Human-nature Relationships and Pro-environmental Behaviour: Lessons from Rural Zanzibari Villages

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ABSTRACT

The island of Unguja in Zanzibar, Tanzania is facing severe deforestation. Previous research has identified shifting cultivation and silviculture activities as well as various demographic, economic, legislative and policy changes as explaining factors for the trend. Despite governmental measures and a long history of international development cooperation projects on the island, deforestation rates have not decelerated. As existing research has identified contradictions between environmental initiatives and local practices, I examine how conservation objectives cohere with prevailing human-nature relationships and socio-material realities in rural Zanzibari villages.

The main objectives of this thesis are to fill gaps in previous research concerning the adoption of sustainable practices in Zanzibar and offer new insights on pro-environmental behaviour (PEB) as linked with human-nature relationships (HNR) and agency. To achieve this, I examine 1) which social and material processes and elements affect and define human-nature relationships in rural Zanzibari villages surrounding the Kiwengwa-Pongwe Forest Reserve, and 2) what processes and elements encourage, disable or otherwise affect individuals' commitment to pro-environmental behaviour in rural Zanzibari villages, and how pro-environmental behaviour is connected to prevailing human-nature relationships and socio-material realities. As a theoretical framework, I utilize the concept of pro-environmental behaviour as connected to empowerment and agency. I also examine the concept of the human-nature relationship as studied in environmental sociology and the multi-disciplinary field of research addressing interaction between humans and nature.

As empirical data, I utilize nine semi-structured interviews I conducted in villages surrounding the Kiwengwa-Pongwe Forest Reserve while participating in a monitoring trip for a development cooperation project KIPPO. As supplementary data and background information, I utilize a survey of 50 respondents as well as two focus-group discussions with a local forest protection NGO which were conducted in collaboration with the project partners and myself. I chose theory-guided content analysis as the analysis method which allowed for a reflexive research process and taking into account locally significant processes.

As results, I offer novel linkages between pro-environmental behaviour, human-nature relationships, empowerment and agency. In the data, individuals showcased interdependent human-nature relationships which motivated commitment to conservation objectives. Nature was considered by the interviewees the basis for livelihoods, and the destruction thereof was perceived as threatening the future of the communities. However, prevailing socio-material realities may affect individual agency toward the environment, and environmental initiatives empower people unequally. Therefore, future research should incorporate discrepancies among people's ability to commit to sustainable practices and include dependencies derived from local human-nature relationships in the analysis of pro-environmental behaviour.

KEYWORDS: human-nature relationship, pro-environmental behaviour, sustainability, agency, development cooperation, Zanzibar, Tanzania, Kiwengwa-Pongwe Forest Reserve, KIPPO, MUMKI

TIIVISTELMÄ

Ungujan saari Sansibarilla Tansaniassa kärsii vakavasta metsäkadosta. Aiempi tutkimus on tunnistanut maatalouskäytännöt ja metsätalouden sekä useat demografiset, taloudelliset ja lainsäädännölliset tekijät sekä muutokset toimintatavoissa muutosta selittäviksi tekijöiksi. Hallituksen toimista ja kansainvälisen kehitysyhteistyön pitkästä historiasta huolimatta metsäkato ei ole vielä hidastunut. Koska aiempi tutkimus on tunnistanut ristiriitoja ympäristötavoitteiden ja paikallisten käytäntöjen välillä, tutkin kuinka suojelutavoitteet sopivat yhteen sansibarilaisissa maaseutuyhteisöissä vallitsevien luontosuhteiden ja sosiomateriaalisten realiteettien kanssa.

Tutkielmani päätavoitteina on täydentää tietoaukkoja aiemmassa tutkimuksessa kestävien käytäntöjen omaksumisesta Sansibarilla sekä tarjota uusia näkökulmia ympäristömyönteiseen käytökseen liittämällä käsite luontosuhteisiin ja toimijuuteen. Tämän vuoksi tarkastelen, 1) mitkä sosiaaliset ja materiaaliset prosessit ja elementit määrittelevät luontosuhteita sekä vaikuttavat niihin Kiwengwa-Pongwen metsäreserviä ympäröivissä sansibarilaisissa maaseutuyhteisöissä ja 2) mitkä prosessit ja elementit edistävät, estävät tai muutoin vaikuttavat ympäristömyönteiseen käytökseen kyseisessä kontekstissa. Selvitän myös, kuinka ympäristömyönteinen käytös on yhteydessä vallitseviin luontosuhteisiin ja sosiomateriaalisiin realiteetteihin. Käytän tutkielmani teoreettisena viitekehyksenä ympäristömyönteisen käytöksen käsitettä yhdistettynä voimaantumiseen ja toimijuuteen, sekä luontosuhteen käsitettä juonnettuna ympäristösosiologisesta tutkimuksesta ja aiemmasta monitieteisestä tutkimuksesta, joka on pyrkinyt selvittämään ihmisen ja luonnon välistä vuorovaikutusta.

Käytän tutkielmani empiirisenä aineistona yhdeksää Kiwengwa-Pongwen metsäreserviä ympäröivissä kylissä pitämääni teemahaastattelua, jotka keräsin toimiessani kehitysyhteistyöprojekti KIPPOssa. Analyysiä tukevana aineistona sekä taustamateriaalina käytän tutkielmassani projektin partnerien kanssa yhteistyössä alueella keräämääni 50 vastaajan kyselytutkimusta sekä kahta alueen metsänsuojelujärjestön fokusryhmähaastattelua. Valitsin analyysimetodiksi teoriaohjaavan sisällönanalyysin, mikä mahdollisti refleksiivisen tutkimusprosessin sekä paikallisesti merkittävien prosessien sisällyttämisen tutkimukseen.

Tutkielmani tuloksina tarjoan uudenlaisia yhteyksiä ympäristömyönteisen käytöksen, luontosuhteiden, voimaantumisen sekä toimijuuden käsitteiden välille. Aineistossa yksilöiden luontosuhteita määritteli keskinäinen riippuvuus luonnon kanssa, mikä motivoi osallistumaan luonnonsuojeluun. Haastateltavat käsittivät luonnon elantonsa perustana, minkä vuoksi sen tuhoutumisen koettiin uhkaavan yhteisöjen tulevaisuutta. Toisaalta vallitsevat sosiomateriaaliset olosuhteet voivat vaikuttaa yksilön toimijuuteen ympäristöään kohtaan, ja ympäristönsuojeluprojektit voimaannuttavat paikallisia epäsuhtaisesti. Siksi jatkotutkimuksen tulisi sisällyttää ympäristömyönteisen käytöksen analyysiin ihmisten väliset eroavaisuudet toimijuudessa sekä luontosuhteista juontuvat riippuvuussuhteet.

ASIASANAT: luontosuhde, ympäristömyönteinen käytös, kestävyys, toimijuus, kehitysyhteistyö, Sansibar, Tansania, Kiwengwa-Pongwen metsäreservi, KIPPO, MUMKI

CONTENT

List of abbreviations

CBNRM – Community-based Natural Resource Management

DFNR – Department of Forestry and Non-Renewable Resources (Zanzibar)

GIS – Geographical Information Systems

GST – Geographical Society Turku (Finland)

HEP – Human Exceptionalism Paradigm

HIMA – 'Hifadhi ya Misitu ya Asili' (project in Zanzibar)

HNR – human-nature relationships

KIPPO – Kiwengwa-Pongwe Protection & Open Civil Society project in Zanzibar

K-PFR – Kiwengwa-Pongwe Forest Reserve

MUMKI – 'Mtandao Wa Uhifadhi Wa Mazingira Kiwengwa-Pongwe' (an umbrella organisation for village-level forest conservation committees)

NEP – New Environmental Paradigm

PEB – pro-environmental behaviour

REDD+ – Reducing Emissions from Deforestation and Forest Degradation (international project)

SUFO – Sustainable Forest Use and Food Security project in Zanzibar

VCC – Village Conservation Committee

1. INTRODUCTION

The interaction between humans and nature is a timely sociological research topic. Climate change and depleting natural resources call for understanding the host of factors which cause unsustainable pressure against ecosystems and finding a balance between environmental initiatives and social justice. If not sufficiently addressed, environmental problems are likely to concretely degrade the living conditions of millions of people and may cause a wave of climate change-induced migration and conflict (e.g., Reuveny 2007). As people living in developing regions are most dependent on the primary sector of the economy and possess least resources for adaptation (Filho et al. 2018), many environmental initiatives attempt to support the adoption of alternative and more sustainable livelihoods in such areas.

The island of Unguja in Zanzibar, Tanzania is suffering from severe deforestation and has a long history of conservation projects, many of which have attempted to safeguard diminishing natural forests by offering environmental education, involving locals in tree-planting and forest patrolling, assigning land areas for different usage types, and promoting technological advancements addressing fuel requirements such as solar cookers and wood-conserving stoves (Benjaminsen & Kaarhus 2018; Kukkonen & Käyhkö 2014; Käyhkö et al. 2011). While these objectives have their credit, they have yet to fulfil their expectations in reduced deforestation rates (Kukkonen & Käyhkö 2014). Individuals often lack alternatives for the course of action especially in developing regions. Benjaminsen & Kaarhus (2018), for example, have identified incompatibilities between environmental initiatives and local forest practices in the village of Mitini in Zanzibar, but a more comprehensive outlook is needed on what social and material processes explain and define interaction with the environment in Zanzibari villages. These may include a variety of socio-material conditions and processes such as economic prosperity, livelihoods, norms, traditions, culture and available technology. A deeper understanding of the local conditions is required, as some of the shortcomings of environmental initiatives are linked with their inability to successfully merge environmental objectives with existing socio-material realities in a manner which benefits locals equally. Insufficient consideration of local cultural processes has been found to reduce the success rate of community-based conservation interventions (Scheba & Mustalahti 2015; Waylen et al. 2010).

This thesis offers insights as to what processes and phenomena characterize individuals' connection and interaction with nature in rural Zanzibari villages. To achieve this, I employ the concept of the *human-nature relationship*, based on discussions and approaches of Finnish and international environmental sociology and interdisciplinary fields of environmental research. To define the human-nature relationship, I use the environmental sociologist Jarno Valkonen's (2005) definition as especially referring to *an individual's interaction with the natural environment*. The fields of research addressing the relationship between humans and nature have been especially interested in "environmental consciousness, values and attitudes of individuals and communities as expressions of a nature relation" (Valkonen & Valkonen 2014). In this thesis, I offer novel perspectives to human-nature relationships by examining them in a context where environmental consciousness, values and attitudes may fail to materialize in behaviours towards the environment due to prevailing socio-material realities limiting individuals' choices. Therefore, I do not perceive human-nature relationships only as a result of ethical consideration but rather, as comprehensively shaped by a host of local and global factors and processes such as prevailing socio-material conditions which affect an individual's way of interacting with their environment.

Moreover, I examine *pro-environmental behaviour* as enabled by agency and as part of the human-nature relationship. Pro-environmental behaviour refers to acts which "benefit the natural environment, enhance environmental quality, or harm the environment as little as possible" (Larson et al. 2015). To connect the concept of pro-environmental behaviour with agency and empowerment is to acknowledge that not all individuals are equally empowered to improve or conserve the state of their environment, as individuals living in developing regions, for example, have been found to opt – due to poverty and acute need – for short-term survival strategies instead of committing to long-term environmental objectives (Chokor 2004; Rhead, Elliot & Upham 2015). Environmental concern is often perceived as an initiator of pro-environmental behaviour (Kollmuss & Agyeman 2002) and in this thesis, I define pro-environmental behaviour as behaviour and actions which aim to conserve or improve the state of the environment (Larson et al. 2015). While socio-material realities, such as depleting natural resources and poverty, can hinder commitment to environmental conservation, they may also initiate pro-environmental behaviour. For example, firewood is the primary source of energy for most Zanzibari individuals (NBS 2016), and complete eradication of natural forests on the islands would leave communities concretely hindered. Therefore, by understanding local human-nature relationships as relations of dependency and linking them

to the analysis of pro-environmental behaviour, I offer new perspectives for grasping what motivates individuals to commit to environmental initiatives in rural Zanzibari villages.

Environmental sociology became its own sub-discipline of sociology as a response to the global environmental crisis during the 1970s, and one of its focal objectives is finding a sustainable co-existence between humans and their environment (Foster, Clark, & York 2010). While human-nature relationships and pro-environmental behaviour are studied by various fields of environmental social sciences and humanities, environmental sociology can offer a perspective which more comprehensively includes societal processes in the analysis of the concepts. This outlook is needed as a response to previous individualistic approaches emphasizing the responsibility of individuals, highlighting such behaviour as consumption choices as a main channel of influence (Fudge & Peters 2011; Hargreaves 2011).

As the concepts of the human-nature relationship and pro-environmental behaviour are rooted in interdisciplinary fields of research, I utilize findings and theories from various fields mostly situating under environmental social sciences and humanities, all the while identifying this thesis as environmental sociology. I chose this approach as environmental sociology only started emerging as a separate field of inquiry during the 1970s (Hannigan 2006, 10), and to only include sociological accounts would be to overlook the multi-dimensional nature of environmental issues. Therefore, perspectives from different disciplines can supplement sociological understanding to create more comprehensive outlooks on complex research questions. The chapter 2.1. starts with a general portrayal of the research fields as well as a general discussion as to how nature has been perceived in the academic discourse, and will then address debates on human-nature relationships and dualistic ideas of nature. In chapter 2.2., I will make an examination as to what sociology and environmental sociology can offer the study of human-environment interactions. In Chapter 2.3., I will give an overview of how human-nature relationships and pro-environmental behaviour are addressed in the context of Zanzibar, Tanzania, and sub-Saharan Africa.

2. HUMANS, NATURE AND ENVIRONMENTAL SOCIOLOGY

2.1. Humans and nature across disciplines

Environmental research is, by nature, trans-, multi- and interdisciplinary, drawing knowledge from multiple disciplines, creating new disciplines in the process, and transforming existing disciplines into adopting environmental issues as part of their scope (e.g., Khagram et al. 2010). Slatin et al. (2004) defines *transdisciplinary* research as a joint effort of different disciplines to form a shared conceptual framework by combining discipline-specific theories, concepts and approaches together. The framework is used to address a common research problem. Transdisciplinary research differs from *multidisciplinary* research, as the latter refers to a "faculty from different disciplines working independently on different aspects of a project", simultaneously or side by side, not crossing their disciplinary boundaries (Collin 2009). According to Karlqvist (1999), "[a]s science moves closer to applications, decision- and policymaking, problems occur that cannot be confined to narrow disciplines or kept within the borders of specific departments". Similarly, The UK Treasury has argued that a major challenge for environmental research is to fill in gaps which exist between separate disciplines developed in the 19th and 20th centuries (HM Treasury 2004, 22). As Donaldson, Ward, & Bradley (2010) define it, *interdisciplinary* research is conducted "between disciplines". Interdisciplinary research is a hybrid of multi- and transdisciplinary research of sorts, where disciplinary boundaries are recognized and respected (similar to multidisciplinary research), but the strengths of different disciplines are joined to conduct more comprehensive information about a common subject, utilizing shared concepts and methods (similar to transdisciplinary research) *(Figure 1)* (Khagram 2010).
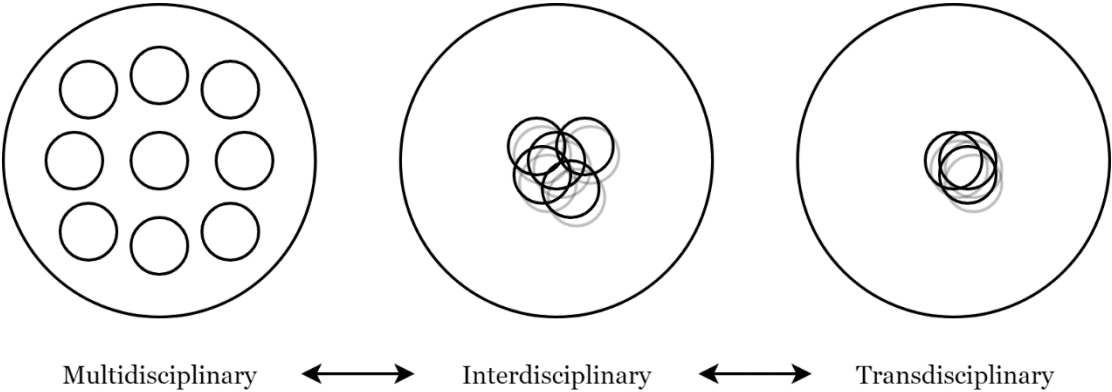

Figure 1. Multi-, inter-, and transdisciplinary research according to Stember 1991.

In this thesis, I create an interdisciplinary approach by utilizing pre-existing research from various fields mostly situated under environmental social sciences and humanities. Environmental social science, or *human-environment interactions* (also known as *sustainability science* and *coupled human natural systems research*) is a broad study of the interrelations between humans and the natural environment, covering many disciplines including environmental anthropology, environmental geography, environmental sociology, environmental and ecological economics, and environmental psychology *(Figure 2)* (Moran 2010, xi). Interactions between humans and the natural environment are also studied in environmental humanities which include environmental history (which is sometimes count as an environmental social science, see Moran 2010) and environmental philosophy (including ethics and aesthetics) (Palsson et al. 2013). In addition to the young age of environmental sociology, I further justify my choice of producing interdisciplinary research by not only the need of environmental research to work 'between disciplines', but also by my subject and concepts of choice which are rooted in various disciplines and cannot be comprehensively understood by only focusing on sociological discussions. I identify this thesis belonging to interdisciplinary environmental sociology which utilizes pre-existing research from various fields to conduct more comprehensive results – therefore, my approach is not multidisciplinary or transdisciplinary, but interdisciplinary.
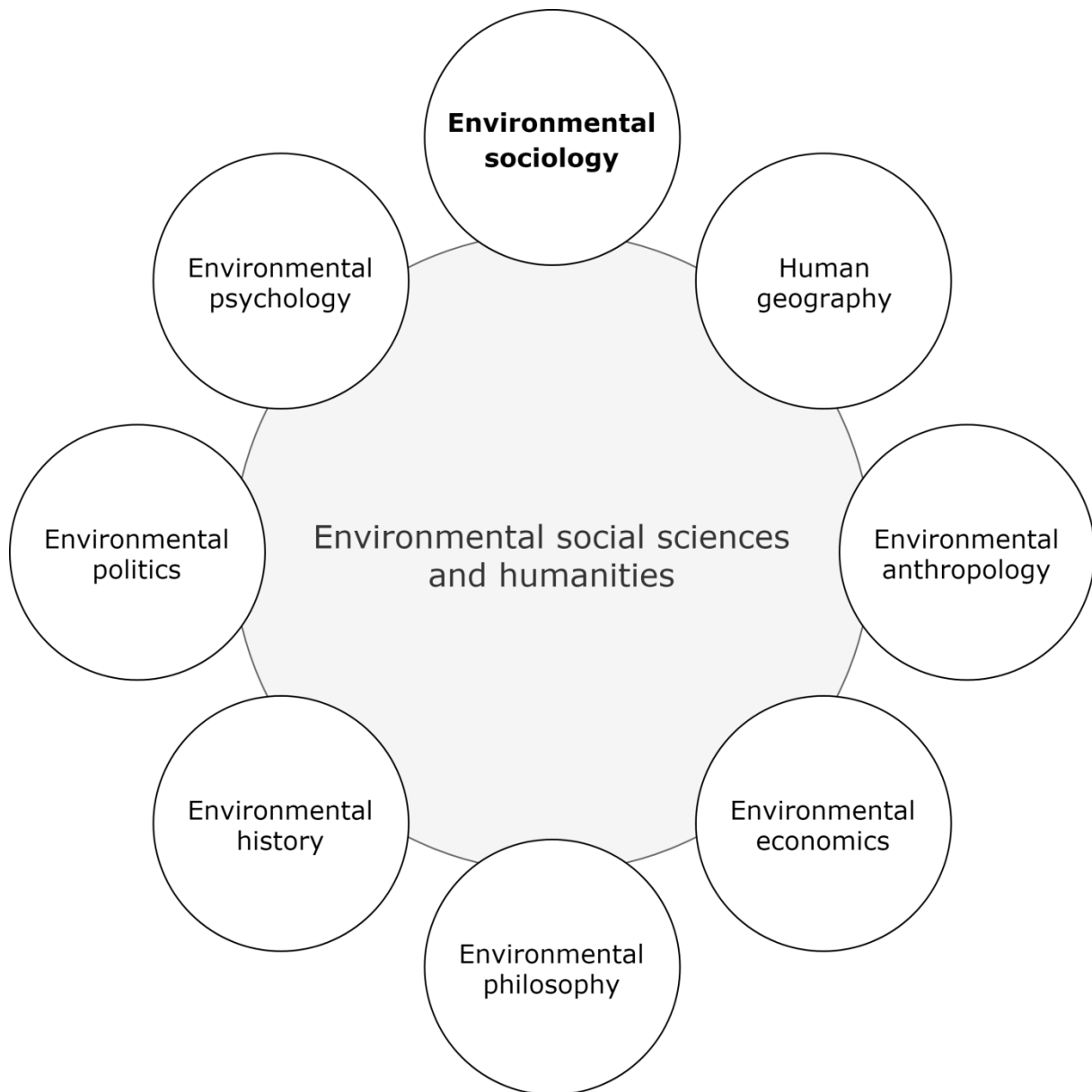
Figure 2. The most relevant disciplines for this thesis under environmental social sciences and humanities.

There is a significant amount of overlap between disciplines studying human-environment relations *(Table 1)*. Therefore, many concepts, such as human-nature relationships and pro-environmental behaviour, are studied by various different disciplines. However, while the disciplines are interested in similar subjects and themes, they have different approaches for explaining phenomena. Environmental sociology is interested in "the nature of environmental social movements; states, politics and environmental policy formation; environmental attitudes, beliefs and values; the relationships between consumption and production institutions; the reciprocal impacts of societies and environments; the role of technology in social and environmental change; and the significance of 'the global' in terms of

'environmental scale' and social institutions" (Buttel et al. 2002, 28). Environmental sociology emphasizes societal structures as explaining environmental behaviour (Reid, Sutton, & Hunter 2010). This perspective differs from environmental psychology which – studying psychological phenomena as affected by and affecting the natural environment – has often focused on the micro level as explaining human-environment relations, emphasising such actions as individual consumption choices as significant environmental behaviours (Larson et al. 2015; Valentín & Lucila 2010). The purpose of this thesis is to contribute to the understanding of the relationships between humans and nature as affected by not only environmental attitudes, beliefs and values, but also as comprehensively connected to production, consumption, various socio-material processes and human-nature relationships. For example, the economic structure in Zanzibar is largely based on the primary sector of the economy such as agriculture, livestock farming, silviculture and fishing (Juntunen 2008, 38) which may impose specific relations of dependency between humans and nature.

Table 1. The most relevant disciplines for this thesis and their main interests and main phenomena used to explain human-environment interactions.

	Main interests	Main explaining phenomena
Environmental sociology[1]	Human-environment interactions; environmental movements, politics and environmental policy, environmental attitudes, beliefs and values, consumption and production	Social action and societal structures, environmental facts
Environmental psychology[2]	Human-environment interactions; consumption, motivation, attitudes, behaviour	Psychological processes such as attitudes, emotions and self-regulation, environmental processes
Environmental history[3]	Human-environment interactions; time and place specific human-nature relations	Societal changes throughout time and places, environmental processes
Environmental politics[4]	Human-environment interactions; political theories and ideas, social movements, policymaking	Governance, policies, social action, environmental processes
Environmental philosophy[5]	Human-environment interactions; ethics, moral, ontological questions	Ethical consideration, reasoning, societal structures
Human geography[6]	Human-environment interactions; people, communities, cultures, economies, relations with and across space	Social interaction, interdependencies between people and environments

Environmental history includes environmental phenomena in understanding historical processes, or "to place man in the context of his environment, not as a master with dominion over nature but as part of nature and subject to its laws, and further to show how his actions have impacted on nature" (Smout 2009, 1). While this description by Smout has only a slight normative tone, environmental philosophy considers environmental issues largely as ethical issues. As written by Brennan & Lo (2014/2010, 4), "[e]thics assumes we are moved by consideration of other people's interests and suffering [as caused by environmental problems]." The study of environmental politics takes a step further toward practice from

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[1] Buttel et al. 2002.
[2] Valentín & Lucila 2010.
[3] Smout 2009.
[4] McBeath & Rosenberg 2006.
[5] Brennan & Lo 2014/2010.
[6] Aitken & Valentine 2006.

ethical consideration, and is interested in governance and policymaking as ways to combat environmental issues (see McBeath & Rosenberg 2006). While there are differences among the disciplines and their approaches and conceptualizations, they all share a common research subject as related to humans –

nature

1. The phenomena of the physical world collectively, including plants, animals, the landscape, and other features and products of the earth, as opposed to humans or human creations. (Oxford Dictionaries 2019a.)

The word *nature* is used straightforward in everyday language. Moreover, research addressing human-environment relations often does not explicitly define what is referred to as nature. Similar to the Oxford Dictionary definition, nature can be understood as a sphere consisting of plants, animals and 'natural' landscapes which are not greatly affected by people. In this definition, nature does not include people. According to historian Laura Feldt (2012, 1), nature is often understood as a place that people have not yet completely contaminated with their presence and which has not yet been 'ruined' by civilization. Nature, in this view, is understood as an original state or space that is separate from people and becomes spoiled at human touch. In this *dualistic* concept of nature, nature and culture are presented as opposing, exclusive spheres (Haila 2000). In such accounts, the human-shaped environment loses its natural qualities and becomes culture, which is the opposite of nature (see Feldt 2012).

As philosopher Eero Ojanen (2005, 9) points out, the ability of a person to interact with nature is due to both being composed of the same elements. According to Ojanen, however, humans are not exclusively biological beings, but also have a "spiritual", self-conscious dimension. The biological and spiritual qualities do not exclude one another – humans are separate entities from other beings in nature, but simultaneously part of nature. Geographer Teijo Rytteri (2002, 25) points out that if we think that human activity automatically destroys nature, we cannot develop an ethical and sustainable relationship with the environment. Debates in environmental ethics often highlight the view that, as cultural beings who differ from the rest of the animal kingdom, people have the duty to protect nature (Valkonen & Saaristo 2010, 11). Thus, the special place of humans in nature does not mean that nature would disappear with human activity.

Environmental sociology perceives nature and the environment as social and cultural constructs, the definitions of which vary by era and culture. Therefore, there is no agreement on what nature is and what it is not. The modern notion that culture and nature are opposed to each other is only a few hundred years old. During the pre-modern era, nature was largely perceived as an actor and the function of natural events was to convey messages to people. Contemporary concepts of nature are influenced by pluralism, and there is no exhaustive answer to where nature begins and where it ends. Thus, there are various competing and co-existing ideas of nature present in the public discourse. (Valkonen & Saaristo 2010, 10–11.)

Contemporary academic literature has increasingly attempted to expand on our understandings of nature – via, for example, the concept of *naturecultures*. With naturecultures, writers such as Donna Haraway (2008) attempt to shift our thinking away from dualistic ideas of nature and culture towards the interfaces and entanglements thereof, where species are placed "together in situated histories, situated naturecultures, in which all the actors become who they are *in the dance of relating*, not from scratch, not ex nihilo, but full of the patterns of their sometimes-joined, sometimes-separate heritages both before and lateral to *this* encounter" (Haraway 2008, 25).

Many prominent contemporary writings on nature carry a somewhat normative tone, stating how we *should* move from certain understandings of nature and the world surrounding us, towards others – or, altogether dismiss the concept of nature (see Bignall & Braidotti 2019; Latour 2008). Such accounts address the question of nature via a rather top-down approach, making ethical claims about different understandings and proposing alternatives for them. Conversely, to this perspective, I offer a bottom-up, empirical approach to the question of human-nature relationships. In Finnish research, the concept of *luontosuhde* (translating to *human-nature relationship* or *nature relationship*[7]) is a prominent way of understanding how people relate to and interact with nature. Research on human-nature relationships has been primarily interested in environmental awareness, attitudes and values possessed by people and communities, which are seen as building blocks of the nature relationship (Valkonen 2005, 17). In many ways, the study of the human-nature relationship is the study of the meanings of nature, and such research requires an open, non-normative approach. In this thesis, I do not

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[7] see Valkonen & Valkonen 2014 and Valkonen 2005.

define desirable or undesirable views regarding nature but instead let individuals whose voices are otherwise not considerably present in academic discourse express their perspective. Therefore, my mission is not to define how nature should be understood, but explore the variety of these understandings and how they may be formed. Moreover, human-nature relationships are formed and become visible in a host of practical interactions between humans and their environs. Many of these interactions may be separate from the ideals possessed by individuals (Valkonen & Valkonen 2014) – therefore, an excessive emphasis on ethical consideration is not sufficient in solving environmental problems.

In cases where research does not explicitly define nature, I will assume it refers to generalized definitions of nature, such as the Oxford Dictionary example. Another word that will frequently appear in the thesis is *environment* – which I also leave for my interviewees to define. However, in the Oxford Dictionary (2019b), environment is defined as "[t]he surroundings or conditions in which a person, animal, or plant lives or operates" or with definite article – *the environment*, "[t]he natural world, as a whole or in a particular geographical area, especially as affected by human activity". Often, the word environment is understood to be similar to the word nature (in referring to ecosystems) but especially referring to nature as affected by humans, and the interaction between the two.

Our ideas of nature are constantly shifting, and according to historian Lynn White, Jr. (1997, 26–27), technological advancements in agriculture, for example, have changed people's attitudes towards nature throughout history. Enhanced ability to shape the environment through the development of ploughs in Northern Europe began to change people's relation to nature, and while people had before considered themselves part of nature, they were now starting to think of themselves as the masters of nature. This dynamic began to instil a dualistic nature relationship in Western countries during the late 7th century. White names Christianity one of the sources for an exploitative human-nature relationship. In the Old Testament, man was not just part of nature, but God had created him as his own image, and other beings were subordinate to man. (White 1997, 26–27.) Environmental politics Professor Yrjö Haila (1994) criticizes White's interpretation, stating that the Bible also presents a harmonious description of man as part of creation and questions how a mere description could explain the widespread distribution of an exploitative nature relationship.

According to Haila (1994, 68), discussions on the human-nature relationship often bring forth dualisms such as human-centrality vs. nature-centrality, or subjugation vs. harmony, and calls for new, more multidimensional ways to perceive the relationship between humans and nature. According to Valkonen (2005, 17), the human-nature relationship, at its widest definition, can be seen in all human activities. The nature relationship is the relationship of the human animal to its natural base – therefore breathing, moving, acquiring food and working in the forest can be considered an expression of the relationship between a human and nature. Derived from the great variety of human-nature relationships among individuals, analysis of the nature relationship is most worthwhile at the individual level, simultaneously recognizing socio-material conditions and processes which affect individuals.

2.2.   Environmental sociology as a response to an environmental crisis

Environmental sociology started its emergence as separate from 'anthropocentric' sociology during the 'Environmental Decade' of the 1970s (Hannigan 2006, 10). The growing consciousness of environmental issues forced sociologists to renew their thinking and to include the environment in sociological research. In a key article defining the new sub-discipline *Environmental Sociology: A New Paradigm* (1978), William Catton, Jr. and Riley Dunlap argued that sociologists were focusing on debates between competing anthropocentric theories – such as functionalism, conflict theory and Marxism – stating that "their apparent diversity is not as important as the fundamental anthropocentrism underlying *all* of them". Catton and Dunlap argued that anthropocentrism was an integral part of contemporary sociology, naming this 'sociological worldview' the Human Exceptionalism Paradigm (HEP). The HEP incorporated four main assumptions, which included 1) the uniqueness of humans among earth's life forms as cultural beings, 2) the high variety of cultures and the ability of culture to change more rapidly than biological traits, 3) the social origin of human differences which allows for social alteration of inconvenient differences, and 4) the prospect of limitless progress due to cultural accumulation. Thus, in the Human Exceptionalism Paradigm, all social problems were ultimately solvable. (Catton & Dunlap 1978.)

These assumptions were contradicted by both contemporary, environmentally conscious research and societies awakening to environmental problems in the 1970s. The changing intellectual climate called for reassessing the Durkheimian notions embedded in sociology,

according to which social facts can be exhaustively explained as only linked to other social facts – eliminating the need to consider *environmental facts*. This rethinking process resulted in the formation of environmental sociology as a sub-discipline of sociology. (Catton & Dunlap 1978.) As proposed by Schnaiberg (1972), "the study of interaction between the environment and society is the core of environmental sociology". Along with a specified interest, environmental sociology proposed a New Environmental Paradigm (NEP), including the following assumptions (Catton & Dunlap 1978):

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 societal phenomena."

These assumptions have at least the following implications for environmental sociology research: Humans and nature are not opposed to each other, but humans are included in nature. Environmental sociology attempts to perceive humans as part of ecosystems, ones which humans are dependent on and which can be modified by humans. Moreover, the finite nature of the world calls for the protection and fostering of natural resources that humans, as previously stated, are dependent on. According to Foster, Clark, & York (2010), environmental sociology is a discipline which has emerged "in direct response to a crisis: the crisis of the earth." However, environmental sociology is divided into two opposing schools. On the one hand, some environmental sociologists and environmental economists in particular perceive nature as a set of natural resources which can be bent to our will and exploited for our needs. Others, however, aim to examine the social accounts to environmental problems and highlight societal discrepancies. The aim of the latter group is to found a new relation to the earth as a whole. (Foster, Clark, & York 2010.)

This thesis explores what new insights environmental sociology can offer both Zanzibari environmental issues as well as the concepts of the human-nature relationship and pro-environmental behaviour. By conducting research on these concepts in a context which varies from the contexts where previous research has focused can highlight the role of the underlying socio-material conditions affecting individuals – and, in that, what kinds of results

research finds. Therefore, I will compare my findings to pre-existing research conducted in industrialised settings to illuminate the ways in which Zanzibari, interdependent human-nature relationships and socio-material realities affect pro-environmental behaviour. For example, environmental psychology research often cites Thompson & Barton's (1994) suggestion that an individual's environmental behaviour is dictated by attitudes which can be placed on a two-dimensional scale between ecocentrism and anthropocentrism – while ecocentrism is presumed to lead to conserving behaviour, anthropocentrism is affiliated with the exploitation of natural resources. This finding, however, may be limited to industrialised settings and the relations of dependency among humans and their environs typical to those.

Prevailing socio-material conditions affect the individual by offering sources of empowerment and agency. In sociological inquiry, the concept of agency has its roots in the works of Max Weber (1968), who mostly addressed agency as referring to the delegation of authority to various actors apart from rulers. Questions of agency have, since Weber's writings, interested many sociologists, as "[t]o what extent social actors create the world or are instead productions of it, how we conceptualise or dissect actions has clear normative implications concerning social change and individual responsibility" (Loyal 2003). One of the key continuators to Weber's works was Anthony Giddens, whose idea of agency was based on the idea of active operation of human beings – a perspective critiqued as being too idealistic in assuming rationality and creativity. Contemporary sociology especially focuses on agency as a concept allowing for the analysis of not only freedoms and conscious actions of individuals, but also the constraints of choice. (Loyal 2003.) Following Clarke & Agyeman (2011), agency is understood in this thesis as *power and resources that allow an individual to commit conscious decisions and operations regarding their environment.*

Sociological inquiry functions as a base for this thesis where approaches and theories are derived, offering novel perspectives to the concepts which have been studied in various other disciplines. As noted by Clarke & Agyeman (2011), "[d]eveloping effective participation strategies in environmental and sustainable development policy has fuelled growing research interest in agency, empowerment and disempowerment and the contexts and constraints under which these terms become meaningful". Therefore, the utilization of the concept of agency may help understand the heterogeneity of abilities among individuals to participate in environmental protection and thereby ease the success of future environmental initiatives.

2.3. Human-environment relations in Zanzibar and sub-Saharan Africa

Human-nature relationships are influenced by local, national and global factors. For example, the development of agriculture is a phenomenon which ties together global, national and local processes, all of which not only affect landscapes but also shape social realities. In Tanzania for example, the first immigrants arriving in the slopes of Kilimanjaro began to transform the natural forest into a cultivated area (Soini 2006, 13). With the arrival of colonialists and missionaries, the area was integrated into the global world market. During colonialism, the slopes of Kilimanjaro were mainly used for growing coffee beans, and large cultivated areas were reserved for the most profitable crops. Today, farmers in Kilimanjaro's southern slopes do not have sufficient information on suitable crops, promoting sales or general quality standards. At the same time, the growing population is increasing the need for cultivation, and agriculture has almost completely displaced the original vegetation. (Soini 2006, iv; 13.)

Agriculture is the most common livelihood in Zanzibar. People living in the countryside are dependent on small-scale farming, cultivation of cash crops and livestock farming. Farming is the biggest determinant for land-use in Zanzibar and the most important basis for Zanzibar's economy. Agriculture, livestock farming, forestry and fishing account for more than 50 percent of Zanzibar's gross domestic product and over 90 percent of the country's exports. The majority of local agriculture consists of small-scale farming. Global markets have shaped Zanzibar's livelihoods, and in the 19th and 20th centuries, large areas of Zanzibar's original forests were converted into coconut and clove plantations, especially by slave labour. Coconut and clove exports are still important for Zanzibar's economy, but due to the fall in demand, the islands now also grow new types of exports such as tobacco, rubber, cardamom and peppermint. (Juntunen 2008, 38.)

Little systematic research on contemporary environmental attitudes has been conducted in sub-Saharan Africa. It has been suggested, however, that environmental attitudes in developing regions differ in many ways from ones in industrialised contexts. In Nigeria, while positive environmental values are present in the cultural heritage, livelihoods are prioritized over environmentalism due to poor socioeconomic conditions. Also, pro-environmental behaviour of female individuals can be hindered by repressive gender roles. (Ogunbode 2013.) Environmental concern alone, therefore, does not always lead to pro-environmental behaviour if there are not sufficient living conditions to support it, and a great proportion of

research has been interested in the gap between environmental knowledge and awareness, and pro-environmental behaviour (e.g., Kollmuss & Agyeman 2002). Adoption of sustainable practices requires knowledge, skills, time and energy – which are often not available in developing countries. In Nigeria, it has been suggested that individuals are most concerned about environmental issues which have direct and more prompt consequences to the living conditions (Ogunbode 2013). These include waste management problems and air pollution. Biodiversity loss and deforestation, on the other hand, are perceived as less acute problems. (Ogunbode 2013.)

According to Kukkonen & Käyhkö (2014), "[m]eta-analyses of case studies have linked deforestation in sub-Saharan Africa to population growth, in-migration, urbanization, growth of agricultural and forest industries, domestic demand of agricultural and forestry products, economic development, poor land policies and foreign debt". Derived from GIS analysis (Geographical Information Systems) on deforestation patterns in Zanzibar, Käyhkö et al. (2011) propose the founding of conservation sites in collaboration with local farmers, establishment of sites for permanent agricultural activities as well as promotion of new, more sustainable livelihoods. The island of Unguja has a multi-decade history of governmental actions and development cooperation projects addressing deforestation, many of them having promoted alternative, more sustainable livelihoods. As no decline has been observed in deforestation rates so far (see Kukkonen & Käyhkö 2014), deeper understanding is needed of the social and material processes preventing a shift toward more sustainable practices. Moreover, while previous research has identified incompatibilities between environmental initiatives and local practices in Zanzibar (see Benjaminsen & Kaarhus 2018), more information is needed on how human-nature relationships and the dependencies among individuals and their environs may or may not facilitate pro-environmental behaviour in Zanzibari communities.

Saunders et al. (2010) have studied the effect of projects utilising the Community-based Natural Resource Management (CBNRM) approach. CBNRM has gained a status of an established approach to natural resources management in rural developing areas, offering locals more secure tenure rights. This approach has also been favoured by social scientists as a method for increasing political participation. CBNRM, however, has also been criticized in multiple studies for not fulfilling its grand objectives. (Saunders et al. 2010.) As Saunders et al. (2010) remark, "CBNRM rarely takes into account or acknowledges the field complexities

of target sites (people and their relationship with each other and their environs) and thus tends to engage in simplifications." Many social factors affect the success of CBNRM projects, and in the village of Kisakasaka, Zanzibar, the unequal distribution of benefits caused by CBNRM arrangements has caused jealousy and dissatisfaction amongst locals (Saunders et al. 2010). Development interventions may exacerbate inequality within communities, working as arenas where certain members of communities are empowered while others are not. These conflicts can cause instability and impair conservation efforts.

As a means to decentralize local governance, the proportion of forest areas under the control of local communities has been increased over the past two decades in Tanzania (Rantala et al. 2012; Vihemäki 2012, 329). Governmental action and development cooperation projects which help explore alternative, more sustainable livelihoods are considered a key measure in helping to relieve pressure on forests and allowing the forest to recover (see Käyhkö et al. 2011). In the study site of this thesis – Kiwengwa-Pongwe Forest Reserve – the use of natural resources is controlled by COFMAs (Community Forest Management Agreement) (for more information on COFMAs, see Benjaminsen & Kaarhus 2018). These legal agreements not only limit the use of natural resources, but also appoint different areas for different land use types. All of the villages studied in this thesis had COFMAs which meant that the communities had a somewhat regulated access to forest resources – however, a village-specific plot where collection of firewood was permitted existed in each village (see GST n.d.). Not all villages in Unguja have COFMAs or a similar access to forest products which may cause conflicts as individuals attempt to acquire firewood for fuel.

Primary production is not the only process affecting human-nature relationships in Zanzibar. For example, the effects of tourism on human-nature relations have been studied by Stefan Gössling (2002). Tourism is a major livelihood in Zanzibar, and according to Gössling, tourism in Zanzibar "changes local conceptions of time and identity, influences cultural values, forces disembedment, and leads to a focus on cash-income". The change in social relationships also changes human-environment relations by getting individuals formerly living in remote villages involved with tourism and affected by the values encoded in the industry. According to Gössling, Zanzibari individuals working in the tourism industry become more interested in monetary profit, renouncing traditional activities. Gössling claims that due to Western influences through tourism, historical conceptions of time have changed among Zanzibari. Previously, time was perceived as a continuum in which individuals were

embedded – therefore natural resources had to be conserved for the future. Tourism has shifted this conception by favouring attitudes striving for quick profit, and traditional systems where natural resources used in a planned way are disappearing. (Gössling 2002.)

Religion is another factor affecting human-nature relationships in the Muslim majority region of Zanzibar. According to Saniotis (2012), ethical behaviour toward the environment is part of Islamic dogma, but seemingly indifferent attitudes regarding nature are apparent in many Muslim majority regions. Saniotis highlights the following explanations for the phenomenon: Firstly, Western influences through colonisation affected Islamic ecological practices negatively by instilling utilitarian views and replacing old traditions with Western understandings of the environment. Secondly, a great proportion of Muslim majority countries possess and utilise very basic technology. This means there is a dependence on raw materials. Moreover, these regions have rising human populations. In Zanzibar, the Islamic Foundation for Ecology and Environmental Sciences (IFEES) has intervened in fishing practices where fishers bomb coral reefs to ease access to fish. The aim of the Misali Ethics Pilot Project in Zanzibar was to sensitise locals to the environmentally ethical views included in Islam in collaboration with prayer leaders and teachers. (Saniotis 2012.)

Environmental conservation projects, however, may not only consolidate environmentally sustainable behaviour, but can also clash with local cultural practices and norms affecting sustainable human-nature relationships negatively. According to Benjaminsen & Kaarhus (2018), the Reducing Emissions from Deforestation and Forest Degradation (REDD+) scheme and the Zanzibari 'Hifadhi ya Misitu ya Asili' (HIMA) project have reduced the value of Zanzibari forests for locals by commodifying forest carbon for sale in global carbon markets. In this arrangement, industrialized countries can buy emission allowances from developing countries, and developing countries get paid for reducing forest-related CO_2 emissions by conserving forests. According to Benjaminsen & Kaarhus (2018), the REDD+ project has failed to "recognize the multiple and largely non-market functions that the forest has for members of the local community". In the village of Mitini, Zanzibar, forests provide an economic 'buffer' – forest products can be used in cases of emergency or special occasions to provide extra income. By comprehensively intervening traditional, socially embedded forest conservation practices and constricting the multiple values of forests to the value of forest carbon, the REDD+ and HIMA projects may even reduce willingness to protect the environment among locals. As concluded by Benjaminsen & Kaarhus, assessing the true

worth of forests for individuals requires analysis of their 'social embeddedness' – "considering the inherent complexities of human-nature relationships, including the social function of flexible access to forest and forest resources, as well as the role of local norms of solidarity and redistribution in reducing local vulnerabilities" (Benjaminsen & Kaarhus 2018).

Environmental issues in Zanzibar call for the understanding of socially embedded ideas as to what nature is, what meanings of and functions for natural environments exist as well as how individuals interact with nature. In this thesis, the set of these questions is referred to as the *human-nature relationships* of individuals. Understanding human-nature relationships also opens up a prospect for analysing how individuals in rural Zanzibari villages aim to improve or conserve the state of the environment as well as how environmental protection is seen as competing with other vital activities such as livelihoods – and yet, what motivates individuals to prioritise conservation activities. These questions are addressed under the theme of *pro-environmental behaviour*.

3. THEORIES ON HUMAN-ENVIRONMENT RELATIONS

3.1. Conceptualising the relationships between humans and nature

In research literature, human-nature relations are addressed in various ways. A notable branch of research addresses the relationship between humans and nature using the concept of the *human-nature relationship* (HNR). This field of research is mostly rooted in disciplines such as environmental psychology, social psychology, sociology and anthropology (Muhar et al. 2018). Literature addressing human-nature relations often attempts to produce a classification of the different ways humans relate to the 'natural world' (see De Groot, Drenthen, & De Groot 201; Flint et al. 2013; Nisbet, Zelenski, & Murphy 2009; Van Koppen 2000). In this thesis, following the approach by Valkonen & Valkonen (2014), the human-nature relationship is broadly defined as the *different ways humans relate to the 'natural' environment*, especially referring to practical interactions with the environment. The human-nature relationship is a general concept which includes various different aspects such as nature connectedness, place attachment and environmental worldviews (Muhar et al. 2018).

Some HNR research attempts to portray the different aspects which constitute the human-nature relationship (see Flint et al. 2013; Muhar et al. 2018). In their article, Flint et al. (2013) review empirically grounded typologies of human-nature relationships and break them down according to three main dimensions – positionality, character of bond, and understanding of nature. The *positionality* domain includes "anthropocentric-ecocentric polarity, the hierarchical relation of humans above nature or vice versa, and the notion of humans as part of or separate from nature". The second domain, *character of bond*, includes the "intentions underlying humans' interaction with nature, biophilia vs biophobia, responsibilities for nature and rights of nature, preferred roles of technology in nature, spirituality or religiosity, instrumental to intrinsic values, and a gradient from connectedness (also termed belonging, sense of home, authenticity, identification, relatedness, and rootedness) to apathy which refers to a distance from or lack of attention to nature". The last domain, *understanding of nature*, is closely linked to 'images of nature', including "notions of nature as fragile or resilient, the predictability of nature and modes of learning".

An attempt to operationalise human-nature relations for quantitative analysis has been made by producing a variety of scales that approach different aspects of the human-nature

relationship and are often rooted in different disciplines. The New Environmental Paradigm (NEP) scale is perhaps the most influential quantitative scale for operationalising human-nature relationships, and has been the foundation for several other scales (De Groot, Drenthen, & De Groot 2011; Dunlap et al. 2000). The scale consists of a questionnaire of 15 questions which attempt to measure the human-nature relationship of the individual, and it has also been utilised in non-Western contexts such as Africa (see Ogunbode 2013). However, De Groot, Drenthen, & De Groot (2011) criticise the scale by stating that most of its questions focus on "people's cognitive awareness of the consequences of harming the natural environment" and not on the human-nature relationship. Other scales used for measuring certain aspects of the human-nature relationship include the Nature Relatedness (NR) scale, the New Ecological Consciousness scale, Connection to Nature (CNS) scale, and the Human-Nature Relationship (HNR) scale (De Groot, Drenthen, & De Groot 2011; Li & Lang 2015; Nisbet, Zelenski, & Murphy 2009).

As the human-nature relationship is a highly contextual structure, different dimensions of it become relevant depending on the environment and social circumstances. Thus, no ready-made questionnaire is used in this thesis – instead, an effort is made to become sensitive to locally relevant environmental issues as encouraged by Flint et al. (2013) as a key part of research on human-nature relationships. In this thesis, context-sensitivity was achieved by reviewing previous literature on human-nature relationships in Zanzibar (chapter 2.3.), utilizing semi-structured interviews to allow for unexpected viewpoints and themes (chapter 5.2.), and utilizing local knowledge for supplementing the research process and the formulation of relevant interview questions and themes (chapter 5.2.). While quantitative attempts to operationalize the human-nature relationship enable context-to-context comparison, they do not adequately allow for context-sensitivity and therefore risk erasing individual differences between human-nature relationships. As argued by Valkonen (2005), generalizing human-nature relationships as portraying entire cultures often creates essentialist outlooks which do not accurately illustrate the heterogeneity within communities.

According to Muhar et al. (2018), mainstream paradigms assessing relationships and interactions between social and natural systems, such as Human–Environment Interactions or Coupled Social-Ecological Systems, do not adequately include the motivations for interacting with ecosystems which exist in the "different individual and collective understandings of the human-nature relationship". Traditions, philosophy, ethics, values, attitudes, behaviour,

lifestyles and worldviews are closely intertwined with human-nature relationships, and according to Muhar et al. (2018), concepts concerning nature and environment are a specific subset of these social-cultural concepts. In HNR research, social-cultural concepts are sometimes used intermixed with human-nature relationships, and boundaries between these terms have become blurry *(Figure 3)* (Flint et al. 2013).
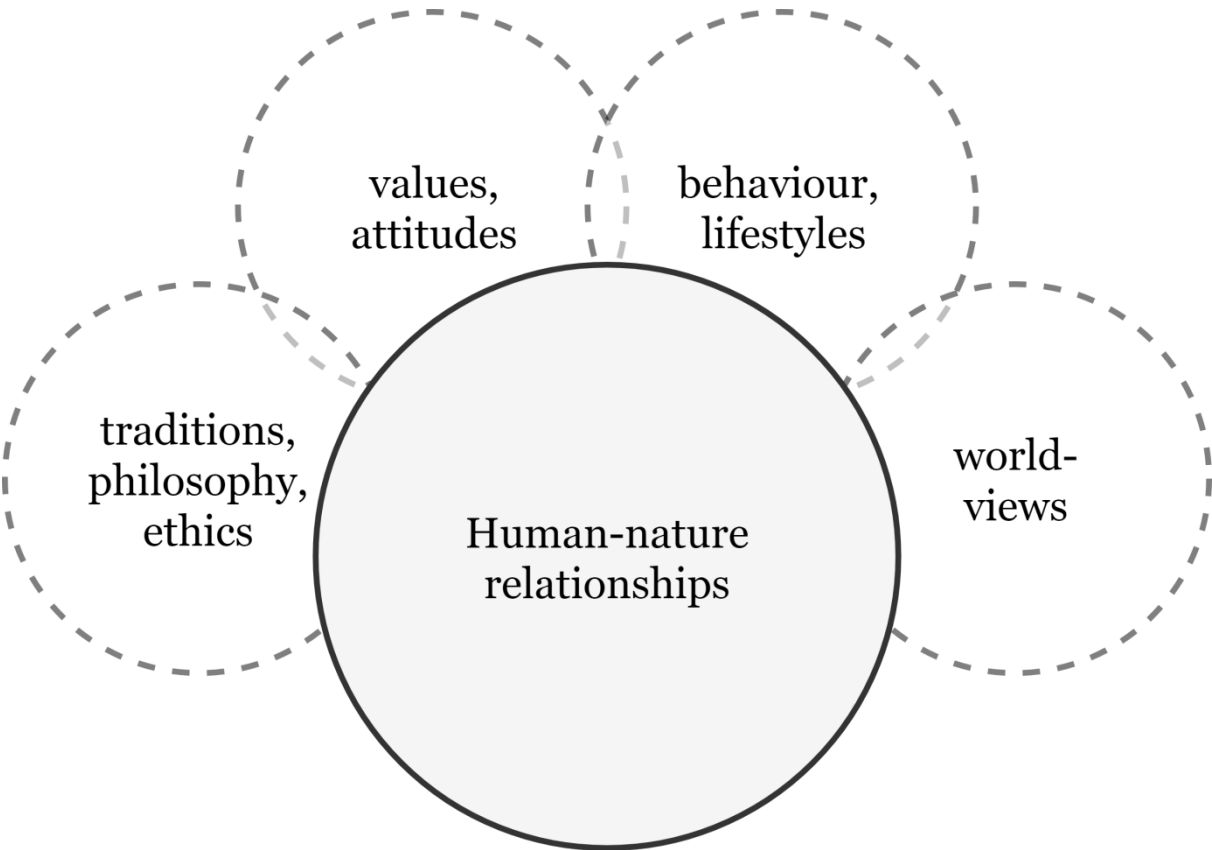
Figure 3. Human-nature relationships as affected by other social-cultural concepts (Flint et al. 2013; Muhar et al. 2018).

The ways humans relate to their environment have been recognized as an important component of sustainability efforts (Flint et al. 2013; Muhar et al. 2018). However, some research on human-nature relationships make a distinction between collective understandings of human-nature relationships and practical human-nature relationships which especially refer to the interactions which humans have with their environs (see Muhar 2018; Valkonen & Valkonen 2014). While an individual's values and attitudes may affect and guide behaviour, Valkonen & Valkonen (2014) separate worldview-related ideas as to how people and communities are considered, or presented, to relate to nature – *discursive human-nature relationships* – from 'actual' human-nature relationships to which they refer as practical interactions with the environment. While Flint et al. (2013) propose that situational factors

may affect human-nature relationships and environmental behaviour, Valkonen & Valkonen (2014), on the other hand, include behaviour as an integral part of the human-nature relationship itself. According to Valkonen & Valkonen, the discursive human-nature relationship exists in the sphere of the collective cultural self-understanding whereas actual interactions with nature occur in localized practices between humans and their environs.

3.2. Environmental behaviour, agency and human-nature relationships

As the global environmental crisis calls for facilitating sustainable behaviour and solving existing environmental problems, a great body of research has addressed such initiatives. Examples of concepts used for addressing behaviours aiming to maintain or improve environmental quality include *pro-environmental behaviour*, *responsible environmental behaviours*, *environmentally responsible behaviours*, *ecological behaviours*, *conservation behaviours*, *environmentally supportive behaviours*, and *environmentally significant behaviours* (Larson et al. 2015). In this thesis, I will use pro-environmental behaviour (PEB) as the concept of choice as it can be understood as referring to a wider range of behaviours than certain other concepts. For example, the term *environmentally responsible behaviours* can be understood as suggesting that all individuals have a chance and hence responsibility to act in a sustainable way, which is also evident in some research conducted on the concept (e.g., Kaplan 2000). I perceive pro-environmental behaviour as a concept that is or sounds more neutral – however, as will be discussed later in more detail, research on pro-environmental behaviour often fails to acknowledge and analyse how individuals are unequally empowered to maintain or improve their environment. Therefore, I will contribute to the research on this concept by including a critical sociological perspective which includes societal structures and discrepancies in the analysis of the concept previously studied especially by environmental psychologists as a phenomenon mostly occurring as separate from societal processes. In this, I will offer an example as to how an interdisciplinary approach can improve research on complex phenomena.

PEB literature often defines pro-environmental behaviour as behaviours which *improve the state of the environment or harm it as little as possible*, and one of the orientations typical for environmental sociologists has been assessing the connection between attitudes and environmental behaviour (Larson et al. 2015; Stets & Biga 2003). Early attempts for

characterizing and measuring human-environment interactions has been mostly based on unidimensional scales, and Larson et al. (2015) argue that they have widely overlooked the multi-dimensional structure of environmental attitudes. PEB literature encompasses a variety of fields ranging from social sciences to environmental psychology, but the works by environmental sociologist Riley Dunlap, among others, have founded a basis for understanding environmental concern, which is often understood as an initiator for pro-environmental behaviour (see Kollmuss & Agyeman 2002). There is considerable amount of interdisciplinary traffic in PEB literature, with concepts and theories being adopted from psychology to sociology and vice versa (see Stets & Biga 2003). In this thesis, I utilize an interdisciplinary approach to conduct more comprehensive research. Therefore, I will also make an effort to become sensitive to interdisciplinary disagreements on the use of terminology, as conceptual differences have been recognized as a key issue in multidisciplinary environmental research (Tress, Tress, & Fry 2005; Uiterkamp & Velk 2007).

In environmental psychology, pro-environmental behaviour has been largely understood as occurring in the private sphere, including actions such as recycling, waste reduction, water conservation, energy conservation, environmentally-conscious transportation and green or eco-friendly purchasing (Larson et al. 2015). However, as Larson et al. (2015) point out, "a singular focus on the consumer-oriented household behaviors that are prevalent in many behavior measures may preclude the consideration of other types of PEB that may be of equal or greater ecological and social importance". Environmental sociology, on the other hand, has typically focused on macro-level processes as explaining environmental behaviour – an approach which has been criticized for erasing heterogeneity among micro-level actors and entities (Reid, Sutton, & Hunter 2010). Therefore, Reid, Sutton, & Hunter (2010) argue, macro level approaches fail to sufficiently explain pro-environmental behaviour at the individual level. This thesis includes both the macro and micro levels in the analysis of pro-environmental behaviour by recognizing the multitude of attitudes, values, beliefs, and other social-cultural concepts which exist in the private as well as public spheres guiding the actions of individuals.

Various situational factors may also affect the behaviour of an individual, and the adoption of environmentally sustainable behaviour may require a considerable amount of time and cognitive effort (Coelho et al. 2017; Muhar et al. 2018). In this regard, pro-environmental

behaviour is likely to be affected by a host of factors differing from context to context. For example, environmental behaviour in Zanzibar is to some degree coordinated by development cooperation projects aiming to involve locals in tree-planting, forest protection and patrolling, and support the adoption of environmentally sustainable livelihoods and ways of practicing existing livelihoods. These actions are usually organized in local communities following the principles of CBNRM. Therefore in this thesis, I will analyse social processes occurring in the village communities which affect pro-environmental behaviour.

Previous research has acknowledged the importance of situational and context-based, discursive and practical, factors which can inhibit an individual's ability to affect their surroundings (Clarke & Agyeman 2011). Harrison, Burgess and Filius (1996) have found, for example, feelings among European laity of being "unable to pursue their moral obligations to alter their current lifestyles of consumption as they felt disempowered and alienated by government institutions". Fudge and Peters (2011) argue that the failure of the UK Government's behaviour change agenda to anticipate people's reactions has been largely due to the programme's "excessively narrow focus on the individual". Therefore, the writers continue, it has overlooked the wider political and economic aspects affecting individual action. In environmental psychology, individual attitudes toward the environment have been a central interest in the study of pro-environmental behaviour, as attitudes are thought to lead to behaviours (Stets & Biga 2003). In their article, Stets and Biga (2003) criticize the psychological perspective for an overly large emphasis on attitudes and attempt to incorporate identity theory into environmental sociology:

> *When we investigate individuals' identity, as well as identity prominence, identity salience, and identity commitment, and we relate this to attitudes and behavior, we keep actors attached to the social structure in which they are embedded and from which action emerges. This is in contrast to psychological theory, in which actors are conceptualized as isolated entities, impervious to societal influences. We treat actors as having individual agency while recognizing that this agency may be constrained when interactions with particular social ties limit resources and opportunities, given the exclusion of other social ties.*

While in this description Stets and Biga acknowledge that individual agency may be constrained by social ties, they maintain an emphasis on individual factors and processes, failing to consider how agency may be limited by environmental facts, poverty and lack of resources. As their study is conducted on a sample of students in a northwest university, their theorizations may mostly apply to groups for whom poor socio-material conditions do not limit individual choice to a large degree, and it is likely that pro-environmental behaviour takes on different forms in a rural village of a developing country than in an industrialised city. This weakness is admitted by the writers themselves, acknowledging the need for more varied contexts. Sawitri, Hadiyanto, & Hadi (2015) have defined *agency* regarding one's environment as the "capacity of individuals to intentionally choose, execute, and manage their own actions to actualise expected outcomes", becoming both the "products" and "producers" of their environments. As pro-environmental behaviour is executed in order to improve one's environment, I argue that it always requires agency.

Moreover, as pro-environmental behaviour requires agency, it also requires consciousness. An individual's interaction with the environment can be either sustainable or unsustainable – or, in many cases, rather neutral *(Figure 4)*. Often, our interaction with the environment is not motivated by a desire to affect its condition – rather, it may be in fulfilling our own needs. Therefore, the individual may not know or consider whether their actions are improving or degrading the state of the environment. For example, we often lack sufficient knowledge regarding ecosystems to become conscious of the consequences of our behaviour. Pro-environmental behaviour, on the other hand, is conscious efforts to improve the state of the environment. Therefore, pro-environmental behaviour not only requires the individual to have sufficient resources to execute it, but also motivation and knowledge. Some literature on pro-environmental behaviour treats all actors homogeneously in their ability to modify their environment. By linking societal factors, socio-material realities and the concept of agency in the analysis of pro-environmental behaviour, I will examine what heterogeneities exist among Zanzibari villagers in their ability to *produce their environment*.

Human-nature relationship

Unconscious sphere

Sustainable behaviour

Conscious sphere

Pro-environmental behaviour

Anti-environmental behaviour
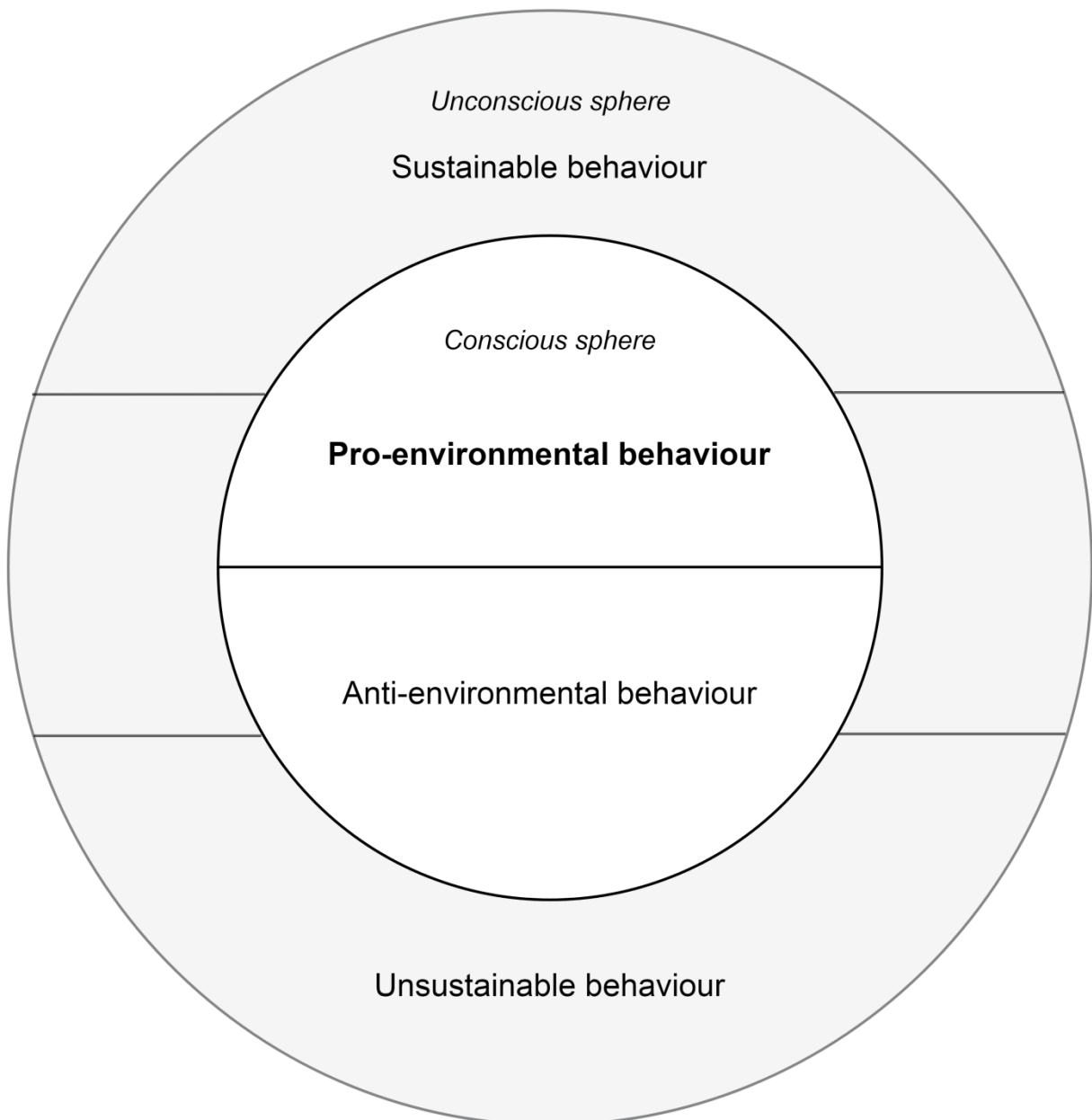
Unsustainable behaviour

Figure 4. The connection between pro-environmental behaviour and human-nature relationships as proposed in this thesis.

4. RESEARCH QUESTIONS

This thesis is divided into two main themes: 1) Human-nature relationships and 2) pro-environmental behaviour. In this thesis, human-nature relationships are understood as the relationships between humans and their 'natural' environment as discussed in chapter 3.1. As the human-nature relationship refers to all interaction with nature (Valkonen & Valkonen 2014), the main themes of this thesis are not exclusive. I regard the human-nature relationship as referring to all interaction with the environment, therefore including pro-environmental behaviour (as discussed in more detail in the previous chapter). The demarcation of the human-nature relationship and pro-environmental behaviour is consciousness, as pro-environmental behaviour especially refers to efforts of improving the quality of the environment (Larson et al. 2015).

4.1. Human-nature relationships in rural Zanzibari villages

My first research question is *which social and material processes and elements affect and define human-nature relationships in rural Zanzibari villages surrounding the Kiwengwa-Pongwe Forest Reserve*. Through interviews, I want to find out what values, attitudes and behaviours the interviewees attach to the natural environment, and how they perceive themselves in relation to nature. However, as human-nature relationships especially refer to practical, localized interactions with the environment (Valkonen & Valkonen 2014), the factors and processes affecting interviewees' interaction with the environment are the main focus. I take into account the diversity of nature relationships by attempting to portray the multitude of different accounts rather than aiming to only produce generalizations. An effort is made to avoid *essentialism* – presenting the interviewees' nature-relationships as describing the entire culture (see Valkonen 2005). Human-nature relationships are always complex structures which vary from individual to individual even within closely-knit communities. Despite individual differences, however, human-nature relationships are simultaneously linked with prevailing socio-material conditions and other societal processes existing at the micro and macro levels.

As pointed out by Charles A. Ogunbode (2013), human behaviour is a major driver of environmental issues, and therefore it is crucial to understand what kinds of perceptions and attitudes humans possess toward the environment. The focus of my research is on the attitudes

possessed by the interviewees toward the "natural" environment, such as plants, animals, forests, waterways and landscapes. As argued by Valkonen (2005), human-nature relationships are developed and reflected in practices toward the environment, so for example, human-nature relationships become visible and assessable in the livelihoods practiced by individuals. In the context of Zanzibari villages, it may be assumed that the human-nature relationship is not a customary concept which the interviewees could readily comment. Therefore, I analyse human-nature relationships through a set of questions regarding the understandings of, attitudes towards, and interaction with the natural environment *(see Appendix 1)*.

Even if an interviewee were not able to express their nature relationship, this does not mean they do not have a relationship with nature. If we argued that someone has no nature relationship, we would mean that they do not interact with nature. According to Valkonen (2005), the human-nature relationship is reflected in all activities – even working on the computer. In this thesis, I assess human-nature relationships through, for example, the livelihood practices of the interviewees. Most Zanzibari individuals gain their livelihood through primary production such as agriculture and forestry which are livelihoods having a considerable impact on the environment (Juntunen 2008). Thus, local human-nature relationships can be assessed by examining how the interviewees take ecosystems, animals and plants into account in their business.

Human-nature relationships prevailing in societies can also be analysed in relation to how comprehensively livelihoods and industry shape the environment. Nature relationships are influenced by the resources available to the individual, and according to Rytteri (2002, 41), human-nature relationships in Finland have changed depending on the standard of living during each era. In the 19th century, there was no concern whether nature was destroyed as a result of human activity. Due to hunger and a modest standard of living, people utilised everything offered by forests through utilising the slash-and-burn method, burning tar, practicing woodland grazing as well as using and selling firewood. (Rytteri 2002, 41.) Some studies have suggested that environmental concern is a phenomenon especially present in wealthy Western societies, as "industrialized societies can use their wealth to explore higher-order needs, while the less affluent cannot afford to take such material security for granted" (Ogunbode 2013).

4.2.   Pro-environmental behaviour – motivations, modes and obstacles

My second research question is *what processes and elements encourage, disable or otherwise affect individuals' commitment to pro-environmental behaviour in rural Zanzibari villages, and how pro-environmental behaviour is connected to prevailing human-nature relationships and socio-material realities*. According to Ogunbode (2013), studies conducted in Western socio-cultural contexts suggest that positive attitudes toward the environment are an important correlate to pro-environmental behaviour. Therefore, he continues to note examination of environmental attitudes is fundamental in promoting pro-environmental behaviour (Ogunbode 2013).

Some environmental conservation projects in Africa have hindered local people's ability to practice their livelihoods and traditional activities (see Benjaminsen & Kaarhus 2018; Büscher 2010). For example, some conservation projects have founded nature reserves, disabling local people from using wood and other forest resources in their daily lives (Rantala et al. 2013). On the other hand, many environmental protection projects can also help locals protect their natural resources and thus even save local livelihoods, enabling them to continue in the future. In my thesis, I want to find out whether the interviewees consider environmental protection and nature conservation areas as a Western agenda, or whether they perceive environmental protection as suitable and effective for themselves.

Environmental concern may be linked with experiences of environmental degradation (Ogunbode 2013). In this thesis, I perceive environmental concern as a starting point for conscious pro-environmental behaviour, as degrading environment is a concrete reason for a shift in practices and fixing existing environmental problems. Environmental conservation projects, however, do not always improve the state of the environment. Even actions which aim to improve or conserve the state of the environment may factually degrade its state – therefore, pro-environmental behaviour requires comprehensive knowledge on sustainable interaction with the environment and is characterised by continuous efforts for improving one's practices. In Zanzibar, pro-environmental behaviour may include a variety of different environment-conscious actions such as taking the environment into account in practicing a livelihood, efforts to avoid cutting forests, participation in the operation of a local forest protection organization and village conservation committees, and building knowledge through attending to educational events. As real-life interaction could not be assessed through

available resources and methods, the main focus of this thesis is on the interviewees' subjective self-assessment of their interaction with the environment and not how it truly affects their environs.

In Zanzibar, agency may be a considerable bottleneck to pro-environmental behaviour. For example, in Nigeria, "a host of sustainable traditional environmental resource conservation measures previously embraced by communities have been abandoned in order to meet the exigencies of short-term survival" (Chokor 2004). Poverty disempowers individuals from acting according to their true moral stances. Individuals may be empowered or disempowered to participate in environmental protection through possessing or not possessing the sufficient level of education, skills and other resources. Adoption of pro-environmental behaviour is resource-consuming, and if an individual is struggling with their everyday survival, it becomes less likely they are able to invest their time and resources into learning about sustainable practices or fixing environmental problems (Chokor 2004; Coelho et al. 2017).

While some previous research has presented linkages between human-nature relationships – and understandings thereof – and environmental behaviour (e.g., Muhar et al. 2018; Valkonen & Valkonen 2014), the actual relationship between human-nature relationships and pro-environmental behaviour remains under-theorized. For example, it is unknown how specific aspects of the human-nature relationship, such as dependency on ecosystem processes through livelihoods, may affect pro-environmental behaviour. Moreover, most literature still addresses the concepts as separate, calling for an integrative approach. Therefore, I will utilize my case study on rural Zanzibari villages in creating a more comprehensive understanding of the linkages among the main concepts used in this thesis. In addition, I will also examine what new perspectives to the concept of pro-environmental behaviour may be found by utilizing the concept of agency in the analysis of environmental behaviour in rural Zanzibari villages.

5. DATA AND METHODS

5.1. Data

The data used for this thesis consists of primary data – nine semi-structured interviews – and supplementary data – a survey study (n=50) as well as two focus-group discussions *(Table 2)*. All data was collected during the period of December 2017 to January 2018 in ten different villages surrounding the Kiwengwa-Pongwe Forest Reserve (K-PFR) on Unguja island, Zanzibar in Tanzania. These villages were Pangeni, Kilombero, Tunduni, Mchangani, Bambi, Pongwe, Pwani Mchangani, Kandwi, Upenja and Kiwengwa. I performed the collection of the primary data, conducting semi-structured interviews in each of the mentioned villages (excluding Kiwengwa due to a strict timetable). I collected the primary data for the use of this thesis specifically, and the focus of the semi-structured interviews was on human-nature relationships and pro-environmental behaviour as formulated by a general theoretical framework I had at that time (methods further addressed in chapter 5.2.). Supplementary data, on the other hand, consists of outputs used for conducting a baseline for the KIPPO (*Kiwengwa-Pongwe Protection & Open Civil Society Project*) project. Supplementary data was collected in collaboration between the workers of the Department of Forestry and Non-Renewable Resources of Zanzibar (DFNR), a fellow representative of the GST (Geographical Society of Turku), and I.

Table 2. Portrayal of the data.

	Data type	N	Collected
Primary data	Semi-structured interviews	9	December 2017–January 2018
Supplementary data	Survey study	50	December 2017–January 2018
	Focus-group discussions	2	December 2017 & January 2018

KIPPO is a three-year development cooperation project which started in 2017 and will end in 2019. The project is funded by The Finnish Ministry for Foreign Affairs. The project partners of KIPPO are Finnish and Zanzibari, consisting of The GST (Finland), DFNR (Zanzibar) and a Zanzibari forest protection NGO named MUMKI (Mtandao Wa Uhifadhi Wa Mazingira Kiwengwa-Pongwe) (Zanzibar). The goal of the project is to build the capacity of MUMKI to

work as an umbrella organisation for local village-level forest conservation committees (VCCs). There are 11 VCCs working in the Kiwegwa-Pongwe area, one in each village surrounding the Kiwengwa-Pongwe Forest Reserve (K-PFR) which is located in the North-East part of the island of Unguja. The project aims to improve forest protection and sustainable forest use in the area surrounding the K-PFR.

To conduct the survey study, the project partners and I made ten visits to the villages surrounding the K-PFR. The purpose of the survey study was to assess the villagers' opinions and attitudes regarding the operation of MUMKI, as well as document attitudes regarding environmental conservation in general. Moreover, I collaborated with workers from the DFNR and my fellow representative of the GST to hold two focus-group discussions with the board members of MUMKI. In these discussions we tracked their progress and assessed how their operation could be capacitated by the KIPPO project. The discussions were held at MUMKI's office, with translations and other assistance offered by the workers of the DFNR. I will use the results of the survey study and the focus-group discussions as supplementary data for this thesis, especially contributing to the analysis of the obstacles to pro-environmental behaviour in the K-PFR area. The form used for conducting the survey study can be found attached at the end of this thesis *(Appendix 2)*. The focus-group discussions were not recorded in audio, but I wrote down notes of the main results instead. Therefore, I will not make systematic analysis of the focus-group discussions, but use the main findings as supplementing the analysis and offering background information.

All interviewees and respondents were recruited with the help of the DFNR. Before arriving at the villages, the village leaders were informed by the DFNR about our arrival, and the village leaders asked for a group of villagers to assemble. I did not choose the interviewees myself, but the first available interviewees were asked by the workers of the DFNR to participate in my interviews. The rest of the assembled villagers participated in the survey study. As the villagers knew beforehand that the purpose of the village meeting was to collect information about environmental protection, it may be assumed that the groups of villagers did not represent average inhabitants in these communities but were more active in environmental conservation – a factor which further justifies my choice to avoid producing generalisations. Rather, I address the interviews as examples of opinions existing in the villages. As compensation for the semi-structured interviews, I paid the interviewees a small

sum of money or offered them beverages. I asked all interviewees for permission to interview them and record the interview using a digital audio recorder.

The nine villages in which I conducted semi-structured interviews were considerably similar to each other. They were based on primary production such as crop cultivation, animal husbandry or fishing. Five of the nine interviewees were farmers by occupation (referring to crop cultivation), whereas two interviewees were heads of their villages (one of whom was also a part-time farmer) *(Table 3)*. One interviewee was a fisherman, and one interviewee was a teacher by occupation. One interviewee also practised livestock husbandry in addition to crop cultivation. Most of the interviewees (7 out of 9) practised a livelihood which was dependent on the environment. The average age of the interviewees was 47 years.

Table 3. Semi-structured interviews.

Interviewee	Conducted	Gender	Age	Occupation	Participation in forest protection	Length
1	December 2017	F	43	Farmer	No	38:20
2		M	45	Farmer, livestock farmer	Yes	44:51
3		F	23	Farmer	No	49:52
4		M	54	Farmer	Yes	39:57
5		F	60	Farmer	No	42:20
6		M	55	Fisher	Yes	45:53
7	January 2018	M	32	Teacher	Yes	37:20
8		M	53	Head of village, farmer, fisherman	Yes	36:13
9		M	61	Head of village	Yes	41:25

5.2. Method

To create a context-sensitive approach as encouraged by previous research (see Chapter 3.1.), I allowed locally important themes to emerge during the research process and emphasised them in the analysis. Due to time- and other practical limitations (for example, interviewees got tired due to heat and heavy manual labour and could not, from an ethical standpoint, be held for long periods), not all dimensions of human-nature relationships could be addressed. Therefore, the emphasis of this thesis is on dimensions and processes that were deemed

locally relevant by the interviewees and the workers of the DFNR, and what I considered interesting from the perspective of the theoretical framework of the thesis. For example, I emphasized meanings of nature (Chapter 6.1.) as its own theme, as due to the foreign cultural context and my lacking knowledge of Swahili, it was important to gain a basic understanding of meanings incorporated in the local language. Moreover, this choice allowed the interviewees to define what nature means for them, resulting in a bottom-up approach. I chose value of nature (Chapter 6.2.) as another focal dimension of human-nature relationships in Zanzibar, as I deemed the perceived value of nature to motivate participation in environmental protection. Lastly, I focused on interaction with nature (Chapter 6.3.) through a wide assessment as to how the locals understood the effect of their actions on their surroundings. Along with utilizing pre-existing research on local human-nature relationships, I deemed these three main dimensions sufficient for offering an understanding as to what factors and processes affect human-nature relationships in rural Zanzibari villages.

I utilised semi-structured interviews for collecting the primary data. The semi-structured interview differs from an open interview by having a guiding frame of themes that should be addressed (Saaranen-Kauppinen & Puusniekka 2006). Therefore, having a general idea as to what theoretical concepts I wanted the interviews to focus on, I deemed the semi-structured interview more suitable for collecting data on an already somewhat fixed subject. Nevertheless, I wanted to stay open to new, locally relevant information as encouraged by Flint et al. (2013), which could not be attained with a set of rigid interview questions typical to structured interviews or ready-made questionnaires which are usually used for producing data for quantitative analysis (Saaranen-Kauppinen & Puusniekka 2006). Semi-structured interviews are a useful approach for conducting information about human-nature relationships specifically, as they allow for "inductive reasoning, interaction and reflexion, and take into account the context and cultural background of respondents" (De Groot, Drenthen, & De Groot 2011; Muhar et al. 2018). The method allows additional questions for elaboration such as "why?", "why not?" or "could you tell me more about this?". This enables reflexive measures for conducting interviews – which is especially important when interviewing people in a foreign cultural context.

Two translators from the DFNR helped me conduct the semi-structured interviews. Both worked in the field of environmental protection and had extensive knowledge about environmental issues specific to the K-PFR area and the island of Unguja in general. I wrote

original interview questions in English and they were translated into Swahili. I conducted eight of the interviews with a translator, and the translators translated all the answers in real time to ensure that the answer matched the information desired. This also enabled me to ask additional questions whenever I needed more information or a clarification about a certain question or theme. Working with two different languages and a translator did, however, reduce the interaction between the interviewees and myself. One of the interviewees could speak English, and I conducted the interview with him without a translator.

As I mostly conducted the semi-structured interviews with the help of a translator, I made an effort to structure the interview form *(Appendix 1)* as much as possible in order to reduce misunderstandings and communication problems. Before conducting the interviews, I went through the interview form with each translator and discussed about the subject of my thesis. I did this in order to ensure that the translator had a sufficient understanding as to what the interviews were supposed to focus on. Nevertheless, a fair amount of difficulties with communication arose from language differences. The interviewees did not always answer the intended question at first, and further clarification was needed. The translations provided by the translators were often short, and the interviews were fully translated in the transcription phase by a transcriber who knew both Swahili and English to ensure no part of the Swahili-spoken discussions was lost. The transcriber included the Swahili-spoken parts in the transcriptions so that correctness of translations could be ensured if necessary. The transcriber was third party, ensuring that no changes to the discussions were made from self-interest. As the transcriber did not use punctuation marks and capitals in the transcriptions, I added them with no additional markings to the quotes presented in the analysis chapters 6 and 7 to increase readability. All other changes to original transcriptions are marked in brackets. For example, the following marking stands for a deleted word or part: [–]

In my study, I want to find out whether the interviewees perceive environmental protection primarily as a threat to their livelihoods, or whether they see it as an opportunity to protect local livelihoods and the future of the communities. Even a single failed environmental protection project may affect the reputation of environmental conservation negatively in communities (see Mwalubandu et al. 1991, 69). Therefore, I asked the interviewees if they knew any environmental protection projects which had a negative impact on locals. Moreover, as environmental concern has been linked with pro-environmental behaviour (Ogunbode 2013), we asked the interviewees questions about the state of their living

environment *(Appendix 1)*. While I formulated most interview questions according to my research frame, I gave the workers of the DFNR a chance to influence them. I did this in order to utilise local environmental knowledge for supplementing my knowledge gaps as well as becoming sensitive to local environmental issues. I made changes to the interview questions based on the opinions of the workers of the DFNR. These included the erasure of some of the 'images of nature' dimensions from the interview form. This may have enforced locally pre-existing power relations as to what research is considered worthwhile. Nevertheless, I deemed the utilisation of local knowledge a crucial compromise.

I chose theory-guided content analysis as the analysis method for this thesis. In content analysis, data is examined by analysing and summarizing it, finding similarities and differences. As differing from discourse analysis, the focus of content analysis is on the actual meanings and intentions as considered interesting from the perspective of the research topic and the theoretical framework utilized, rather than the analysis of discourses or semantics themselves. (Saaranen-Kauppinen & Puusniekka 2006.) While in this thesis I address meanings of words from a semantic perspective (especially in chapter 6.1.), the meanings are analysed mostly as linked with previous research concerning human-nature relationships using the methods of content analysis. Moreover, I itemize (see Tuomi & Sarajärvi 2002, 107–108) some of the results in the mentioned chapter as a means to include the variety of different accounts made by the interviewees. During the interviews, I had a general idea of the main themes I wanted information about but wanted to stay open to novel findings in the data. Therefore, I decided to execute content analysis as guided by theory. Theory-guided analysis lies between theory-driven and data-driven analysis. The method enables seeking confirmation from theories to support initial findings from data (Saaranen-Kauppinen & Puusniekka 2006).

Theory-guided analysis allowed for a reflexive research process which was especially useful for conducting research in a foreign cultural context. More specifically, the theoretical background utilized in this thesis is not only a result of beforehand contemplation, but also a result of knowledge I gained throughout the research process. Upon being accepted to participate in the KIPPO project, I decided to use the opportunity to gather data in Zanzibar based on the research frame I had formulated. For conducting my study in the Zanzibari context, I explored research literature concerning international environmental protection and development cooperation projects. This introduced me to critical outlooks on development

cooperation which problematized some 'Western' environmental interventions in developing regions such as African countries as being environmental colonialism (see Atampugre 1991; Büscher 2010; Nelson 2003). Therefore, I attempted to explore environmental colonialism processes as part of my thesis, and while conducting my interviews in Zanzibar, my idea was to perceive utilitarian human-nature relationships as evidence of the hegemony of capitalism and of environmental colonialism. This perspective was derived from literature describing how exhaustively colonialist processes had affected livelihoods and human-nature relationships in Africa (see Atampugre 1991; Gössling 2002).

To gain proof of environmental colonialism occurring in Zanzibar, I included questions in the interviews regarding the interviewees' perceptions of the presence and position of 'Westerners' in development cooperation projects – in hopes of critical viewpoints. However, I soon realised I was not receiving many critical outlooks on Western interventions from my interviewees. Moreover, I learned that the concept of environmental colonialism was a difficult structure to be confirmed via interviewing individuals in a vulnerable position. For example, most of my interviewees had a basic level of education coupled with limited experiences of the world outside Zanzibar, and therefore assessing complex political processes turned out to be a difficult task for them. This does not mean that locals necessarily perceive the participation or position of Westerners positively – rather, it means that the method did not match the research problem. Moreover, 'Western' interventions may have become, to some degree, normalised as there are several ongoing development cooperation projects in Zanzibar, which may also reduce criticism. Upon being faced with not getting interesting results regarding environmental colonialism, the reflexive methods I utilized for collecting and analysing data allowed for me to steer the direction of the research.

We asked the participants of the semi-structured interviews background questions concerning their age, education level, occupation and participation in forest protection. I used the background questions as supplementation for the analysis; I take the age, education level and occupation of the interviewees into consideration when analysing their answers. For example, higher education level may account to higher commitment to environmental protection through better understanding of ecosystems. Occupation also provides valuable information for analysing the human-nature relationship of the respondent, as farmers, for example, are economically dependent on their surrounding ecosystems and natural resources. I will not reveal the villages in which each interview took place as this would give away the identity of

the interviewees in the case of the village leaders. To ensure anonymity, I will also not reveal exact dates of the interviews.

One of the issues I experienced during the interviews was that there seemed to be a degree of pressure amongst the interviewees to give positive answers concerning environmental protection. Some interviewees were also shy giving answers. This was likely at least partially due to cultural reasons; female respondents tended to be shy as they were interviewed by a male duo. In contrast, I noticed no considerable shyness within male respondents. Shyness could also be explained by the fact that I, the interviewer, was not a member of the communities. These problems may have been eased by selecting another method for collecting data. A suitable method for answering the research questions might have been ethnography. Living in the village communities might have brought forth some of the problems concerning environmental protection in the area as well as expose hidden meanings given to nature which the interviewees may not have consciously highlighted in the interviews. However, due to limited resources for conducting research, I selected the more pragmatic method. Moreover, it is to be presumed that even ethnographic research conducted by an outsider could not have captured all the hidden meanings that constitute some of the key elements in the human-nature relationships typical to the area – and neither would the method have eliminated the need for semi-structured interviews as part of research.

5.3.   Researcher position and research ethics

As discussed before, all data was collected during my participation in a monitoring trip for the development cooperation project KIPPO. My participation in a development cooperation project brings forth implications concerning my position as a researcher. Having taken part in such a project, it can be questioned if my intention is to try to portray cooperation projects in a positive light. The purpose of this thesis, however, is to produce a balanced inquiry of global environmental challenges and means to combat them. It is important to produce research that can be utilised in development projects so that challenges occurring in them can be recognized and reacted upon.

Before starting my interviews, I obtained a research permit, the purpose of which was to ensure that the results of my study would not cause political problems in the area. Therefore,

one of the ethical challenges of my study is the possibility of having to portray aspects of the local cultural or political environment in a negative light. However, the purpose of this study is not to demonize environmentally unsustainable behaviour, but to perceive it as a result of complex phenomena which is often not retraceable to the free choice of individuals. I anonymized all interview material and handled it with care, ensuring that no negative effects for participating in research would be caused to the interviewees. The third party transcriber did not receive any additional information about the interviewees other than audio files. In most cases, we could not arrange the interviews to take place in completely private settings. I will take this into account as a factor reducing the willingness by the respondents to offer answers considered negative in the communities. Moreover, some participants to feel a degree of responsibility to participate in the study because of having workers from the DFNR participate in the semi-structured interviews as translators and in the collection of the supplementary data.

During the research process as well as while working in the KIPPO project, I utilized various practices for creating decolonizing and empowering interactions. This called for a thorough review of literature on environmental colonialism and international environmental policy, and acknowledging the histories and challenges thereof. A central challenge in international environmental social science research and environmental initiatives is the hierarchical relation of different knowledge systems – and the position of academic, or 'professional', knowledge over other understandings (Zavala 2013). These power relations affect which understandings, interests and practices attain hegemony locally and globally, and how our realities are shaped. For example, according to Scheba & Mustalahti (2015), the central role of expert knowledge in community-based forest management may weaken the goal of empowering locals via the policy and demand for "less technically and bureaucratically demanding ways of forest management and planning to allow local communities to fully take over ownership and control of forest resources and to relieve state and non-state actors of cumbersome and overburdening development requirements". To this end, some scholars have emphasized the utilization of indigenous environmental knowledge for climate change adaptation (see Burkett 2013).

In this thesis, I have made a conscious effort to unwind such problematic power relations. To achieve this, I utilized an approach which started from the creation of mutual understandings regarding the research theme – or, a *third space* (see Bhabha 1994; see also Glasson et al.

2010). This called for acknowledging the differences between local knowledge systems and my own, and the asymmetric power relations among them. In this, I became aware of my position as a white, Western researcher in Zanzibar and the implications thereof. Becoming sensitive to existing power relations was required in the creation of a third space between the knowledge systems, in which neither understanding would be privileged (see Glasson 2010). For example, I started the semi-structured interviews with an open approach as to how the interviewees understood nature rather than taking hegemonic understandings from academic literature as a starting point. In this thesis, I do not privilege any understanding over another – therefore, my perspective is not ethical in that I would criticize certain human-nature relationships, but rather, I view them as largely built by prevailing socio-material conditions and other societal processes. This is not to say individuals have no power over their environments (as without this power pro-environmental behaviour and agency would be paradoxes), but the way this capacity to act is utilized is closely linked with a host of social and material processes occurring locally and globally.

As Casimir Ani (2013) notes, the 'western world' often treats Africa as being foreign to sustainable practices, but in fact, African communities have had long histories of sustainable natural resource management systems. As these systems are largely based on traditional indigenous knowledge systems, they have been often undermined in arenas where 'professional' understandings based on techno-bureaucratic values are privileged. One of such privileging phenomena is technological determinism due to which 'technological advancement' in itself is presumed to take care of problems (see Atampugre 1991). Moreover, as argued by Bhambra (2007), the Western notion of 'modernity' includes the idea that the historical processes which have occurred in the 'Western' world will inevitably, or ought to, take place everywhere in the world. However, as Scheba & Mustalahti (2015) note, for many strategies characterized by scientification and bureaucratisation, there are alternative, less demanding approaches to natural resource management which may, in fact, be more successful in promoting poverty alleviation and local empowerment. My thesis is an attempt of unwinding the hegemony of techno-bureaucratic values in research. While Zanzibari villagers may also highlight the value of technological advancement, it needs to be critically assessed as to how environmental initiatives have participated in such value shifts. This, however, is mostly outside the scope of my thesis.

As noted by Zavala (2013), anti-colonial projects do not always align with the interests of local people. However, a realistic representation of often-marginalized understandings can give them a chance to shape academic discourse and help relieve prevailing power asymmetries. By doing this, research may empower locals. Moreover, by presenting local discrepancies in individuals' capacities to act may offer a starting point for future alleviation of social problems. However, there are varying interests among individuals in any context. In this thesis, I do not address individuals living in rural Zanzibari villages as a homogenous group – rather, I recognize the multitude of values, interests, attitudes and behaviours possessed and practiced by them. In order to relieve local asymmetric power relations from affecting the research process, I created interview questions that all interviewees could answer regardless of their education level *(Appendix 1)*. Nevertheless, I observed that the interviewees with most powerful positions in the communities were the most elaborate with their answers. Therefore, these interviews would be the easiest to use for analysis. However, I made a conscious effort not to over-represent any interviewee in the analysis, and to utilise all interviews regardless of how short the answers were. Unwillingness to elaborate may have also derived from the fear that certain opinions could be perceived as unacceptable in the communities. For example, there undoubtedly was pressure in the villages to cooperate in environmental protection efforts, and some interviewees may have deemed negative perceptions towards conservation unacceptable to voice.

Short answers may also be a sign of lacking skills to verbalise experiences and opinions which can be related to low level of education. Presenting the variety of opinions may be eased by quantifying some parts of the analysis. I did this by categorising different types of answers and quantifying how many of the interviewees brought up certain types of ideas (Chapter 6.1.). Moreover, I made a conscious effort to include the opinions of the female interviewees and to compensate for their shorter answers. Therefore, my emphasis is on portraying the variety of views rather than a detailed analysis of the most elaborate answers. Moreover, background information of the interviewees offers information about the status of the interviewee in the community which will be used as supplementing the analysis.

6. HUMAN-NATURE RELATIONSHIPS AT THE INTERFACE OF SOCIAL AND MATERIAL

6.1. Revealing semantics: Dualisms, unities and demarcations

As argued by Valkonen & Valkonen (2014) upon studying human-nature relationships among the Sámi culture, "[b]efore we can make any substantive claims about the Sámi relationship to nature, we need first of all to define the "nature" to which the Sámi relate themselves." I use the same approach in this thesis. Instead of choosing and utilizing a definition of nature or the environment from pre-existing literature, I examine how the interviewees understand the words. This not only helps achieve a bottom-up, non-normative approach, but also helps create a *third space* where different understandings are equal (see Bhabha 1994; see also Glasson et al. 2010). Moreover, the discussions on the words and meanings thereof reduce the risk of misunderstandings derived from a language barrier. In Swahili, the word *nature* is usually translated as 'maumbile' and this was the case in all but one of the interviews. The two translators as well as the third party transcriber translated *nature* as 'maumbile' and vice versa in each case. Therefore, while the words 'nature' and 'maumbile' undoubtedly carry different connotations that can be traced to cultural differences, *maumbile* will, unless stated otherwise, be used interchangeably with *nature* in this thesis. The English word *nature* is also used in Zanzibar, and was used by the translators and respondents by itself. In the interviews, the word *environment* most often translated into *mazingira*.

I analysed the interviewees' accounts regarding the meanings of nature by grouping different answer types into different categories. The identified categories were the following: 1) nature is unmodified by humans or is created by an entity, 2) nature refers to human nature or their behaviour, 3) nature is the same as the environment, 4) nature refers to ecosystems, and 5) nature refers to the characteristics of an entity. All but two of the interviewees brought up several of these ideas during the interviews. Therefore, some of the different dimensions regarding the idea of nature are not exclusive, and the interviewees expressed varying combinations of these views *(Table 4)*.

Table 4. Ideas of nature and their frequencies.

Interviewee	1	2	3	4	5	6	7	8	9	**Total**
1) Unmodified/created	x	x	-			x	x	x		**5**
2) Human nature/behaviour			-	x	x		x	x	x	**5**
3) Same as environment		x	-		x				x	**3**
4) Ecosystems		x	-		x		x			**3**
5) Characteristic			-			x		x		**2**

Five interviewees described nature as being something unmodified by humans or created by itself. In these descriptions, nature is at odds with human activity:

> "*For example the environment is everything we see here, okay. But the nature is some sort of that, we say that environment, we can create ourself an environment. But nature, it there. We can't aid it. We can aid to create a beautiful, nature we can't aid [unclear] but environment we can aid or we can destroy.*" –Teacher, 32

This answer type represents a dualistic human-nature relationship (see Haila 2000) where humans, their creations and signs of their activity are not included in nature but exist in the concept of *the environment*. In the excerpt above, nature is perceived as an initial state of sorts which has not yet been contaminated by people – which is a dominant way of understanding nature, at least in select locations (Feldt 2012, 1). However, contamination can have either good or bad results as the environment can be destroyed or 'aided'. Therefore, human interaction with nature is not necessarily harmful even if it turns it into the environment. According to the interviewees, however, nature does not only refer to a natural landscape or an untouched ecosystem, but it also refers to a constant creative force. This creative force is always present in the environment – in the form of bacteria, fungi and plants. It is also present in humans themselves, as humans are created as a result of this creative force.

An answer type as common was to understand nature as referring to the 'human nature' or human behaviour. A 61-year-old village leader stated that the word *maumbile* refers to human behaviour whereas the English word *nature* is referred to with the word *mazingira* (a word which more often refers to *the environment*). Two interviewees understood *maumbile* as referring to the characteristics of an entity. This answer type is close to the *human behaviour*

type but referring not only to human characteristics – in these answers, nature can refer to the characteristics of the land or weather conditions. Both of these answer types highlight the similar usage of the words *nature* and *maumbile* in English and Swahili as the English word *nature* can also refer to behaviour or characteristics.

Three interviewees understood the word nature as interchangeable with the word *environment* (in Swahili *mazingira*). According to a 60-year-old farmer, the words nature and environment referred to the existence of trees and animals, and there is no difference between the words. The connection and demarcation of the words *nature* and *the environment* will be addressed later. Three interviewees understood nature as referring to ecosystems, including trees, soil and animals. Upon being asked what nature meant to her, a 23-year-old farmer was having difficulties expressing her opinion and we got no response.

When discussing the meaning of *the environment (mazingira)*, interaction arose as a focal theme. Whereas nature was often understood as something uncontaminated by people, the environment was a sphere defined by human interaction: "*How I understand environment [mazingira] is the state of something and many [-] times how we use environment it is in a positive perspective, a good perspective* [Village leader, 53].*"* Moreover, while the environment was often understood as referring to mostly natural landscapes, it especially referred to the surroundings of the interviewees. In these discussions, some interviewees intuitively highlighted some parts of the surrounding ecosystem that was meaningful to them, many interviewees mentioning trees and forests as a defining feature of the environment. Upon discussing human interaction with the environment, development emerged as an important theme:

> "*Environment is not different from nature, but now environment is something that is in like preservation to do or to develop, and nature, you cannot develop it but environment you can develop it*" – Fisher, 55

As *the environment* allowed for interaction and development, there was a normative aspect present in some ideas as to what the word stood for. This was especially true in the accounts by 54-year-old and 23-year-old farmers in which the environment stood for cleanliness. The importance of clean environment was elaborated by the 54-year-old farmer: "*You know, environment and human being is like a man and his brother. Just an example, if it will be that*

the environment is not clean then a person in that area living there will be a hard." In these accounts, the normative idea of what the environment should be like was brought up while explaining the meaning of the word itself. The condition of the environment was also seen as a starting point for actions deemed important to one's values: *"– for mankind to have a good life then he needs to have a good environment* [Village leader, 53].*"*

As the final theme regarding the understandings of nature, we discussed whether humans were part of nature. While some interviewees initially stated that humans were not part of nature, they later changed their mind – therefore, all interviewees ultimately agreed that humans were part of nature. This view was especially frequently justified by the idea that the word nature refers to everything that is created on its own. A 54-year-old farmer thought that humans are part of nature because *"nature is a word taken from the word creation to get the name nature"*. In this view, everything that is created, including humans, is part of nature. A 32-year-old teacher elaborated the view that humans are part of nature by arguing that there is an interdependent relationship between humans and the rest of the ecosystem:

> *"Here we are part of nature, because we didn't create ourselves. So we are here, and no one can say that I belong to myself, no. So we are a part of nature. So the nature depend on us, and also we depend on the nature."* – Teacher, 32

Our discussions regarding the inclusion of humans in the idea of nature highlight the distinction between humans and other entities included in the ecosystem – while humans were considered part of nature, their actions and products were often not. This distinction does not extend to other animals, but seems to be the demarcation between cultural and non-cultural beings (see Feldt 2013; Ojanen 2005). In this view, the products of our actions are deemed culture whereas the products of other species are not regarded as culture. These accounts highlight the idea that humans have a special place in nature as separate from other animals. From the positionality aspect (see Flint et al. 2013), humans are, in this view, above other species in the ecosystem. A 53-year-old village leader even thought that humans were so important for the ecosystem that other beings depended on us: *"We are [part of nature] because if it is not for us those other things cannot exist [–] because all those things, if we do not exist there is nothing…"* However, in the case of this interviewee, the special place of humans in the ecosystem was not a justification for exploitation – in contrast, he considered humans as carrying a responsibility to nurture the ecosystem.

6.2.   The ecosystem as the foundation of community life

To gain an insight as to what motivated the interviewees to invest time and effort in environmental conservation, I asked them questions regarding their value of nature. Understanding the value of natural resources for local individuals calls for the analysis of their *social embeddedness* (see Benjaminsen & Kaarhus 2018). In other words, we need to analyse how concretely ecosystems are part of the daily activities of the individuals, and how they perceive their relation to them. Such perspective also opens up the prospect for analysing why and how the interviewees interact with nature. To deepen my understanding of the nature relationship of the interviewees, I focused on their home environment, as proximity to 'natural' landscapes and ecosystem processes can be considered a starting point for a close and regular interaction with nature. Valkonen (2005) argues that human-nature relationships are built in regular practices toward nature, and I deem the home environment of the interviewee as a key arena where the shaping of human-nature relationships occurs. The economic structure of a rural Zanzibari village is vastly different than an industrialised city, and seven out of nine of my interviewees practised a livelihood that was based on utilising natural resources – farming, livestock husbandry and fishing. While one of the other interviewees was a village leader and one was a teacher, they could be deemed as interacting closely with nature as they, too, lived in rural villages and had both participated in forest protection.

The interviewees usually brought up the ability to make a living via their livelihood as an important aspect of living in the villages and mentioned natural resources the environment provided: *"The environment in my home during this time is very good [–] it good because if it is forests, there are forests that are fertile* [Village leader, 53].*"* Fruit trees and forests were often highlighted as an important feature of the home environment. The benefit of fruit trees especially was that they required little maintaining but helped provide food and small income. Therefore, similar to the role of forests, fruit trees provided stability and security. Other ways of combating poverty and increasing stability were also highlighted. In the excerpt below, a 32-year-old teacher describes the importance of communality in the villages:

"Even [unclear] a lot of neighbors are leaving [unclear] we're in a peaceful situation because we live in extended family. I'm not a single family, more family. So we depend on one another." – Teacher, 32

While poverty had formed close-knit communities in which people depended on each other, adequate natural resources were, in contrast, seen as a source of self-sufficiency: *"These rural areas? The biggest benefit I get, if you live in cities everything you, but here [–] I am independent* [Farmer, 43].*"* Natural resources were comprehensively connected to the ways social life was organized. For example, MUMKI was founded as a result of forest degradation, and its operation was seen as an important consolidator of the village communities. In the survey study, 17 respondents intuitively brought up the idea of MUMKI uniting villagers to work as a community as a reason why it is needed. Therefore, as natural resources offered a foundation for everyday life in the village communities, their diminishment could unite villagers to work together to save them.

However, there were varying ways of understanding the value of nature. When asked how the environment benefited her, a 60-year-old farmer stated that it did not benefit her but caused her harm instead: *"Losses… I get the usual losses of life [–] like my businesses when I farm, they [crops] get destroyed."* In this case, the interviewee perceived nature mostly as weather and other factors which can damage, reduce or destroy her yields. Unlike some other farmers interviewed, this interviewee did not consider natural resources needed for agriculture, such as soil, water and nutrients, as part of nature. The same interviewee, however, mentioned fruits as important natural resources which helped her in her daily life. Most concretely, the value of nature was linked with the possibility of earning income by selling natural resources such as soil, sand, firewood, fruits and agricultural products. The utilization of natural resources for economic profit was, however, small-scale. The livelihoods of the interviewees sustained them, their families and their communities, but were not turned into enterprises. In this regard, while natural resources were used for small economic profit, this was not comparable with the operation of large-scale farms, for example. The use of natural resources was mostly defined by modesty and acute need.

Not all pros of living in the villages had to do with bare survival. Other advantages of rural life included fresh air, peacefulness and natural beauty: *"The village is surrounded by a beautiful environment, many trees and birds and animals. So we're living in a semi-paradise*

[laughs] [Teacher, 32].*"* Leisurely sauntering or recreational use of natural landscapes, however, was not highlighted as important by most interviewees. Instead, a great deal of the interviews focused on issues related to natural resources and their direct use. Most interviewees did not perceive nature as an arena where 'nature experiences' are consumed. This may imply that because the interviewees were surrounded by plants and animals on a daily basis, nature did not appear as a destination. Moreover, livelihoods likely affect how individuals perceive nature – among my interviewees, the 32-year-old teacher was the interviewee who mostly brought up the beauty and comfort of nature. The farmers, in contrast, had a more pragmatic attitude toward nature. For them, 'nature' was the site for everyday activities such as practicing livelihoods and organizing community life. Therefore, the lacking interest or opportunity for conscious recreation in nature was, in this case, not a sign of a distant human-nature relationship but, in contrast, due to close interaction with nature.

Ecosystems and natural resources were deeply embedded in a host of everyday activities in the communities. As pointed out by Benjaminsen & Kaarhus (2018), natural resources may truly gain their value in the manifold functions they play in the lives of individuals and not only via their exchange value. For example, the interviewees emphasized the importance of trees as part of a functioning and hospitable environment. In addition to offering fuel for cooking, the value and meaning of trees was linked with their ability to regulate the conditions of the environment. Trees reduced excess heat and wind, prevented drought and erosion, and offered shade for working. Moreover, planting trees in places where soil had been collected allowed new soil to be created. Forest products also represented a safety net that could be trusted in the case of emergency: *"If it reaches a point, if you have to, you cut [trees]* [Farmer, 45].*"* Among the interviewees, there was a concrete understanding of nature as sustaining the communities:

> *"It means trees also have a very big place. It has its importance because if we cannot live in a world of, there will be the world has no trees. So trees also have a very big place to human beings. [–] For example we can use here in Zanzibar, we can use wood, we can use firewood here in Zanzibar and many others to get trees for building, you understand, and animals, we get milk, stew."* – Farmer, 54

The interviewees understood humans as being directly dependent on nature and its resources. Careless use of natural resources, on the other hand, was deemed dangerous: *"For example, we do have a jungle. But for example you bomb it, so you destroy everything. Can you live in that situation now? No you can't. So we depend on nature, and we need it* [Teacher, 32].*"* As the excerpt before shows, nature was thought by the interviewee to be something irreplaceable – a feature which calls for a responsible attitude towards it. The value of nature was also often linked with the natural resources it offers. These included soil, water, oxygen and other ecosystem products which are crucial for human life and form the foundation for livelihoods such as farming. Therefore, the destruction of nature meant the destruction of livelihoods which the communities depended on.

6.3. Human-nature relationships: The local and the global at once

In the rural Zanzibari villages, human-nature relationships were characterized by a host of local and global, social and material, processes. Poverty characterized the everyday life of the interviewees, and as observed by Ogunbode (2013) in the context of Nigeria, priority may be given to activities which improve living conditions most drastically in the short term in such contexts. These may consist of such activities as practicing one's livelihood or, in case of emergency, cutting trees to provide firewood for cooking. Poverty, therefore, is an important aspect to be included in the analysis of human-nature relationships in rural Zanzibari villages. In the villages, poverty was concretely observable – no advanced technology for agriculture was accessible, livelihoods were mostly based on the primary sector of the economy, and everyday life did not include long periods of downtime. From the ethical standpoint, our interviews could not be prolonged because the villagers were preoccupied by their livelihoods during the day. While poverty may be in part a local phenomenon, it is also comprehensively linked to Africa's history as a colonized continent. As Thomson (2000/2016, 186) points out, colonialism has left most of Africa's countries as specialized export economies which possess little technology and have small industries – and therefore as underdogs in global arenas.

Poverty concretely affected how the interviewees reflected their relationship with nature, and most interviewees stated they felt interdependent with their environment. In addition to poverty, the sense of interdependence with nature was also linked with production systems. In the rural Zanzibari villages, individuals mostly worked in the primary sector of the economy

such as agriculture, fishing and livestock farming. Therefore, the availability of natural resources in the short term directly affected their living standards. In contrast, individuals living in industrialised societies are less often involved with primary production, and ecosystem processes such as droughts or floods usually do not directly compromise their livelihood. In industrial agriculture many environmental processes can be controlled with pesticides, chemical fertilizers and genetic engineering. Therefore, socio-material conditions such as available technology, production methods and available natural resources affect the formation of human-nature relationships by, for example, tying individuals into close relations of dependency with ecosystem processes.

As in the villages, individuals were concretely dependent on ecosystem processes as a basis of their livelihoods, there was a shared understanding that nature had to be conserved. The normative goal of harmony with nature emerged in many interviews. Harmony with nature was a tool which safeguarded the sufficiency of natural resources for the future. For example, a 45-year-old farmer highlighted that the correct way of collecting and selling soil was by ensuring that new soil would form afterwards: *"It's planting of trees, because there will come a ground, those waters when they come there they will bring a flow of another soil."* Excessive or careless exploitation of natural resources, on the other hand, could threaten the carrying capacity of ecosystems and the future of communities. Therefore, the use of natural resources had to be organised within the communities, and selfish or careless use thereof was criticised:

> *"Losses… maybe we say that for losses it will be a social one, that a huge population of people do not like education. People that, let's say, criminals become many that is these people who are criminals do this which is wrong… [–] you know of forest together with these things that others like us we invest, they come and just take, let's say they come to steal and so, forest crime…"* – Village leader, 53

Many of such unauthorized forest users as described above were likely individuals from villages without community-owned forest areas – therefore having poor access to forest resources legally. This is an example of how national and global actors such as international environmental initiatives not only have the power to mediate human-nature relationships but may also cause conflicts among the groups they empower and the ones they do not. Conflicts

may also derive from mismatching human-nature relationships. For example, the founding of forest reserves is a hegemonic Western undertaking that has widely replaced other ways of living with nature, displacing indigenous populations and leaving them without a livelihood in a number of places in Africa (Büscher 2010; Nelson 2003).

As environmental initiatives usually call for a behavioural change and cooperation for a common goal, they may also pit locals against each other in the process. While people living outside the communities and 'stealing' common natural resources were criticised by some interviewees, many stated the availability of firewood as an important feature of their own home environment. As Valkonen & Valkonen (2014) point out, environmental consciousness and attitudes do not sufficiently explain the various ways in which individuals interact with their environment in practice. The use of forest resources especially highlighted the disconnection between environmental attitudes and actions among the interviewees. While on the one hand, there was an agreement that forest products should be conserved, acute need could override this ideal. Moreover, own actions were validated by desperate need and lack of options, whereas the actions of 'criminals' could be explained by lack of education: *"Because they are not educated they see that there is their home* [–] *so people do not have the education so they go to finish their life problems...* [Village leader, 53]*.*" This juxtaposition was especially underlined by the translator who elaborated: *"They don't... primitive, because they primitive."*

As stated by Muhar et al. (2018), environmental attitudes and values of an individual are largely built in interaction with collective processes and actors such as institutions, norms, customs and symbols. In the case of this study, the interviewees' interaction with nature was mediated by various processes at local, national and global levels. While one's home environment was an important arena where human-nature relationships were built and institutionalised through livelihoods, social interaction and material conditions such as the availability of natural resources, many preconditions for interaction were set at national and global levels through such processes and phenomena as global politics, environmental initiatives, technological advancement and development of agriculture. Human-nature relationships, therefore, are not built in a vacuum, but occur at the interface of the social and the material. The possessor of such relationship – the individual – has to work actively in recognizing and navigating such influences in order to steer one's behaviour. In this thesis, I

perceive this process of becoming aware as the demarcation line separating conscious (pro-/anti-environmental behaviour) and unconscious interaction with the environment.

7. PRO-ENVIRONMENTAL BEHAVIOUR AND ITS LINKS TO AGENCY

7.1.   Environmental concern as initiating pro-environmental behaviour

In this chapter, I will discuss the accounts given by the interviewees concerning the degradation of the environment. Approaching pro-environmental behaviour by analysing perceived environmental threats is justified by the idea that pro-environmental behaviour is initiated and motivated by environmental concern (see Kollmuss & Agyeman 2002). Pro-environmental behaviour, therefore, consists of actions whose aim is to intervene the degrading state of the environment by maintaining or improving the quality thereof (see Larson et al. 2015). As discussed in chapters 6.2. and 6.3., the interviewees were highly dependent on the resources which ecosystem processes offered. Therefore, the protection of these resources was fundamental for rural community life in the area.

When asked about the biggest threats to the environment, the interviewees highlighted deforestation, collection of sand and soil and careless disposal of trash. As discussed in chapter 6.2., trees had many important functions in the everyday life of the communities, and deforestation was threatening these advantages. A 53-year-old village leader stated that due to deforestation, heat had increased during the days. Excessive heat inconveniences manual labour and can cause damage to crops which are exposed to the sun. Moreover, deforestation increases drought and causes erosion by leaving the soil unprotected from rainfall and wind.

The village community was an important unit in which pro-environmental behaviour, such as patrolling, planting trees and sharing environmental education, was organised. Many interviewees also emphasised the importance of pro-environmental behaviour for the sake of the community, which differs from the findings of Chokor (2004) where Nigerians living in poor rural conditions emphasised egocentric goals over communality. Therefore, poverty alone does not explain environmental attitudes and behaviour, but they are also linked with socio-cultural factors such as norms, traditions, communality and religion. It is important to note, however, that my interview data does not represent the diversity of opinions within the communities and fails to sufficiently address egocentric environmental behaviour which undoubtedly existed in the communities. However, in contrast to the findings of Chokor

(2004) in Nigeria, commonly agreed rules for the utilization of natural resources were highlighted by many interviewees as a corner stone of sustainable community life. The observed social pressure for controlled use of natural resources was likely partially due to not only the fact that the interviewees were interviewed by a representative of the KIPPO project as well as staff of the DFNR, but also due to the long-standing influence of development cooperation projects in the K-PFR area. In the following excerpt, the interviewee thought that the sheer lack of a plan for the use of natural resources was dangerous to the state of the environment:

> *"One destruction that will contribute in destroying the environment, if you don't have the permission or you were not chosen to do this, like for example to draw sand, to do whatnot or to cut down forests, with no proper plan it means even the environment will be destroyed"* – Fisher, 55

The interviewees felt responsible for environmental problems to a varying degree. A 61-year-old village leader stated that his village community had exacerbated environmental problems because they had not disposed of waste correctly. The waste problem – in the case of plastic waste especially – was concretely observable in some of the villages. Due to lacking waste treatment, there were piles of empty plastic bottles and other plastic waste lying haphazardly on the ground in some villages. Plastic waste was not always considered a problem, and many interviewees were happy with the environmental state of their villages. A 53-year-old village leader thought that not all destruction of nature was the responsibility of human activities:

> *"In destroying there are different situations, there are certain things, there are certain times. We destroy [nature by] ourselves but there are certain times it is destroyed because of the nature of the world [–] like when we miss rain it is also a problem"*

When being asked about his responsibility to environmental problems, a 45-year-old farmer initially stated that his livelihood did not have any effect on the environment. When asked to elaborate how he perceived the effect of cutting down bushes to create clearance for farming, he stated: *"Disadvantages… it will be there for removing those bushes, but now its disadvantage is not so big because it's not for trees…"* After further discussion, the farmer admitted that there was harm caused by animal manure as well as drought and increased

temperatures from clearing vegetation for farming. Forest fires were also mentioned by a 32-year-old teacher as a danger to nature. Forest fires in Zanzibar are especially a product of the slash-and-burn method which is still used for creating openings for shifting cultivation and producing nutrient-rich ash for the crops. The ones who would mostly suffer from environmental problems were perceived by a 61-year-old village leader to be future generations:

> *"The biggest loss that if we destroy nature, really, let's say that nature in the past, we saw it as natural. If we destroy it or if we made it, now you there you said loss, the biggest loss is [–] [for the future] generation."*

The said interviewee, however, listed many negatives caused by the degradation of the environment, all of which would lead to a situation where the communities could not fulfil their daily needs. A 60-year-old farmer found environmental protection benefiting the communities at present: *"Benefit is there, because that's the reason they are conserving that forest for us so that it doesn't turn into a desert."* As the excerpt before shows, rationing the use of natural resources was a way to allow the ecosystem to heal and recover. If natural resources were exploited in an uncontrolled manner, this would exceed the carrying capacity of the environment, turning it into an unhospitable desert. In that situation, the production of natural resources would be significantly reduced. As a 55-year-old fisher stated, not conserving the environment would cause a loss of benefit for all:

> *"If you did not preserve it, when they are destroyed, it means they will not have benefit [–] like when you preserve it, it means it will produce, you will preserve later, you will harvest. You can get a benefit of getting money for using and to run…"*

Based on data conducted in the UK, Rhead, Elliot & Upham (2015) have proposed that anthropocentric beliefs positively correlate with justifying the exploitation of natural resources. This idea is rooted on Thompson & Barton's (1994) highly-cited suggestion that "ecocentrism – valuing nature for its own sake, and anthropocentrism – valuing nature because of material or physical benefits it can provide for humans" independently explains people's behaviour toward their environment. Human-centred environmental beliefs, however, do not exclude environmental concern and pro-environmental behaviour in my

findings. In contrast, there was a high level of environmental concern observable in the accounts given by my interviewees, as the ecosystem is understood as the foundation of community life.

In my interviews, anthropocentrism was not at odds with environmental action but in contrast, a key motivator for it. In some contexts, anthropocentrism may primarily refer to individualist profit-seeking through the exploitation of natural resources. In my interviews, however, human-centrism was communal by nature. Interviewees did not highlight selfish ambitions, but expressed care for the communities. Anthropocentrism takes various forms depending on the context. Therefore, it seems unlikely that it could explain the justification of exploiting natural resources in all contexts. As my interviewees' nature relationships were defined by close interaction with ecosystems, they had a deep sense of interdependence with nature, and careless exploitation of natural resources was understood as concretely hindering the livelihood of people.

According to Filho et al. (2018), Africa is likely to be the continent where the effects of climate change will be most drastic as people's livelihoods are largely based on primary production. As noted in chapter 6.3., livelihoods are not as closely dependent on ecosystem processes in industrialized settings, and environmental problems may therefore affect individuals on a more abstract level. Therefore, conserving local natural resources does not become an acute question of survival in such contexts. This may explain why the exploitation of natural resources is not perceived as being at odds with the well-being of an individual in highly industrialized regions. Therefore, I argue that understanding what motivates individuals to practice pro-environmental behaviour always calls for the analysis of prevailing human-nature relationships and the phenomena affecting them in order to understand the whole of dependencies prevailing in a given context. Approaches which perceive pro-environmental behaviour as occurring in the private sphere – as only connected to the individual – are unable to comprehensively explain the multidimensional phenomenon. Therefore, theories based on such approaches only apply to a limited number of homogenous contexts.

7.2.   Pro-environmental behaviour: A shift in attitudes and practices

Pro-environmental behaviour in the villages was largely organized by international development cooperation projects such as the KIPPO project, which operate in tandem with governmental policies. KIPPO is not the first project focusing on the K-PFR area but a successor to a series of previous projects. The SUFO project by the same partners was active during the years 2013–2015. SUFO was preceded by the LIVE (2009–2012) and KIWA (2006–2008) projects. As the mentioned projects have engaged locals in environmental action in the form of tree-planting, patrolling the conservation area, sharing education, organizing planned environmental protection, etc., the influence of development cooperation is important to be included in the analysis of the interviewees' accounts regarding pro-environmental behaviour.

In the interviews, pro-environmental behaviour consisted of two main aspects: 1) Fixing existing environmental problems, and 2) shifting toward more sustainable practices in order to reduce future environmental problems. Many studies conducted in industrialised settings often emphasise individual action such as consumption choices as a central channel through which pro-environmental behaviour occurs (Fudge & Peters 2011; Hargreaves 2011). In my interviews, however, consumption choices did not emerge as an important aspect to pro-environmental behaviour. In the Kiwengwa-Pongwe Forest Reserve area, livelihoods are largely based on the primary sector of the economy – therefore, a considerable share of consumed items and products are produced locally (Juntunen 2008). Moreover, many products, especially in rural areas, are acquired by bartering instead of purchasing with money. None of the interviewees mentioned consumption choices as being related to environmental conservation – rather, pro-environmental behaviour in the villages was hands-on and concrete interaction with ecosystems.

As a means to fixing existing environmental problems, the interviewees often mentioned planting trees. Tree-planting was included in the objectives of the KIPPO project as a way of creating a buffer zone to the conservation site in order to reduce pressure to the forest. A healthy forest was considered important by the interviewees in the shift to sustainable practices as founding a basis for ecotourism: *"We can put an attraction in the cleanliness of our environment so the environment has the potential to bring in money* [Farmer, 54].*"* Ecotourism appeared as a gateway from producing own goods to utilizing the environment for

making monetary profit. In this shift, natural resources no longer need to be consumed directly, but can be used to produce 'nature experiences' with monetary value which are consumed by tourists. As found by Gössling (2002), the tourism industry may affect local people's values and lead to an emphasis on monetary profit instead of 'living off the land'. In the following excerpt, however, the focus on cash-income does not compromise the value placed on environmental conservation but vice versa as it is seen as a motivator to build ecotourism:

> *"[60-year-old farmer]: Because that forest is being conserved and tourist come and look at the animals.*
> *Translator: When they look what do we get or when the tourist come to look what do we gain?*
> *[60-year-old farmer]: Money!"*

Instead of fixing existing environmental problems by such activities as planting trees and collecting waste, more emphasis was placed on shifting toward more sustainable livelihoods and practices which would reduce overall pressure on the ecosystem. These included changes in the way agriculture was practiced. A 54-year-old farmer said that he was now practicing permanent agriculture instead of shifting cultivation. Both modes of practicing agriculture have accounted to deforestation in Zanzibar (Kukkonen & Käyhkö 2014). The interviewee, however, argued that having a piece of land appointed for his own use called for taking care of it: *"I also farm, but my ground the same that I had. I am supposed to take care of it so that I do not destroy the environment."* The interviewee considered shifting cultivation more harmful as impacting a wider area: *"But if today I farm here, tomorrow I farm there [–] still it will be that I am destroying the environment so, farming [permanently in one area] like that is how I conserve that environment."* Other sustainable practices were also mentioned by a 32-year-old teacher:

> *"For example, we depend on fire, wood fire, uhh firewood. Okay, firewood for cooking, or we say, fuel. So nowadays, I have to get other things, natural gas, you see. So as to reduce the problem of deforestation. So that's why I need other sources. Solar power also. It's going to reduce cutting down the trees, it is a source of rain and a source of oxygen that we need."*

Many of these objectives had been defined by development cooperation projects and adopted by local individuals as important. Development cooperation projects have much power in local communities, aiming to comprehensively redefine local practices and thereby human-nature relationships. This shift, however, requires individuals to become conscious of their behaviour and the environmental effects thereof. Environmental initiatives often approach this shift by offering locals equipment, environmental education, and by redefining the rules how individuals may utilize natural resources. However, this shift does not always happen smoothly, and various obstacles may hinder or resist the transition. As discussed in chapter 6.3., environmental initiatives may, by attempting to change and replace local human-nature relationships, cause contests and conflicts among individuals – but in addition, such contradictions do not only occur among human-nature relationships, but within them. In the following chapter, I will elaborate on what obstacles may hamper individuals from practicing pro-environmental behaviour in situations where they have adopted such objectives as important.

7.3.   Obstacles, agency and empowerment

Some scholars have pitted the objectives of international environmental protection against poverty and the realities it brings along. For example, Nicholas Atampugre (1991, 7) argues that for millions of inhabitants in developing regions, everyday life is a constant struggle to survive which prevents them from committing to environmental protection. According to Atampugre, Western NGOs' notion of development cooperation has often consisted of bringing their historical and economic processes to a foreign context and presuming that these 'advancements' solve problems by themselves. Since Atampugre's writings, international development cooperation has increasingly focused on more sensitive approaches, such as utilizing indigenous knowledge and involving locals in forest management (see Fabricius & Koch 2004, xiii; Glasson et al. 2010; Scheba & Mustalahti 2014; Vihemäki 2012, 329–330). International environmental initiatives, however, face multiple challenges to this day, and the objectives of a development cooperation project may not always be in line with local practices and processes.

The interviewees had mixed feelings about environmental conservation. A 23-year-old farmer as well as a 61-year-old village leader stated that the unavailability of firewood made their life

more difficult: *"Nature conservation, to be honest it oppresses [–] I return home, I have nothing. I remain with my countenance down and I start thinking to whom should I go to? [Village leader, 61]."* Both, however, agreed with the conservation of the K-PFR, and the 61-year-old village leader said that the cons of not protecting it would be even greater: *"It [conservation] is valid, then like if it was not protected we would not find even one tree."* Most interviewees thought that conservation was not threatening their livelihood. Two interviewees said that they collected firewood from the ground for cooking instead of cutting trees, which did not contradict the objectives of the KIPPO project. A 43-year-old farmer, on the other hand, argued that conservation helped her livelihood, as a conserved mango tree keeps giving her fruits. Moreover, due to a forest area being appointed to each village community, the interviewees were allowed to use firewood in moderation, and most of them felt that this was enough. Upon being asked how she would manage if the community ran out of firewood, the 43-year-old farmer said that wood-conserving stoves promoted by development cooperation projects would reduce the need for firewood. A 32-year-old teacher stated that conservation cannot hinder anyone's livelihood, and difficulties derived from conservation projects are on the account of the individuals:

> *"Conservation cannot hinder anyone. Rather, thus we call it the mindset of the people themselves. When they think negatively, they can say okay, conservation of the environment can create a negative things for us. But indeed they are wrong to believe this kind. What we believe, preserving and conserving the environment is one among the world issues, important issues now. We need to create, we need to solve, we need to reduce or we call it, the climate change, you see? So getting these environmental conservation and observation will be the mitigation of this problem."*

In the excerpt above, the interviewee presumes a homogenous amount of *agency* among individuals to create solutions in the face of environmental problems. However, there were material and social realities which concretely hindered individuals from practicing pro-environmental behaviour and achieving the objectives of the KIPPO project – or, in the words of Sawitri, Hadiyanto, & Hadi (2015), becoming the *producers of their environments*. While all of the respondents of the survey study found the protection of the K-PFR important, 32 percent of the respondents did not think that protection activities were easy to put into practice *(Table 5)*. Some tasks of the KIPPO project could not be executed due to lacking

facilities. In our discussions with the leader board of MUMKI, members of it highlighted that patrolling the conservation area was hindered by missing protective gear for weather conditions. Suppressing forest fires as well as intervening with unauthorized forest use was also complicated by lacking vehicles for getting around the conservation zone. Some of the equipment owned by MUMKI was at risk of theft and due to lacking security at the MUMKI office, the laptop and other office supplies acquired with the project funds could not be permanently stored there, complicating the steady and organized operation of MUMKI.

Table 5. Attitudes toward the protection of the Kiwengwa-Pongwe Forest Reserve.[8]

2.3 Describe your attitude towards the protection of Kiwengwa-Pongwe forest area.

	AC	MA	MD	DC	Missing	
1. Protection of Kiwengwa-Pongwe forest area is important.	84 %	16 %	0 %	0 %	0 %	100 %
2. Do you need more information concerning forest protection?	64 %	30 %	2 %	0 %	4 %	100 %
3. I want to participate in the protection of K-PFR.	76 %	20 %	2 %	2 %	0 %	100 %
4. Protection activities are easy to put into practice.	28 %	38 %	16 %	16 %	2 %	100 %
5. Protection activities are efficient and working.	54 %	38 %	8 %	0 %	0 %	100 %
6. I can participate in the activities of MUMKI and the VCCs.	70 %	22 %	2 %	4 %	2 %	100 %

According to the survey study, 37 out of 50 respondents found the location and boundaries of the K-PFR clear. In other words, 13 of the respondents had difficulties in discerning where the forest reserve is located. This number is even more significant considering that 90 percent of the respondents had participated in MUMKI's operation. The boundaries of the reserve were marked with rather unnoticeable signs, and there mostly were no fences. To efficiently protect the forest reserve and reach the objectives of the KIPPO project, it is important for the villagers to know its boundaries and to have a shared understanding as to which parts of it are allocated to which type of usage. Similar to fences and markings of protected areas, other material equipment may also empower individuals to participate in protecting their environment. According to the discussions with MUMKI leader board members, motorcycles acquired by the project have increased patrolling and made their work easier. The motorcycles also enabled MUMKI members to react to acute violations more quickly. This equipment is an example how agency may be acquired through material devices – therefore, agency is linked with prevailing socio-material conditions. Not only do socio-material conditions such as production methods, available technology and natural resources affect how individuals are dependent on their environs, but they also define the resources such as time, skills, knowledge and tools individuals have at their disposal for environmental conservation. Therefore, although development cooperation projects offer their partners agency through material

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[8] AC = agree completely, MA = mostly agree, MD = mostly disagree, DC = disagree completely

devices, they may also deepen discrepancies among local people in cases where individuals are empowered disproportionately. Moreover, they also create new relations of dependency in cases where locals become reliant on the equipment acquired by projects.

Education about sustainable practices emerged as an important aspect of pro-environmental behaviour in the semi-structured interviews as well as the focus group discussions and survey material. A 54-year-old farmer stated that through gaining environmental education he had learned not to harm the environment while practicing his livelihood. 98 % (49 out of 50) of the survey respondents, however, wanted more information concerning forest protection.[9] The interviewees perceived education as a gateway to more sustainable practices and livelihoods – and therefore it is a major mode of gaining agency. Knowledge allowed individuals to become aware how their actions affected their environment, and if alternatives were at hand, a shift to more sustainable practices could be made. A 32-year-old teacher stated that the KIPPO project had empowered people to find alternative livelihoods which did not cause similar pressure against the forest:

> *"And I can show you somewhere here we have that lady now, she's selling some domestic product. For example potatoes, mangoes, coconuts. And she was a bad wood-cutter. Now she left everything. You say, okay because you give me this kind of knowledge, now she can [unclear] herself. And if you want to see how she improve herself, you can see the [unclear] she lives."*

While education is widely considered central in sustainability efforts, it may not be equally accessible for all. In the K-PFR, environmental education was mainly channelled through KIPPO and other development cooperation projects, the scopes of which are always limited. As discussed in chapter 3.2., pro-environmental behaviour is a conscious part of the human-nature relationship. In other words, it is intentional efforts to improve the state of one's environment and always requires knowledge of which practices do so. Without a sufficient amount of environmental knowledge, an individual's interaction with nature remains in the unconscious sphere. Moreover, knowledge alone does not lead to sustainable interaction if no alternatives exist or if there are insufficient resources to adapt. People who had not shifted into more sustainable practices were often referred by the interviewees as having traditional

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[9] It is important to note that 45 (90 %) of the 50 respondents had participated in MUMKI's activities, and it is to be assumed that not everywhere in the K-PFR area are people as committed to forest protection.

mentalities, whereas own participation in MUMKI's operation empowered them to protect the environment and take care of future generations. Moreover, MUMKI was seen as a network which shared knowledge among village communities:

> *"MUMKI's job is also to give education to the citizens that live in areas like those to be able to take care of the environment. Because environment is a very important thing, because we are here, but tomorrow our children are coming and they are supposed to live like the environment."* – Farmer, 54

Participation in environmental initiatives also helped some interviewees gain respect in their communities. A 32-year-old teacher described the way he had been empowered by being involved in MUMKI's operation: *"Before that I was like a broom over there. But now I can work myself. I can talk to community, I can teach the community. Not only everything that I have in my situation, but also other people situation."* An individual may be empowered to become a producer of their environment through increased knowledge, but also through increased resources to practice pro-environmental behaviour.

However, not everyone is empowered by environmental initiatives, and many projects have empowered individuals and communities disproportionately – which, in the village of Kisakasaka, Zanzibar, has caused jealousy and envy (Saunders et al. 2010; Scheba & Mustalahti 2015). In the village of Mitini, on the other hand, strict rules for the utilization of forest resources has even caused resistance-like behaviour (Benjaminsen & Kaarhus 2018). Therefore, equal distribution of benefits is not only important for social stability, but also crucial for the accomplishment of the project' goals. In the contexts of developing regions, the focus on expert knowledge in environmental initiatives has been found to marginalize individuals from participating in community-based environmental conservation (Scheba & Mustalahti 2014). Among my interviewees, the 32-year-old teacher who had the highest level of education reported feelings of empowerment through environmental protection most explicitly. As pro-environmental behaviour requires environmental knowledge, individuals with best preconditions to acquire such knowledge may be advantaged in attaining agency in environmental initiatives.

As discussed in chapter 6.3., some of the interviewees perceived people using forest resources without permission as criminals. While assessing actual forest use was outside the scope of

this thesis, it is to be assumed that many 'forest criminals' came from villages without an assigned COFMA and had not been given environmental education. As such individuals may not be conscious of the consequences of their actions, they may even hinder their future living by degrading the state of their environs through unsustainable practices. As environmental initiatives empower individuals to participate in environmental conservation disproportionately, pro-environmental behaviour in rural Zanzibari villages is not primarily determined by individual factors occurring at the micro level, but is comprehensively linked with socio-material realities, human-nature relationships, agency and empowerment.

8. CONCLUSIONS: Lessons from rural Zanzibari villages

I have examined 1) which social and material processes and elements affect and define human-nature relationships in rural Zanzibari villages surrounding the Kiwengwa-Pongwe Forest Reserve, and 2) what processes and elements encourage, disable or otherwise affect individuals' commitment to pro-environmental behaviour in the context. I have also explored how pro-environmental behaviour is connected to prevailing human-nature relationships and socio-material realities. Derived from my analysis, I argue that human-nature relationships in rural Zanzibari villages are comprehensively linked with such social and material processes and elements as economic prosperity, production systems, cultures and politics. Therefore, human-nature relationships are simultaneously influenced by local, national and global processes which are linked with both social and material conditions. An example of such phenomenon is poverty which simultaneously occurs globally in the form of political power relations and locally via available equipment, technologies and natural resources. In developing regions especially, economic prosperity sets a variety of preconditions in regard to agency – and was therefore an important aspect to be included in the analysis of human-nature relationships in rural Zanzibari villages.

As part of the human-nature relationship, pro-environmental behaviour is largely affected by similar processes as human-nature relationships and cannot be comprehensively understood without analysing the wider socio-material conditions, realities and processes affecting a given context. In the rural Zanzibari villages, the analysis of human-nature relationships offered many clues for understanding why individuals were, on the one hand, motivated to practice pro-environmental behaviour and on the other, disempowered to do so. Moreover, connecting human-nature relationships to the analysis of pro-environmental behaviour offered a framework for analysing the shift to sustainable practices. I identified the demarcation of pro-/anti-environmental behaviour and other interaction with the environment to be the consciousness of how one's behaviour affects their surroundings. Pro-environmental behaviour requires knowledge, but it also requires sufficient resources for shifting to sustainable practices. Therefore, pro-environmental behaviour is comprehensively linked with agency.

I approached the analysis of human-nature relationships via the creation of a mutual understanding of the subject with the interviewees and an assessment as to what nature meant

for them. The interviewees possessed varying and co-existing ideas as to what constituted nature or environment. Most often, the interviewees understood nature as referring to something which was unmodified by humans or created on its own. In the analysis, I deemed this view as the *dualistic idea of nature* where nature and culture were perceived as opposing each other (see Haila 2000). While humans were largely thought by the interviewees to be part of nature, a distinction between them and other animals was made. For example, humans were largely thought to carry a responsibility toward their environment and to take care of it, whereas this responsibility did not encompass other beings. Thus, the analysis of what nature stands for locals may already offer an insight as to how they interact with it.

The different ideas of nature produced varying and overlapping combinations. Importantly, no two interviewees had exactly the same idea of nature, but all interviewees highlighted varying ideas in their definitions. This showcases that human-nature relationships are multi-dimensional structures which may vary even in close-knit communities such as the ones studied in this thesis. While nature was largely thought of as not including culture, the accounts regarding the environment included more human interaction. Many interviewees highlighted that the environment could include elements of both cultural and natural origin and could be modified to match human needs. Humans were – as cultural beings – largely thought of as carrying a responsibility toward the environment. This responsibility was especially observable in the accounts regarding development. Many interviewees intuitively highlighted desirable qualities of the environment – including cleanliness, fertility and availability of natural resources – and taking care of the environment for future generations was deemed a humans' responsibility. Human-nature relationships are affected by local, national and global processes. Therefore, the views of the interviewees were likely shaped by not only local cultures, but also by a host of international influences such as environmental conservation projects. Such projects affect local human-nature relationships by instilling foreign ways of understanding and interacting with the environment.

The ecosystem was largely understood as the foundation of community life among the interviewees. As most interviewees practiced a livelihood which was concretely dependent on natural resources such as water, nutrients and soil as well as environmental conditions such as heat, wind and erosion, most interviewees had an understanding of nature as supporting – and threatening – human life both in the short and long term. Therefore, natural resources were deemed crucial to ration and preserve. While there was an emphasis on conserving behaviour

as an ideal, many interviewees admitted they had to cut trees due to lack of choice. The interviewees largely regarded education as empowering individuals to conserve their environment, but not all individuals had similar access to it – nor a similar readiness to receive, process and utilize expert knowledge which many environmental initiatives are based on. Therefore, individuals with highest levels of education were privileged in participating in and being empowered by projects. Moreover, individuals living outside the villages where environmental education was offered had a lesser chance of adapting their behaviour. By requiring time and effort, educating oneself also competes with other vital activities such as attaining a livelihood – which is especially relevant in the context of developing regions.

In the rural Zanzibari villages, poverty comprehensively affected used and available production methods, resources and technology. The reliance on ecosystem processes was reflected in local human-nature relationships, and many interviewees felt interdependence with nature. Livelihoods and natural resources sowed individuals into networks of dependencies with ecosystem processes. While natural resources may offer individuals a livelihood, individuals, in safeguarding such ecosystem services, may facilitate the continuation of the relationship by offering the pieces of ecosystem hospitable environments via, for example, nutrients and water. The feeling of interdependence with ecosystems was crucial in understanding the individuals' commitment to environmental initiatives, as for an individual whose livelihood is based on their environment, the destruction thereof signifies the loss of yield or income – and for many individuals living in developing regions, such loss cannot be afforded. Therefore, neither livelihoods being largely based on primary production or poverty alone explained the dependent human-nature relationship type, but in tandem with each other. For example, farmers in developed regions are, due to more prosperous economic conditions, unlikely to be similarly dependent on their yields on the short term. Moreover, industrial agriculture utilizes various efficient ways of controlling environmental processes and conditions in order to ensure steady production which are often not accessible in developing regions. Understanding local human-nature relationships as relations of dependency offered me novel perspectives for analysing pro-environmental behaviour and helping us understand the inner conflicts of individuals while rationing, conserving and consuming natural resources.

I identified environmental concern a key initiator for pro-environmental behaviour in that it justified the need to maintain or improve the state of the environment. Environmental concern

alone, however, cannot be considered sufficient in the shift to sustainable behaviours. While environmental concern motivates practicing pro-environmental behaviour, the shift to sustainable practices requires various enabling factors. In the context of rural Zanzibari villages, such enabling factors included time, knowledge, skills and material resources. While it is likely that these enabling factors are comprehensively linked with shifting to sustainable practices everywhere, it is highly contextual which of them become especially meaningful. For example, while in developing regions, all of these may be difficult for individuals to access, they are likely to be more available in more developed contexts. In the analysis, I have referred to the individual's ability to modify their environment as agency – and my key argument is that the heterogeneous levels of agency among individuals significantly create a gap between their environmental attitudes, values and ideals and concrete interactions with nature. Therefore, research focusing on the assessment of either alone is not sufficient.

While previous research has utilized the concept of agency in the analysis of environmental participation (e.g., Clarke & Agyeman 2011), most research on pro-environmental behaviour still overlooks the heterogeneity among individuals' capabilities to affect their environs. This may derive from approaches which overly emphasize individual traits such as attitudes as explaining pro-environmental behaviour. I argue that such research overlooks how comprehensively one's interaction with their environment is connected to societal processes. I approached pro-environmental behaviour with an integrative research frame, connecting it with the wider concept of the human-nature relationship. This perspective allowed me to expand the analysis of pro-environmental behaviour by including a wider frame of knowledge from various fields. The interdisciplinary approach I utilized also enabled supplementing previous understandings on pro-environmental behaviour. I utilized sociological understandings in the analysis to produce novel perspectives to a subject mostly studied in environmental psychology. These included the inclusion of agency in understanding how humans behave, and how their capacities to act may be derived from prevailing socio-material conditions.

I identified knowledge as an important gateway to becoming conscious how one's behaviour affects their environment. Pro-environmental behaviour requires an individual to choose, based on their best understanding, effective tools for attaining sustainability. Knowledge builds causal relationships between actions and consequences thereof, offering individuals sets of behaviours which help them reach their goals. Therefore, knowledge is at the core of

agency. In the context of developing regions, short-term objectives are often prioritised as a means to gaining a livelihood, but environmental initiatives aim to replace short-term goals with long-term protection and rationing of natural resources. Therefore, the adoption of such objectives requires individuals to adopt them as effectively fulfilling their interests. In the data, some interviewees simultaneously recognized how the protection of forests hindered their livelihood but also agreed with the goal as being rational in the long term. Therefore, environmental initiatives are a question of persuasion, sometimes leading into contestation. In my data, it was apparent that objectives of conserving the forest reserve were somewhat at odds with the needs of local people and existing ways of utilizing forest resources. The desired shift in practices called for remoulding existing human-nature relationships by spreading knowledge and intervening behaviour that was deemed unacceptable. The interfaces of different human-nature relationships as well as their power relations become visible in such contestations where, on the one hand, international environmental initiatives attempt to mobilize global targets and, on the other hand, local individuals accept, resist or dismiss them – leading to certain human-nature relationships gaining power.

In Figure 5, I present the interconnections of the main concepts I have utilised. The figure as a whole represents the human-nature relationship as including a conscious and an unconscious area of interaction as well as various processes affecting them. Unconscious interaction with nature where an individual does not know or consider how their behaviour affects the state of the environment is represented as the grey circle. This interaction may be sustainable, unsustainable, or quite neutral. In the figure, I have presented six main processes and phenomena which affect an individual's behaviour towards nature.[10] These include knowledge, dependency on ecosystem processes and socio-material realities – as comprehensively interconnected with each other. The central sphere in the figure represents conscious interaction with the environment, consisting of pro- and anti-environmental behaviour. In this type of interaction, the individual possesses a degree of consciousness in regard to how their actions affect the state of their environment. The six (and more) main factors create ensembles of influence affecting one's interaction with nature. Therefore, I argue that research suggesting pro-environmental behaviour is the independent result of ecocentrism or anthropocentrism (e.g., Rhead, Elliot, & Upham 2015) is inadequate in grasping the multi-dimensional and complex factors affecting environmental behaviour which

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[10] The location of these in the figure does not represent their relation to sustainability or unsustainability, nor are processes and phenomena affecting the human-nature relationship limited to these six.

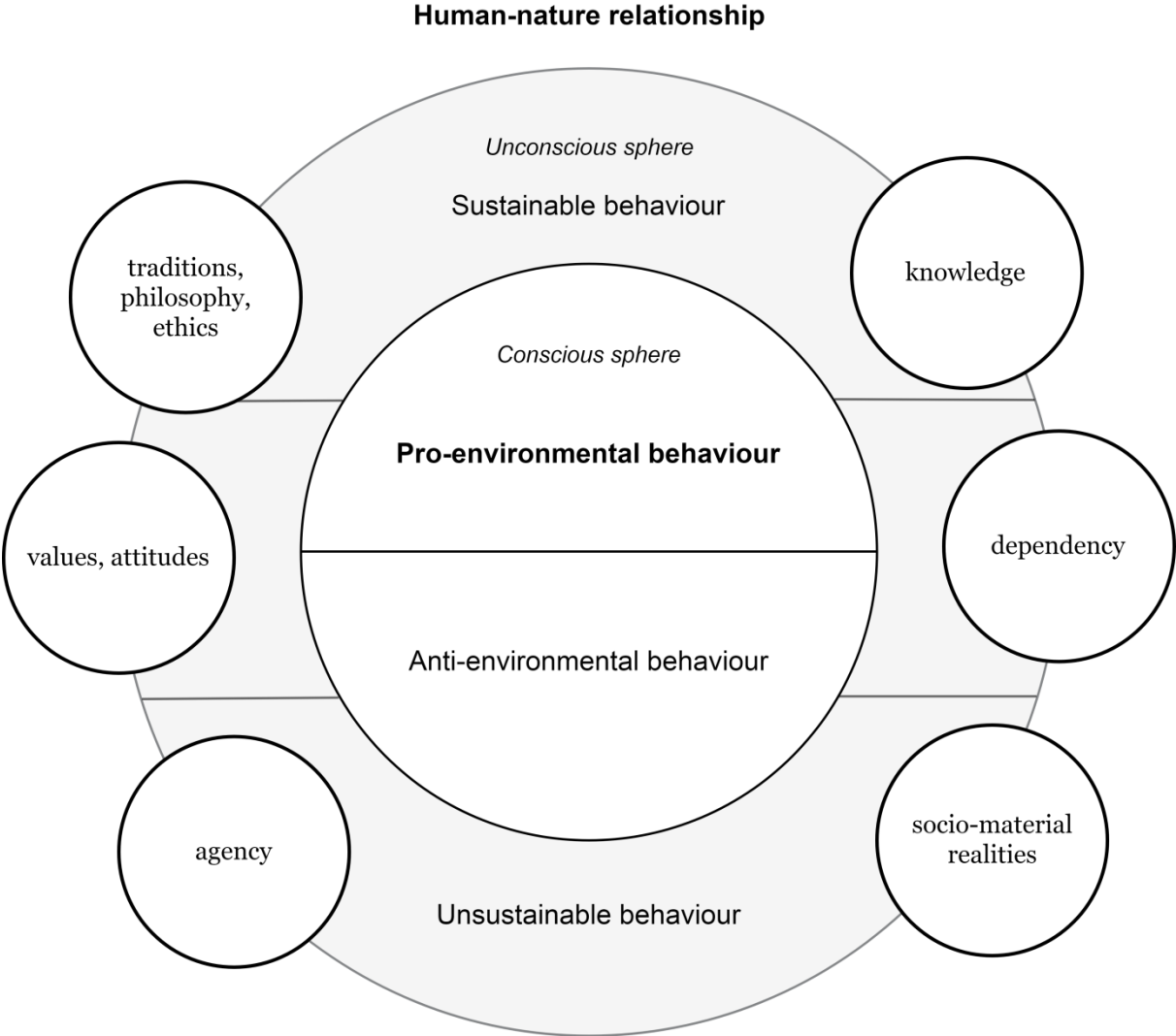vary from context to context, forming unique combinations in each situation.

Human-nature relationship

Figure 5. Interconnections of the main concepts.

The results of this thesis offer insight as to what socio-material realities and human-nature relationships are often taken for granted in research assessing pro-environmental behaviour. By having analysed these concepts in a context where socio-material realities concretely disempower individuals from practicing pro-environmental behaviour and nature is the basis for livelihoods, I argue that research emphasizing anthropocentrism as a centric cause to exploitation takes for granted the underlying societal structures affecting the behaviour of individuals. Understanding anthropocentrism as explaining exploitative behaviour suggests that individuals are not concretely and acutely dependent on their natural environment. This was not the case in my study. Therefore, to build more resilient theories on what factors affect environmental behaviour, future studies should consciously focus on including more varied contexts for conducting research and including prevailing socio-material conditions in the

analysis. This thesis has offered such framework for future studies, studying the question of human-nature relationships and pro-environmental behaviour with a context-sensitive, bottom-up approach.

While this thesis has offered novel insights, it is not without its shortcomings. Some of the weaknesses of this study have to do with the methods of conducting research. As an outsider of the village communities, grasping deep cultural meanings of nature was inevitably limited. One of the limiting factors was language, and despite having all parts of the semi-structured interviews translated, the language barrier concretely hindered interaction with the interviewees and I. Due to conducting the interviews with the help of translators, asking additional questions and steering the interviews turned out challenging. While one of the interviews was conducted in English, having to translate ideas into a language which is not native to the interviewee likely stripped away some of the meanings encoded in words. This does not mean that 'outsiders' are not allowed to conduct research on human-nature relationships. In contrast, research conducted by 'outsiders' may help highlight phenomena which is typically taken as a given in the context in question. Nevertheless, it is important to become sensitive to the shortcomings of research in order to avoid filling the gaps with own pre-conceived notions.

In this thesis, prevailing understandings of environmental issues in Zanzibar may have been enforced by conducting research with the help of the DFNR. Firstly, people in the villages were asked by the DFNR to assembly in preparation for our research which undoubtedly affected the group of people available for interviews – i.e., this research focused on individuals who were likely more committed to environmental conservation than the average population in the villages. Therefore, the analysis of disempowerment and marginalization is limited in this thesis, which was especially attempted to be relieved by utilizing findings from pre-existing research. While previous research offers insight to processes in Zanzibar in general, these processes undoubtedly vary between villages. Moreover, due to the presence of the DFNR and me being a representative of the KIPPO project, there was a noticeable amount of pressure among the interviewees to give positive answers regarding environmental initiatives. This was especially observable in the transcripts where one of the translators questioned any unfavourable opinions about environmental protection. Therefore, I emphasize that this thesis cannot sufficiently assess negative opinions concerning environmental conservation or 'Western influences' in Zanzibari villages (cf. Benjaminsen &

Kaarhus 2018; Gössling 2002). To compensate for this shortcoming, the analysis of pro-environmental behaviour as affected by human-nature relationships and socio-material realities was supplemented via the assessment of enabling and empowering processes – offering clues as to what is required for successful facilitation of pro-environmental behaviour.

To conduct research, I utilised the method of theory-guided analysis in order to create a reflexive research process and to achieve sensitivity to locally important processes as encouraged by existing HNR research (see Flint et al. 2013). Simultaneously, the reflexivity of the research process has its drawbacks. Unlike studies utilizing ready-made scales, my research process is difficult to imitate, disabling direct comparisons between contexts. Against this drawback, the upside of my approach was its resilience against the tendency of research to erase heterogeneity and portray human-nature relationships as representing entire communities, a feature which has been criticized by Valkonen (2005) and Reid, Sutton, & Hunter (2010), among others. Moreover, the reflexive approach helped me illuminate pre-existing notions encoded in established approaches, as ready-made questionnaires such as the influential NEP scale (Dunlap et al. 2000), do not sufficiently include themes concerning prevailing socio-material realities or agency.

The approach of including prevailing socio-material realities, agency and empowerment in the analysis of human-nature relationships and pro-environmental behaviour helped me reach a central goal of this thesis which was to produce more multi-dimensional ways of understanding human-nature relationships as encouraged by Haila (1994). Following Haila, research should avoid dualisms such as anthropocentrism or ecocentrism as all-embracing categories which are assumed to portray human-nature relationships. I do not highlight single factors or processes such as poverty as comprehensively explaining how people relate to or interact with the environment, but identify human-nature relationships as processes which vary according to each combination of contextual and by situational factors which always produce novel relations of cause and effect.

Instead of producing strict generalizations as to how individuals relate to nature in rural Zanzibari villages or attempting to classify different human-nature relationships (e.g. Flint et al. 2013), the universality of my thesis is derived from identifying phenomena and processes which affect human-nature relationships and pro-environmental behaviour. It also proposes

interrelationships between the main concepts and offers a context-sensitive, interdisciplinary framework for future studies. As in my thesis, anthropocentrism caused novel interactions in a context previously under-researched, it is to be assumed that the factors affecting human-nature relationships and pro-environmental behaviour are more complex than previously recognized, and that new combinations thereof may produce unexpected results. This does not mean that research should not attempt to find universal factors or categories that affect human-nature relationships and pro-environmental behaviour such as economic prosperity, but that it should acknowledge how these may not directly explain phenomena as detached from other influencing factors. While I have analysed the concepts from the perspective of empowerment, I acknowledge that agency regarding one's environment is attained through different measures in different contexts and situations. For example, while research conducted in industrialized settings often emphasizes consumption (e.g., Coelho et al. 2017; Fudge & Peters 2011; Hargreaves 2011) as a main channel of influence, my research was especially focused on concrete hands-on interaction with the environment.

While the emphasis of this thesis is on theoretical assessment, it is not without its implications for environmental policy. Firstly, environmental initiatives should attain comprehensive understandings on pre-existing human-nature relationships and processes affecting thereof for the basis of merging local practices, environmental objectives and social justice more successfully together. In contrast, large global programs formulated as somewhat apart from local interactions, such as the REDD+ project, inevitably face contradictions as attempting to comprehensively redefine established human-nature relationships. Secondly, environmental conservation steered at the global, national and local levels should increasingly recognize how it empowers individuals disproportionately, and its consequences. While research has previously identified such problems as the emphasis of expert knowledge in environmental conservation as marginalizing individuals from environmental initiatives (see Scheba & Mustalahti 2015), these findings must be incorporated in practical implementations by acknowledging discrepancies in the levels of agency among individuals. These can also be used in finding alternative measures, such as the utilization of indigenous knowledge, for involving and empowering locals in environmental initiatives.

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APPENDIXES

Appendix 1. Semi-structured interview form

Theme 1. Human-nature relationship

1. Background information
   1.1. How old are you?
   1.2. What is your education?
   1.3. What is your occupation?
2. The living environment of the respondent.
   2.1. Could you describe the surroundings of your home?
   2.2. Do you prefer living in the city or in the countryside and why?
   2.3. What are the pros and cons of your living environment?
3. Nature values and understandings of nature.
   3.1. Is there a word in Swahili that stands for nature? What does it refer to (e.g.plants, forests, animals, oceans)?
   3.2. What does the word 'mazingira' stand for? Does it differ from 'nature'?
   3.3. How would you describe your relationship with nature?
   3.4. Do you think people are a part of nature? Why / why not?
   3.5. Is nature important to you? Why/why not?
4. Occupation & the environment.
   4.1. Does your occupation somehow affect the environment?
   4.2. How do you take into account the environment while practicing your occupation?
5. Nature as a resource.
   5.1. Are there natural resources you need in your daily life?
   5.2. How does agriculture or forestry help boost the economy?
   5.3. Do you think nature should be used more to make money, or should it be conserved?
6. Life without nature.
   6.1. What do you think about life in a city where there are no nature (e.g. parks, plants or animals)?
   6.2. What do you think is the biggest danger that could destroy nature?
   6.3. What would happen if all nature (e.g. forests, plants, animals, oceans) was destroyed?

Theme 2. Pro-environmental behaviour

1. General attitudes regarding nature conservation.
   1.1. Have you heard of the VCCs or MUMKI? (If not, explain what their purpose is. Also tell the respondent what KIPPO project is.)
   1.2. What do you think about nature conservation (e.g. the work of the VCCs and MUMKI)?
   1.3. Do you think nature conservation is important/useful? Why/why not?
   1.4. Do you think we should conserve nature (e.g. forests, animals, oceans)?
2. Nature conservation in Zanzibar/Tanzania.
   2.1. Do you know any nature conservation projects elsewhere (other than Kiwengwa-Pongwe area)?
   2.2. Who do you think nature conservation is benefiting?
   2.3. Do you think nature conservation has been good or bad for Zanzibar and why? What about the Kiwengwa-Pongwe area?
3. Treatment of locals & marginalization.
   3.1. Do you know an example of a nature conservation project that caused disadvantage for local people?
   3.2. Do you think conservation projects (e.g. KIPPO) are treating local people fairly?
   3.3. Are the opinions/views of the local people taken into consideration in conservation projects (e.g. KIPPO)?
   3.4. Do you feel included by the VCCs and MUMKI to participate in nature conservation/resource management?
4. Western influences.
   4.1. What do you think about Western people participating in nature conservation in Zanzibar?
   4.2. Do you think Western people's influence on the environment in Zanzibar/Tanzania has been good or bad?
5. Nature conservation and livelihoods.
   5.1. Does nature conservation help or hinder your livelihood?
   5.2. What do you think about protection areas where tree-cutting is illegal?

Appendix 2. Survey interview form

<div align="right">

Interviewer(s): _____

Date: _____

Place (village): _____

</div>

Individual Interview

1. BACKGROUND
Age: _____

Sex: _____

Shehia: _____

2. ATTITUDES REGARDING THE PROTECTION OF K-PFR

2.1 Have you heard of the Kiwengwa-Pongwe Forest Reserve (K-PFR)? Yes / No.

2.2 Are the location and boundaries of the forest reserve clear in your opinion?
_____

2.3 Describe your attitude towards the protection of Kiwengwa-Pongwe forest area.

	I agree completely	I mostly agree	I mostly disagree	I disagree completely
1. Protection of Kiwengwa-Pongwe forest area is important.				
2. Do you need more information concerning forest protection?				
3. I want to participate in the protection of K-PFR.				
4. Protection activities are easy to put into practice.				
5. Protection activities are efficient and working.				
6. I can participate the activities of MUMKI and VCCs.				

2.4 What do you think needs to be improved or done differently in Kiwengwa-Pongwe forest area protection?_____
_____
_____

2.5 Are you familiar with the work of the village conservation committees (VCC)? Yes / No.

2.6 Is the VCCs work useful? How?

_____
_____
_____

3. ATTITUDES REGARDING MUMKI

3.1 Have you heard of MUMKI? Yes / No.
If yes: where?

_____

(If 3.1: Yes) 3.2 How active are men/women in MUMKI's activities?

_____
_____

3.3 (*Here explanation about MUMKI for those who don't know the organisation*)
Which following services would you like MUMKI to provide to the community? (*Circle the wanted services*)

Forest protection, tree planting, fire suppression, awareness events, information or
other, what?_____

3.4 Why is MUMKI needed / not needed?

_____
_____

3.5 Have you participated in MUMKI's activities? Yes / No. If yes, which activities you participated?

1. Meetings	
2. Monitoring / patrolling	
3. Tree planting or other forestry work	
4. Fire suppression	
5. Education / awareness	

3.6 What kind of events has MUMKI organized in your village? Did you take part in them? Have you heard of events held by MUMKI in other villages?

	Held in my village	Took part	Held in other villages
1.Awareness events			
2.Recruiting new members			
3. Meetings			
4. Other:			

Did you find the activities useful?
_____
_____

3.7 Describe your views concerning MUMKI.

	I agree completely	I mostly agree	I mostly disagree	I disagree completely
1. It is easy to find information about MUMKI				
2. It is easy to participate in MUMKI's activities				
3. It is easy to give MUMKI feedback.				

3.8 How could MUMKI be improved?
_____
_____

3.9 Have you contacted MUMKI in any matter? Yes / No.

If yes, why did you contact MUMKI? Did you get assistance with the issue?
_____
_____