individual members of congregations on the three major motives for environmental concern that emerged from the analysis of interviews with the clergy and environmental protection workers. The second section of the chapter explores thematic networks pertaining to 'limitations of religious environmentalism', which summarises narratives regarding the factors militating against religious pro-environmental actions. It is important to restate that the reason for reporting the results from qualitative analysis of interviews and quantitative analysis of questionnaires together is to give a detailed picture of both the meanings participants attach to their beliefs and actions, and the patterns of such beliefs and actions at the level of individual members of congregations. The last section uses Sewell Jr.'s (1992) theory of structure to summarise the findings presented in the chapter.

6.1. Evidence of Religious Environmentalism

Analysis of interviews and questionnaire data has produced some interrelated discourses in which participants saw religion as an important source of inspiration to engage in a harmonious relationship with the natural environment and/or to protect it from damage and destruction. Based on the principal motivation, I have broadly divided these religiously-inspired predispositions to "take actions with pro-environmental intent" (Stern, 2000:411) into three: 'ecocentric', 'anthropocentric' and 'theocentric' environmentalism. Each of these broad categories of religious pro-environmental

attitudes/behaviours have some interrelated but discrete sub-categories or 'basic themes' that directly derive from the data. Each of these sub-themes captures a set of ideas within the data-set that are relevant to understanding how participants articulate their views about religious environmental concern. It is noteworthy that although virtually all of the environmental ideas discussed below are seen to have religious backings, not all of them originated from religious scriptural teachings. I have categorized some of these ideas, beliefs, and practices as forms of 'religious' environmentalism because participants have used religious sources to rationalize them. It is also important to note that these categories are not mutually exclusive and their boundaries are not quite clear. As will be seen, more than one form of motivation and justification were expressed to explain environmental concern. The dominant ideas that represent participants' perception of nature and define the 'ideal' form of human/environment relationship are illustrated below:

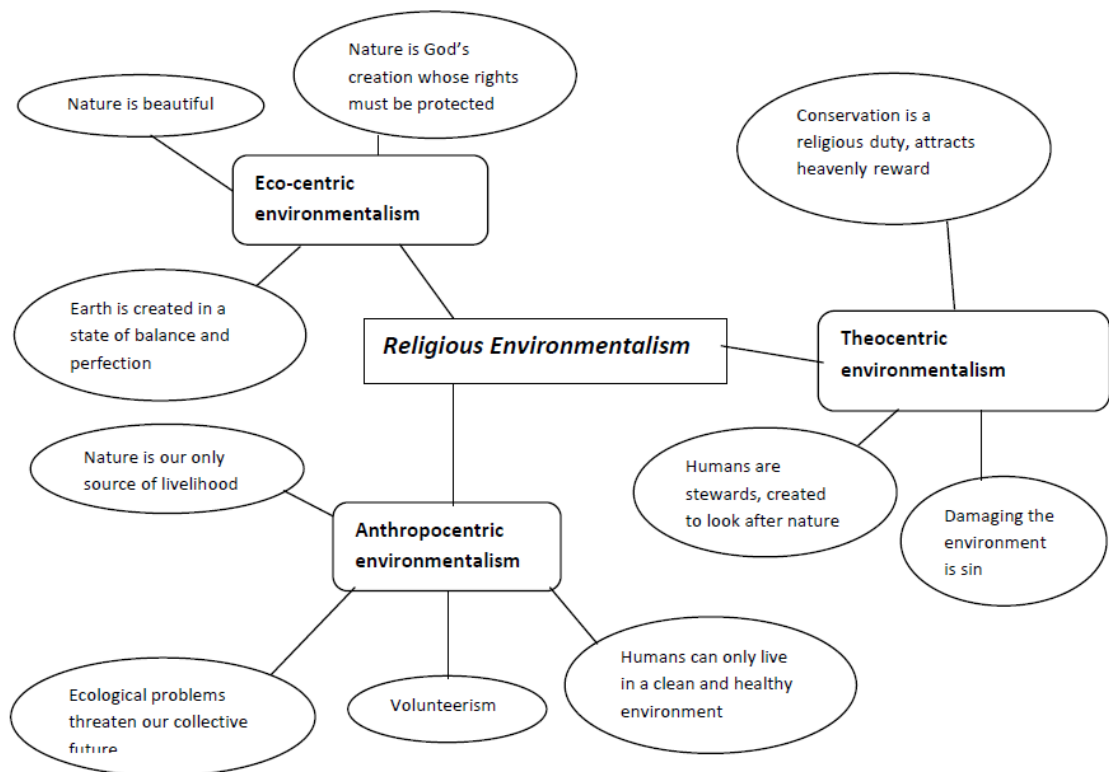


Figure 6.1: Thematic network for *varieties of religious environmentalism*

6.1.1. Religious ecocentrism

This can be described as the religious belief that nature has intrinsic value, which underlies some of the attitudes and behaviours that are in harmony with the natural environment. Such beliefs, as evident in the data, are mainly rooted in religious scriptures and provide strong motivation to manage and conserve nature. An

interpretive analysis of the narratives of the participants shows that ecocentrism revolves around the notion that nature, like humanity, is God's creation that deserves respect because it has its own value and purpose. This belief was justified by religious views which ascribe agency to nature and portray nature as beautiful, created in a perfect order, having rights, and by the view that earth's resources are finite.

'Balance of nature and perfection'

One of the major arguments participants advanced to support nature-centred religious environmentalism is the doctrinal view that nature was created in a state of balance and perfection. The earth was seen to be created in a perfect order and shape - a treasure that needs to be preserved from distortion:

He (God) warned humans not to indulge in activities that would harm the environment or distort the balance in the environment. God further warned in the Qur'an that humans should desist from spoiling the earth after it has been put in a perfect condition and shape. [18: Sufi Muslim]

Therefore the Islamic view of the environment is that it must not be spoilt or damaged. He (God) further warned humans to avoid distorting the natural balance of the environment, that is not to pollute the land, the water and the atmosphere. [02: Salafi Muslim]

Our people must accept to put into practice Allah's command that Muslims should avoid distorting the balance of nature. [07: Salafi Muslim]

Two important points are notable in these three quotations. The first was the expressed viewpoint that nature is as a perfect and balanced creature. This was followed by a command to preserve that fragile, balanced and perfect creature. Both the belief in the balance and perfect state of nature and the directive to preserve this pristine creature have theological underpinning. Thus religious individuals are expected to heed this 'warning' to 'avoid' damaging the environment in order not to upset its natural balance.

'Beauty of nature'

In addition to the belief in the balance and perfect state of nature, belief in the beauty of nature has also been emphasized as a drive for environmental concern. As God's creation, the earth is seen to be created in a 'beautiful', 'adorable' form:

The religion has provided a complete guide on how to relate with the environment, how to preserve its balance and beauty and so on. [07: Salafi Muslim]

Here, the preservation of nature's 'beauty' appears as another reason for a positive relationship with the environment. If nature is seen as something 'beautiful' it also implies a perception of nature as a precious but delicate creature that deserves care and protection from humans. Furthermore, appreciating the beauty of nature is an expression of gratitude to God. This inspires a belief in the sacredness of nature. A source of 'guidance', that is cultural rules, on how to interact positively with nature, with a view to

preserving her beauty, is said to be found in religious teachings and doctrines. Believers are therefore expected to access this religious knowledge on how to preserve the beauty of nature and use it in their interaction with the environment.

'Nature's rights must be protected'

Respect for the 'rights' of other creatures has also been highlighted as another important reason for pro-environmental attitudes and behaviour. Religious scriptures (Quran and Hadith) were interpreted to stress the need for valuation of nature and a recognition of her right to be protected from abuse and destruction:

The natural environment, like humans, has rights - the right to be protected from harm and damage. [02: Salafi Muslim]

If we take a look at the teachings of the Prophet, animal's rights, rights of the natural environments especially plants are prominent. [08: Salafi Muslim]

Here also, knowledge of religious principles that advocate respect for the rights of nature to be protected from harm and destruction by humans, according to this discourse, enables religious individuals to act in a responsible way in their interaction with nature. Ecocentric environmentalism has been observed among both Christian and Muslim interviewees. References to the beauty of nature, rights of nature and balance of nature were more salient in the narratives of Muslim participants.

6.1.2. Anthropocentrism

This theme summarises all human-centred environmental concerns that either derived or are inspired by religious beliefs. At the core of anthropocentrism is the 'dominionist' notion that sees human as the dominant creature and the rest of nature as a resources provided to support human needs. However, these narratives also focused on human's moral obligation to protect nature in order to guarantee human sustainability by preventing the harmful effects of environmental degradation. Like ecocentrism, this belief was inspired or supported by religious scriptural teachings. But unlike nature-centred environmentalism, anthropocentric environmentalism is based on religious principles that encourage problem solving and volunteerism to benefit fellow humans. Anthropocentric environmental concern was the most dominant form religious environmentalism in the discourses on human-nature relations and environmental degradation. Its higher recurrence in the data, in comparison with the other varieties of environmentalism, confirms the role of increasing environmental degradation in inspiring religious environmental movements.

Source of livelihood

One major premise upon which this form of religious environmentalism is based is the belief that the earth is the provider of all essential resources that sustain human life. Here, the instrumental value of nature is the primary motivation for restoring and conserving it:

...by properly cultivating, maintaining and taking care of the earth man can maximise the potentials that are in the earth. So, as religious leaders, we teach that man should be able to actually... where you eat from, you should be able to maintain. [01: Pentecostal Christian]

All these means Islam has come with very strict measures that would help protect the environment, because human life depends on the quality of the environment. [02: Salafi Muslim]

What I wanted to add is that, our society should know that Allah has mandated us to preserve and manage the land we depend on for our sustenance just as we preserve and manage our bodies.” [04: Sufi Muslim]

Protecting humans’ source of livelihood was seen to involve using resources moderately, restoring the depleting resources and avoiding wastefulness:

...we encourage people to actually not waste resources in their relationship with the land and not to equally waste the land; we should ensure that lands are properly tilled and like in biblical... the covenant of God and Israel, God told the people of Israel that they should observe a period of non-farming, I don’t know what it is called in agricultural terms, I am not an agriculturalist, you understand that. [01: Pentecostal Christian]

...having provided all these, God cautioned mankind not to waste the resources of the earth. [02: Salafi Muslim]

...And I said that if these (fruits) are what God gave us food (after our creation) then we need to keep and maintain the environment to give us the natural food we need to survive. Instead of cutting down a tree, think of planting a tree that can help supply you with good air and also get food from it. [05: Evangelical Christian]

'Ecological problems threaten our common future'

Environmental degradation was seen as both an existential and impending threat to human survival and welfare that calls for a transformation of our relationship with the natural environment:

Now that land degradation has become very severe in this region, and governments are beginning to realise the damage we are doing to the environment, as we saw in the recent flood disasters which clearly suggest that our environment has come under serious threat, I think the religious institution will begin to play a vital role now. [02: Salafi Muslim]

We must rise up and protect the earth from further degradation. If the earth is spoilt, our lives will be adversely affected. The challenge of desert encroachment, deforestation, floods, erosion and lack of sanitation is very real as we can see everywhere in the region. We are directly responsible for combating this challenge. [18: Sufi Muslim]

Religious teachings were presented as supportive of problem-solving, protection of the human species. Religion was used to activate environmental concern with a view to

preventing harmful effects of environmental degradation and improving the quality of human life:

God has also warned us against doing things that would harm us. [03: Salafi Muslim]

Religion always has a role to play in solving problems of humanity. So, even if the government does not promote environmental sanitation, sustainable land use etc, religious leaders can do that since their duty is to educate the people to do what will benefit them in this life and the next. [04: Sufi Muslim]

Religious leaders have a responsibility to change this bad situation. [07: Salafi Muslim]

Environmental pollution and wasteful consumption were the key issues raised during discussions on environmental degradation and the future of humanity. These environmentally damaging behaviours were linked to the major problems affecting the environment and threatening human sustainability.

'Volunteerism'

Volunteerism is another recurrent theme in the discourse on human/environment relations and addressing environmental problems. Many participants who referred to volunteerism when talking about environmental management and conservation seemed to derive their inspiration from religious doctrines:

Another thing is community participation in environmental management which is highly encouraged by the Prophet. He (Prophet) took part in organising people to plant trees and to clean the neighbourhood. He enjoined all his followers to individually and collectively play an active role in managing the environment. [08: Salafi Muslim]

Like in my church, once in a month we do what is called societal cleaning. We go on to the streets, yes, it is just a voluntary service ...we pick up wastes and.. we do a lot, clean people's environment as our own service to the community. So by so doing, I wanted to instil into them the culture of cleanliness and sanitation and helping to keep your environment in order. (01: Pentecostal Christian)

As religious leaders, we encourage people to form community-based associations to take care of the needs of their communities. The Prophet encouraged volunteering and community service, saying 'the best among you is he who brings benefit to others'. [08: Salafi Muslim]

Defined as religiously-inspired volunteering, environmental conservation is seen as one of the religiously recognised ways of fostering good community social life. This can be understood as a depiction of the religious dictum of 'serving God by serving others'.

'Humans can only live in clean, healthy environment'

Another warrant some participants gave for anthropocentric pro-environmental attitudes and behaviour is the notion that a clean and healthy environment is a necessary requirement for good human life. These participants provided religious justification for living in a clean and healthy environment:

If the land becomes polluted and degraded, there is no way we can live on it. [02: Salafi Muslim]

But they need to make it an important task because, without the environment life is impossible and you can only pray when you are alive and healthy. When there's flood or any other ecological crisis, who would have the ability to pray? [03: Salafi Muslim]

So I encourage people to maintain them, maintain your environment, don't throw such waste materials here and there because at the end of it, it makes your environment so clumsy and when your environment is not orderly and clean there is no way you can have the peace of mind to relate with your God. [01: Pentecostal Christian]

The basic need to live in a clean and healthy environment inspires this form of environmental concern. It must be emphasised - as the above quotations show - that the physical environment was basically viewed as a 'place of worship', whose ritualistic value depends on its cleanliness and purity. This view was shared by both Christian and Muslim interviewees.

6.1.3. 'Theocentric Environmentalism'

This 'God-centred' form of environmental concern was built on the belief that environmental stewardship is a religious duty which humans were directly commanded to undertake. Here, stewardship of nature was seen to be sanctioned by religious scriptures, defined as having certain spiritual benefits in the form of 'heavenly reward', spiritual healing etc. In the same vein, environmental destruction and wastefulness were viewed as amounting to disobedience to God. As a religious doctrine, believers are expected to accept injunctions which commanded stewardship of nature without questioning or personal interpretation. Like other varieties of religious environmentalism, theocentric concern for the environment has emerged in participants' narratives in 3 interrelated themes:

Environmental stewardship seen as a religious duty

Participants have made several references to human's religious obligation to conserve the natural environment. Muslim respondents drew from religious sources (e.g. Quran) and historical accounts of early Islamic communities to stress the viewpoint that nature conservation is an important religious duty:

So, planting trees is a very important religious duty... So all these are religious duties that Muslims are strongly encouraged to observe... [04: Sufi Muslim]

Accordingly, environmentally positive behaviours are regarded as signs of religious piety:

Actually, you know cleanliness is next to godliness. If you are godly, you are encouraged to be clean. ...God abhors disorderliness and so we encourage people that as long as you are serving God with one heart, your environment shall be clean. [01: Pentecostal Christian]

Also, environmental sanitation is an important component of the Islamic faith, according to the Prophet, ...whoever takes environmental sanitation seriously is a pious person. On the other hand, a person who doesn't take environmental sanitation seriously is not a pious person. [04: Sufi Muslim]

By the same token, environmental conservation and management is believed to be a rewarding activity:

Based on that, the Prophet said in one narration that among the actions and good deeds for which a believer will continue to receive reward after his death is a tree planted from which other living beings derive benefits." [04: Sufi Muslim]

Only religious scholars can convince our people that environmental conservation is a rewarding activity. ...If a local person is told about the teachings of their religion on environmental protection and they became convinced that it is rewarding, they'll surely do their best to look after the trees and even plant more." [03: Salafi Muslim]

Humans seen as stewards of nature

The belief that environmental stewardship is a religious duty is further espoused by an overlapping discourse which defined humans as stewards who were created to look after the rest of nature. Some Christian and Muslim participants maintained that humans' role and responsibilities as stewards on earth are clearly spelt out in the religious scriptures:

Human is created to look after the earth. When God called him (human) vice-regent, He meant human is given the custody of the earth to look after the earth and its resources, not to cause any harm to it. [07: Salafi Muslim]

...because the concept of *Khilafa* (vice-regency) in Islam connotes looking after something so as to preserve or improve it. When God sent Adam from the heaven down to earth, He sent him to look after the earth, that's why God provided laws and guidelines on how the earth can be managed and preserved." [02: Salafi Muslim]

The stewardship discourse shares with dominion theology the notion that sees humans' as occupiers of an apex position of creation in relation to the rest of nature in a hierarchy instituted by God. The stewardship discourse, however, differs from dominion theology in its view of humans as 'caretakers' not 'owners' of nature.

'Environmental damage is sin'

Closely related to the belief that environmental conservation is a religious duty that attracts heavenly reward is the narrative that damaging the environment is a 'sin' that could attract negative consequences. Many Muslim participants have affirmed this viewpoint and presented it to condemn environmentally damaging acts:

That is why God said that one of the signs of ungodly people and mischief makers is their destructive activities in the environment: "When he goes away his aim everywhere is to spread mischief through the earth and destroy crops and animals. But Allah does not like mischief. [09: Sufi Muslim]

Specific examples of behaviours that affect the environment negatively have been identified. From the examples given below, many Muslim participants saw land and

water pollution, indiscriminate harvesting of forest resources (especially trees), wasting resources especially water, and crops, as not only great sins according to their religion but also some of the major causes of environmental problems:

Also, Islam has prohibited polluting water with urine/faeces. That's why the Prophet warns that Muslims should avoid the curse of urinating or defecating on the road, under a tree, or inside water. [02: Salafi Muslim]

Someone would just decide to cut down a tree without thinking about whether that is allowed or not. Islam discourages cutting down trees or wasting their fruits. It also prohibits wasting water and polluting water sources. The prophet has cursed people who pollute the land. He encouraged us to be merciful to all living things. All these and many more are fundamental teachings of Islam. [07: Salafi Muslim]

Honestly, Islam's take on this is that, whoever does anything that harms the environment and other humans, is not a good Muslim. ...So, Islam seriously warned against doing this. Islam, according to the Prophet is a religion of cleanliness. Cleanliness is among the first things taught by the Prophet. [02: Salafi Muslim]

Secondly, on the relationship between humans and the environment, it is stated in the Qur'an that God has laid (out) the earth so humans can benefit from it, so any activity that can damage or pollute the earth is prohibited in Islam. For example, the Prophet has told us not to cut down certain trees. In fact even defecating under a tree is strictly forbidden by the Prophet. Also prohibited is urinating into running water. [03:Salafi Muslim]

6.1.4 Questionnaire results on varieties of religious environmentalism

Questionnaire data about individual members' environmental beliefs have revealed some consistencies with the patterns that emerged from the interviews with religious leaders. Generally, there is an overwhelming support among the respondents for all the three varieties of environmentalism presented above. Findings from the questionnaire data are presented below:

Ecocentrism

A significant majority of all respondents (87%) agreed with the view that one of the most important reasons to conserve the environment is to preserve the beauty and balance of nature. Slightly more Christians (89%) compared to Muslims (86%) showed agreement with ecocentric environmentalism. Chi Square test showed no significant relationship between religion and ecocentric environmental concern (Chi=2.170,df=2;p=0.338). Like anthropocentrism, slightly more men (87%) compared to women (84%) agreed. Agreement with ecocentric beliefs decreases with level of education as 100% of respondents with informal or primary education, 87% of those with secondary school education and 85% of those with tertiary level of education expressed agreement. However, more respondents with higher income (92%) compared to those with lower income (81%) have reported ecocentric environmental belief.

Anthropocentrism

Overall, 91.4% of respondents agreed that one of the most important reasons to conserve the environment is to ensure the continued survival and welfare of humans. Christians (92%) and Muslims (92%) agreed in roughly the same number. However, test for statistical significance using Fisher's exact test showed no significant difference between the two groups in terms of anthropocentric environmental concerns ($G=0.1;p=1$). Again, more men (92%) compared to women (90%) showed agreement with anthropocentric environmentalism. 100% of respondents with informal or only primary education, and 90% of those with secondary school education expressed agreement with anthropocentric environmental concern. However, 91% of those with tertiary level of education agreed.

Theocentrism

Two questions were asked to measure theocentric environmental beliefs. Respondents were first asked whether or not they agree with the assertion that one of the most important reasons for conserving the environment is to get 'heavenly reward'. The second question asked respondents whether their religions forbids destruction of nature. In all, 89% of respondents felt that conserving the environment attracts heavenly reward. The results also show that 94% of Muslim compared to 80% of Christian respondents agreed. Fisher's exact test shows a statistically significant relationship between religion and theocentric environmentalism ($G=11.877;p=0.001$). More men (94%) compared to women (79%) have expressed agreement. Agreement with theocentrism decreases with level of education: 87% of respondents with tertiary education agreed compared to 95% of those with secondary education and 100% of those with informal or primary education. Similarly, more respondents with higher income (93%) agreed, compared with those who earn lower incomes (89%).

On the second measure of theocentric environmentalism, 62% of all respondents felt that their religions forbid over-exploitation and damaging of nature. A higher proportion of Muslims than Christians (67% in comparison to 51%) agreed. Chi square test revealed a statistically significant difference between the two groups ($\text{Chi}=7.804,df=2;p=0.019$). A higher percentage of males (67%) in comparison with females (49%) reported agreement. As with the first question, respondents with higher education and those with higher income reported higher agreement in comparison with those with lower education and lower income.

6.2. Limitations to religious environmentalism

In the preceding discussions, participants' views on positive environmental attitudes and behaviours were presented to show how religion provides motivation for environmental concern and influences pro-environmental behaviours. The variety of perspectives summarised above indicate that religion empowers individuals to act in an environmentally responsible way through a set of principles, guidelines, and procedures (or 'schemas' according to Sewell 1992) inherent in the belief system. In that way the institution of religion can be seen as enhancing or constraining the agency of individual environmental actors. However some of the participants quoted in the preceding sections saw this agency to act in an environmentally responsible way as dependent on, among other things, knowledge of these principles and ability to creatively apply them. This brings into the discussion the issue of what structural theorists call 'resources', without which the application of cultural schemas by social agents is not possible. The rules-resource interconnection was manifest in the patterns that emerged from the analysis of interviews with the clergy. Responding to the question of whether these environmental beliefs and principles really translate into conscious actions to protect the environment, participants have revealed a discrepancy between beliefs in religious environmental principles and ethics and actual environmental behaviour. First, none of the clergymen interviewed reported making a speech to their congregation about religious environmental principles or about any environmental issues. Second, only one congregation reported organising periodic environmental protection activity (sanitation campaign). Third, none of them was aware of the existence of a religious environmental movement in the region. Fourth, all participants have reported observing widespread environmentally-damaging behaviours among members of their congregation and little practice of religious environmental ethics. Fifth, all participants have expressed good understanding of the key environmental problems affecting the region and the threats they pose to their livelihoods and welfare. The analysis proceeded to identify themes that capture narratives pertaining to what has been identified as a 'gap' between the principles and practice of religious environmentalism. The analysis has revealed three major themes each of which contains recurring and interrelated sub-themes which summarise participants' arguments on why religious environmental principles have not translated into conscious efforts by faith communities to conserve nature and fight environmental destruction in the region. I have conceptualised these major themes pertaining to limitations to religious environmentalism as: 'poverty', 'ignorance', 'de-

prioritisation', and 'humans' negative tendencies' as represented in the thematic network below:

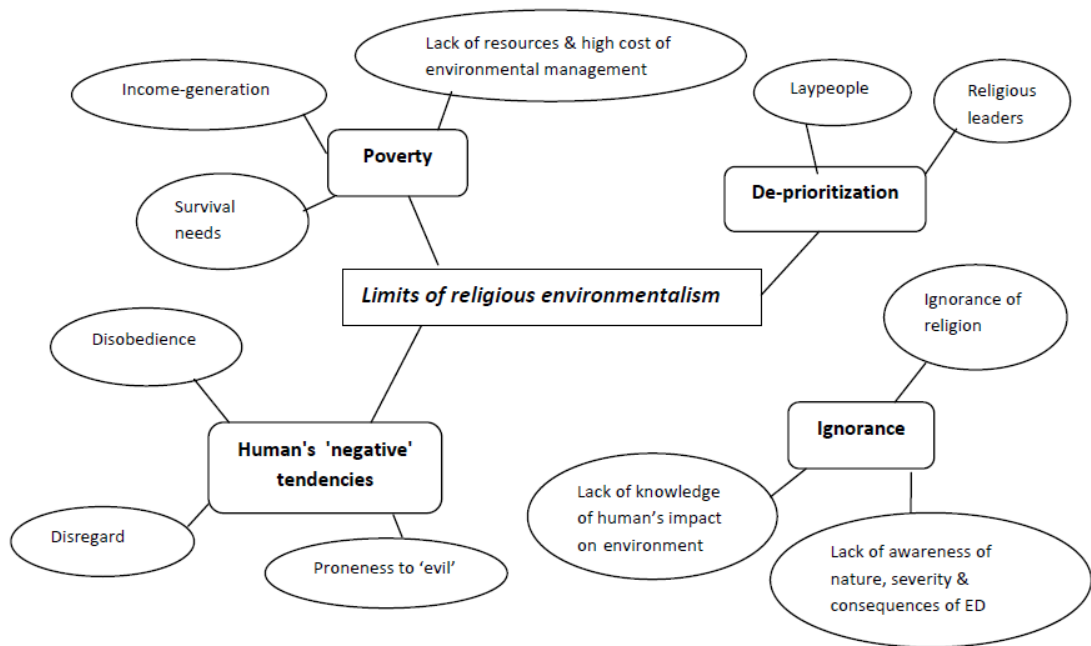


Figure 6.2: Thematic network for *limitation to religious environmentalism*

6.2.1. Poverty

Well, in my opinion... there has been an increase in land degradation in this area and the major thing which I think is causing it is poverty. Truly speaking, poverty has caused a lot of trouble to our environment here. [05: Evangelical Christian]

The majority of participants made reference to 'poverty' as a key obstacle to the practice of religious environmental principles. Although participants' position on the degree to which poverty militates against pro-environmental behaviour differ, their conception of 'poverty' is clearly the same across board. When mention is made of poverty, participants generally implied conditions characterised by lack of material resources necessary to afford what is considered a modest standard of living by Nigerian standards (see chapter 2 for a discussion on the poverty profile of Nigeria). I have broadly classified discourses on poverty in the interviews into three analytical sub-categories on the basis of how lack of material possessions impede people's pro-environmental behaviour and/or prompts them engage in environmentally-destructive behaviour. The sub-categories are: 'survival needs'; 'income-generation'; 'low income' factors and high cost of conservation/management.

'Survival needs'

As reported above, the majority of participants have stressed the importance of environmental conservation and management, and disapproval of activities that cause damage to the natural environment in their religious traditions:

Actually, as religious leaders, we try our best to make people see the reason why the land should not only be exploited but it should be conserved not only for ourselves but for the future generations. But the reality on the ground makes it very difficult sometimes... [01: Pentecostal Christian]

However, they have also argued that poverty 'forces' many people in the region to engage in activities that cause harm to the environment in order to meet the basic needs of food, energy and shelter:

...so because of lack of such resources for use, the people are forced... I would use the word forced, to cut down trees to cook meals... you understand that... so by so doing... it actually brings deforestation and desertification. [01: Pentecostal Christian]

If you look at the high rate of deforestation in this region... it is high because people are poor and cannot afford alternative sources of energy. [03: Salafi Muslim]

...but the important thing I have noticed is that people are so poor that they cannot let these trees grow without cutting them down for fuel wood. So, we are using our trees, we are using them not because we don't know their environmental value. [05: Evangelical Christian]

...Some also do so in order to get firewood for domestic energy use. That is why it is difficult to arrest the problem of deforestation in this region because the people have to be provided first with alternative sources of energy like kerosene and cooking gas for them to stop cutting down trees for charcoal and fire wood. [06: Environmental official]

These accounts can be taken to mean that it is absolutely impossible for certain groups of people - the poor in the society - to refrain from exploiting nature, because their survival depends on it. I am interpreting participants' responses to indicate a probable 'conflict' between environmentalism as established by religious principles and the 'survival needs' of the majority of people in the area. In such situations people are naturally poised to prioritise 'survival' over the long term gains of environmental protection and management. Thus, even though respect for and stewardship of nature are a central tenets of their religions, in practice, environmentalism is secondary to meeting basic needs:

...people always consider lack of alternative sources of energy and job opportunities as excuses to engage in bush burning and deforestation. And that is an Islamically accepted way to respond to situations like this... necessity is an acceptable excuse to do what is otherwise disallowed. [09: Sufi Muslim]

...according to Islamic law, better alternatives must be provided to people before urging them to stop doing things they need to do to survive [18: Sufi Muslim]

As an 'acceptable excuse', necessity-driven negative environmental behaviour is not seen as religiously improper because "humans are not held accountable for offenses committed out of necessity" [09: Sufi Muslim]. Many respondents have noted that in a society where the majority of people are "extremely poor", it is difficult for the clergy to preach against such behaviours as bush burning and firewood harvesting. As one

respondent put it, followers “would not take your advise seriously because of their economic situation”. He further asked “how would they survive if they were to stop using firewood?” [13: Pentecostal Christian]. This means that even though religious leaders command a very high degree of influence on members of their congregations, followers assess messages from such leaders before a course of action is taken.

It is apparent that most of the ‘subsistent’ environmentally damaging activities that fall under the category of ‘acceptable evils’ are associated with the search for food or energy, for domestic as opposed to commercial purposes. Like food, energy also featured as an ‘essential human need’ throughout the interviews. The major subsistent activities cited by participants are bush burning, deforestation for firewood, clearing of land for agriculture and, over-cultivation. In the case of bush burning, one participant said:

When we are talking about the issue of bush burning, we are talking about the same issue of poverty. A person looking for a rodent or rabbit... and the bush is too tick for them to get to the animals, so they might decide to set the whole bush on fire. It is not as if people are not aware of the effects of their actions and the importance of the environment. [05: Evangelical Christian]

This participant has emphasized that people who engage in activities like bush burning have what I term ‘knowledge of environmental problems’ but that their economic situation makes them to ‘prioritize’ getting food from the bush over leaving the bush in a healthy state.

Thus, although respect for nature is an important tenet of their faiths, in practice, it is subject to meeting basic human needs. When those basic needs are in jeopardy, environmental protection and management is considered inconsequential.

'Income generation'

The second sub-category of poverty-driven activities that participants identified as constituting practical barriers to religious environmentalism and listed among the underlying causes of increasing environmental degradation in the region are those that are driven by the need to generate income to earn a living. At the centre of these discourses is the conception that extreme poverty and lack of alternative sources of income propel some people to engage in environmental destruction to earn a living:

...some do so in order to earn income from selling fuel wood or charcoal, which is a very important business here [06: Environmental official].

When you are talking about the issue of environmental degradation such as bush burning, deforestation and the rest, you are dealing with the aspect of people going into these things (activities) to earn a living. [05: Evangelical Christian]

We basically have no other source of energy apart from the firewood. The firewood sector is employing hundreds of thousands of youths in the villages who had no work to do during the

dry season. Firewood and charcoal vendors can be seen in all nooks and corners of the cities. These people have no other means of earning income besides selling firewood. [11: Salafi Muslim]

The people who engage in businesses that are considered damaging to the environment were seen as doing what they were doing out of necessity and are likely to stop the business and venture into other businesses if viable alternatives exist. One of the participants has stressed that view in his remarks:

If alternative and better sources of energy are developed, people who buy and sell firewood or charcoal as well as those who are in the bush cutting down the trees and transporting them to the cities would have no option but to go out of such business. [18: Sufi Muslim]

These income-generating activities were further linked to what some participants have identified as 'patronage' of cheaper fuels and other environmental resources by the poor families. This patronage boosts and sustains environmentally-damaging activities that are driven by desires to earn income. Such income-generation activities were seen to depend directly on availability of market for firewood, charcoal, bush meat etc. Patronage for such goods is in some ways also poverty-driven as the people's income level is too small to enable them afford other sources of energy like kerosene or cooking gas, while electricity is said to be unavailable:

Because I cannot afford cooking gas all the time and electricity is almost totally unavailable I was compelled to decide between buying fuel to power my generators and cooking gas. If I am to go for cooking gas we will be sleeping in total darkness throughout the night. So the best thing to do is to go for firewood and save some money to maintain our power generator. I ask God to forgive me for contributing to environmental degradation by patronizing firewood sellers every day. [16: Salafi Muslim]

Sometimes I spend 60,000NGN a month (£240) on cooking gas in my house. This is almost four times the minimum wage in this country. How much is my income, Mr Shehu, to keep spending these huge amounts on cooking gas every month? Is that sustainable? That is why I ask my wives to use firewood most of time. They don't like it... and I know it is not good for their health but... what can I do? [18: Sufi Muslim]

Two important issues are discernible from these quotes. First, due to a lack of sufficient resources, people have no choice but to patronise firewood vendors and in doing so contribute to sustaining the business of firewood sellers and indirectly contributing to deforestation. Second, the participants tried in different ways to assert their concern for the environment in making choices about energy consumption. However, the 'situation' does not allow them to put their concern for the environment into practice in relation to energy consumption, as their choices were limited by lack of resources.

Lack of resources and high cost of environmental management and conservation

Another strong theme that emerged from the discourse on poverty and religious environmentalism is that the 'high cost of environmental management and

conservation', in relation to people's material conditions, prevents them from conserving the environment and managing its fragile resources. This narrative underscores participant's understanding of the role of conservation and proper management of finite resources as well as their knowledge of the effects and consequences of failure to 'manage' and 'preserve' the environment:

If you are very poor, you want to explore the farm and cultivate every land available. So I see poverty as the reason why it is difficult for people to actually adhere to these biblical teachings, not to just exploit land but to also be able to maintain it. [01: Pentecostal Christian]

The other way in which poverty contributes (to land pollution) is because some people cannot also afford to buy bins in their homes so that the waste collection workers can easily collect and dispose of them. These bins cost about 4000NGN (£16). How many people can afford to take 4000NGN out their meagre income to buy a waste bin? How much is the minimum wage? You cannot waste your meagre resources on a waste bin when you have other priorities like food, water and hospital bills to settle. So it is easier to get a corner in the area, an undeveloped plot of land or drainage and dump the wastes there. [05: Evangelical Christian]

We are too poor and disorganised to have the time to look at the environment and rescue it from degradation. Even our homes are unclean, our walls are collapsing on us, yet we cannot do anything about it because we are living miserably and not hearty and relaxed. That is to say, with our poverty and misery we cannot do what it takes to even maintain our homes, let alone, the larger environment. [10: Sufi Muslim]

...most people have planted trees in their houses either as a source of shade, a windbreaker, or a source of food. But outside their homes in the bush nobody wants to manage the trees there. They see that as the responsibility of government, and think that planting and managing trees outside there in the bush is expensive. [13: Pentecostal Christian]

People need money to plant and maintain trees, when they have no resources to do that, the environment is affected. When people lack resources to construct drainages in their neighbourhood or to maintain a proper landscape to prevent erosion of the top soil, there's no way they can stop erosion. [10: Sufi Muslim]

In these quotes, participants have expressed a common belief in the desirability of pro-environmental behaviour as well as the importance of environmental management. However, the 'material condition' of the people affects their ability to 'invest' their resources into managing the environment and to put into practice their beliefs and ethics about the environment. That is to say, individuals who are overwhelmed by 'struggle' to meet 'daily necessities' like food, and so hardly have any 'surplus' to spend on environmental management and conservation. Even routine activities like bush fallowing by subsistent farmers, implied one of the participants quoted above, requires adequate land to carry out. The same resource constraints make typical activities like household waste management, which require only small resources to buy waste bins, difficult to afford, according to one of the participants. The usage of the term 'waste' instead of 'spend' by the second participant while describing a pro-environmental behaviour (proper waste disposal) is indicative of the degree to which poverty could affect people's ability to put their values into practice. Some other environmental conservation and management activities identified by participants included tree planting

and 'community erosion control measures'. These activities were also seen to require material resources that are not available to the majority of the population. In the absence of 'investment' in managing the environment, ecological problems and degradation become inevitable.

Furthermore, religious environmentalism at congregational level is also constrained by lack of resources. Religious congregations were seen to be crucially positioned to provide environmental leadership in communities. But as one respondent implied below, they do not have the resources to do so. In the absence of resources to advance and support environmental management, the clergy saw themselves as only capable of providing environmental education and creating awareness:

The challenge is that most religious organisations lack the financial resources to sponsor such (environmental protection) campaigns. But at the individual level, we can all play our little role in passing the message. It is incumbent on us to educate our neighbours, our families and relations on the responsibility of protecting the environment and managing resources. [11: Salafi Muslim]

However, not all participants agreed with the characterisation of environmental management as an essentially costly activity. Also, some interviewees did not see poverty as a major factor responsible for the discrepancy between people's professed environmental values and their actual behaviour towards the environment. Two participants have attempted to differentiate pro-environmental behaviours that cannot be constrained by economic conditions and those that require some material investment to perform. To these participants, not all environmentally damaging behaviour can be linked to poverty:

To be poor does not mean to live in an unsanitary, untidy environment. To be poor does not mean you should gather your household wastes and dump them anywhere you find... there are appropriate ways of waste disposal but as you can see here, people have littered the whole place with used plastic bags... [14: Evangelical Christian]

There are certain basic things that we can do regardless of our economic conditions. I know poverty can prevent us from doing some few things that require so much resources like looking after the forests, but not things like keeping our environment healthy by minimising pollution. [08: Salafi Muslim]

6.2.2. 'Ignorance'

'Ignorance' is yet another strong theme that dominated discourses on the obstacles to the practice of religious environmental principles in most of the interviews. Although a number of the clergy I interviewed have demonstrated a good understanding of the major environmental problems affecting the region, 'ignorance' was a recurrent theme in their accounts of environmental attitudes and behaviour among the people. This implies that knowledge of environmental and religious schemas is a necessary resource in the structural complex of religious environmentalism. The dominant views expressed

suggest that poor understanding of religious environmental teachings and lack of awareness of the nature, severity and effects of environmental problems are among the factors militating against pro-environmental behaviour and contributing to environmental destruction. Broadly, I have categorised these discourses into the following sub-themes:

Poor understanding of environmental degradation

Narratives that point to widespread lack of awareness among individuals of the nature, severity and consequence of environmental degradation are salient in most of the interviews. A recurrent theme in the interviews is the notion that, because the majority of people in the area are either unaware of the existence of environmental problems or unaware of their severity and effects, these problems continue to get worse. Based on my interpretation of the discourse, this condition of individual and communal 'ignorance' impedes the peoples' ability to protect the environment from further damage by altering their ways of life and their relationship with the environment, or prevents the 'activation' of their religious environmental ethics. Repeated calls for awareness creation by the clergy is an indicator to their concern that the majority of their followers lack basic awareness about both religious principles for nature conservation and the phenomenon of environmental change:

At the individual level, we must create awareness so that people will know the challenges of environmental degradation, and how we are supposed to respond to them. [09: Sufi Muslim]

Lack of sufficient understanding of environmental problems was seen to make people 'unmindful' of the physical changes in the environment, unaware of the 'value' of nature and less concerned about the effects of environmental problems:

As you can see environmental degradation is increasing and the majority of our people are not even interested in the visible changes in the environment. Some people actually don't know the value of nature and the effects of environmental problems. Others know about it but see it as a secondary, less important issue. [09: Sufi Muslim]

This lack of awareness, according to some participants, is not limited to the laypeople. Religious leaders themselves were seen to be also in need of further enlightenment about environmental problems, for them to contribute to awareness creation among their followers:

But the major obstacle that needs to be addressed is to create awareness among the religious leaders themselves. Let them be educated first on the challenges of land degradation and the religious principles of nature conservation. [03: Salafi Muslim]

There is need for such activities annually or twice a year to sensitize religious leaders and the public to the challenges of land degradation now that the problem has reached an alarming proportion. [02: Salafi Muslim]

One of the participants further suggested that even among the religious leaders, knowledge of the severity of environmental problems, and religious 'solutions' to the problems are inadequate. To him, 'experts' on the environment have a 'responsibility' to educate religious leaders on the need to create awareness among their followers:

...even though we are experiencing the negative effects of environmental degradation, not many of us really know the extent of the crisis or think that religion has solutions to all these. Even among us the leaders, most of the times we look up to the government whenever problems like these occur. But if experts will play their part in sensitising us about the challenges we are facing, we can come in also and educate our followers. [07: Salafi Muslim]

This notion suggests a sequence in the social construction of environmental problems within faith communities: problems > experts > religious leaders > laypeople. 'Experts' or environmental scientists were seen to be the primary source of environmental information, who were expected to relay such information to the government and community leaders (eg the clergy), who can then use the different mediums of communication within their congregations to 'sensitise' the masses. Some participants also tried to explain the reason behind ignorance of environmental problems on the part of religious leaders and by extension their followers:

...our religious scholars are more concerned with the spiritual dimension of the religion. Other social, economic, political and ecological issues are not given attention. [09: Sufi Muslim]

...we pay more attention to spiritual aspects of the faith and little or no attention to others. [11: Salafi Muslim]

Paying attention to 'spiritual aspects of the faith' implies striving to acquire and spread knowledge of such spiritual matters and lesser commitment to acquiring and spreading knowledge on 'other', 'non-spiritual' matters. This attitude is tied to categorisation of 'other matters' such as environmental problems as "less important issues" [09: Sufi Muslim] in comparison to 'spiritual matters'. This theme will be discussed later.

Among the sample, the majority of participants who saw poor understanding of environmental problems as an important obstacle to pro-environmental behaviour were Muslims.

Lack of awareness of human's impact on environment

Like the preceding sub-theme, 'ignorance of the impact of human activities on the environment' is another important concept that emerged from the interviews. Although occurring in only a few (3) interviews, I have found it relevant to understanding the persistence of ecologically-damaging behaviour in the region.

Most of the time, we are not conscious of the implication of our actions on the environment. [05: Evangelical Christian]

It (environmental degradation) is due to lack of awareness and enlightenment on how our actions affect the natural environment. [14: Evangelical Christian]

People have to be enlightened about this as many of them don't think we are directly responsible, through our activities, for some of the problems we attribute to God. [09: Sufi Muslim]

Unlike the previous sub-theme pertaining to poor understanding of the nature, seriousness and effects of environmental problems, this sub-category of discourse on 'ignorance' centres on the role of human activities in environmental change. The first respondent above, for instance, argued that people are largely "unconscious" of the impact of their actions on the environment. His view can be understood to mean that certain behaviours such as consumption need to take environmental impact into consideration. As can be seen, two Christians and one Muslim participant saw lack of awareness of human impact on the environment as a barrier to pro-environmental behaviour and a possible contributing factor to environmental degradation.

Ignorance of religion

This appears to be the most recurrent of all the three sub-themes on 'ignorance' in the interviews. Its salience in comparison with other sub-themes is another indication of participants' strong belief in the role of religion in environmental concern and conservation. In a number of interviews, both prevalence of ecologically damaging behaviours and lower environmental concern were linked to ignorance of religion. Ignorance of religion was associated with the prevalence of ecologically damaging behaviour, lower pro-environmental behaviour, and limited religiously inspired efforts to conserve nature in three related ways. First, people who are unaware of the religious injunctions on behaviours like wastefulness, pollution etc were seen as likely to indulge in such activities:

Well, ignorance could be a contributing factor, but not always. Most of us know that it is not right to harm the environment. There are quite a few adult Muslims who are totally ignorant of the basic Islamic environmental ethics, because these things are learnt right from childhood. [08: Salafi Muslim]

While the participant quoted above was trying to downplay the number of people who are ignorant of religious teachings on human-environment interaction, his statement shows that lack of knowledge of the "basic Islamic environmental ethics" could lead to negative environmental behaviours. The second point is evident in the following quotes:

The religion has provided a complete guide on how to relate with the environment, how to preserve its balance and beauty and so on. Our knowledge of these principles is not sufficient, I think. There is need for more efforts to educate people on these teachings. [07: Salafi Muslim]

So, I will consider it ignorance of (religious) environmental ethics on the part of the majority of people. [13: Pentecostal Christian]

These two quotes, like the one before, have stressed the role that ignorance of religious environmental principles plays in increasing negative environmental behaviours. However, in mentioning that religion provides a "guide" on "how to preserve the balance and beauty" of nature it further suggests that pro-environmental actions involve an appreciation of the beauty and balance of nature, the absence of which could cause 'disrespect' for nature. The third sub-theme pertains to ignorance of religious principles for the conservation of nature which are necessary before any conscious effort is made to use religious ideas to solving environmental problems:

Even though we are experiencing the negative effects of environmental degradation, not many of us really think that religion has solutions to all these. [07: Salafi Muslim]

6.2.3. 'De-prioritisation' of environmental concern and problems

Another recurrent theme throughout the interviews is what I interpreted as 'de-prioritisation of environmental concerns and problems'. By this, I am referring to narratives in which participants suggest that concern for the environment and dealing with environmental problems are in practice not considered as issues of high religious priority. These narratives can be divided into two interrelated sub-themes: narratives that pertain to the laypeople and those that relate to religious leaders.

Laypeople

Even though concern for the environment has been identified as a religious duty by most participants, pro-environmental behaviour is believed to be limited to religious people paying more attention to other ritualistic aspects of their faith than to aspects such as caring for nature:

Majority of Muslims think that anything outside worship, spiritualism, and basic rituals is secondary to their religion. [09: Sufi Muslim]

...we pay more attention to some aspects of the faith and little or no attention to others. Environmental conservation and management is a central issue in Islam, we all know that. We try to educate people on that, but unfortunately the people are reluctant to put these teachings into practice. [11: Salafi Muslim]

As you stated, humans always want to be comfortable. I think, we are not very much concerned about the state of the environment. ...I think.. we are not really 'trained' and disciplined to be concerned about our future and the future of our children. Rather, we are trained to be more concerned with meeting our immediate needs. [10: Sufi Muslim]

The above statements suggest that religious leaders believe the laypeople prioritise certain aspects of the faith like worship and other rituals over looking after nature, despite its significance to their faith. Muslim respondents were more likely than Christian respondents to report prioritising 'worship,' among other rituals, over environmental concern in the same way as they are more likely to emphasise the

‘spiritual environmentalism’ – respect for pristine nature as a religious duty, and ‘ecocentrism’ – belief that nature has its own value and purpose. In addition to prioritising certain aspects of religion over environmental concern, it is also obvious that other ‘worldly’ concerns (economic needs) are prioritised over environmental management and protection.

Another dimension of ‘deprioritisation’ of environmental issues is a comparatively small amount of attention paid to environmental problems, compared to other problems, by the laypeople. As I indicated in preceding sections, anthropocentric environmental concern mainly results from the activation of environmental values by the perception of existing or potential environmental problem(s) and risks. Religious tenets are then employed to stimulate action to combat the problem. From the responses across the interviews, I have found that there is a sense among the clergy that environmental problems are not perceived as ‘serious’ problems by many members of the faith communities. For this reason, there are limited efforts to use religion to encourage actions that would solve these problems:

So, we pay little attention to climate and the environment just as we do to other development issues. These are some of the things. At the individual level, we must create awareness so that people will know the challenges of environmental degradation, and how we Muslims are supposed to respond to them. [09: Sufi Muslim]

I think, we are not very much concerned about the state of the environment. ...I think, we are not really ‘trained’ and disciplined to be concerned about our future and the future of our children. Rather, we are trained to be more concerned with meeting our immediate needs. [10: Sufi Muslim]

Religion is a comprehensive thing. Everything is supposed to be given serious attention. We are largely careless about the environment, even though it is given serious attention in the religious books. We need to get more serious in teaching people especially in the rural areas about the environmental principles of the religion. [11: Salafi Muslim]

As you can see environmental degradation is increasing and the majority of our people are not even interested in the visible changes in the environment. Some people actually don’t know the value of nature and effects of environmental problems. Others know about it but see it a secondary, less important issue. [09: Sufi Muslim]

The views expressed here show that the environment is not receiving adequate attention from individual members of religious communities. Some of the reasons why the environment is not given adequate attention, as shown above, include ignorance, poverty and so on. However, religious leaders also play an important role in shaping the environmental orientations of their followers and in the construction of social problems in Nigeria.

Religious leaders

The view that religious leaders, like the lay people, are not paying adequate attention to the environment is significant in the narratives of both Christian and Muslim

participants. A significant majority of participants contended that religious leaders are not making any efforts to bring religious resources to address environmental concerns. A small minority however claim that religious leaders are making some contributions in terms of teaching environmental ethics to their congregations. What is common across the board is the notion that religious leaders focus more on the relationship between humans and God and less on the relationship between humans and the rest of nature:

One could say yes, that teachings and preaching in the church have not been centred on environmental conservation. [14: Evangelical Christian]

Many of us (religious scholars) think our primary responsibility is to teach people how to worship God. Any other thing outside this is not considered an important topic of religious teaching. [07: Salafi Muslim]

With regards to the issue of religious teachings on environmental conservation, what we currently do is not adequate. Definitely, more attention is paid to human relationship with God. Environment is something that deserves special attention from religious preachers. Hardly do religious preachers spare time to discuss environmental issues with congregations. It is my hope that these issues will begin to receive more attention. [02: Salafi Muslim]

First, there is what I may call failure on the part of religious leaders and scholars to pay attention to these issues and the teachings of religion regarding human-environment relationship. [03: Salafi Muslim]

In addition to prioritising worship and other rituals over environmental concerns, lack of clear understanding of environmental problems among religious leaders also contributes to 'de-prioritisation' of environment by religious leaders:

Religious leaders have a responsibility to change this bad situation. But there is need for experts to draw their (religious leaders') attention to the problems we are facing. Even though we are experiencing the negative effects of environmental degradation, not many of us really think that religion has solutions to all these. Even among us, the leaders, most of the times we look up to the government whenever problems like these occur. But if experts will play their part in sensitizing us about the challenges we are facing, we can come in also and educate our followers. If experts or the government can find time to educate them they can no doubt do a good job in creating awareness of these challenges. [07: Salafi Muslim]

As I tried to explain earlier, our religious scholars are more concerned with the spiritual dimension of the religion. Other social, economic, political issues are not given attention. But if experts on the environment can partner with them, they'll return to the teachings of religion. All religious scholars know that tree planting, for example, is a hugely rewarding act. So if scholars are reminded about this and educated about the how tree planting can help control land degradation, they will be happy to educate their followers further. So, awareness creation is the first step and it must start with the religious leaders themselves. [09: Sufi Muslim]

But most of the Imams don't take it serious. Unless if government or environmental protection NGOs urge them to do so. [03: Salafi Muslim]

These responses can be interpreted to mean that religious leaders themselves are not particularly knowledgeable about the environmental problems affecting the area and thus require experts or the government to boost their awareness and understanding of those problems before they can use their status to promote conservation. This discourse emphasised the importance of anthropocentric religious environmentalism.

Understanding the seriousness of environmental problems is seen to be necessary to prioritisation of pro-environmental protection by the clergy.

6.3. Conclusion

This chapter has explored participants' discourses pertaining to religiously-inspired pro-environmental attitudes and behaviour, and the factors responsible for the gap between environmental principles and behaviours. Evidence of strong pro-environmental beliefs and attitudes was found throughout the interviews. Narratives that signify pro-environmental principles and actions were thematically grouped into either ecocentric, anthropocentric and theocentric religious environmentalism. Religious ecocentrism is nature-centred environmental concern that largely derives from religious values that see nature as God's creation which, like humans, has its own value purpose and thus deserves respect and care. Religious ecocentrism uses metaphors derived from religious scriptures to describe nature as a "beautiful", "perfect", "balanced", creature which shares with humans certain "rights" that deserve to be respected and protected. Ecocentrism was evident in the narratives of both Christian and Muslim clergy interviewed, although Muslim interviewees were more likely than Christians to express ecocentric religious beliefs. However, a slightly higher proportion of Christian congregants compared to Muslims have reported ecocentric beliefs. Human environmental stewardship as prescribed in both Christianity and Islam involves protecting these God-given rights of nature. Anthropocentric (human-centred) environmental concern and behaviour is the most recurrent theme in the interviews and the most widely reported in the questionnaires. The basic premise of interrelated but non-repetitive discourses pertaining to human-centred environmental concern is the notion that environmental problems threaten humans' continued survival and welfare, and religion influences individuals to strive to prevent the harmful effects of environmental problems. Theocentrism is another variety of religious environmentalism found in both the interview and questionnaire data. This form of environmental concern and behaviour is God-centred, as it is mainly driven by the belief that environmental stewardship is commanded by God while environmental destruction and wastefulness are forbidden. Compared to ecocentrism and anthropocentrism, theocentric environmentalism is the least reported form of religious environmentalism among the sample. Muslim participants were more likely than Christians to report theocentric environmental beliefs and actions.

Using Sewell, Jr.'s (1992) theory of structure as an analytical tool (see chapter 2), these findings confirm both the agency of religious individuals and the role of both religious and environmental *schemas* and *resources* (structures) in enhancing and constraining it. The findings also demonstrate the capacities of these capable individuals to transform and reproduce these structures. The notions that the natural environment has 'rights' and that human stewardship involves protecting those rights, that environmental damage is sin, while environmental stewardship is rewarding are illustrations of intersection of "transposable" and "generalisable" religious and environmental *schemas*. Beliefs that the environment is 'beautiful', created in a 'perfect' and 'balanced' shape and order are some of the examples of environmental schemas - cognitive understandings, thoughts, and orientations about nature - which participants hold. Such beliefs intersect or overlap with religious schemas - such as beliefs that nature, like humanity, is God's creation and that humans were uniquely created to look after the rest of creation - to influence their interaction with the natural environment. The utility of both religious and environmental schemas in the 'structuration' process, as seen in the above analysis, depends on their (schemas) "enactment" by the *resources* at the disposal of religious individuals and communities. Religious resources observable in the narratives presented above include, among other things, knowledge of religious scriptures and doctrines, religious experiences, services, and rituals and interactions; environmental schemas include knowledge of the seriousness of environmental problems, perceived responsibility for environmental conservation and stewardship, competing interpretations of causes and effects of environmental problems, as well as organisational structure and material resources to devote to environmental management and protection. Access to these resources among the participants perhaps explains why anthropocentric environmental concern was more widely reported than ecocentric and theocentric environmentalisms. Religious and environmental schemas are "instantiated" or "empowered" by participants' wide array of resources, such as the knowledge that environmental change is 'real' and serious - accumulated over time through experience and multiples sources of information - which in turn facilitates perceptions of responsibility to inform anthropocentric pro-environmental orientations and behaviours to a larger degree than that facilitated by ecocentric and theocentric motivation. A greater prevalence of anthropocentric beliefs over other conceptualisations of religious environmentalism, can also be understood in terms of the ability of agents to borrow and apply schemas (norms and principles), such as problem-solving and volunteering orientations, from other religious structural complexes to current environmental issues. This tendency is

captured by Sewell Jr.'s (1992:18) notion of 'transposability of schemas'. As highlighted in chapter two, this idea denotes social actors ability to not only access diverse cultural schemas, but also their capacity to apply them to different situations. Social *agency* can be understood as "the capacity to transpose and extend schemas to new contexts". In this sense religious values that emphasise volunteering, problem-solving and other altruistic behaviours appeared to be drawn and utilised in relation to environmental issues.

The structural complex of religious environmentalism in the data presented above is constrained by a number of factors, the most salient of which are lack of material resources, ignorance, and deprioritisation of environmental issues by religious individuals and congregations. These three discourses constitute a further demonstration of how the interplay of schemas and resources influence both human agency and reproduction of structures. Discourses on poverty, for example, illustrate the utility of non-human resources in the instantiation of cultural schemas, while those on ignorance underscore the role of human resources in the form of knowledge of the function of religious and environmental schemas in the process. Sewell's axiom of "unpredictability of resource accumulation" (Sewell Jr. 1992:18) can be applied to understand why ecocentric, anthropocentric and theocentric pro-environmental schemas are not always extended to current environmental issues. According to Sewell, although social actors have the unique ability to transpose cultural schemas to new contexts, the resource consequences of the application of such schemas to new situations is not certain (Sewell, Jr. 1992:18). Thus, enactment of religious schemas that recommend respect for the rights of the natural environment, prohibit environmental damage and encourage pro-environmental behaviours might have been affected by not only unavailability of resources but also uncertainty regarding the outcome of their application on actors' resources. This could be the reason why, for instance, religious individuals prefer to transpose schemas of problem-solving and volunteering to other issues instead of environmental management and protection. Notwithstanding the constraints in terms of resources, religious individuals in this study are able and willing to mobilise and transpose religious and environmental cultural schemas to current environmental problems. It is clear from their discourses that their agency has imbued them with the capacity to reinterpret this schema-resource relation in the context of worsening environmental problems. By doing so, they would be able to transform the structural complex of religious environmentalism.

Another interpretation of the findings on religious environmentalism can be developed using the VBN theory (Stern, 2000). As outlined earlier, individual's pro-environmental action is produced through their personal norms by beliefs in the threats posed by environmental condition to things they value (awareness of consequences) and beliefs in their ability to mitigate such threats (awareness of responsibility). These assumptions can be applied to explain the preponderance of anthropocentric and ecocentric environmental concerns reported by the participants. Since religious individuals in the study population emphasised valuing others and expressed a sense of responsibility towards them, realisation of the threats of environmental degradation could activate their personal norms of problem-solving and love of nature to take pro-environmental actions. However, as evidenced in the findings on limitations to religious environmentalism, the extent to which personal norms are activated, by awareness of threats and responsibility, and are likely to result in pro-environmental action, can be affected by a number of social psychological, economic and political factors. Factors reported above such as poverty (personal costs of environmental action) and 'ignorance' (lack of access to environmental information) are some of the factors reported to affect the personal norms and predisposition to pro-environmental behaviour in this sample.

Finally, my findings on various motives for pro-environmental action support earlier views such as Tomalin (2002, 2009), that question the relevance of the concept to understanding environmental values and practices of people in non-western societies. The narrowing of the concept of 'environmentalism' to denote responses to contemporary environmental problems appears to negate the various forms and motives of pro-environmental action discussed above. The findings also partially support an earlier distinction by Hoffman (2005) that based on their underlying motives, environmental concern can be divided into 3 categories, namely: *theocentrism* from *anthropocentrism* and *ecocentrism*. However, while in Hoffman's classifications each of these three forms of pro-environmental attitude/behaviour emanates from a separate ethical foundation and only theocentrism derives from religious beliefs and principles, all 3 varieties of environmentalism reported here are religiously-inspired. Thus, these findings add to earlier studies (eg Gottlieb, 2006; Hitzhusen & Tucker, 2013) that also documented evidence of renewed efforts to utilise religious perspectives as principal motivations for pro-environmental actions.

The findings that identified lack of prioritisation of environmental issues by faith communities supports the conclusion of an earlier study in Ghana (Golo & Yaro, 2013).

In that study, some Christian religious leaders reported that, as important as environmental change is, the "Church seems to have ignored" it, as it focuses on "personal salvation". Previous studies have dealt with the role of poverty in environmental degradation. A few studies (Guha & Martinez-Alier, 1997; Tomalin, 2002, 2009) have also investigated how poverty necessitates or constrain pro-environmental action. This study is another contribution to the debate from a faith-based perspective. Earlier studies (BBC World Trust, 2010; Leiserowitz, 2008; Leiserowitz, 2003; Pew Global Attitudes Project, 2006) have shown that there is widespread lack of understanding of environmental problems among the ordinary people in Nigeria. Some of the findings reported in this chapter confirm what was reported in these earlier studies. Furthermore, these findings, like the ones to be presented in the next chapter, underscore the importance of environmental education in the region. The findings on factors that militate against the practice of religious environmentalism could serve as a starting point for future studies on environmentalism in Nigeria.

CHAPTER 7 - UNDERSTANDINGS OF ENVIRONMENTAL CHANGE

This chapter draws entirely from qualitative analysis of interviews to explore understandings of environmental problems within religious congregations. The central objective of the chapter is to understand the extent and the ways in which religion shapes perception and strategies of adaptation to environmental change in faith communities. The chapter begins by exploring a thematic network which summarises to the role of institutional factors and social contexts in environmental problems. This network summarises narratives of participants that attribute environmental degradation in the region to a dysfunctional government and related institutions as well as certain social and situational factors in the society. The discussions that follow these non-theological narratives explore participants' perception of environmental change that derive from religious beliefs and worldviews. Unlike previous sections, this section focuses on theologically rooted understandings of environmental issues. These narratives about the current environmental problems and change are based on religious ideas and cosmologies. In all the 3 sections, I tried to understand how different religious groups perceive different environmental problems and how they differ in the adaptation strategies they propose. The last section summarises these findings and uses relevant theories to discuss their implications.

Overall, all of the participants perceived environmental change as both a real and existential threat to the livelihoods and wellbeing of their communities. The most common environmental problems that they identified were desertification, erosion, flash floods, resource depletion and garbage accumulation, demonstrating that local leaders recognise the same core set of issues as cited in national and scientific studies. However, their understanding of environmental change is limited by the fact that a vast majority tended to confuse climate change with local ecological problems. In other words, even though there is a strong sense of understanding of anthropogenic environmental change, there appears to be a limited understanding of the difference between climate change and environmental degradation. I have divided participants' discourses about the causes and strategies of adaptation to environmental change into three broad themes. Some of the participants made no reference to religious beliefs and worldviews in their discussion of the causes of environmental change. I have categorised their views under a 'global theme' I called 'non-theological narratives'. Others interpreted environmental

change from a purely theological point of view. I have classified their views under a major theme I referred to as 'theological narratives'. A third sub-set used both religious and non-religious perspectives to illustrate their understanding of environmental change. Such views are found in both non-theological and theological narratives. A number of respondents saw environmental change as rooted in the destruction, over decades, of ecological systems due to human activities. These participants believed that human activities were driven by social and institutional factors and what they perceived as deep rooted problems that created conditions for a negative human-environment relationship. These problems were seen as systemic because they were embedded in the structure of the society, for example weak government, rather than in the actions of individual agents. Other participants attributed degradation to a divine transcendent cause and interpreted environmental change as either outcomes of human 'sin' or as a sign of 'end times'. In between these dichotomous perspectives were narratives that attributed environmental change to both anthropogenic and divine causes. It is noteworthy that the majority of participants did not express commitment to only one narrative about environmental change. Rather, they expressed views that are in support of different and competing narratives at different times during the interviews.

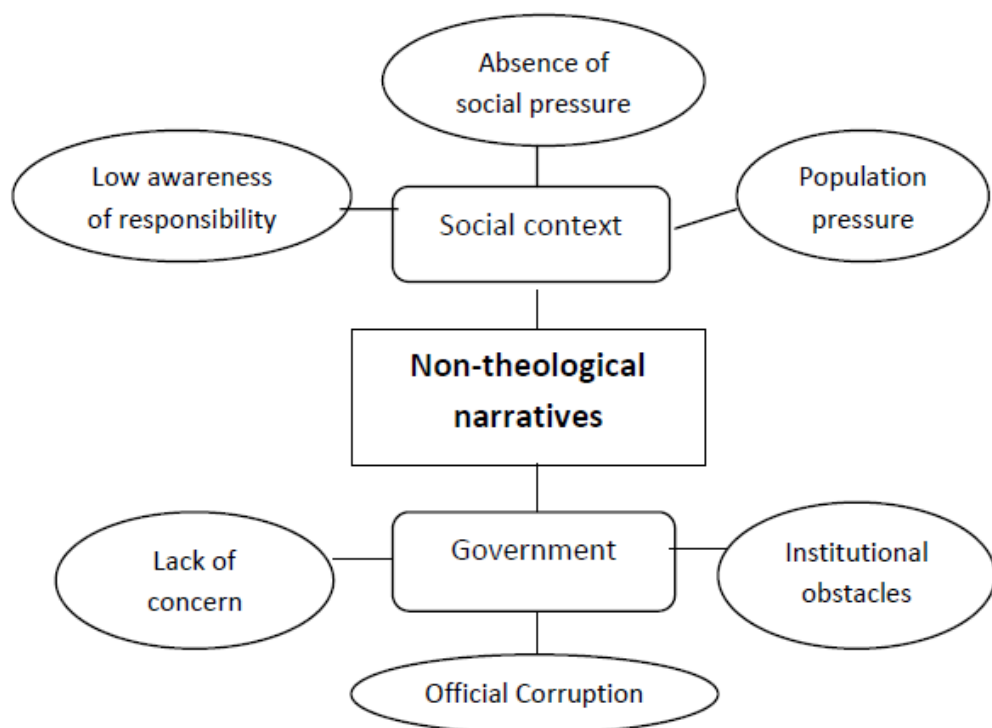


Figure 7.1: Thematic network for *non-theological narratives*

7.1. The role of government in participants' views of environmental change

Almost half the participants shared a view that government had a role in aggravating environmental degradation. Participants' discourses expressed a sense of failure, an unwillingness of the government to combat environmental damage and an inability of government and her agencies to ensure sustainable use and management of resources. 'Weakness' on the part of the government was explicated by participants in three ways: i) a lack of concern for environmental problems; ii) crippling corruption and; iii) a lack of effective institutional and legal mechanisms to combat environmental degradation. Views that support this 'blame' narrative have been expressed by participants of all denominations.

7.1.1. Lack of concern

While maintaining a clear view that governments play a crucial role in environmental protection and management, several participants stated that there was an astonishing 'lack of concern' by government at local, state and national level for environmental sustainability. This, according to the participants, explains the persistence and even worsening of environmental problems such as garbage accumulation, deforestation and soil erosion:

Before, the government took environmental matters like sanitation and nature conservation seriously, and waste management systems used to work very efficiently. Today, the government is not concerned about all these and so people dump refuse wherever they can. If you go out outside this mosque you can see that the entire surrounding, the streets and the drainages have been littered with plastic bags... The issue of plastic bags has reached a crisis state. The plastics we are generating without an effective system of disposing of them can make our entire farms infertile. Yet, nothing is being done (by the government) to arrest it. [7: Salafi Muslim]

The government is to blame for some of these problems. Previous governments in the 1970s up to the 1980s had a very effective arrangement in terms of environmental health, sanitation and natural resource conservation. But today, there is nothing to show that the government is really doing anything to make the environment good. Even as children we knew there were environmental health workers and we knew about some of the basic environmental sanitation laws, for example... Nowadays we neither see environmental workers nor hear anything about environmental laws... All we hear these days (regarding the environment) is when relief materials are being distributed to victims of flood disasters. That is all! Nothing will be done to prevent future occurrence of floods. Not even constructing drainages or expanding existing ones. [18: Sufi Muslim]

Here in Adamawa, there are no such campaigns (about the environment)... Our leaders have their priorities. I do not think this (environment degradation) is one of the issues of priority of the government now. [12: Sufi Muslim]

In the above quotes, there is a strong sense among the participants that the government's handling of environmental problems has worsened in recent times. Participants contrasted the present governments with governments of "the past" which were "very effective" in managing the environment. They clearly blamed the worsening 'plastic bag

crisis' and recent flooding on the government. They also made positive reference to the 'effective' garbage collection and management of the government in the past, as well as praising the government's environmental health policies of that period. Participants who believed that the current government was not giving sufficient attention to environmental management largely cited waste management, environmental sanitation and disaster relief to illustrate their points. However, other aspects of environmental conservation and management were also mentioned, including: negating alternative means of energy, neglecting past and existing desertification control programs and failing to take concrete measures to combat environmental destruction.

7.1.2. Government corruption

Environmental management and conservation was seen to be hampered by the phenomenon of corruption in Nigeria and corruption featured in participants' narratives in several ways. Some participants viewed government corruption as a factor responsible for the weakening of agencies established to protect the environment. Others thought that monetary resources budgeted to combat ecological problems were being diverted to private hands or channelled to different causes. Even when budgets were not being diverted, there was a view that ineffective utilisation of funds often impeded environmental policy implementation. Some officials responsible for implementing environmental policy (e.g. by managing environmental protection agencies) were thought to expect 'bribes' from the public in exchange for their services. Public officials were often viewed as being more concerned with acquiring wealth than with solving extant problems and for that reason were likely to allocate resources to areas where they expected to get maximum 'gains' rather than addressing pressing ecological problems:

I can recall that a lot of money is budgeted for the control of ecological problems every year. But you discover that the funds budgeted are either not properly utilised or stolen by the officials responsible for handling them. I read a report recently that about 40 Billion NGN (£16million) budgeted for controlling ecological problems in Nigeria have been diverted to personal accounts. It is not that the government doesn't have money. It is not that the land is not wealthy, the control and appropriate use of the resources and wealth is the problem. The money is there. But are the budgets done annually being implemented? Monies are not directed to the specific areas for which they are budgeted. [15: Evangelical Christian]

...for example, you see this garbage heap behind the mosque, we tried our best to call on the government to collect the garbage, without success. We visited the environmental sanitation bureau several times but they kept telling us they don't have fuel in their vehicles. They expect us to bribe them for doing their job. Whenever it rains, you cannot pass through that road as the garbage has covered the entire road. It is the responsibility of the government to collect refuse or provide people with a facility for refuse disposal. But they don't care to do live up to their responsibilities and they don't want anybody to tell them to discharge their responsibilities. [12: Sufi Muslim]

Many leaders are more concerned with accumulating wealth and building big mansions than with solving problems affecting the people. [12: Sufi Muslim]

7.1.3. Institutional and legal obstacles

Participants suggested that environmental protection and management required strong government institutions and effective laws and that the persistence and worsening of environmental damage in the region was linked to a lack of effective institutions and laws for combating environmental abuse. Despite the size of the threat posed by environmental degradation in Nigeria, participants seemed unaware of the existence of any explicit environmental protection policy or that government agencies might lack the requisite institutional capacity to implement environmental policy. Participants attributed continuous abuse of the environment to a general inefficiency on the part of the government and its agencies, particularly in the provision of necessary infrastructure:

Very few if any places have been set aside for refuse dumping. No refuse collection system. So the only available place, like undeveloped plots of land, drainage systems and sometimes roads, are used to dump refuse. [01: Pentecostal Christian]

...because of weak government and inefficiency people build houses everywhere, without observing the rules of urban planning. As we witnessed a few months ago in Jos, people built houses on (natural) drains and gullies and when the flood came, many lives were lost. [03: Salafi Muslim]

Even some government officials who are responsible for implementing environmental policy have expressed 'dissatisfaction' with certain aspects of the existing policy, namely 'mildness' of penalties for environmental damage. According to one official, existing environmental laws need to be reviewed so as to meet new and emerging environmental challenges and provide for tougher punishment for environmental destruction:

The only thing I can say relates to the fine or penalties for violating different environmental laws like cutting down trees or illegal dumping of hazardous wastes. These penalties, in my opinion, are very mild and do not produce deterrent effect at all. There is need to review the laws because there are new environmental challenges that require new laws to tackle. A big tree when cut into fuel wood can be sold for over 10,000NGN (£40) and the penalty for cutting down the tree is 2,000NGN (£8) in fine, people may continue to cut down trees because the punishment is not severe enough to stop them. [06: Environmental official]

Narratives on adaptation to environmental problems based on this 'government-centred' discourse focus on good governance, public policy and strengthening of public institutions. The majority of participants suggested that mitigating ecological problems requires the effective implementation of environmental policy and that at the current time in Nigeria this was absent. Little attention was paid to the role of individual actions in combating environmental change. When questions were asked about what individual choices or community efforts are required to mitigate or adapt to environmental change, participants mentioned poverty, institutional bottlenecks, lack of governmental support and incentives as major impediments to such efforts:

Unless the government intervenes and make alternative energy sources affordable to the poor, this crisis will continue. [20: Environmental official]

It is the government's responsibility to provide its citizens with alternative sources of energy as a strategy for controlling the rate of deforestation. As individuals, we cannot solve the problem of deforestation when the main source of our domestic energy is from firewood. ...Therefore, the problem of deforestation can only be addressed institutionally. Our NGOs are doing a good job here, but they are not capable of doing it alone without active collaboration with the government. [09: Sufi Muslim]

If the government decides to support religious organisations and involve them in the implementation of environmental protection policies a great impact would be made. [11: Salafi Muslim]

The people's perspective is that environmental conservation is the responsibility of the government. I think we need to sensitize them to tell them what their responsibility is. [13: Pentecostal Christian]

Perceiving themselves as lacking the necessary resources and information to cope with environmental change, some participants recalled how they collaborated with the government during the Polio eradication campaign and the fight against HIV/AIDs. To them, a similar collaboration is needed to mitigate environmental change:

In the campaign against polio, the government provided all the logistical support and brought all religious leaders (both Muslims and Christians) together. People listened to leaders of their religious congregations and took their message seriously. That is why a great success was recorded. I am one of the religious leaders that went round Adamawa State to campaign against HIV/AIDS. We went to all nooks and corners of the state talking to people in mosques about AIDS and how people can prevent themselves from contracting the virus. Thank God, people listened to us and took our warnings seriously, that is why today there is widespread awareness on HIV/AIDS. [11: Salafi Muslim]

That is why I am still saying that the way they (public) should look at it is different. They would want to shift it (the blame) to the government. And I would like to suggest that if the governments are ready to play their role, the faith community can only support. I do not think they can play the dominant role. It has to be a partnership between the government and religious bodies... so when the government officials come to the church, since they (public) respect the word of their pastors, then they will understand the seriousness of the problem. For instance during elections, when religious leaders told the people to register and vote, virtually every member of the church registered and came out to vote, same with HIV/AIDS campaign. Today Nigeria is witnessing a decrease in the rate of HIV/AIDS because of the awareness that was created through the partnership between the government and religious bodies. [13: Pentecostal Christian]

7.2. The role of social context in understanding environmental problems

Participants highlighted a range of socio-economic factors that shaped social context and which they associated with increased environmental degradation in the region. Issues such as population growth, scarcity of natural resources; access to goods and low ecological awareness, were identified by various participants as playing a role in the persistence and growth of environmental problems. Indeed, some of these factors were seen to constitute barriers to pro-environmental behaviour and in some ways could actively promote environmentally damaging behaviour. Like the previous narrative, this discourse was also supported by participants from all denominations.

7.2.1. Population growth and pressure on resources

A narrative on population increase and associated resource depletion was evident across many interviews, for example:

I think this change is due to population increase and scarcity of land and other environmental resources which make people look for where and how to earn a living without regard to the beauty and quality of the place. [10: Sufi Muslim]

The scarcity of land as a resource was also noted:

...actually, I think I will still attribute it to poverty, because a man that does not have enough land to farm you can't expect him to allow the land a period of re-nutrition, you understand; leaving the land for a period of time to recover its nutrients before he starts cultivating it. If you are very poor, you want to exploit, farm and cultivate every land available. [01: Pentecostal Christian]

The inter-weaving of factors such as population, scarcity of resources, poverty and institutional barriers are evident in this account:

Well, people sometimes behave the way they behave, number one due to overpopulation. Once you have too many people to control, you'd have a problem. And that is the reason why you cannot see some laws being effectively enforced in the society. And secondly, when the government has failed to do what is expected of her, definitely people will not do what she expects them to do and that is what is happening to the environment. ...you can see... if the government says this area is preserved for conservation, what have they (people) been provided with? Look at the growing population... kerosene... which is supposed to be available and affordable has been made very difficult to get... Kerosene is not affordable to many, let alone cooking gas. In Nigeria, cooking gas is for the 'big men and women'. People have to go and collect firewood or burn the bush to get charcoal... So, all I am trying to say is that the government should take into consideration that as the population grows the government needs to invest more in terms of efforts to bring alternative sources of energy... The population and the resources available need to be always compared to see how we can avoid catastrophe. [15: Evangelical Christian]

When there is population explosion, the land and other resources like water become scarce. With too many mouths to feed and limited resources available, what every responsible government does is to come up with a workable plan to restore what is being lost of the natural resources. This simple measure is what we failed to achieve in Nigeria... that is why we are suffering from environmental destruction. [14: Evangelical Christian]

This narrative is indicative of the complex situation in which multiple factors combine to create conditions for the continuation of environmental destruction and represents a sophisticated understanding of the problems the region faces. These particular participants, as noted above, also pointed to the relationship between institutional problems - government's failure to implement environmental policy and provide necessary infrastructure and services - and environmental problems - scarcity of land and environmental degradation.

It is crucial to state that according to this narrative, environmental problems like flooding, although linked to global climatic change, were made worse by local environmental conditions such as poverty, scarcity of land in urban centres, pressure on marginal lands and violations of local (urban) development rules. Similarly, adaptation to such ecological problems are also dictated by those factors:

As we witnessed a few months ago in Jos, people built houses on drainages and gullies and when the flood came, many lives were lost... Those people who were affected by the floods needed shelter and could not afford to own houses in other parts of the city... [03: Salafi Muslim]

When you want to have a house and the only plot you can afford is in flood prone parts of the city or close to the waterways and you are allowed (by the government) to build the house if you can, you may likely say "oh let me just build the house, even if flood comes, God will protect me and my house". Or someone may think even if there is flood, the government would assist them. [05: Evangelical Christian]

Other ideas on adaptation reported by these participants included migration from affected areas to less affected areas:

Most of the wild animals that used to live in the bush have been lost. Similarly, if you take a look at the northern part of Bauchi State, many towns and villages in places like Azare, Jama'are up to Misau have completely turned to desert, due to unsustainable agriculture, over-grazing, deforestation or urban growth. So these activities have rendered the environment very susceptible to erosion, desertification, flooding, and farming the land has become difficult if not completely impossible. Our pastoral villages have been forced to migrate southwards in search of grass lands. [07: Salafi Muslim]

Instead of thinking about a long term solution, most people would prefer to relocate to less affected areas. Before many people were moving to Numan to engage in fishing and other related activities. But seeing the devastation caused by the recent floods to the Numan fishing communities, many would say "oh let me move to Yola, let me go to Gombe" and so on... [13: Pentecostal Christian]

However, some participants who hold this view also emphasised long-term measures which centre around addressing the underlying challenges of poverty, population pressure and resource scarcity:

The population and the resources available need to be always compared to see how we can avoid (environmental) catastrophe like this. If that is done, whatever law is put in place people will abide by it. That is how I look at the problem. [14: Evangelical Christian]

7.2.2. The absence of social pressure

Many participants emphasised the importance of 'social pressure' to activating both environmental concern and environmental behaviour. 'Social pressure' was seen as an important factor in stimulating 'positive' behaviour and in depressing those behaviours constructed as 'negative'. In their responses, a significant number of participants related a prevalence of environmental destruction to 'insufficient' pressure on individuals from other members of society:

...in principle, we all have some level of concern for the environment. However, our actions do a lot of harm on the environment. Why is that the case? It may be because the society does nothing to ensure that every individual behaves in an environmentally friendly way during their day to day activities... [17: Sufi Muslim]

Even within the congregations we don't express disapproval of behaviours that are causing harm to the environment. Rather, we even send our children with refuse to dump on the streets and in the gutters. They grow up thinking that this is acceptable behaviour. [08: Salafi Muslim]

Now think about the issue of plastic bags and the damage they are causing to the environment in the cities as well as in the farm lands. You realise that there is still no real effort to discourage local people from using plastic bags unnecessarily or to insist on a proper way of disposing them (plastics) after use. Unless we begin to openly show our disapproval to carelessness like this, people will continue to behave negatively in that regard. [16: Salafi Muslim]

'Expressing disapproval' towards environmental damage, 'discouraging' 'improper' disposal of wastes and 'ensuring' that individuals behave in environmentally responsible ways, can all be understood as means of exerting pressure on individuals to stimulate pro-environmental behaviour. Evidently, these participants are suggesting that lack of such social pressure contributes to environmental damage, as people 'feel free' to engage in behaviour that harms the environment and are less obliged to behave in ways that preserve it.

This narrative points to participants' framing of environmental destruction as an outcome of a process of 'social normalisation' of anti-environment behaviour. One of the participants has attempted to articulate how micro-level actions and behaviours become 'normalised' in everyday life to produce macro-level social patterns as follows:

...so if as an individual I am not educated to know that the bush fire I am lightening, the paper, the refuse I burn etc are impacting negatively on the planet, I will keep repeating such behaviour thinking that it just normal... So an individual's conscious (anti-environmental) actions, a repeated action by family members will translate into community actions and from the community to the larger society... so it multiplies and becomes a normal behaviour in the community. [13: Pentecostal Christian]

7.2.3. Low awareness of environmental responsibility

Some interviewees suggested that whilst their communities are aware of the existence of environmental problems and believe in environmental ethics and principles of nature conservation, the people did not see themselves as personally responsible for combating such problems. The most common interpretation of environmental responsibility was that it was the government's responsibility to protect the natural environment:

Quite a few Muslims know that protecting the environment has positive implications to them, but think that it is government's responsibility not theirs. This is where the conflict comes. I think there are individual as well as institutional issues here. [09: Sufi Muslim]

The people's perspective is that environmental conservation is the responsibility of the government. I think we need to sensitize them to tell them what their responsibility is... [13: Pentecostal Christian]

Although this was the majority view, another narrative suggested that environmental problems like desertification, drought, floods and soil erosion were brought about by global climate change triggered by industrialised nations:

Many people here would argue that climate change is responsible for desertification and drought in this region and that it (climate change) is a global phenomenon... and there is nothing we Africans can do about it. I think this thinking makes us to continue to behave the way we do [18: Sufi Muslim]

In this case, people did not see any reason why they should adjust their ways of life to solve a problem they were not directly responsible for in the first place. Communities were also seen to believe that certain environmental problems were 'too severe' and

‘complex’ to be solved by individual action such as changes in consumption behaviour, resource use and conservation efforts in their small communities:

Not all these problems we are talking about are caused by us. We all know what causes this severe flooding, desert encroachment and all that...I think our people should not be held responsible for what is caused by industrial activities in the US, China and other countries... [17: Sufi Muslim]

This is an interesting perspective on ‘responsibility’ for environmental problems. People who link local ecological problems to global climate change feel they are not directly responsible for the problem and are less likely to take any mitigation measures. This understanding was also tied to the way the public ‘made sense’ of environmental problems and how these problems were socially constructed in the media and other channels of mass communication. One participant stated that foreign radio and television stations like the BBC are their only sources of information about environmental problems affecting the regions as local media hardly give attention to the environment:

If you turn on the [local] radio or TV all you hear is news about the achievements of the government. Issues like [environmental problems] are mostly heard from foreign radio and TV stations like the BBC because the problem is affecting the whole world. In Nigeria nobody cares. [04: Sufi Muslim]

The overwhelming view being expressed here was of a form of helplessness and it seems that communities in which this was prevalent were unlikely to feel personally responsible for conservation efforts. However, there is also another narrative, although expressed by a minority of participants, that seems to conflate global environmental change to local environmental degradation. For instance, a number of participants tended to believe that local activities like deforestation for firewood and charcoal, bush burning etc are contributing factors to climate change.

7.3. The role of theology in understanding environmental concerns

In each of the narratives described above, belief in human agency in causing and mitigating environmental degradation was evident. Experience, environmental knowledge and context (rather than religious belief) appeared to influence participants' understandings of environmental change. Those religious leaders who attributed environmental problems to human activities were explicitly asked whether they believed that ecological problems like erosion and loss of nutrients could be caused by external forces beyond any human influence. A number of them revealed that religious scriptures (Bible and Quran) have provided clear injunctions on the responsibility of humans in managing the natural environment. The failure of humans to live up to that 'God-given' responsibility was seen to produce consequences in the form of environmental problems.

According to most Christian participants, it amounts to 'blame shifting' to attribute current ecological problems to divine causes. Some Muslim participants, (mostly from the *Salafi* sect) however took a 'middle' position by arguing that while it is not totally wrong to see environmental change as 'God's will', human communities should also accept some level of blame for their continued mismanagement of nature. To these participants, religious individuals have to 'do their best' in preventing environmental problems before putting their trust on God to protect them. This narrative is especially salient in the views expressed by Muslim interviewees who attempted to dismiss the fatalistic views about environmental change that are commonly associated with certain sects within Islam. Such discourse also suggests the belief that although humans have the capacity to cause and mitigate environmental problems, their agency is limited by the existence of a supernatural power - God - who ultimately controls everything:

So it is not right to fold our hands and expect God to look after the environment for us or to expect Him to solve problems we cause with our own hands. God has given us two choices - to do good or bad. He warned us about the consequences of doing bad and the benefits of doing good. Therefore, our role in most if not all these ecological problem is very clear. (07: Salafi Muslim]

Before we consider any problem as predestined, we have to ensure we have done our own part in preventing it, that is we must first strive to prevent it from occurring. Surely, God makes certain disasters occur by natural causes, but before such things occur what have you done to prevent it? God tells us some of the precautions we need to take to prevent such occurrences so that even if they occur the gravity and damages will be minimal. For example agricultural land, we all know what needs to be done to preserve it. Do we do our part? ...Don't you know that God promises to help only people who make efforts to better their lives. [08: Salafi Muslim]

Actually, what is happening is majority of people are ignorant of the issue of 'causation'. It is true that most people tend to attribute any negative occurrence including environmental problems like floods and desertification to God and destiny. It is unfortunate that many people don't have a proper understanding of destiny and divine cause. Surely, there is destiny and some problems have natural causes. However, there are things you as human can do to solve problems that appear 'natural' or lessen their consequences. There are variables that you can control and those you cannot control. [09: Sufi Muslim]

In this sense, both perception of the causes and strategies of adaptation to environmental problems were shaped by this ambivalent belief in the combination of human agency and divine providence.

A number of other Muslim participants situated their understanding of environmental change within a purely theological point of view, attributing ecological problems to supernatural factors and defining them as 'God's will'. I have identified two narratives based on this particular discourse. The first narrative used the metaphor of 'punishment' to interpret some specific environmental problems such as floods and desertification as God's way of punishing humans for sins such as social injustice, decadence, wastefulness and so on. The second narrative used the Islamic belief in 'divine decree' or 'predestination' to suggest that environmental problems were preordained by God and

reference was made to religious scriptures (Quran & Hadith) to support such claims and to explain some changes in the physical environment such as desertification.

7.3.1. Ecological problems as a 'punishment from God'

Environmental problems like desertification, drought and famine and floods were perceived as problems with transcendental causes and interpreted as God's punishment for humans disobeying His commands, violating His divine rules and committing certain 'sinful' acts. Some respondents mentioned social injustice and prevalence of 'immoral behaviour' as being among the major 'sins' that 'attract God's anger' and result in environmental problems as a consequence:

...in one Hadith the Prophet was reported to have said that "when my people commit certain acts, they will be afflicted by certain problems" ...The first among the consequences according to the Prophet is desertification. That "desert will encroach and drive people away from their homes and farmlands". The other consequences mentioned by the Prophet are floods, earthquakes, and erosion. [04: Sufi Muslim]

Disobedience and sins can cause destruction of crops and forests. ...Therefore, degradation of the land and decrease in its productivity or other ecological problems occur as a result of human sins and disregard for God's commands. [10: Sufi Muslim]

Based on this, many Quranic verses have shown that when humans become disobedient to God, day and night, there is likelihood of disaster striking them, which can affect different aspects of their lives. [03: Salafi Muslim]

God Had destroyed many nations in the past through environmental catastrophe like earthquakes, volcanoes, hurricanes and floods for disobeying His commands. So the earth could be used to punish nations that disobey God. [17: Sufi Muslim]

As mentioned earlier, not all respondents who interpreted environmental problems from a theological point of view and defined them as 'punishment from God' disagreed with scientific explanations of human contributions to environmental degradation:

All these scientific accounts of the causes of land degradation are not directly rejecting the religious perspective that human's disobedience of God's laws and commands causes environmental problems. [03: Salafi Muslim]

Apparently, despite their profound belief that ecological problems could result from widespread 'disobedience of God', there is a sense that participants did not want to unreservedly dismiss scientific accounts on human-induced environmental problems. The implications of this position will be discussed later.

7.3.2. 'Predestination' and fatalism

Another theologically-centred understanding of ecological problems is predicated on the belief in 'predestination' or 'fate'. During the interviews, most Muslim clerics had swiftly and repeatedly emphasised that everything is subject to the will of God, implying a firm belief in predestination - one of the six key principles of the Islamic faith. Thus, belief in predestination offered one explanation for how some Muslim groups perceive

environmental problems and the helplessness felt by communities in preventing environmental harm:

All the environmental problems you just mentioned which are affecting the entire world including our region have already been predicted by prophet Muhammed (PBUH) in so many narrations. [04: Sufi Muslim]

Sure, God makes certain ecological problems occur from natural causes... and there is nothing we can do to stop them [08: Salafi Muslim]

Here, humans were dissociated from being causal agents of environmental problems with the result that inaction was inevitable. Again, some participants had maintained that although ecological problems could result from supernatural forces, humans still have a special responsibility to minimise their impacts. They believed that God has given humans a unique ability and responsibility to do things that would improve the quality of the environment and reduce the threat of ecological problems:

Sure, there is destiny and some problems have natural causes. However, there are things you as human can do to solve problems that appear 'natural' or lessen their consequences. [09: Sufi Muslim]

Some of the actions that participants conceived of as capable of reducing the negative effects of ecological problems involved sustainable land use and controlled development. Coping and adaptation strategies revealed by these participants include tree planting, communal environmental sanitation and preaching environmental stewardship.

7.3.3. Spirituality seen as a solution

Some participants who held environmental change as 'natural' prescribed theological solutions and strategies to adaptation. Theological methods of coping with environmental problems were revealed by participants as activities such as special prayers and almsgiving to the poor and needy. These participants considered spirituality in the form of renewal of religious piety, forsaking of materialism, religious rituals, 'repentance' and charity as solutions to environmental change. From their point of view, since God's anger attracted environmental problems, pleasing Him could prevent or arrest such problems:

...people must return to God. All these problems we are confronted with are caused by our disobedience of God's commands. So people must return to God and avoid sinful acts. [03: Salafi Muslim]

It is mentioned in the Quran that there were people who refused to give the mandatory 'poor due' or alms to the needy, as commanded by God, and He (God) sent Angels to destroy their farms and crops. When they went to harvest their crops, they discovered that everything had been destroyed. [10: Sufi Muslim]

Corrupt, greedy leadership produces materialism and distances people from spiritualism. And God punishes people who promote materialism over spiritualism. Unless these things are

addressed both by leaders and followers, scholars believe that God will continue to inflict us with problem like this. [04: Sufi Muslim]

One participant described the significance of Muslim 'special prayers' in mitigating drought and in bringing abundant rainfall. Such rituals, according to the interviewee, were carried out whenever there was drought in the area:

In general, we need to intensify prayers as we cleanse ourselves from sins of disobedience and injustice. The normal special prayers we offer during drought, when seeking rain, are temporary measures. We need to extend that to all seasons and be steadfast in praying for sustenance and good seasons. [10: Sufi Muslim]

Although belief in the power of prayers and other rituals to ameliorate the effects of environmental decline was expressed by this Muslim cleric in reference to drought, there is a sense that such prayers and rituals are also invoked to 'prevent' other problems like floods and to 'boost' agricultural yields.

7.4. Conclusion

The goal of this chapter was to report on some of the understandings of environmental change within the participating congregations and thus contribute to discussions on religious factors at play in environmental debate. The chapter built on the findings of Djupe and Hunt (2009) suggested that religious congregations were effective avenues for the exploration of religious norms and values and that the clergy are said to have significant influence on members' perspectives on environmental problems. Thus, my analysis sought to understand the views of the clergy on ecological problems as well their perspectives on coping and adapting to change. The findings showed that both Christian and Muslim participants perceived ecological problems as real threats to their communities' livelihoods and future sustainability. However, religion played a minor role in influencing understandings of environmental change in all the Christian congregations as well as in some of the Muslim congregations. Leaders of Christian congregations were more likely than their Muslim counterparts to understand causes of environmental problems in ways that were consistent with scientific knowledge of anthropogenic causes. Contrary to reports from studies of Christian communities in the US (Barker & Bearce, 2012; Guth et al., 1995) none of the Christian clerics interpreted ecological problems as punishment from God or as fulfilment of biblical 'end times' prophecies. In contrast, Muslim participants reported a variety of understandings of environmental change. Participants representing the *Sufi* Islamic congregations expressed the view that certain ecological problems like desertification, floods, erosion and drought were 'natural', and saw them either as punishment from God for human 'sinful' acts and 'godlessness' or as signs of 'end times'. A minority of participants

representing the *Salafi* Muslim congregations also described ecological problems as punishment from God for human sins. Other participants from the *Salafi* sect interpreted ecological problems as caused by human activities such as excessive exploitation of resources and uncontrolled growth. All participants identified pollution due to garbage accumulation as a human-induced environmental problem that threatens the health and wellbeing of their communities. The limited role that religious doctrines played in shaping understandings of environmental change among Christians and the majority of *Salafi* Muslim participants point to the role of scientific knowledge in dealing with perceived helplessness. All the leaders of Christian congregations and most *Salafi* clerics I interviewed had acquired tertiary education whereas participants from the Sufi faith communities had lower levels of western education.

From the policy angle, the finding that even Muslim participants who interpreted environmental problems from a purely theological point of view did not attempt to dismiss scientific explanations on anthropogenic causes of environmental problems and solutions is indicative of their readiness to respond positively to environmental education and to work with environmental scientists and policy makers in finding solutions to the problems. This finding also confirms earlier findings reported in chapter five that knowledge of environmental schemas can empower religious individuals to reinterpret religious principles and beliefs to deal with current environmental problems. Thus, crucial to a meaningful engagement of religious communities with environmental issues is access to environmental information. Djupe & Hunt's (2009) emphasis on the role of environmental education in congregations is well supported by this finding.

In Chapter 2, I showed that many religious institutions around the world, such as the Catholic and Protestant Churches and some Islamic groups, have developed an institutionalised commitment and 'new theologies' to promoting environmental sustainability. It can be seen from the above that religious institutions in Nigeria are yet to institutionalise their engagement with environmental change.

These findings have two major implications that are important to future research on perceptions of environmental change and on mitigating environmental degradation in the communities studied. First, the findings suggest the need for a rigorous analysis of the role of non-religious factors such as education and socio-economic variables in shaping perception and modes of adaptation to environmental issues. Since religious doctrine was found to play only a modest role in shaping opinions regarding environmental change in some congregations, further research is needed to explore the

role of non-religious factors. Second, the 'theocentric' understandings held by some of the participants helps to understand why there is insufficient pressure on the government to find solutions to ecological problems. It also helps to explain why adaptation solutions proposed by environmental scientists and governments are not receiving the support of the local populations. According to the Federal Government of Nigeria (2012), previous programmes to combat environmental degradation have failed to yield desired results because they did not build on existing local knowledge and capacity. Specifically, the report identified local people's perception of the root causes of ecological problems as posing a challenge to implementation of environmental policies. Future policies therefore need to develop a more holistic approach that recognises and utilises these perceptions in a way that would strengthen the capacities of the people. People who hold fatalistic views about environmental change are likely to ignore any policy that recommends measures such as changing lifestyles and consumption patterns. Addressing the challenges posed by rejection of scientific solutions to environmental problems requires understanding of the worldviews that inform such positions. The findings presented in this chapter could contribute to that understanding.

Finally, while existing research has documented the influence of religious structures on environmental structures, little research has focussed on the effects of environmental structures on religious schemas and resources (for exceptions see Sherkat & Ellison, 2007). But as shown in previous chapters, religious individuals can and do transpose schemas and resources from other structures to current environmental issues. Thus, the salience of discourses on institutional and social-structural factors in environmental change has, again, provided support for the notion that environmental education can empower religious individuals to reinterpret religious schemas in ways that could stimulate political action. Literature on religious environmental movements has shown how religious groups utilise religious resources for political activism to prevent and reduce environmental damage. Most of these movements that advocate radical shifts in social and political structures to address environmental change are predicated on the notion that such structures enable and constrain human agency. Thus changes in those structures could generate the necessary behavioural change at the individual level. This perspective is supported by the discourses presented above which show that religious individuals and groups perceive their agency as not only enabled and constrained by religious structures but also by other existing social and political structures. However,

some of their views also suggest that both religious and secular structures develop from and are shaped by individual agency.

The finding that suggests variations in social framing of environmental problems among Muslim participants indicates support for the denominational diversity model (Hand & Van Liere, 1984). The (denominational diversity) model, as highlighted in chapter two, assumes that there is a considerable diversity in theological ideas on environmental issues among various religious denominations, which can associate with socio-economic interests to produce differences in environmental orientation and perception of environmental problems. But while diversity in environmental concerns among the various denominations of Christianity has been sufficiently explored, such diversities have not been explored in Muslim groups. Thus, the finding that the Sufis and Salafis are likely to differ in terms of their understandings of environmental change and their interpretations of religious and environmental schemas needs to be explored further.

CHAPTER 8 - CONCLUSION

The overall goal of this thesis is to contribute to our understanding of the connection between religion and the environment. Religions provide an important analytical lens for policy and research on contemporary environmental issues in view of their historic role in shaping attitudes and behaviour, and human perception, coping and adaptation to problems of life in many societies. To make a useful contribution to knowledge of the connections between religions and the environment, the study examined the influence of religious beliefs on environmental attitudes and behaviour, and perception and adaptation to environmental problems among selected Christian and Muslim congregations in the Northeast region of Nigeria. By examining these two dimensions of the religion-environment nexus, the study contributes to social scientific debates on how human values, attitudes and behaviours affect the natural environment and how human communities perceive and respond to environmental change. An understanding of both aspects of society-environment interaction is crucial to changing society's negative impact on the environment and developing effective measures to mitigate environmental decline. Using Northeast Nigeria - a previously unexplored region - as a case study to make a comparative analysis of Christian and Muslim groups, using mixed research methods, the thesis contributes to empirical evidence on relationships between religious beliefs and values and environmental attitudes and behaviour. It also contributes to understanding of the impact of religious beliefs on perception and adaptation to current environment issues.

In the preceding chapters, I have reviewed relevant theoretical and empirical literature on the social scientific study of religion, society-environment interaction, and religion and environment. In the review, I attempted to situate the present study within these wider literature that cut across different fields of study. My review of relevant literature shows that despite the mushrooming research on the connection between religion and the environment, existing theoretical ideas do not offer sufficient insights on the changing nature of religious impact on people's attitudes and behaviour towards environment, nor on how environmental change is impacting on religious ideas. Against this backdrop, I proposed that a broader approach is required to generate new insights that could help refine and improve existing theories. I also argued that despite the centrality of religion to social life in developing societies of Africa, and the worsening trend of environmental change, little research has been done to explore the role of religion in current environmental issues in the region. On this note, I presented in

chapter three an overview of the Northeast region of Nigeria, in a socioeconomic context, and argued that the region provides an important case for an empirical comparative study on religion and environment. My discussion of the research epistemology and methodology in chapter four addresses the issue of religion-environment connections, why I find the tools and techniques used in gathering and analysing data appropriate, what limitations there were in the approach and techniques, as well as the practical and ethical challenges I encountered in the research process. These preceding chapters provided the background for the thesis, setting the ball rolling for the presentation of my data analysis and discussion of research findings which I did in three chapters (5-7). This chapter, being the last, is intended to be a conclusion to the thesis. The chapter begins with a summary of the issues raised in the literature review and methodology chapters, the research questions answered and the objectives of the study. The chapter then moves to present the key findings of the study in the light of existing knowledge on religion-environment interaction and discusses how these findings are expected to contribute to theory and environmental reform policy and future research. This is followed by a discussion of the limitations of both the study methods and findings, and a reflection on the ways forward.

8.1. Summation of the thesis

In the beginning, my main focus was to review as much literature as possible on the connection between religion and the environment in order to establish both the desirability and timeliness of my study. Following an extensive search, I found that grounding a study of this nature requires a good understanding of major theoretical ideas and empirical literature that cut across diverse, hotly debated topics such as nature-society relations, religion in society, and religious involvement in contemporary environmental issues. This proved to be a daunting task as both the subjects involved (religion and environment) and the body of knowledge to be covered in the review (theory and research) are very extensive and wide ranging. Thus, I limited my review to only theories and empirical research that I found relevant and useful to guiding my research. My review of major theoretical ideas that shaped social scientific study of religious phenomena has revealed that although many classical and contemporary social scientists have provided useful theoretical insights on the nature of religious phenomenon and 'what it does', the debate over what counts as 'religion', what are its social functions, and how a social scientific study of religion can be conducted is far from conclusive. However, from the review of these hotly debated issues on social scientific study of religion, I came to the conclusion that for a good understanding of

'religion' or what is regarded as 'religious' phenomenon, it is plausible to adopt the social constructionist approach as proposed by James Beckford . Some of the precepts of this approach which I found useful in this study include the need to take into account the 'multifaceted and socially constructed nature' of religious phenomena by paying attention to the important role human agents play in producing and modifying what they regard as religion. Other useful methodological suggestions stress the need for developing an understanding of the 'complexity and variety of ways in which human agents use what they define as religion' and emphasise the need for an analysis of how individual and collective agents put to use socially constructed notions of religion in everyday life. Thus, in this study, I tried to focus on how social actors - religious congregations and individual members - in trying to attribute meaning to their environment, draw, through interpretive processes, on religious schemas and resources. By using this approach, I was able to demonstrate in the findings of my study that usage of religious resources is not automatic and varies according to situations.

Also in the literature review, I considered sociological theory on the 'natural' environment. I made an attempt to briefly review some classical and contemporary theories with a view to identifying some key ideas and concepts that have shaped theories on the ontology and 'meaning' of the 'environment'. Following the review, I accepted the 'moderate' social constructionist perspective that stresses the material existence of nature independent of humans but contends that our knowledge of that reality is being shaped by human construction. That is to say, individual and collective actors employ categories and concepts that aid their understanding of the environment and that these categories and concepts are shaped by social and cultural processes across time and place. Thus, in this thesis, I focussed not only on how religious individuals and congregations draw on religious beliefs, experience and practices to make sense of the natural environment but also the observable differences in understanding of the 'environment' among Christian and Muslim participants. My review of related literature on social theory of the 'environment' has also examined sociological theories that addressed the social causes of environmental problems. The most useful of these theories was Catton and Dunlap's (1978) analysis of the then 'Dominant Social Paradigm' (DSP), their critique of traditional sociology and its 'Human Exemptionalism Paradigm' (HEP) and their idea of a paradigm shift represented by the 'New Environmentalist Paradigm' (NEP). Catton and Dunlap's initial sociological analysis of environmental issues and the subsequent theoretical and empirical attempts to

understand societal causes and engagement with ecological problems have provided some useful concepts and methodological insights that have helped guide this study.

My review of theoretical literature on nature-society interaction has also covered some widely used theories of environmental reform, namely Mol's ecological modernisation and Dryzek's 'deliberative communication' theory. Both theories were found useful to understanding current efforts to addressing local and global environmental problems, including those adopted by religious environmental movements. Dryzek's 'deliberative communication', as highlighted in chapter two, is useful to explaining how presence or absence of 'rational deliberation' about environmental issues among religious individuals, within religious communities, and between religious communities and other environmental stakeholders facilitates or impedes environmental management. Mol's ecological modernisation on the other hand provides relevant ideas to analysing the emergence of 'environmental value systems' within religious communities, the role of technology, especially the mass media in the social framing of environmental problems.

The review of empirical literature on religion-environment connection suggests that there are different ways of understanding how religious phenomena relate to environmental issues. These include theories as to how religious resources (worldviews, beliefs, experience and organisations) influence individual attitudes and/or behaviour towards the environment. Another dimension pertains to the role of religious beliefs and experience in shaping perception and adaptation to environmental problems. From my perspective, an understanding of how religious individuals and groups engage with current environmental issues will pave the way for theorising how environmental change impacts on religious factors. After a review of the relevant empirical literature, I proposed that, to fill the existing gap in the literature on religion-environment connection and contribute to a better understanding of the subject, this study needs to depart from previous works by examining both religious influence on environmental worldviews and behaviour, and understandings and adaptation to environmental change. This departure also involves a comparative analysis of two or more religious traditions, a focus on areas and communities that have not been sufficiently studied, an interest in both the *individual* and *collective*, as well as the use of mixed research methods. Based on this conclusion I produced the following research questions for the present study:

- To what extent do religious beliefs and worldviews influence environmental attitudes and self-reported behaviour?

- Is there any evidence of dominion-over-nature beliefs in the narratives and responses of the religious groups?
- Do Christians and Muslims differ in their understanding and commitment to dominion-over-nature orientation?
- How is the dominion-over-nature doctrine interpreted and does commitment to dominion beliefs correlate with negative environmental attitudes and behaviour?
- What other factors influence environmental attitudes and behaviour?
- In what ways do religious beliefs and values provide an ethical basis for pro-environmental attitudes and actions?
 - How are the major discourses about religiously-inspired concerns for the environment framed?
 - Do Christian and Muslim participants differ in their pro-environmental narratives?
 - Does religiously-inspired environmental concern translate into private or public sphere environmentalism?
 - What are the limitations of religiously-inspired concern for the environment?
- In what ways and to what extent do religious ideas shape interpretation of environmental change and narratives of adaptation to change in the environment?
 - What are the dominant narratives about environmental change?
 - Do Christian and Muslim participants interpret environmental problems in the same way?

The last section of the literature review introduced the theoretical frameworks I used to interpret the findings of the study. As I mentioned above, in line with the idea of 'theoretical pluralism' (Beckford, 2003), the analysis of research findings drew from a variety of theoretical perspectives and utilised a number of concepts. The major theories utilised in the interpretation of my research findings include a theory of structures (Sewell, Jr., 1992; Sherkat & Ellison, 2007), and the Value-Belief-Norm theory (Stern et al., 1993; Stern et al., 1999; Stern, 2000). The theory of structure was used to interpret how the interplay between religious and environmental schemas and resources produces varieties of environmental attitudes and behaviours, and influences understandings and adaptation to environmental problems. This interpretation was supported by additional propositions provided by the VBN theory.

Against the backdrop of these discussions on theoretical and empirical literature on the subject, I introduced in Chapter 4 the epistemological and methodological underpinnings of the study. This was followed by a discussion on the approach to data collection and analysis, the instruments utilised, the practical steps taken in the process and a reflexive account of the challenges encountered and how I addressed them. In this chapter, I have argued that even though both social constructionist and methodological realist approaches to social research have offered a lot of philosophical and methodological precepts with which to explore the relationship between religion and the environment, neither of the two dominant sociological perspectives has succeeded in resolving all of the fundamental philosophical issues at the ontological and epistemological levels or provided a sufficient range of conceptual and methodological tools with which the various dimensions of religion-environment interaction I sought to examine can be studied. For that reason, I chose to use a middle-ground approach - critical realism - with the hope that I could overcome some of the critical philosophical and methodological problems that other rival philosophies have failed to convincingly address. I therefore moved on to provide a brief overview of the critical realist approach to social research and argued through the usefulness of adopting critical realist ontological, epistemological and methodological tenets. In the discussion, I underscored the utility of critical realist concepts of 'causation', 'emergent properties' of reality and emphasised the benefits of adopting a critical realist position in dealing with the structure-agency problematic. I also stressed the efficacy of critical realist pragmatist methodology, its acceptance of both constructionists/interpretivist and realist/positivist epistemology and how that informed my decision to use qualitative and quantitative techniques of data gathering and analysis. The discussion that followed introduced qualitative interview as a method of data collection, its suitability to the present study, how it was employed in data gathering, how the data generated were analysed and the limitations of interview as a qualitative research technique. After discussing the usefulness of having an interpretive understanding of environmental beliefs and worldviews, and discourses about environmental behaviour, I moved on to introduce the second method of data gathering and analysis - the quantitative method. Here, I discussed why I needed to use questionnaire data to 'measure' the environmental beliefs and worldviews of members of participating religious groups and analyse their relationship with environmental behaviour. The discussion also covers a detailed account of the instruments used in data collection and the statistical analysis procedures

used. The last section of the Chapter concentrated on the practical challenges faced during the research, the ethical issues involved, and how I overcame them.

The chapters that followed (5, 6 and 7) presented the analysis of data and discussion of findings in the light of the theoretical perspectives discussed in Chapter 2 and their implications for theory and future research. Chapter 5 presented findings from the analysis of qualitative interviews and questionnaire data on the influence of religion on environmental worldviews and behaviour from the reference point of Lynn White's (1967) thesis. Chapter 6 drew on analysis of qualitative interviews and questionnaire data to investigate the theme of religious environmentalism, its different forms as well as their limitations. Chapter 7 explored both theological and non-theological narratives on understandings of and modes of adaptation to environmental change. The key findings from all the three chapters are presented below.

8.2. Summation of key findings

The thesis sought to investigate the impact of religious beliefs, worldviews and environmental attitudes, behaviours and understandings of environmental problems. The findings of the study have revealed insights that indicate how religious factors combine with social, economic and political factors to shape environmental schemas and resources of religious individuals and groups. In addition, the findings also give preliminary insights into how religious individuals and groups, in trying to respond to the reality of environmental change, modify their interpretation of religious beliefs and principles. As will be seen in the following summary of key findings, the structural complex of religion and environment cannot be understood independent of the larger socio-cultural and economic context.

8.2.1. Religion and the environment: dominion vs stewardship of nature

The first research question I answered sought to understand how and to what extent religious beliefs and teachings impact environmental worldviews and self-reported environmental behaviour. To explore this connection, I found it imperative to understand both how religious individuals subjectively interpret their religious and environmental schemas and resources and how the interplay impacts on behaviour towards the environment. I used Lynn White's thesis as a starting point to assess individual environmental attitudes and self-reported environmental behaviours. Specifically, my analysis focussed on examining whether, as White hypothesised, religious individuals are committed to the dominion-over-nature orientation, whether Christian and Muslim participants differ in their commitment to and interpretation of

dominion theology, how they interpret the dominion doctrine, whether belief in dominion-over-nature is associated with negative environmental attitudes and behaviour, and the range of other factors, if any, that influence these. The key findings reported in Chapter 5 can be summarised as follows:

Religious beliefs and doctrines are useful sources of environmental worldviews among the religious groups studied. Religious theology is an important source of schemas and resources that help inform people's environmental worldviews. In trying to make sense of the natural environment, religious individuals (Christians and Muslims) draw from diverse religious teachings and experiences which they interpret differently according to the situation. Knowledge of religious doctrines and environmental conditions are important resources that enhance religious individuals' ability to make sense of their environment. As established by Lynn White (1967) and numerous other subsequent studies (such as Woodrum & Wolkomir, 1997), at the heart of environmental beliefs of most of the studied religious individuals is the dominion-over-nature doctrine. This belief was recurrent in the narratives of both Christian and Muslim participants interviewed and has been overwhelmingly endorsed by both groups according to the questionnaire data. The data further confirms what has been reported in previous studies: that dominion-over-nature doctrine is represented by notions of human mastery over the earth as enunciated by the idea that humans were created to rule over the rest of nature, as well as the utilitarian view of nature as primarily created to serve human beings' need for resources. However, in addition to these, and contrary to what has been reported in the literature, dominion-over-nature doctrine was interpreted by both Christian and Muslim clergy to also mean a divine command to look after the rest of nature. The findings further revealed that dominion-over-nature doctrine is not a simple and straightforward religious belief, as widely reported in the literature. Rather, it is a complex set of beliefs about human position in relation to the rest of creation, the place and value of nature as well as the rights of nature, among other things. It can be understood as a set of beliefs that religious individuals and groups use to not only legitimise the use of environmental resources but also emphasise humans' responsibility to nature. Although it can be used to justify the exploitation of nature, the dominion doctrine can also be used to encourage the stewardship of nature.

As stated above, levels of endorsement of dominion-over-nature doctrine remained the same between Christian and Muslim participants. This suggests on the one hand that, contrary to White's assumptions, Christians, in my study, are not more likely than

Muslims to hold onto the belief of human dominion-over-nature. On the other hand, this finding implies a support for theories that emphasised the need to make a distinction between Abrahamic and non-Abrahamic religions. Evidence of dominion-over-nature orientation is found among both the clergy and the laity in this study. However, there is a strong sense that availability of religious resources - that is knowledge of religious and environmental schemas - has empowered the clergy to reinterpret and transpose religious and environmental principles to the present situation. This could explain why religious clerics interpreted religious commands about human dominion-over-nature as a directive to also maintain a stewardship of nature. With this ability, the clergy, I argue, are specially positioned to serve as important conveyors of the environmental information needed to influence environmental attitudes. Based on the findings of Djupe and Hunt (2009), religious congregations are important avenues for environmental education. Within congregations, the clergy play an important role in interpreting religious norms and values - including religious environmental principles - which could serve to promote pro-environmental attitudes among the laity. Although my study did not evaluate the impact of clergies' environmental views on the laity, I argue that if an effective means of channelling environmental education is developed, the clergy could play a crucial role in promoting pro-environmental attitudes among their followers.

Another important finding of my study is the lack of statistical relationship between religious identification, commitment to dominion-over-nature and negative environmental attitudes and behaviour. First, there is not enough evidence to support some of White's claims that religious identification and commitment to dominion belief predispose individuals to devalue nature and engage in behaviours that damage the environment. On the contrary, non-religious factors such as income and level of education were found to have more influence on both environmental attitudes and behaviour than religion and commitment to dominion belief. Similar conclusions were reached by earlier studies (such as Sherkat & Ellison, 2007). This particular finding does not support theories that emphasised that religious values are important determinants of environmental behaviours. From my perspective, the value-belief-norm theory proposed by Stern et al. (1999) and Stern (2000) is more relevant to understanding the causal powers of religious beliefs and values in environmental behaviour. This is because the theory has taken into account the wide range of other individual and situational factors that combine with religious values and beliefs to influence different kinds of environmental behaviour.

To sum up, of particular importance among the findings highlighted above is the evidence that there is a strong endorsement of dominion-over-nature doctrine. The level of endorsement of dominion theology is the same for both Christians and Muslims. But like identification with Christianity or Islam, commitment to dominion-over-nature orientation does not have negative correlation with environmental behaviours. Conversely, a 'stewardship' interpretation of the dominion command is salient throughout discourses on the dominion doctrine. Religious individuals interviewed did not interpret the dominion command as a license to engage in an unlimited exploitation of nature. This underscores the importance of having a good understanding of how religious individuals themselves interpret scriptural doctrines before drawing any conclusion on how beliefs influence behaviour. Due to reliance on statistical measures of environmental attitudes and behaviour, much of the existing literature does not pay sufficient attention to the way religious individuals interpret theologies. Similarly, the causal power of religion in environmental attitudes and behaviour appears to be dependent on a number of factors. Those factors identified in this study include knowledge of religious and environmental schemas, availability or lack of material resources and the social situation in which the individuals operate.

8.2.2. Varieties of religious environmentalism

The second research question I answered in the thesis explored the ways in which religious beliefs and values inform conscious orientation to protecting the environment. The main issues I addressed in that regard include identifying and analysing the major discourses that emerged from participants' accounts of pro-environmental attitudes and actions, and investigating the various motives that underlie religious pro-environmental attitudes and behaviour. Similarly, I also tried to compare Christian and Muslim participants' accounts of how religious beliefs and values provide a spiritual motivation for pro-environmental actions and examined the various social conditions under which such pro-environmental actions are constrained. My analysis of interviews and questionnaire data has revealed the following findings:

Religiously-inspired pro-environmental worldview was evident in the narratives of virtually all religious leaders interviewed. There is also an overwhelming endorsement of religious environmental principles in the questionnaire results. Pro-environmental views and actions that were inspired or rationalised by religious doctrines can be classified into three: *religious ecocentrism*, *religious anthropocentrism* and *theocentric environmentalism*. Religious values that portray nature as God's creation, which has its

own value, purpose and rights inspire a social consciousness for respecting nature and protecting it from harm. At the centre of discourses on religious ecocentrism is the use of metaphors derived from the Bible or Quran to describe nature as a "perfect", "beautiful" and "balanced" creature whose "rights" must be protected. Belief in a religious responsibility to protect the rights of nature, preserve its beauty, maintain its balance, and its perfection serve as the basis for ecocentric environmental action. This narrative featured recurrently in the views expressed by both Christian and Muslim participants, although more Muslim interviewees had reported religious ecocentric views. There was however a slightly higher proportion of Christian congregants than Muslims who reported endorsing ecocentric items in the questionnaire.

The second variety of religious environmentalism identified in this study is anthropocentric or human-centred. This is the most salient variety of religious environmentalism among the religious groups studied. Human-centred environmentalism is built upon the religious principles of problem solving and volunteerism which motivate individuals and groups to protect the environment so as to prevent the harmful effects of environmental problems. Environmental problems were seen to be detrimental to human's continued survival and welfare, while volunteering to prevent or stop human suffering from ecological problems was recommended by both religious traditions. Thus, when environmental risk is perceived by members of religious groups, religious beliefs are transposed to provide the inspiration that is required to act in ways that could prevent, end or reduce the risk perceived and enhance their wellbeing. Like religious ecocentrism, strong anthropocentric environmentalism was observed in the narratives of both Christian and Muslim participants, although Christian religious leaders were more likely than Muslims to forcibly express it during the interviews.

The third and last variety of religious environmentalism identified in this study is theocentrism, that is, God-centred environmentalism. Unlike ecocentrism which is nature-centred and anthropocentrism which emphasises human benefits of environmental protection, theocentrism is based on religious individuals' desire to obtain heavenly 'reward' and avoid 'sin'. The religious belief that pro-environmental actions like tree planting, sanitation, water conservation and management etc attract 'heavenly reward' motivates religious individuals to engage in such actions even where there are no foreseeable personal gains. Similarly, the belief that environmentally negative behaviours like tree felling, pollution, wastefulness and so on are 'sinful' and

could attract God's anger and wrath also serves as a deterrent to such actions. Even though this form of religious environmentalism is not as commonly reported among members of the sample as ecocentrism and anthropocentrism, it is still an important type of pro-environmental action observed in this study. It is worth restating that both in the interviews and questionnaire data, there is more evidence of theocentric environmentalism among Muslims than Christians.

As I noted in chapter 6, from the viewpoint of structural theory, the ability of religious individuals and groups to put religious principles into practice in real life depends on the enactment of relevant *schemas* by *resources* at their disposal. Among the numerous resources needed to activate religious environmental schemas are knowledge of religious doctrines, religious experiences, as well as environmental resources such as awareness of the seriousness of environmental problems, knowledge of competing interpretations of religious and environmental schemas, material resources and so on. Access to these resources differs among religious individuals and between groups. Religious and environmental schemas are 'empowered' by resources such as knowledge of the severity of environmental problems which were accumulated over time from different sources of information, among others. Instantiation of such schemas and ability of religious individuals to borrow and apply the schemas of problem solving and helping others to environmental issues perhaps explains why anthropocentric environmentalism is more prevalent than ecocentrism and theocentrism.

8.2.3. Limitations to religious environmentalism

Religious environmentalism is found to be dependent on and constrained by the social conditions in which individuals and groups operate. Among the religious communities studied, there is a consensus that the practice of religious environmentalism is low. This suggests that certain social conditions in the region might have affected the ability of the people to put their beliefs into practice in real life. The most prominent social conditions that constitute barriers to the practice of religious environmentalism are lack of material resources (poverty), lack of knowledge of religious and environmental principles and the social context under which environmental issues are prioritised. The discrepancy found between the principles and practices of religious environmentalism was explained by these three factors. High levels of poverty among the people means limited materials resources and less human resources available to commit to environmental protection. Limited knowledge of religious and environmental schemas might affect the ability of actors to transpose religious commands (schemas) that

prohibit behaviours like pollution and wastefulness, and recommend behaviours like tree planting and sanitation. Finally, since both religious beliefs and environmental issues are products of human social construction, the social processes under which they are defined and negotiated and the actors' preferences determine how they are prioritised. In other words, the dynamic process through which religious beliefs are produced, defined and applied to social realities like environmental issues could affect the practice of religious environmentalism. As shown in the analysis, some of the principal agents whose responsibility is interpreting religious doctrines and shaping the definitions of environmental issues - the clergy - have, for the time being, prioritised other issues like personal salvation over environmental problems. This deprioritisation of environmental issues was seen to affect the practice of religious environmentalism.

Despite the limitations imposed by poverty, lack of knowledge and deprioritisation of environmental issues, the strong evidence of religious environmentalism among both Christian and Muslim groups suggests that environmental policy could tap into those beliefs and principles.

8.2.4. Understandings and adaptation to environmental change

Chapter 7 answered the research question 'how and to what extent do religious ideas shape understandings of environmental change?' In answering that question, I made an attempt to examine all the major narratives about current environmental problems that emerged from the analysis of the interviews. In particular, I looked at narratives about the causes of environmental problems and how people are responding (or are supposed to respond) to increasing environmental degradation. I also tried to understand whether Christian and Muslim participants differ in their interpretation of environmental issues and in the strategies of adaptation they propose. The major findings of this inquiry can be summarised as follows:

Overall, there is consensus among both Christian and Muslim groups that environmental change is both a real and existential threat to the livelihoods and wellbeing of their communities. The most common environmental problems participants identified were desertification, erosion, drought, flash floods, resource depletion and garbage accumulation. This indicates that local religious leaders recognise the same core set of environmental issues as cited in national and scientific studies. However, their understanding of environmental change is limited by the fact that a vast majority tended to confuse climate change with some of these local ecological problems. Discussion on the 'causes' of environmental problems and change has revealed three

different but not necessarily competing narratives: the 'government/institutional' narrative, the 'social-situational' narrative, and the 'theological' narrative. Both the 'government' and 'social-situational' narratives saw environmental problems as resulting from long term destruction of the environment due to human economic activities. However, instead of seeing human destruction of the ecological system as an outcome of individual environmental actions, participants described it as resulting from larger social institutional dysfunctions. Such views highlight the importance religious individuals attach to the constraining powers of the state, the law and the society. The theology-centred narrative, on the other hand, stressed the agency of supernatural powers to determine the conditions of the environment and of humans. Each of these three narratives correspond with similar ideas about the best ways to adapt to or mitigate environmental problems.

The narratives on the role of 'government' in environmental problems suggest that environmental change originates from the gradual degradation of the ecological system as a result of human activities. The human economic activities that cause environmental damage were seen to be driven by dysfunctions in the wider political and institutional environment. Thus, in place of activities of individual actors, 'systemic' factors which created a conducive environment for environmental degradation were the central focus of the narrative. The role of government in environmental degradation was elucidated in three themes: lack of concern, crippling corruption and lack of institutional mechanisms to combat environmental degradation.

The first of three sub-themes regarding the government's role in environmental change is explicated by the idea that lack of concern about environmental management and conservation on the part of the governments is contributing to environmental degradation. There was in this narrative a sense that environmental management is the government's responsibility and that whereas governments in the 'past' had been highly effective in implementing environmental policies, the present governments are not giving sufficient attention to environmental management. The second perspective suggests that environmental management and conservation in the region is being affected by the high level of corruption in the government. In other words, governmental agencies responsible for the implementation of environmental policies have been rendered weak and ineffective by prevalent corruption and mismanagement. The third viewpoint attributed environmental degradation to lack of effective laws and institutional mechanisms to combat environmental destruction. Narratives on adaptation

to environmental problems that were informed by these perspectives point to the need for addressing those obstacles with a view to providing effective institutional mechanisms for the implementation of environmental reform policies. Religious individuals and communities perceived themselves as lacking the necessary resources, power and information to mitigate environmental problems. Even individual behavioural change, according to them, could only make sense within a larger framework of public policy and environmental justice.

Another perspective designates environmental degradation as being associated with a range of social factors and contexts, the most notable of which are population pressure and scarcity of resources, absence of social pressure and low awareness of environmental responsibility. Scarcity of environmental resources such as agricultural lands and forests was linked with population increase, the two of which combine to produce resource depletion and environmental change. Adaptation to environmental change under such circumstances involves exploitation of the only available lands and resources, while ignoring the environmental risks of such economic activities and of migrating from worse affected areas, to other areas where the problem is less. In both cases, the people affected do not perceive themselves as capable of reversing the trend through individual or collective efforts. The other narrative accepts the idea that individuals and communities can play a positive role in environmental management and conservation. However, this role was seen to be hampered by the prevailing pattern of social relations, especially lack of 'social pressure' on individuals in the community to foster a positive relationship with the environment. Social disapproval of negative environmental behaviours was said to be low and as a result such behaviours became normalised. According to this perspective, addressing widespread environmental destruction requires changing this unfavourable social situation in a way that discourages environmental damage. Lastly, increased environmental degradation was also linked to low awareness of environmental responsibility. Here, the argument made was that majority of people in the region are not sufficiently aware of the impact their activities are having on the environment. Further, there is also a tendency that even among people who are aware of the impact human activities have on the environment, there are those who think that the responsibility for the addressing environmental problems rests either with the government or the 'advanced' countries who are causing global warming and climate change. Such people also tend to see environmental problems as too 'severe' and 'complex' to be addressed through individual measures such

as changes in consumption and energy sources. This mindset was seen to aggravate the destruction of the environment and inhibit environmental protection.

My findings also indicate that a number of Muslim clerics interpret environmental problems from a purely theological point of view. Such religious clerics are also likely to advocate spiritual means of coping and adapting to environmental problems. The most recurrent theological interpretations of environmental change include a definition of problems such as floods and desertification as 'punishment' from God for human sinful behaviours. Another interpretation uses the Islamic concept of 'predestination' to describe environmental change as events 'divinely decreed' or as signs of 'end times'. Participants who believe that environmental problems are God's punishment for human sins tend to cite lack of 'social justice' and the prevalence of 'immoral behaviours' as the major 'sins' that attract God's anger and lead to environmental problems. Prevalence of such 'vices' in today's world, according to this narrative are the reason why ecological problems are widespread and severe. Societies that are least likely to experience problems such as floods, desert encroachment, famine and loss of soil nutrients are those that are 'obedient' to God's commands. Interpretation of environmental problems as 'signs' of 'end times' or as 'predestined' events is based on the belief that 'God is in control' of everything, both positive and negative. Thus, negative events and tragedies are understood as the 'will of God', sometimes seen as a 'test' of humans' piety. Some participants went a little further to add that such things as ecological problems and other 'natural' disasters are fulfilment of 'end times' prophecies.

My analyses have further revealed that adaptation strategies advocated by religious individuals who subscribe to theological interpretation of environmental problems were mainly spiritual. Those who defined ecological problems as 'ordained by God' or as signs of 'end times' tended to hold fatalistic views, believing that nothing can be done to change the situation. On the other hand, those who saw ecological problems as 'punishment' were likely to advocate spiritual solutions such as special prayers, almsgiving to the poor, renewal of religious piety and so on.

Overall, the findings above suggest that religious beliefs played little role in shaping understandings of environmental change among Christians compared to Muslim groups. In other words, Christian leaders in the region were more likely than Muslims to understand environmental issues in ways that are consistent with scientific knowledge of anthropogenic factors in environmental change. This finding contradicts reports in previous studies (Barker & Bearce, 2012; Guth et al., 1995) that evangelicals are likely

to interpret environmental problems as signs of 'end times' or as punishment for human sins. The finding, however, supports the conclusion from three separate studies in Muslim communities (Hutton & Haque, 2003; Lindskog & Tengberg, 1994; Paradise, 2005) that many Muslims are likely to use theological knowledge to interpret ecological problems. Among the Muslim groups who participated in this study, the Sufis are more likely than the followers of the Salafi sect to define environmental change as 'will of God' or as punishment for human sins. This variation in the framing of environmental problems among Muslim groups further supports the denominational diversity model (Hand & Van Liere, 1984) which emphasises the need to take into account the diversity of theological ideas on environmental issues. From my observation, another possible determinant of variation in understanding of environmental issues is education. Among the religious clerics I interviewed, Christians have the highest level of 'western education', followed by the Salafists. The Sufis have the lowest level of western education in the sample. However, all participants defined pollution of the land and water as an anthropogenic environmental problem which requires human actions to address.

Finally, these findings have confirmed findings in chapter 5 and 6 on the limitations of religious influence on environmental worldviews and behaviour. The evidence that institutional and social-structural factors shape understandings of ecological problems among most Christians and many Muslims provides some support for the notion that environmental reform needs to start with changing the social structures that enable and constrain human agency. This finding is supportive of one of the central arguments advanced by the ecological modernisation theory of environmental reform (Mol, 2010) discussed in chapter 2. The theory prescribes ecological restructuring and transformation of the basic institutions of society and emphasises the instrumentality of environmental laws as well as active involvement of state and non-state actors in environmental decision making.

8.3. Limitations of the study

In order to make a meaningful contribution to the ongoing debate on religious influence on the environment, this thesis sought to investigate the broader aspects of the connection between religion and the environment. This broad approach, as well as the methodological and theoretical triangulation adopted and the sampling techniques used have enabled me to produce findings that will contribute to the body of knowledge on the subject and to the improvement of environmental policy in the region. However,

there are a number of limitations to the applicability of the findings which need to be highlighted.

The first limitation of the study lies in the broad approach adopted to examining the influence of religious beliefs/worldviews on environmental attitudes and behaviours, and the role of religious factors in the perception of and modes of adaptation to environmental changes. I adopted this wide scope so as to have a bigger picture of the religion-environment nexus. While understanding the connection between religious factors and the environment requires a focus on the bigger picture, social scientific study of a complex social phenomenon like religion requires an in-depth analysis of various beliefs, practices and experiences that individuals and groups classify as religious. As the research problem required a thematically broad-ranging exploration, this limited the depth of analysis possible with regard to the specific beliefs and practices that shape the environmental attitudes and actions of the subject of my study.

Secondly, because part of my study focused on exploring the connection between religious beliefs/worldviews and the environmental attitudes and behaviours of Christian and Muslim groups, it has not been possible to explore the 'causes' of environmental attitudes and behaviours. This may limit the practical applicability of theoretical claims made from my findings. Environmental attitudes and behaviours are products of multifarious and complex influences; while my findings do not offer specific explanation as to the causes of specific environmental behaviours in the population studied, they have opened up some avenues for this further exploration.

Thirdly, the purposive sampling technique I used in generating my quantitative data constitutes another limitation to the generalisability of the results of my quantitative analysis. Views collected from members of the congregations, selected on the basis of availability, might not be representative of the entire membership of the congregations. Similarly, because my sample is drawn mainly from urban centres in the three states of the region, it excluded the views of rural agrarian populations that are said to be suffering more from the effects of environmental change.

I would be cautious about generalising my results across the various African religious traditions which predate but still co-exist with Christianity and Islam in the region. A growing body of literature has demonstrated how, compared to the 'Abrahamic' religious traditions, environmental principles of traditional African religious groups promoted environmental sustainability in different African societies for many centuries.

Since these religious beliefs and practices still flourish in the region, an analysis of their roles in current environmental issues would have enriched the findings of this study.

8.4. Theoretical and methodological contributions of the study

Through the findings summarised above, the thesis contributes to the body of theoretical, empirical and methodological research on the relationship between religion and the environment. I have demonstrated that despite decades of empirical research into the connection between religion and environment, the theoretical ideas that shape our understanding of the subject have not been sufficiently modified to address the multi-dimensional character and changing nature of the religion-environment nexus. In other words, the theories we use to guide our investigation into the role of religion in environmental issues are largely based on the assumption that religion is a fixed, one-dimensional phenomenon and has similar influence on individual followers in all societies and cultures. To overcome the problems of existing theories on religion and environment, I propose in this study a broader approach that looks into the different dimensions of the relationship. Thus during the course of this research, I came to the conclusion that a good understanding of the influence of religious beliefs, worldviews and experience on both attitudes and behaviour towards nature is crucial to theorising on the religion-environment connection. I also found that an understanding of the impact of religious beliefs on attitudes about and behaviour towards nature is not sufficient unless we also develop a good understanding of how religious beliefs influence people's perceptions of and modes of adaptation to current environmental issues. This involves an analysis of how religious individuals make sense of current environmental problems and respond to them as well as how their perception and strategies of adaptation change over time. I also suggest that to successfully analyse the role of religion in environmental issues, it is desirable if not necessary to employ the strategy of 'theoretical pluralism', that is, to utilise more than one theoretical approach in designing the study and interpreting the findings. To achieve this in my own work, I emphasised the usefulness of using theories and approaches developed in other disciplines.

On the basis of this methodological position, which I adopted in the course of the project, my study sought to investigate the relevance of the two dominant and competing theoretical perspectives on religion-environment connection: the White's hypothesis and the environmental stewardship narrative. To do that I utilised concepts and theoretical assumptions of the theory of structures as well as the VBN theory of

environmental behaviour. I also sought to examine the relevance of religious ideas to perception and adaptation to current environmental issues. To sufficiently explore this range of topics, and to overcome the inadequacies of previous studies, I made the following methodological decisions:

- focused on both religious individuals and collectives or congregations
- analysed the views of both the laity and clerics
- explored subjective accounts of religious individuals and measured statistically the relationship between religion and attitudes and self-reported behaviours
- conducted a comparative analysis of Christian and Muslim groups
- focused on an area that has not been sufficiently studied and theorised about; a religiously conservative region, where environmental problems are severe, and policy interventions are ineffective
- explored not only the role of religious factors but also the impact of non-religious factors on environment

As I will argue in the following sections, the findings I produced by adopting this theoretical and methodological triangulation could contribute to the body of knowledge on the connection between religion and the environment in a number of ways. These include:

8.4.1. Reassessing of the concept of "dominion-over-nature"

The evidence of different readings that religious individuals in general and the clergy in particular make of religious doctrines and teachings on human-environment interactions questions the extent to which White's thesis can be applied to understanding religious influence on environmental attitudes and behaviour in Northeast Nigeria. The White's thesis, which informed scientific-environmentalist 'blanket criticism' of religious doctrine of dominion-over-nature as essentially anti-environment, is not supported by the findings of my thesis. Instead the findings suggest that a discourse has emerged which sees the dominion theology as a philosophical foundation for environmental stewardship. This therefore calls for a re-evaluation of the concept of dominion-over-nature as used in social research, taking into account the possibility of different readings of doctrinal commandments by religious individuals. To re-evaluate how we theorise the role of dominion theology in environmental attitudes and behaviour, it is also critical to take into consideration the tendency for religious individuals to modify their interpretation of religious traditions to suit changing situations. Although my study did not investigate the impact of environmental change on religious actors and traditions,

my findings point to a complex process in which actors draw from religious beliefs to make sense of the changing environment and in the process produce new religious interpretations of the environmental issues affecting them.

The findings also reveal similarities and differences in environmental worldviews and behaviours of Christian and Muslim groups in the region. Generally, the findings did not support one of White's key assumptions, that Judeo-Christians are more likely than non-Judeo-Christians to hold on to the dominion-over-nature orientation and, consequently, be disrespectful of the environment. Rather, the findings indicate that Muslims are as likely as Christians to report commitment to the doctrine of dominion-over-nature. Thus, while this finding contradicts White's hypothesis, it supports theories that distinguish Abrahamic from non-Abrahamic religions. Therefore, in addition to re-evaluating the concept of dominion as it affects environmental concern, the findings demonstrate the need for a review of the distinction White and other researchers made between Judeo-Christian and non-Judeo Christians.

8.4.2. Theorising environmental behaviour

Some of the findings presented in chapter 5 on the connection between religious factors and environmental behaviour are useful contributions not only towards a better understanding of the religion-environment nexus but also to theorising and researching on environmental behaviour in general. As revealed in the analysis in chapter 5, contrary to what previous studies found, neither religious identification nor commitment to dominion-over-nature orientation necessarily translates into lower levels of pro-environmental behaviour. This finding questions theories that emphasise religious values as principal determinants of environmental behaviour. The effects of socio-economic variables in predicting environmental behaviour further indicate support for theoretical approaches such as the VBN theory that take into account the role a combination of several situational, cognitive and normative factors have in determining environmental behaviour. This finding confirms Stern's (2000) assertion that environmental behaviour is a complex social phenomenon that depends on a broad range of causal factors which transcend worldviews, values, beliefs and norms. A better understanding of these wide range of social factors could also help inform good environmental protection policies. As demonstrated in the analysis in chapter 5, although religious schemas are an important source of environmental worldview, their actual causal power on environmental behaviour is dependent on a number of other factors. Incorporating these factors in both social scientific analysis of religion-

environment connection and environmental policy in religiously conservative societies is therefore advisable.

8.4.3. Towards a better understanding of 'religious environmentalism'

The concept of religious environmentalism is fast gaining acceptance in both literature on religion and the environment and among environmental practitioners across the world. Many attempts have been made to investigate its relevance and applicability to current debates about religious engagement with environmental change. Analysts such as Tomalin (2002, 2009), have examined the relevance of the term to understanding the role of religious traditions in current environmental crises and questioned the applicability of western notions of 'environmentalism' to analysing environmental values and practices of people in non-western cultures. Others (such as Hoffman, 2005) have investigated the distinct motivations for environmental concern and distinguished *theocentrism* from *anthropocentrism* and *ecocentrism* as forms of environmental concern. Several other researchers (Gottlieb, 2006; Hitzhusen & Tucker, 2013) have documented evidence of religious environmental perspectives and how they inform environmental movements in different societies across the world. My study builds on these past attempts by using the views of religious clerics to identify the philosophical foundations of religious pro-environmental action. It departs, however, from all these past attempts by distinguishing the various motivations for religious pro-environmental action, namely religious ecocentrism, religious anthropocentrism and theocentrism. Based on the evidence generated from primary sources, my findings have shown that each of these forms of environmental concern are religiously-inspired and/or sanctioned. Thus, instead of treating 'religious environmentalism' as simply a religious response to contemporary environmental problems, the study proposes that religious environmentalism is a multi-faceted religious ethical orientation for environmental preservation and protection. A central concern of my proposition is that religious beliefs and principles could inform three distinct but related motivations to preserve the environment. Religious anthropocentrism results when religious traditions are drawn on to motivate or legitimise preserving resources for future growth and development or preventing harmful effects of ecological problems. In the case of religious ecocentrism, religious beliefs and principles provide an ethical foundation to preserve the environment so as to protect its integrity, beauty, balance and rights. Theocentric environmentalism, on the other hand, happens when religious individuals and groups engage in a positive relationship with nature with a view to obeying divine commands, earn heavenly reward or avoid 'sin'. In all these three cases, religious beliefs and values

serve as the basis for ethical conduct towards the environment. With this finding, the study calls for a re-examination of the concept of religious environmentalism with a view to understanding how its different forms manifest in different groups at different times and how the concept can be used to inform environmental reform policies in religiously conservative societies. So far, research literature on religious environmental stewardship tends to treat religious environmentalism as an ethical orientation to save resources for future generations and prevent environmental catastrophe. Based on my finding, this (anthropocentric) religious environmental thinking, despite being the most recurrent motive for environmental action, is not appealing to *all* groups of religious conservatives. For instance, among religious people who believe God will always take care of the earth, will provide for both present and future generations, or that humans cannot alter the dynamics of nature, anthropocentrism amounts to assuming a role of God. Such religious groups and individuals may not understand the message of environmental scientists that revolves around mitigating ecological crisis for continued human survival and wellbeing. For them a more plausible grounds for pro-environmental action is theocentrism or ecocentrism. Understanding this distinction could have far-reaching implications for environmental reform policy in a devoutly religious society like Nigeria.

My investigation of the principles and practice of religious environmentalism has also revealed additional insights into the multiple socio-economic and political conditions that could affect the degree to which religious resources can be used to engender environmental action. This finding, like those regarding the varieties of religious environmentalism, can help inform future studies on religious environmentalism, in addition to having some practical implications for environmental policy. Although the findings on the variety of ways in which religious principles enhance human agency to protect the environment are expected to contribute to present understanding of religion-environment relationships and inform future research into the subject, they do not provide insights on the conditions that enhance or limit such relationships. Findings on the limitations to religious environmentalism have provided additional information on some of the factors that affect the practice of religious environmentalism. Among the numerous social, economic and political factors that impede religious environmentalism, poverty, lack of knowledge of religious environmental principles, lack of awareness of the seriousness of environmental problems and the impact of human activities on the environment, and prioritisation of personal salvation and other-worldly matters over environmental protection by religious communities are notable. The notion that poverty

negatively affects individual and communities' ability to protect the environment and contributes to environmental degradation is well established and has been used to design environmental policy in low income countries. Even though poverty is salient in the literature on environmentalism in these societies, my finding further extends the debate to a different setting that has not been adequately studied. In my opinion, this particular finding on how poverty impedes the practice of religious environmentalism in Northeast Nigeria could also be useful to organisations that (seek to) engage religious faith communities in environmental protection. The findings regarding the manner in which poor understanding of environmental issues affects religious environmentalism indicates low awareness of environmental change in Nigeria, as in other developing countries. This, together with findings reported in chapter 7 on perception and adaptation to environmental change emphasise the need for concerted efforts towards increasing environmental education in the region. The need for greater environmental education in the region is also highlighted by the finding that environmental issues are not receiving adequate attention in most religious groups. My findings on the limitations of religious environmentalism could be used as a basis for future studies on environmentalism in Nigeria, as well as to inform development of practical ways of improving pro-environmental actions among members of religious groups.

8.4.4. From fatalism to agency: the role of environmental education

The findings reported in chapter 7 revealed some useful insights on the understandings of environmental change within faith communities in Northeast Nigeria. These insights are likely to contribute to the discussions on religious factors at play in the debate on environmental change. Also, the perspectives explored can be used to design policy measures to mitigate environmental degradation and strengthen the adaptive capacities of the local people or review existing ones. Below are some ways in which the findings can be used in both knowledge and policy arenas:

Despite the disparity in perception and strategies of engagement with environmental change among religious groups, there is a consensus in terms of the realisation of the challenge posed by environmental change. The unanimous belief that environmental change poses a serious challenge to sustainability in the region can be exploited to facilitate environmental education and strengthen participation of faith communities in environmental conservation. Since there is strong evidence that many religious clerics from both Christian and Muslim groups have a good understanding of the negative impacts of environmental degradation there is good reason to use them to convey

environmental information across to the laity. By virtue of their influence in their communities, they can serve as important conveyors of environmental education in congregations. As I personally observed during the course of my interactions with them, these religious leaders are very confident of the trust they enjoy from their congregations and are quite confident of their power to influence opinions in such congregations. Several religious leaders I interviewed have expressed their readiness to take part in the environmental movement. They, however, lamented that there were no attempts by environmental NGOs or the government to engage them in the movement. In a devoutly religious country like Nigeria, it is hard to imagine how environmental policy can succeed without the support of faith communities. Thus the elimination of barriers to the participation of religious groups in the environmental movement is likely to prove helpful in tackling environmental issues. The first among these barriers is lack of environmental education. Improving environmental education in faith communities could enhance their engagement with environmental issues.

The findings of this study indicate that fatalistic views about environmental change can be addressed with increased environmental education. Participants who are more educated are less likely than those with lesser education to interpret desertification and flash flood as punishment from God. That means a gap is being created by lack of communication about environmental issues and how they can be addressed. This gap is therefore left to be filled by apocalyptic stories resulting in fatalism and helplessness. As reported in chapter 7, even participants who interpreted environmental change from a theological point of view did not reject or dismiss scientific explanations on the role of anthropogenic factors in environmental change. It is therefore likely that with environmental education, such clerics can accept scientific solutions to the problems.

According to the Federal Government of Nigeria (2012), part of the reason for the failure of previous policies to combat environmental degradation in the country was due to their inability to build on existing local knowledge and capacity. Notable among the major challenges identified in the report was the need to challenge people's perception of the root causes of ecological problems. According to my data, religious congregations play an important role in shaping public opinions about environmental issues. The findings as to how different religious denominations perceive environmental change could be used to target particular religious denominations that lack good understanding of the causes of environmental problems.

Since the findings add to the body of knowledge on the political, social and cultural factors that shape how local people understand and respond to environmental change this proves additional avenues for future research. There is currently little doubt that knowledge of the social and cultural contexts through which environmental issues are framed is crucial to theorising society-environment relationships and to developing effective policy interventions to address the challenges of environmental change. Presently, little is known about understandings of environmental change in the region. For this reason, future research can build on these findings to investigate the role of theology and other social factors that drive perceptions and adaptation to environmental problems. The evidence suggests that with adequate information about environmental problems, religious individuals can reinterpret religious schemas in ways that can accelerate collective action to address those problems, and indicate how environmental change can impact on religious beliefs and organisations. This impact is perhaps responsible for the emergence of many religious environmental movements in many parts of the world. While social research has paid attention to the impact of religion on environmental issues, it appears little is known about the effects of environmental change on religious traditions. I hope that future research will build on this to examine how religious response to environmental change is leading to changes in interpretations of doctrines and in setting priorities of religious groups.

8.5. Recommendations for further research

Since my study did not evaluate the impact of clergies' environmental views on the members of their congregations, futures studies could explore this aspect with a view to understanding how faith communities can serve to promote environmental education, an important requirement for pro-environmental actions.

An important issue worthy of exploring in future studies is the possible influence of environmental change on religious schemas and resources on religious environmental structure. Using the VBN theory and the theory of structure, this study has provided some preliminary insights into how awareness of environmental change, its consequences on the things religious individuals value, and belief in the ability of individuals to mitigate it, could activate environmental agency among religious individuals. I would suggest that future studies should investigate the present and potential impacts of environmental change on religious beliefs and how they are interpreted and applied. In other words, research that specifically pays attention to changes in the interpretations of religious beliefs, and how such changes affect the

agency of religious individuals, is needed. Also, the evidence that by virtue of their knowledge of environmental and religious schemas, religious individuals have the capacity to select and apply a multiplicity of religious ethical principles to current environmental issues requires some exploration. Policy-oriented research into how the various forms of religious environmentalism can be utilised to achieve greater participation of religious communities in environmental management is also a clear way forward for further work.

Diversity in understandings and framings of environmental issues among the various denominations of the major religious traditions is an important area of research interest. However, while denominational subcultures in environmental concern within Christianity has been somewhat explored, diversities in perception of environmental problems within the various denominations of the Islamic faith have not been adequately studied. And, as my findings suggest, there appears to be a considerable difference in how the Sufis and the Salafis interpret ecological problems. Because of the constraints on my sample and data, more research on these diversities would be needed to conclude whether these differences are caused by doctrinal or other non-religious factors.

Finally, future research could also investigate the similarities and differences in the perception of environmental change between the major religious traditions (Christianity and Islam) and the Traditional African religions (TAR).

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APPENDIX I: INTERVIEW GUIDE

This interview schedule was developed to serve as a guide for the researcher during the interviews with leaders of participating congregations and environmental protection officials. The schedule is designed to cover broad aspects of the relationship between religion and the environment. The discussion guide was developed by breaking down the main research questions into specific questions and sub-topics in order to generate both wider and deeper responses on the various aspects of the topic. This is not a rigid questionnaire but a flexible guide to the possible themes that would be discussed in the face to face interviews. The issues identified here have been arrived at following the review of related literature, local and international media coverage of the environmental problems of the region and my personal knowledge of the research area.

- Perception of environmental change/degradation, its causes, extent and responses of faith communities.
 - a) Views on environmental conditions in the area/region
 - b) Nature, causes and consequences of various problems
 - c) People's attitudes and behaviour towards the natural environment
 - d) Views on the relationship between human activities and environmental conditions.
 - e) Views on how communities cope with changing environmental conditions.
 - f) Religious explanation of environmental change
- Views of religious leaders and environmental protection experts on the role of religious resources in promoting sustainable land use and combating land degradation.
 - a) Personal views on the current and potential role of religious teachings in promoting pro-environmental behaviour with specific examples and details.
 - b) Problems and prospects of 'Faith-based land resources conservation initiatives' in the area.
- Religious beliefs/cosmologies about human-environment interactions

- c) Dominion theologies
- d) Stewardship theologies
- e) Environmental attitudes and behaviours of religious individuals and groups.

APPENDIX II: QUESTIONNAIRE

Dear Sir/Madam,

I am conducting research on the links between religion and environmental behaviour in Northeast Nigeria. I will appreciate if you can please fill in the following information as appropriate. Your responses will be treated with utmost confidentiality and your identity will be kept anonymous. I attached a participant information sheet in case you need further information about the research.

Serial number: _____

State: _____

LGA: _____

Religion: _____

Denomination: _____

Age: _____

Gender: _____

Education: _____

Occupation: _____

Income/Annum _____

SCALE ITEMS FOR MEASURING RELIGIOUS BELIEFS AND ENVIRONMENTAL BEHAVIOUR

For each item in section one and two, please indicate whether you strongly agree (**SA**), mildly agree (**MA**), unsure (**U**), mildly disagree (**MD**) or strongly disagree (**SD**). For each of the items in section three, please indicate how often you have done the activity mentioned.

SECTION ONE: BELIEFS AND WORLDVIEW ABOUT NATURE AND ENVIRONMENTAL PROBLEMS

1. Humans have the right to exploit the resource in the land to suit their needs

SA	MA	U	MD	SD
----	----	---	----	----

2. When humans over-exploit the land it often produces disastrous consequences

SA	MA	U	MD	SD
----	----	---	----	----

3. God will always take care of the environment regardless of what humans do on it

SA	MA	U	MD	SD
----	----	---	----	----

4. Plants, animals and water are supposed to be treated kindly because they are also created by God

SA	MA	U	MD	SD
----	----	---	----	----

5. Humans were created to rule over the rest of nature

SA	MA	U	MD	SD
----	----	---	----	----

6. Humans are severely abusing the natural environment

SA	MA	U	MD	SD
----	----	---	----	----

7. Desertification, drought, water and land pollution have been highly exaggerated

SA	MA	U	MD	SD
----	----	---	----	----

8. The balance of nature is very delicate and easily upset

SA	MA	U	MD	SD
----	----	---	----	----

9. The earth has plenty/unlimited natural resource such as water, trees and land to support human's consumption

SA	MA	U	MD	SD
----	----	---	----	----

10. If we continue to exploit land resources as we have been doing, we will experience a major ecological crisis

SA	MA	U	MD	SD
----	----	---	----	----

SECTION TWO: MEASURE OF ENVIRONMENTALISM

11. One of the most important reasons to conserve is to ensure a continued survival and welfare of humans

SA	MA	U	MD	SD
----	----	---	----	----

12. One of the most important reasons to conserve is to preserve the beauty of nature

SA	MA	U	MD	SD
----	----	---	----	----

13. One of the most important reasons to conserve is to get heavenly reward

SA	MA	U	MD	SD
----	----	---	----	----

14. According to my religion, it is forbidden to over-exploit, damage or destroy the natural environment

SA	MA	U	MD	SD
----	----	---	----	----

SECTION THREE: SELF REPORTED ENVIRONMENTAL BEHAVIOUR

Please indicate how often you have done each of the following in the last one year.

15. I plant trees to conserve the environment

Never	Rarely	Sometimes	Often	Very often
-------	--------	-----------	-------	------------

16. I use firewood/charcoal for cooking

Never	Rarely	Sometimes	Often	Very often
-------	--------	-----------	-------	------------

17. I discourage others from cutting down trees

Never	Rarely	Sometimes	Often	Very often
-------	--------	-----------	-------	------------

18. I use plastic bags

Never	Rarely	Sometimes	Often	Very often
-------	--------	-----------	-------	------------

19. I stop buying certain products because they cause environmental problems

Never	Rarely	Sometimes	Often	Very often
-------	--------	-----------	-------	------------

20. I dispose-off plastic bags on the surface

Never	Rarely	Sometimes	Often	Very often
-------	--------	-----------	-------	------------

21. I encourage family and friends to use water moderately

Never	Rarely	Sometimes	Often	Very often
-------	--------	-----------	-------	------------

22. My garbage is dumped on refuse heap or inside the gullies

Never	Rarely	Sometimes	Often	Very often
-------	--------	-----------	-------	------------

23. I pick up litter that was not my own

Never	Rarely	Sometimes	Often	Very often
-------	--------	-----------	-------	------------

APPENDIX III: QUESTIONNAIRE IN THE LOCAL LANGUAGE

Lamba: _____

Jiha: _____ Karamar hukuma: _____ Addini: _____

Kungiya: _____ Shekaru: _____ Jinsi: _____

Matakin ilmi: _____ Sana'a: _____ Kudin shiga: _____

KASHIN FARKO

Bayyana ra'ayinka ta hanyar nuna amincewarka ko rashin amincewarka ga kowanne daya daga ciki batutuwan da aka ambato a kasa kamar haka Na Yarda Sosai (**YS**), Na Yarda (**Y**), Ban Sani ba (**BS**), Ban Yarda ba (**BY**) Ban Yarda ba Sam (**BYS**)

1. Dan-Adam yana da yancin anfanida albarkatun kasa yadda yake so

YS	Y	BS	BY	BYS
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2. Rashin tattalin albarkatun kasa da gurbata muhalli da jama'a kanyi na iya haifar da mummunan yanayi

YS	Y	BS	BY	BYS
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3. Masana da hukumomi na ruruta matsalar kwararowar hamada, da karancin ruwansama da matsalar gurbatan ruwa a wannan yanki

YS	Y	BS	BY	BYS
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4. Itatuwa, dabbobi, albarkatun ruwa na bukatar kulawa daga bil'adama domin suma halittune na ubangiji

YS	Y	BS	BY	BYS
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5. Allah Ya halicci mutane kuma ya basu iko kan dukkan sauran halittu.

YS	Y	BS	BY	BYS
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6. Mutane na mummunan illaga albarkatun kasa da muhalli

YS	Y	BS	BY	BYS
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7. Allah Zai kare muhalli daga barna da gurbata shi da al'umma keyi

YS	Y	BS	BY	BYS
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8. Irin yadda Allah Ya tsara yanayin kasa da muhalli yasa yi musu illa yana da sauki

YS	Y	BS	BY	BYS
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9. Akwai issassun (wadatar) albarkatun kasa kama daga itatuwa, ruwa, da dabbobi da zasu biya wa daukacin jama'a bukata ba tare sunyi karan ciba

YS	Y	BS	BY	BYS
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10. Idan muka cigaba da sare itatuwa, gurbata muhalli da rashin tattalin albarkatun kasa, zamu wayi gari da matsalolin da dama kamar Hamada, karancin rowan sama, da yawaitar cututtuka da sauransu.

YS	Y	BS	BY	BYS
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11. Daya daga cikin dalilan kula da muhalli shine domin tabbatar da kyautatuwan rayuwan mutane.

YS	Y	BS	BY	BYS
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12. Daya daga cikin dalilan kula da muhalli shine domin kare sauran halittu da kyautata su.

YS	Y	BS	BY	BYS
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13. Daya daga cikin dalilan kula da muhalli shine domin samun lada wajen ubangiji.

YS	Y	BS	BY	BYS
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14. A karkashin karantarwan addinina, gurbata muhalli haramun ne/mummunan abu ne.

YS	Y	BS	BY	BYS
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KASHI NA BIYU

Bayyana ra'ayinka/ki akan wadannan tambayoyi

15. Dasa itatuwa domin kare muhalli

Bantabayi ba	Ban cikayi ba	Nakanyi wani lokacin	Nakanyi	Nakan yawaitayi
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16. Anfani da itace ko gawayi wajen girki

Bantabayi ba	Ban cikayi ba	Nakanyi wani lokacin	Nakanyi	Nakan yawaitayi
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17. Hana mutane sare itatuwa

Bantabayi ba	Ban cikayi ba	Nakanyi wani lokacin	Nakanyi	Nakan yawaitayi
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18. Anfani da leda

Bantabayi ba	Ban cikayi ba	Nakanyi wani lokacin	Nakanyi	Nakan yawaitayi
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19. Ban zubda gurbataccen ruwa a cikin rariya ko sarari

Bantabayi ba	Ban cikayi ba	Nakanyi wani lokacin	Nakanyi	Nakan yawaitayi
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20. Barin anfani da abubuwa masu gurbata muhalli

Bantabayi ba	Ban cikayi ba	Nakanyi wani lokacin	Nakanyi	Nakan yawaitayi
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21. Zubda shara a lambatu, kwari, ko filin da ba'a gine ba

Bantabayi ba	Ban cikayi ba	Nakanyi wani lokacin	Nakanyi	Nakan yawaitayi
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22. Umurtan iyalina su takaita barnan ruwa

Bantabayi ba	Ban cikayi ba	Nakanyi wani lokacin	Nakanyi	Nakan yawaitayi
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23. Kwashe sharan daba nawa ba

Bantabayi ba	Ban cikayi ba	Nakanyi wani lokacin	Nakanyi	Nakan yawaitayi
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