



universität
wien

MASTERARBEIT / MASTER'S THESIS

Titel der Masterarbeit / Title of the Master's Thesis

„Shifting the boundaries of habitability? The impact of migration on subjective and culturally-embedded well-being in a context of environmental change in Northern Ghana“

verfasst von / submitted by

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angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of
Master of Science (MSc)

Wien, 2023 / Vienna 2023

Studienkennzahl lt. Studienblatt /
degree programme code as it appears on
the student record sheet:

UA 066 855

Studienrichtung lt. Studienblatt /
degree programme as it appears on
the student record sheet:

Masterstudium Geographie

Betreut von / Supervisor:

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List of Abbreviations

El	Expert Interview
FGD	Focus Group Discussion
IPCC	Intergovernmental Panel on Climate Change
KII	Key Informant Interview
PWJ	Participatory Walking Journal
SES	Socio-ecological system
SSI	Semi-Structured Interview
TW	Transect Walk

I. Summary

Assessing the habitability of locales, especially in rural and resource-dependent settings, emerges as an ever-increasing necessity under the aegis of augmented environmental challenges and can inform the set-up of context-sensitive and well-adjusted strategies for building resilience. Such strategies especially have to consider the seminal role of migration as a dynamic social mechanism that has the potential to shift the boundaries of perceived habitability to both positive and negative ends. Migration and habitability, however, cannot be assessed without a thorough consideration for the respective socio-cultural context(s). Resulting from a plethora of dendritic research findings regarding human responses to environmental change, including migration, socio-cultural dimensions have increasingly come to the fore as a fundamental explanation for the observed heterogeneity of results.

As such, socio-cultural dimensions circumscribe the emotional, subjective, and psychological aspects of human-nature interrelations and critically inform how social units perceive environmental risks and eventually act upon them. Socio-cultural dimensions substantially undergird subjective well-being, which constitutes an important component of the decision to render a given place habitable and – accordingly – can be utilized as a proxy for perceptions of habitability. The interrelation of migration and socio-cultural dimensions has crucial implications for local levels of habitability and, besides the effect on the material means to sustain a living, especially informs the perception of subjective well-being in situ.

This study is based on six weeks of qualitative empirical fieldwork in a rural community in Northern Ghana and attempts to scrutinize the role of this interrelation for local perceptions of habitability. In particular, the place-based, perception-based, and flexible research places a distinct focus on place attachment, social status, and community cohesion as underlying socio-cultural dimensions of particular meaning in the specific local setting. Research results thereby conform a double tracked relationship: On the one hand, migration served to impact the perceived subjective well-being through its influence on the underlying socio-cultural dimensions, whilst these socio-cultural dimensions and their ample relevancy for local perceptions of subjective well-being also bear the potential to steer and shape migratory pathways on the other hand. In this vein, this study emphasizes to take the role of both culture and migration – in their reciprocal interplay – more seriously in future research.

II. Context of this study

This work is part of a master's thesis and has been undertaken within the institutional framework of the University of Vienna. In particular, this study has been embedded in the HABITABLE project, which strives to conceptualize the notion of habitability as an important aspect of socio-ecological systems' and resilience research and intends to underline the various facets to this analytical term. This study has contributed to this overall project by shedding light on a small aspect of the habitability framework, the role of socio-cultural dimensions and subjective well-being in their interrelation with migration, but has not been able to cover the entirety of the habitability conceptualization for reasons of space. The empirical fieldwork has been conducted with the exceptional institutional support from the University of Ghana, who are a part of the HABITABLE project, likewise. This master's thesis is paper-based, indicating that the central cornerstone of the work is the scientific article in chapter 8. The article is embedded in a framing text that elaborates on further conceptual and methodological thoughts and presents extended empirical evidence. Altogether, both the framing text and the scientific paper have to be understood as one comprehensive work, but remain devoid of context and analytical clarity if not assessed conjointly.

III. Acknowledgements

First and foremost, I would like to thank Habib Adam Maltiba and Awaki Sulemana for their exceptional support and facilitation throughout the fieldwork period. Without their communicative and organizational skills, their deeply-rooted knowledge of the local context, and their supportive and joyful attitude, none of this research would have been possible.

I am very grateful for the welcoming and warm reception into our research community in Northern Ghana, and I am very honored to have been allowed this experience. As a fitting representative, I like to thank Mr. Justice and his family for their hospitality, understanding, and kindness.

I would also like to thank Mumuni Abu as representative for the whole Regional Institute for Population Studies (RIPS) at the University of Ghana for his thorough and effective guidance, his advice, and his support and kind consideration. He provided us with the perfect environment to flourish during the empirical fieldwork.

A great thank you also to Patrick Sakdapolrak and Harald Sterly for their patience, organization, guidance and calmness in times of precipitance. The research is based on their theoretical advancements and would not have been possible without their input and scientific mentorship.

I want to thank Simon Merschroth for the great cooperation in the field and fruitful discussions on the project. A heartfelt thank you also to Benjamin Schraven, Michael Ayamga, Stephen Adaawen, Delali Badasu, and Bernard Alando for their time, their provision of vital networks in situ, their hospitality, and their advice.

Ultimately, I need to thank Sanja and my family for their constant support throughout this prolonged research effort. Without them and their encouragement, I would not have been able to write this thesis. Thank you!

1. Introduction

Incrementally accruing environmental changes on global to local scale levels imply both sudden and long-term shifts in the respective habitability of places and for its constituent populations. Especially for resource-dependent societies in rural areas, this development has the potential to amplify existing challenges. However, environmental changes will not affect social units homogeneously and are finding their manifestation in concrete, place-based, and subjective perceptions that invoke differentiated adaptive strategies (Herbeck 2015). Migration has emerged as one of those household-based responses that can substantially undergird attempts to mitigate environmental risks, diversify the livelihood portfolio, and enhance the level of resilience.

Migration can interact with the habitability of a given locale in a double-tracked fashion. On the one hand, migration bears ample potential to impact the underlying habitability by providing both positive and negative impacts. On the other hand, the underlying level of habitability also conditions migration and can contribute to alter existing migration patterns and flows (Sterly et al. forthcoming). Indeed, scientific insights posit that migration can influence coupled socio-ecological systems and the perceived utility of places by operating as a catalyst for positive or negative change (Barnett and Webber 2010, Renaud et al. 2011, Adams and Adger 2013a, Castles 2012). Human migration can thus present an important avenue of providing livelihood security in the light of increasing environmental detriment. In this context, it is fundamental to understand that human movement is based on the experiences of place-based reality, is culturally-embedded, and is shaped by steadily shifting discourses about conducive human-environment interactions (Parsons 2019). In other words, migration closely interacts with the given socio-cultural context at hand. This core assumption is crucial, but has been largely undervalued in research on the role of migration for human-nature interrelations (Wiederkehr et al. 2019, Adger et al. 2013, Adams and Adger 2013b). Accordingly, hitherto results have been characterized by a diverse portfolio of migration strategies that are *“driven by many cultural, psycho-social and emotional factors that can present little external logic and seem to defy generalization”* (Adams and Kay 2019: 130). In order to better understand how different social units perceive places to be habitable or not, and in order to pinpoint the role of migration in the process, we thus have to redirect our focus on the underlying socio-cultural dimensions.

Studies circling around notions of habitability are emerging as a promising field of research to investigate coupled socio-ecological systems. However, research on socio-ecological systems has continuously undervalued the seminal role of socio-cultural dimensions in shaping human responses to environmental change, amongst them *inter alia* migration. Fairly often, such negligence comes down to omitting important cultural peculiarities of social units that have the potential to explain many of the observed ‘deviances’ from the expected. Not only does a specific cultural context guide the perception of environmental change, it likewise determines how particular social units act upon it (Herbeck 2015). As of yet, ‘objective’ insights from physical sciences and social science approaches with distinct cultural unawareness have remained superior in shaping broader discourses on environmental change, leaving subjective conceptions on the fringes of research endeavors and the role of culture as a “*black box*” (Parsons 2019: 4). Critical accounts posit that such bio-physical attempts frequently rely on a singular environmental hazard, such as temperature thresholds or sea level rise, and combine these with economically-based cause-and-effect assessments to identify high-risk zones or numbers of potential migrants (Adams and Kay 2019, Faist and Schade 2013, Adger et al. 2009, Horton et al. 2021). However, emphasizing the interrelation of socio-cultural dimensions and migration is vital to ensure that the design and the implementation of adaptive strategies and resilience-building mechanisms adhere to the respective local contexts. Only such consideration can provide the foundations for wide-ranging societal acceptance and can serve to spark well-rooted incentives to preserve material and immaterial goods that people value.

The framing text at hand has to be considered in combination with the corresponding scientific paper (see chapter 8), and both works conjointly constitute the underlying master thesis. The framing text thereby extends and complements the scientific paper and intends to add a more comprehensive analytical delineation of the theoretical framework and a more nuanced representation of the empirical fieldwork findings. In contrast to the scientific paper, focusing on the *impacts* of migration on culturally-embedded subjective well-being as proxy for habitability, this framing text explicitly analyzes how the *interrelation* of migration and socio-cultural dimensions contributes to shift perceived subjective well-being, and thus overall habitability. This second direction implies that socio-cultural dimensions have the potential to shape migration trajectories, likewise. This can entail that culturally-embedded migration strategies eventually feed back on the community and thus constitute further, migration-induced impacts on local perceptions of subjective well-being and overall habitability.

This thesis utilizes a process-based and human-centered concept of habitability that centers both material and immaterial properties and is linked to migration via the notion of connectivity. I specifically focus on subjective well-being as important component of habitability and underline that culturally-embedded notions of subjective well-being, besides material means necessary to sustain a living, similarly affect perceptions of habitability. A specific focus is placed on social status, place attachment, lifestyle changes, and community cohesion as socio-cultural dimensions of particular relevance for subjective well-being in the local setting. The whole research is based on six weeks of qualitative empirical fieldwork in a rural and resource-dependent community in Northern Ghana that is prone to increasing environmental risks. The results indicate that, on the one hand, migration exerts distinct impacts on the underlying socio-cultural dimensions and is responsible for igniting far-reaching social and cultural transformations. This, in turn, serves to influence levels of subjective well-being and features back into perceived levels of habitability. On the other hand, the very specific socio-cultural context at hand also influences migration and caters for a situation where migration trajectories and emerging benefits are – for the most part – (re)directed to the community of origin. Such cyclic and circular pathways then serve to feed back on the respective level of habitability in situ and underline the overall significance of this interrelation for understanding complex socio-ecological systems.

In the following, the framing text proceeds to present additional hitherto research findings in the state of the art that extends the discussion depicted in the paper. I thereby especially focus on the broader embedding of the research in socio-ecological systems' and resilience thinking and attempt to showcase how both migration and socio-cultural dimensions have been linked to human-environment relations as of yet. In the next section that centers the theoretical framework of habitability, I will elucidate on related theoretical notions that have helped to set the stage for the conceptualization of habitability. Thirdly, the section 'Study design and methods' further explains the choice of a place-based, perception-based and flexible research design and recalls the implementation of qualitative methods in the field. In the 'Results' section, this framing text presents additional empirical evidence that complements the findings of the paper. The portrayal of results in this framing text adds further empirical nuance by also accentuating the *interrelation* of migration and socio-cultural dimensions for shaping subjective well-being, as opposed to a focus on migration *impacts* in the corresponding paper. Moreover, the results section in this framing text also includes a

subsection where I analyze the interrelation of migration and lifestyle changes as a socio-cultural dimension that was omitted from the paper for lack of space. Lastly, I compare the research results depicted in the scientific paper and in this framing text in the 'Discussion' section and attempt to connect the empirical findings in Northern Ghana with existing works on the relationship of migration, environmental change, and cultural context. Note that chapter 8 contains the corresponding scientific paper, where the major lines of argument, the core assumptions and definitions about the habitability concept, the central hitherto research works that have paved the way for this study, and the bulk of empirical results are depicted. The corresponding framing text that comprises the chapters one to seven is to be understood as extension of the paper and embarks on additional conceptual and methodological thoughts, underpinned by further empirical evidence. Altogether, the underlying thesis thus serves to accentuate the fact that an analysis of "habitable places" cannot be conducted without taking the underlying socio-cultural context(s) and migration as dynamic social mechanism into account.

2. State of the art – Situating habitability in socio-ecological systems’ research

Whilst the corresponding scientific paper only somewhat touches upon the theoretical embedding of the habitability lens, this extension of the thesis provides the platform to explicate the underlying conceptual background in a more comprehensive manner. We are doing so by recounting seminal scientific advancements in socio-ecological systems’ and resilience research and show how the increasing recognition and consideration of the social sphere has opened up the scope to apply a human-centered framework of habitability. Moreover, this extended state of the art also serves to underline that a renewed focus on ‘the social’ in coupled SES advances the acknowledgement of socio-cultural dimensions, which are beginning to play an important role in explaining human responses to (environmental) changes, inter alia including migration. By showing how diverse scientific approaches have commenced to integrate socio-cultural dimensions, we set the stage for the importance of notions like place attachment, lifestyle changes, social status, and community cohesion, all of which showcase an interesting relationship with migration for the conception of habitability.

2.1 Assessing the evolution of socio-ecological systems’ research as the conceptual backdrop for the habitability lens

In utilizing a place-based habitability lens, we situate our analysis within existing research on socio-ecological systems (SES), emphasizing the social side of human-environment interactions, and also accentuate a close relation to resilience thinking. Socio-ecological systems (SES) will be under increasing stress with augmented changes in climatic conditions and regarding the wider environment, especially so for rural and resource dependent societies that will be confronted with changing levels of agricultural productivity, resource availability, and natural hazards. As a result, the perceived utility of places (Adams 2016, Adams and Adger 2013a, 2013b) or their underlying habitability (Sterly et al. forthcoming, Horton et al. 2021) is shifting as well. Given the interconnectedness of human and natural systems and therewith associated feedback effects, changes in the physical environment automatically trace back to the social structures that were designed to interact with the physical structures in situ (Adger et al. 2009). In line with such considerations, Eriksen et al. (2015) postulate that climate

change should not be analyzed in isolation from other changes in socio-ecological systems, for instance regarding wider political transformations or cultural changes. Such accounts thus serve to emphasize that the social side has to be recognized as the pivotal catalyst for transformative change in socio-ecological systems (Carr 2019). At last, ever more audible invocations to center the social sphere are also emanating from the finding that social dynamics in general, and human agency in particular, have been somewhat undervalued in research on socio-ecological systems and resilience as of yet (Davidson 2010, Cote and Nightingale 2011, Brown and Westaway 2011).

Further impetus for the social sciences to increasingly spearhead the scientific engagement with socio-ecological systems and resilience thinking is also given by the notion of (social) limits to human adaptation vis-à-vis changing environments (Adger et al. 2009, Gharbaoui and Blocher 2018, Carr 2019, Carr 2020, Dow et al. 2013). Perceptions of risk, as well as the willingness and capacity to act, can be distributed differently across and within social units (Adger et al. 2009), representing a limit for collective adaptive capacity. By all means, increasing risks to a given socio-ecological system have the potential to imperil the valued objectives – be they material or immaterial – that a particular social unit adheres to, whereby a continuous piling of negative impacts can entail the culmination in a threshold of adaptation (Dow et al. 2013, Adger et al. 2009). As the very least contingency, environmental changes can confront societies with existential risks (Huggel et al. 2022). In summary, the potential of increasing environmental challenges calls for research that uncovers the various linkages of human-nature systems, which serves to bring the notion of habitability to the fore.

SES thinking has close linkages to resilience research and both concepts have borrowed a fair few delineations and definitions from the biophysical realm in order to gain a better comparative theoretical basis and in order to coat ostensible differences between the ecological and the social side. Resilience research has ultimately evolved from the need to better understand the interdependencies between ecological and social spheres, albeit the social dimension has drawn the short straw of research spotlight for the most part (Cote and Nightingale 2011, Armitage et al. 2012). Resilience can be defined as *“the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks”* (Walker et al. 2004: 6), which is closely related to adaptability, *“the collective capacity of the human actors in the system to manage*

resilience” (Walker et al. 2004: 7). Taken together, these definitions showcase the impetus to merge ecological and social aspects of coupled human-nature interactions, evolving in a co-dependent and interwoven fashion that are prone to both sudden and incremental changes (Folke 2006, Folke et al. 2010). Resilience thinking has subsequently molted into research on coupled socio-ecological systems (SES), where the interdependence of human and ecological systems, for instance manifested through feedback effects and mutual thresholds, is placed at the center of analysis (Cote and Nightingale 2011). Foregrounding the reciprocal dependencies of both the social and the ecological side in coupled SES has a range of advantages for research and serves to reinforce methodological and epistemological clarity. Such an understanding of socio-ecological systems has the ability to focus on the social aspects of human-nature relationships whilst retaining the theoretical contributions of (ecological) systems thinking, which provides an important conceptual backdrop for framing habitability in this work.

2.2 A focus on the ‘social’ serves to foreground the relevancy of socio-cultural dimensions

The evolution of socio-ecological systems’ research towards a coupled analysis of both social and ecological spheres in increasingly dynamic frameworks, undergirded by a close relation to resilience thinking, also serves to bring subjective, emotional, and psychological aspects of human-nature interactions to the fore. In other words, socio-cultural dimensions showcase an increasing prominence in SES research and bear the potential to explain many ambiguities of existing societal responses vis-à-vis changing environments. Plenty of works have thus commenced to take the role of socio-cultural dimensions more seriously and brought a whole new set of theoretical and methodological concepts and tools into a revitalized discussion (McCarthy et al. 2014). Groundbreaking work to merge social theories with resilience thinking by introducing the explanatory power of culture has been undertaken by Cote and Nightingale (2011) and Armitage et al. (2012). The former argue that SES research can gain a lot from incorporating context-specific cultural meaning, up to an extent that goes well beyond the explanatory power of mere system-based perspectives. Armitage et al. (2012) on the other hand explicitly encourage the utilization of a social framing of well-being for resilience research that is paired with an ecologically-informed and dynamic systems understanding.

Culture as such is also beginning to play a more prominent role in the vulnerability framework, where more recent understandings of vulnerability especially highlight questions of who is vulnerable and under what conditions, indicating the more prominent role of intangible and non-material facets of social life (Thomas et al. 2019). Culture also commences to infiltrate the adaptation literature, where *“culture is no less central to understanding and implementing adaptation”* (Adger et al. 2013: 112). Adger et al. (2009) for instance address the role of material and immaterial aspects that people value, which is varied in both space and time. This further implies that adaptation is contingent upon the respective norms in which the practices are embedded, with corresponding limits to adaptations for some (Dow et al. 2013).

This belief is also mirrored in the research of Carr (2020: 3), who argues that resilient livelihoods are co-constituted by the balancing of material needs and the maintenance of socio-cultural meanings altogether, entailing the continuous (re)creation of locally-embedded *“socio-ecologies”*. In that vein, recent theoretical advancements in resilience research increasingly move towards the recognition that *“more often than not, efforts to negotiate environment and ecology are principally decisions about how to manage society”* (Carr 2019: 73), which makes way for a more prominent role of the underlying socio-cultural dimensions. However, and besides ample strides to retrieve the seminal role of socio-cultural context(s), Barrett and Constanas (2014) state that socio-cultural realizations as part of the non-material dimensions of SES remain those parts of the overall system that are, still, least understood. The embedding of habitability in SES and resilience research with a distinct focus on the social sphere – whilst retaining a dynamic systems’ perspective – can help to uncover perceptions of habitability and their interaction with adaptive strategies, which includes, inter alia, migration.

2.3 Bringing in migration as a dynamic social mechanism that influences habitability and interacts with the underlying socio-cultural dimensions

It is by now widely acknowledged that migration is a very important adaptive strategy for rural livelihoods to cope with the trials and tribulations posed by environmental change. Whilst past narratives of linear, unidirectional and mass scale displacements due to environmental change have been put to rest (see for an overview e.g. Perch-Nielsen et al. 2008, McLeman and Gemenne 2018, Piguet 2012), it is currently emphasized that migration comes in many

different forms and types, and can significantly contribute to increase resilience towards external shocks, but can also exhibit negative impacts (Foresight 2011, Afifi et al. 2016, Scheffran et al. 2012, Tacoli 2009, Black et al. 2011, Gemenne and Blocher 2017). Besides a flurry of empirical insights about the interrelation of migration and the environment in the recent decades, there is still ample room for improvement. Adger and Fortnam (2018) for instance criticize the dearth of comprehensive theoretical frameworks that merge socio-ecological thinking with migration, particularly with regard to a more holistic and inclusive incorporation of the human dimensions of socio-ecological dependencies.

In recent years, studies circling around the role of migration for environmental change adaptation, mitigation, and resilience in socio-ecological systems have witnessed a reinforced consideration for socio-cultural dimensions (Parsons 2019, Wiederkehr et al. 2019). This has helped our understanding that socio-cultural dimensions influence migration trajectories all the way through from the actual decision-making process up to the experiences of migrants in new settings (Haug 2008). Vice versa, migration also influences the underlying cultural and social configurations at hand, thereby entailing transformative social and cultural changes that transcend scales and enduringly alter human practices, interactions and beliefs (Castles 2012). Pioneering work for the increasing recognition of all aspects cultural within migration studies has been undertaken by the field of mobility studies, which emphasize that movement is much more than mere relocation from one place to another, but rather embodies cultural meaning and significance (Frello 2008, Cresswell 2010, Hui 2016, Parsons 2019). From this lens, socio-cultural dimensions are more than a mere 'explanatory variable'. Much rather, the underlying cultural context, human movement and the interaction with the environmental are co-evolving in close embracement (Parsons 2019).

Correspondingly, a fair few socio-cultural dimensions, delineated in more detail in the corresponding scientific paper, have received increasing recognition for their potential to interact with migration and subjective well-being. Concomitant with arising environmental challenges is the risk of impelling the loss of cultural identity, which is ultimately tied to the affinity with and belonging to a certain place, and theories on place identity have made valuable contributions to emphasize the more subjective and emotional dimensions of human-environment relationships (Devine-Wright 2013, Fresque-Baxter and Armitage 2012). People that exhibit strong bonds to their place of habitual residency will decide about

choosing migration based on an assessment of existent place-based sentiments (Adams and Kay 2019, Adams 2016). Migration is thus closely related to notions of belonging. Place attachment can imply that people do not wish to leave the place where they have established emotional ties, even under conditions of repeated environmental risks (Adams 2016). The other way around, both environmental change and migration can profoundly impact place attachment by affecting the place people live in and the valued objectives the place embodies (Adams and Adger 2013a). When the continuity of place is modified or disrupted, for instance by an environmentally-induced loss of habitability or through migration, strong sentiments of loss and grief can affect subjective well-being and can subsequently entail the breakdown of existing social structures (Kelly 2009, Tschakert and Tutu 2010).

Sustaining a livelihood and enabling a satisfying level of subjective well-being is also molded by the level of community cohesion, togetherness, and mutual support. Leaving one's social support groups behind is a decision with far-reaching emotional consequences (Adger et al. 2013). Migration can also influence and transform existent patterns of social interaction, which consequentially bears the potential to feed back into collective efforts to protect the availability of resources and the overall level of habitability (Qin and Flint 2012). Social status represents another socio-cultural dimension that is strongly linked to migration through the recognition and admiration that the movement can embody. People with a migration-induced social status can then emerge as respected carriers of knowledge and can help to implement collective adaptive practices (Fresque-Baxter and Armitage 2012, McLeman 2018, Carr 2019, Carr 2020). The resilience of a particular social unit can also be underpinned by commonly shared and institutionalized lifestyles, beliefs and values, which can contribute to community strength and feelings of belonging (Berkes and Ross 2013, Gilmartin 2008). These 'ways of living' are important in resource-dependent settings because they represent tacit rules and incentives for collective action that ultimately enable a sustainable governance of the socio-ecological system at hand (Makondo and Thomas 2018). All of these socio-cultural dimensions are crucial to understand peoples' responses to changes in the respective socio-ecological systems they are part of. Accordingly, the depicted interrelations between migration and diverse socio-cultural dimensions offers ample potential to shift subjective well-being of social units and, in turn, feeds back into the overall level of habitability. Analyzing these interrelations is of utmost importance to provide communities with the appropriate tools to increase their resilience whilst retaining a sense of cultural integrity.

3. Theoretical background – Extended embedding of the habitability framework

The utilization of the habitability framework, and the specific focus on subjective well-being as important constituent of habitability, will be explained in more detail in the corresponding scientific article. The article contains the employed definition of habitability, the major conceptual arguments for applying this specific framework, the main axes of analysis including the delineation of subjective well-being, as well as the conceptual incorporation of migration and socio-cultural dimensions, respectively. To that effect, the portrayal of the theoretical framework in this framing text especially resorts to depict additional conceptual thoughts that are of value for grasping the whole picture of habitability in a more comprehensive manner. Major notions in this framing text pertain to related conceptual works that have informed the set-up of the analytical lens as well as further insights on the embedding of subjective well-being. In doing so, I also show how process-based understandings of habitability play a crucial role for the overall conception and might inform assessments of habitability that go beyond the displayed focus on respondents' subjective and culturally-embedded well-being.

Briefly recapping the major lines of argument from the paper, the insights from this empirical case study especially serve to refine the notion of subjective well-being for habitability and showcase how migration and the underlying socio-cultural dimensions interact to influence perceived levels of habitability in a rural and resource-dependent setting that is prone to environmental risks. Migration is linked to habitability – and subjective well-being – through the notion of connectivity, implying that human movement can be considered as one of many social mechanisms that cater for the flow of people, material, and immaterial goods between places. Sterly et al. (forthcoming) state that migration can interact with habitability in a double tracked fashion. On the one hand, migration can impact the present levels of habitability, either by enhancing or worsening the material means necessary to sustain a living, or by shifting perceived levels of subjective well-being. On the other hand, migration is also conditioned by the existent levels of habitability, and in the case of our research, conditioned by the underlying socio-cultural context(s). Whilst the corresponding article only focuses on the *impacts* of migration on culturally-embedded subjective well-being, this framing text extends this notion to look at the *interrelation* of migration and underlying socio-cultural

dimensions for subjective well-being, and thus habitability. Following Sterly et al. (forthcoming), I define habitability as the material or immaterial properties of places (or socio-ecological systems) to afford a certain way of pursuing livelihoods that is linked to the ability of individuals, households and communities to sustain a living and their perceived understanding of well-being. In the analysis, I explicitly focus on the notion of subjective well-being as opposed to material and relational conceptions. Locally embedded perceptions of subjective well-being are inherently dependent on the underlying socio-cultural dimensions, whereby changes of the respective socio-cultural context(s) can contribute to either enhance or lower perceptions of subjective well-being.

A range of other works on socio-ecological systems provides an important foundation for the set-up of habitability and undergird its close relation to resilience thinking. Rendering a place habitable and ensuring a resilient socio-ecological system is, in its essence, based on the mutual management of both natural and human processes in such a way that guarantees the maintenance or enhancement of the particular locale according to the objectives and desires of its constituent populations (Carr 2019). The idea of place utility is providing helpful additional insights for a habitability-based lens, given that Adams and Adger (2013a, 2013b) and Adams (2016) argue that the quality of places is crucial for the respective in-situ satisfaction of a given social unit and also informs decision-making on adaptive strategies, such as migration. They explicitly accentuate their framework with the idea that perceived well-being and associated non-provisional, cultural ecosystem services are fundamental building blocks of place utility and thus inform subsequent migration decisions. Another study by Warner et al. (2010) draws on the concept of carrying capacity in a similar context, whereby they assert that carrying capacity has to be recognized as a function of cultural and natural features altogether. Human carrying capacity, however, has been criticized for providing a rather deterministic framing (Sterly et al. forthcoming, Cote and Nightingale 2011). This study also coincides with the idea that non-material contributions of nature entail “*nature’s effects on subjective and psychological aspects underpinning people’s quality of life, both individually and collectively*” (Díaz et al. 2018: 271), which adds an important and hitherto missing dimension to the study of nature-society interactions. However, we intend to broaden the scope even more by also including material and non-material contributions to human well-being that are not primarily bound in nature, for instance those emerging from social interactions. Despite the valuable basis provided by the concepts of place utility, nature’s

contribution to people or human carrying capacity, Sterly et al. (forthcoming) posit that a habitability-based lens can also add a temporal and long-term perspective that is still lacking in concepts of SES analysis.

So far, applications of habitability are spanning from global-scale conceptions of planetary boundaries or temperature thresholds that render parts of our socio-ecological systems uninhabitable or overloaded (Rockström et al. 2009, Steffen et al. 2018, Sherwood and Huber 2010) up to local-scale assessments focusing on the impact of environmental changes for the habitability of small island states (Storlazzi et al. 2018, Duvat et al. 2021). Although studies that utilize notions of habitability, also in combination with migration, are on the rise, they are still characterized by a primacy of quantitative ‘top down’ modeling approaches, as for instance in most climate risk assessments, and also display a disproportionate focus on physical sciences as opposed to social dimensions. Critical accounts posit that such procedures frequently rely on a singular environmental hazard, such as temperature thresholds or sea level rise, and combine these with economically-based cause-and-effect assessments to identify high-risk zones or numbers of potential migrants (Adams and Kay 2019, Faist and Schade 2013, Adger et al. 2009, Horton et al. 2021). Whilst this study surely does not advocate against the importance of such quantitative and large-scale assessments, which are also vital to ensure a better comparability across regions (Horton et al. 2021, Eriksen 2016, Phillips and Robinson 2015), it is argued that these need to be counterbalanced by locally-grounded, empirical studies. Apparently, *“it is ironically the ‘ground’ that is missing from recent accounts”* (Brace and Geoghegan 2011: 287), mirroring ever more audible invocations to direct the focus of research on the local scale level (Hess et al. 2008, Herbeck 2015, Adams and Kay 2019).

Within this framing text, I also utilize the opportunity to further clarify the analytical focus on subjective well-being as an important constituent part of overall habitability. Carr (2019) argues that social units, particularly concerning those residing in predominantly rural and agricultural settings, (re)produce their respective socio-ecological system, and its underlying habitability, only to the degree that their perception of well-being is sufficiently met (Carr 2019), thus rendering perceived well-being an inherently fundamental segment of analysing habitability. Whilst this research explicitly focuses on subjective well-being that is dependent on the underlying socio-cultural dimensions, it is certainly acknowledged that well-being is also tied to the sufficient coverage of material needs and the satisfactory means to sustain a

living (confer Armitage et al. 2012). By utilizing a social understanding of subjective well-being for the conception of habitability that is rooted within the respective cultural context(s), this study can add crucial insights on human agency, perceptions and grounded understandings of environmental change and migration, which opens up the scope for including normative aspects of resilience and human movement more generally (Armitage et al. 2012).

In the conception of habitability, notions of subjective well-being and therewith associated cultural peculiarities are highly dynamic and in constant flux. Both the influence of environmental changes and migration as a means of connectivity to other locales can induce sudden- or long-term social and cultural changes, which conversely determine how the habitability of a place is framed, (re)produced and perceived by its constituent members. Such a dynamic conception is necessary, as an increasingly interconnected world leads to scale-transcending and interwoven ties between places that can facilitate changes on various levels. Nevertheless, the place-based rootedness of habitability also ensures to view locales in their own right, as distinctive and unique (Eriksen 2016). We utilize the understanding of Phillips and Robinson (2015: 410), circumscribing places as “*as a location with both physical and symbolic attributes*”, which suits our set-up of habitability that is based on both the means to sustain a living and subjective well-being alike. Secondly, our proposed research frame also adheres to Parson’s (2019) indication that scale has been one of the major obstacles for conjointly analyzing local life-worlds and their respective cultural backgrounds together with large-scale phenomena such as climate change. As a result of that, recent strides in research argue for a more relational concept of place that underpins the various connections – material and immaterial – that places can embody in an increasingly globalized world (Devine-Wright 2013, Brace and Geoghegan 2011, Phillips and Robinson 2015). Whilst retaining an inherently place-based lens that identifies the role of socio-cultural dimensions through their cumulative effect on subjective well-being, the notion of connectivity – of which migration is just one aspect – can help to grasp linkages between different scales and places.

The embedding of a habitability lens within wider discourses of socio-ecological systems thinking also enables a process-based understanding of changes in habitability and facilitates a mutual integration of concepts from socio-psychological research and the biophysical realm (Sterly et al. forthcoming). We are tallying with Adger et al. (2009) and Cote and Nightingale (2011) in our conception of habitability by arguing that a purely ecological approach to human-

environment interrelations in combination with an analytical primacy of ‘systemic structures’ is misleading as it masks the seminal relevancy of socio-cultural, normative and emotional dimensions that substantially undergird interaction and (re)production in SES. Formulated differently, the attempt to understand social processes by unsophisticatedly applying bio-physical terms and systemic conceptions does not do justice to the complex socio-cultural arrangements that underlie human responses to environmental change. By combining resilience thinking with a focus on socio-cultural context(s) that shape locally perceived well-being, however, we are able to combine dynamic, system-oriented and scale-sensitive notions of adaptability, thresholds and connectivity (emanating from a bio-physical standpoint) with ideas about subjectivity, agency, behavioural theories, emotions, and cultural norms and values emerging from socio-psychological thinking (Armitage et al. 2012).

In this context, it is possible to identify non-linearity, feedback mechanisms and tipping points within a SES from a social science viewpoint, thereby balancing the origins of these terms from natural sciences with a human-centered lens. The notion of tipping points is of particular interest for studies circling around the concept of habitability and is gaining increasing traction in SES research, given that continuously accruing environmental changes bear the potential to tip socio-ecological systems over a certain limit of resilience or adaptive capacity. For this study, an identification of potential tipping points was beyond the scope of this work. Nevertheless, future research should strive to shed light on the existence and role of such tipping points that can entail relevant results for policy-making and local resource governance.

4. Methods and study design – Additional insights on the methodological approach

This section augments the delineation of research methods in the scientific paper by adding additional nuance to the chosen methodological approach. Because the choice of a place- and perception-based research design is already explicated in the corresponding scientific article, this broader embedding merely adds some additional thoughts on the flexibility of the implementation in situ. After an extended insight into the chosen research location, this portrayal of the methodological approach especially focuses on the application of methods in the field and narrates major milestones throughout the process. In the end, this framing text also includes a statement of positionality from the perspective of the researcher.

4.1 A flexible research design allows for place- and perception-based adjustments

The application of a place- and perception-based research design is finding its realization in a flexible conception of the research. With flexible, it is meant that the research keeps eyes and ears open to different ways of seeing the world, different ways of knowing, and different ways of perceiving the surroundings. Adhering to local perceptions is the key cornerstone for a flexible research design. The research, whilst thoroughly prepared and equipped to react to upcoming eventualities, deliberately left some blanks that should be filled during the empirical fieldwork by incorporating the voices of the respective respondents. The selection of socio-cultural dimensions and the question ‘what environmental change is’ was intentionally left to the analysis of first results in the field, which is underpinning the set-up of habitability as a locally informed framework for research. As a result, a diverse range of changes are included in this study, depicting that ample differences exist in their perception, even within a geographically bounded community. For instance, whilst one participant stated that floods affected him regularly over the last three years, with devastating impacts for his crops, another participant – contrariwise – argued that floods have never affected him negatively. Much rather, this participants’ agricultural areas were prone to drought. Note well that these diverging accounts of environmental change found their manifestation in close proximity and underline the fact that perceptions of environmental change can differ within locales and across different carriers of knowledge. Moreover, the selection of socio-cultural dimensions

was only conducted after the initial phase of data collection and resulted in the exemplary display of social status, community cohesion, lifestyle changes, and place attachment as those dimensions that exhibited particularly interesting interdependencies with migration and habitability. Quite naturally, this research also had to omit certain socio-cultural aspects from the analysis. For instance, the issue of lifestyle changes was left out of the corresponding scientific paper for reasons of space. In addition, socio-cultural dimensions that cover gender relations, linguistic dynamics, or family and kinship structures were also not considered as primary objectives of analysis, although they exhibit important connotations for subjective well-being and overall habitability, likewise.

4.2 Study location

The study was conducted in a rural community in the Tolon District in Northern Ghana. The research area is located in the West African Guinea savannah belt, characterized by a unimodal rainfall regime that exhibits one annual rainy season, usually from April/May to October, and a dry season from November to late April. The large majority of the population is dependent on rain-fed subsistence agriculture and major crops include maize, beans, groundnuts, guinea corn, and rice. Ghana's migration history likewise played into the selection of a community in the Northern Region, given that north-south migratory movements are still quite entrenched, promising rich accounts on century-long migration impacts and subsequent cultural changes. Well before colonial times, movements of social groups were the norm rather than the exception in Sub-Saharan Africa, particularly in response to fluctuating climatic conditions (Makondo and Thomas 2018). With the onset of colonial rule in the coastal areas of Ghana, North-South migration became institutionalized, as the colonial administration perceived the northern areas as labor reserves for work in mines, plantations, or infrastructure (Jarawura and Smith 2015, Schraven and Rademacher-Schulz 2015). Contemporarily, these North-South movements are still quite common throughout Ghana and either focus on large-scale urban agglomerations like Accra or Kumasi, or are directed towards greener pastures in the central districts (Van der Geest 2011, Abu et al. 2014). However, migration patterns are undergoing well-visible changes in recent years, in parts ascribable to worsening environmental conditions, but for the most part relating to swiftly transforming socio-cultural and socio-demographic structures (see for instance Schraven and Rademacher-Schulz 2015).

4.3 Implementation of the study design in the field

This research was conducted with the institutional support from the University of Ghana in Accra, and after preparing the fieldwork guidelines and the underlying concept for a prolonged period of time, the University of Ghana represented our first point of contact for the period of fieldwork. After refining the research design, revising the method toolkit and clarifying administrative and organizational issues with local stakeholders from the University of Ghana, we proceeded to Tamale, the district capital of the Northern Region. In Tamale, we spent about one and a half weeks in order to meet our research facilitators and translators, organize the day-to-day fieldwork structure, and acquire additional material for the empirical data collection. During this phase, we conducted a one-week training session with our facilitators, introducing them to our research objectives, the method toolkit, and the study design. Additionally, we utilized this time to conduct the bulk of expert interviews, either face-to-face or online, which gave us a good preparation for the research as well as valuable insights on potential pitfalls in this specific local context.

The empirical fieldwork in the research community was split in two distinct phases. After receiving a first impression of the field site, the first phase of the research involved the identification of underlying levels of overall habitability, derived from recent changes in habitability that were perceived by the community. In addition to general changes in the means necessary to sustain a living, this study especially placed a focus on both changes in the environment and with regard to socio-cultural dimensions, restricted to a period of 20 years. In this phase, we conducted six expert interviews, four key informant interviews, 10 semi-structured interviews as well as two transect walks and one focus group discussion. In doing so, we could identify major changes that impacted local habitability and were able to decipher a range of socio-cultural dimensions deemed relevant for a satisfactory level of subjective well-being. In constant cycles of analysis and evaluation, this first phase of the research yielded the final selection of place attachment, social status, lifestyle changes, and community cohesion as the four socio-cultural dimensions of particular relevance in the local setting. Subsequently, the second phase of the research placed a narrowed focus on these four dimensions, which implies that the method toolkit and the research guidelines had to be adjusted in a process of iterative review. In the second phase of the research, we specifically turned towards the role of migration for shaping locally perceived habitability by accounting

for the selected socio-cultural dimensions. This second stage involved the realization of further 15 semi-structured interviews, two focus group discussions and five participatory walking journals. The empirical data was collected with the help of our local research facilitators and interviews were conducted in Dagbani for the large majority of cases, with simultaneous translation in English. The notes from the interviews were transcribed and subsequently coded utilizing MaxQDA coding software. The process of coding thus enabled a clustering of research results according to the relevant analytic categories utilized in this work.

4.4 Positionality statement and limitations of the research

Empirical fieldwork, especially when equipped with a flexible design, always involves certain trade-offs and limitations that need to be clarified beforehand with due diligence. Empirical fieldwork has to involve a thorough consideration for the positioning of the researcher and has to exhibit awareness for distinct cultural peculiarities that can hamper a smooth proceeding of the research cycle. First and foremost, utilizing a habitability-based lens bears the risk of assuming deterministic human-nature interactions and an overemphasis on ‘hard’, ‘structural’ factors. In particular, the extended focus on a setting of environmental change also bears the risk to overly stress the role of environmental conditions and issues of climate change. In addition, this research assumes the existence and relevancy of specific socio-cultural dimensions and ‘categories of culture’. First, the dimensions utilized in this study should not be understood as fixed categories, but rather as fluid and interchangeable societal contexts, whereby various socio-cultural dimensions overlap and influence each other mutually. A grouping of results in socio-cultural dimensions such as place attachment or community cohesion is undertaken for analytical purposes, but it has to be considered that these categories only constitute one part of the broader socio-cultural context at hand. Secondly, there is a certain likelihood that some socio-cultural dimensions that might be of importance for the interrelation of migration and habitability have not been mentioned throughout the course of the research, for various reasons. However, the flexible research design that gives participants enough room to utter their own perceptions helps to circumvent some of these concerns to a satisfactory degree.

In situ, it is also crucial to take barriers of language and culture into account. Some of the socio-cultural dimensions, and important linkages between them, might constitute tacit

taboos. As a result, it is well possible that respondents did not tell us everything about certain issues. This, in turn, implies that the displayed illustration of socio-cultural dimensions is not all-encompassing. In addition, some socio-cultural dimensions and indicators of habitability will remain hidden because people will not perceive them to be 'relevant', will understand them in different terms, or will not have knowledge about them. In such an empirical setting, it is also crucial to consider the expectations of participants vis-à-vis the research team. Participants might attempt to 'earn' something by interacting, or could perceive the presence of researchers as a threat, which is why a closer look at the existing social configurations and power structures in situ is indispensable.

Language remains a major barrier that might result in the loss of valuable information expressed by the respondents. Intonation, meanings, imageries, or figurative speech conveyed in respondents' answers can slip the attention of the researcher in a setting of simultaneous translation in the field. In any case, the research is heavily dependent on the facilitators and their ability to communicate. Through a triangle set-up, from the respondent via the translator to the researcher, some information will inevitably be lost in-between the lines. In this case, however, rigorous and in-depth preparation as well as a constant, iterative process of query can help to mediate some of these barriers. Lastly, it has to be emphasized that the research has been conducted in the rainy season, which might contort some of the place-based perceptions of participants and might lead to euphemize the scenery in contrast to a barren, hot, and arduous dry season.

5. Results – Extended results from the fieldwork

The following chapter of this master's thesis illustrates further results from the empirical fieldwork in Northern Ghana. The portrayal of findings from the data collection process in this section especially turns towards a more detailed and nuanced description of local perceptions and presents arguments and thoughts that would have gone beyond of the scope of the scientific article. This implies that every sub-section of the results in this framing text is closely associated with the illustration of findings in the corresponding scientific article and follows up on the respective central themes. In particular, the portrayal of results in this extended work especially highlights the *interrelation* of migration and the underlying socio-cultural dimensions and their combined effect on subjective well-being, as opposed to a sole focus on *impacts* of migration in the article. Furthermore, this section also introduces the role of lifestyle changes as another socio-cultural dimension that was left out of the article for reasons of space, but nevertheless constituted an important part with regard to both respondents' perceptions of subjective well-being and overall local habitability.

5.1 General perceptions of habitability

The study locale was perceived quite well with regard to its habitability for the majority of respondents, and many expressed a growing satisfaction with the quality of the place over the last 20 years. People are very proud of their community, which holds a long history and is known in the area for its trading prowess and the amount of agricultural produce. The community also seemed to be better off than many of the surrounding communities and increasingly serves as a magnet for people from adjacent villages and towns, as in-migration has increased considerably over the last years. In past times, *“people used to say: ‘Ah, you are getting married in the community of suffering’ when a woman got married in this community but now even ladies from Accra are coming here to marry people from this community. So the overall prospects have increased a lot.”* (KI13). Statements like this were emerging relatively frequent, for both genders and older and younger generations alike, and showcase that people have been quite content with the given circumstances, which comes down to two major reasons: First, in this community, and in Northern Ghana in general, the so called ‘hometown concept’ still holds a high value, which is explained in more detail in the scientific

article. Secondly, people were lauding the plethora of major positive changes that transpired within the last 20 years, which respondents coined with the term ‘developments’. Such changes were manifold and affected fairly diverse aspects in the day-to-day community life, but most prominently mirrored a range of infrastructural improvements. For instance, the road access has improved considerably, and many participants even selected the road network as the most important change with regard to their habitability, as it enables a faster connection to other places. In parallel, the community also saw a true surge in motorized vehicles – ranging from tractors to motorbikes – over the last years, which considerably facilitates the work on the fields and underpins the improved level of connectivity, likewise.

Infrastructural improvements also concern the set-up of electricity and network, which came about in the years 2008 and 2009, respectively. Evaluations of these developments included *“the community is lightened up”* (SSI5), *“enlightens and brightens the community”* (TW1) and *“has opened our eyes”* (SSI1). Electricity also comes with major economic advantages and has led to an increasing mechanization of agricultural practices, for instance with regard to the utilization of a mechanical grinding mill, thereby removing both physical burdens and fostering economic empowerment. Such amelioration is directly palpable in the immediate community scenery, where small-scale shops are starting to mushroom in direct proximity to the main road and the market, including shops for electronics, food stores, clothing shops, and services. Another major improvement of perceived habitability that is likewise correlated to the increasing mechanization is the government- and NGO-led provision of mechanized boreholes in 2015, which has enhanced access to water.

Moreover, participants also have been very eager to underline the importance of the new Junior High School and the small clinic. Whilst the availability of both elementary and high school facilities has upped the enrolment rates, the clinic has helped to ameliorate many small-scale health issues and gives people a new sense of security, especially considering women during their pregnancy. Another change that has been perceived as highly relevant for local habitability concerns the increasing build-up of rectangular block houses that slowly start to surpass the predominance of round and traditional mud houses. People frequently combine traditional and new housing styles in one household and praise the new houses for their spaciousness and their durability. Particularly with regard to increasing environmental hazards, people were fairly happy with the new houses that can withstand floods and storms

a lot better. Closely correlated to the shift in housing is the spread of toilet huts in the village, implying that open defecation is regressive, which obviates the propagation of infectious diseases like Cholera. Taken together, these accounts effectuate a steep rise in the perceived level of habitability for most participants. Crucially, many of those changes in the last 20 years have been greatly influenced by migration.

However, some also assessed the level of habitability negatively, and many of those participants were former migrants that came to view the rural life as backwards and uncivilized. In addition, there was a pronounced difference with regard to the dry season and people were expressing severe concerns about this period of the year. Perceptions of habitability have to be recognized as socially differentiated as well (see als Merschroth et al. forthcoming). Whilst those that were able to profit from recent developments and were able to maximize their farming outputs despite challenging environmental conditions spoke highly about the perceived level of habitability, those that were shook by environmental changes, had less options to deal with arising challenges, and were not under the aegis of community support systems often depicted their perception of habitability with a certain level of despair.

Whilst the general development of habitability was perceived to be positive for the most part, there are certain dips in the curve. Fairly often, new and shiny ‘developments’ become somewhat normalized after some time and do not contribute to positive perceptions of habitability as they did in the immediate time after construction. Moreover, many of the new amenities and infrastructural improvements get overused and decline with regard to their proficiency. For instance, whilst the set-up of a Junior High School has sparked ample excitement in the beginning, the increase in population, an abundance of students and a lack of both space and teaching personal has led to increasing criticism. Similar tendencies are discernible for the clinic, where well-trained doctors are rare and medication and appropriate storage facilities are absent most of the time. This indicates that whilst the overall perception of habitability, especially pertaining to the material means to sustain a living, has increased considerably over the last years, some ample problems remain that especially endanger the resilience of those that are most vulnerable. This is amplified by the increasingly palpable impacts of environmental change on a community that is still first and foremost dependent on the state of the surrounding ecological system and the corresponding climatic conditions.

5.2 The role of environmental change for habitability

Despite the predominance of positive changes outlined above, environmental change indeed represents the major factor endangering a good and steadily increasing level of habitability. Droughts have been a recurrent phenomenon in the study area and can affect the yield output, with severe consequences for food security. Likewise, floods appear from time to time in the rainy season and also impact the amount of agricultural yields. For floods, the proximity of the community to the White Volta plays a crucial role and renders those that have their fields closer to the river a lot more vulnerable. Moreover, storms and strong winds seemed to appear more regularly, and respondents were especially worried about the destructive impacts on infrastructure and housing facilities. One participant stated that *“The storms are very dangerous because they can destroy the houses and pick up the roofs and blow them away. These storms also push the maize down, which is bad for plant growth and harvest. Storms in general are also a lot more intense now”* (TW1), indicating a perceived intensification of risk. During one of the transect walks, I was guided to a few houses that were seriously damaged by floods and storms, sometimes even entailing their abandonment. Traditional round houses are more susceptible to both flooding and storm impacts, a major reason why many people opt for cement houses in their future aspirations.

Besides the increasingly erratic nature of rainfall, participants especially identified the decline in soil fertility and concomitant land degradation as major impediment for perceptions of habitability. Most participants blamed human error for the ongoing degradation, pertaining to an excessive application of fertilizer and a wide-ranging loss of vegetation and forest cover in order to clear land and obtain firewood. The indication of human mismanagement was not only restricted to a decline in soil fertility and degradation, but was also mentioned as underlying reason for other environmental challenges. For example, people were farming too close to the major river and cleared a lot of vegetation in the process, thereby constricting its important function as a natural barrier: *“Without the trees at the river banks, which have been cleared for farmland, the river is not kept in check anymore and water can transcend to the fields more easily”* (FGD1). People were highly perceptive of the close interrelation of human practices and environmental feedbacks in this area and pointed towards the apparent changes in micro-climate that impede a sustainable livelihood: *“The vegetation was changing a lot with different kinds of trees that used to be present before but now there are less trees and plants*

due to deforestation, both in total and regarding the different types. Due to cutting down the trees, the place now gets a lot warmer and hotter, and the local weather is changing” (KII1).

In particular, the substantial loss of vegetation and forest cover resulting from an increase in population and a subsequent expansion of both farmland and housing area was worrying many participants. In the past, the forest used to be an important source of traditional herbs and fruits and also provided a crucial regulating function for the local climate. Notwithstanding such human encroachments in the socio-ecological system at hand, the increasing unpredictability and erratic nature of rainfall as well as the frequent occurrence of environmental hazards points towards a combination of both human mismanagement and changing climatic conditions. Overall, environmental change was one of the major aspects seriously dampening participant’s perceptions of habitability in the study locale, which is why we proceed to assess the reciprocal interrelation of socio-cultural dimensions and migration for perceived habitability as being embedded within an environmental change-prone context.

5.3 Migration as important livelihood strategy for improving local habitability

It has already been mentioned in the corresponding scientific article that migration represents a crucial and well-institutionalized local livelihood strategy to cope with problems posed by volatile environmental conditions. Migration is a strategy of economic diversification and serves to illustrate the increasing level of connectivity of the research locale to other parts of Ghana and the world at large. As such, migration flows also underpin a process of gradual transformation in rural areas, away from mere subsistence-based agricultural livelihoods, and towards a more diversified livelihood portfolio, a trend that has also been identified in other studies in Ghana (Schraven and Rademacher-Schulz 2015). Because the major pathways and patterns of migration are explained in more detail in the corresponding scientific article, this section rather turns towards some additional insights concerning the positive and negative impacts of migration on the material means necessary to sustain a living.

Migration is perceived fairly positive and is affiliated with many of the positive changes and developments that the community has experienced in the recent 20 years. Almost all the households could name both positive and negative impacts and were well aware of the various risks and pitfalls that can arise, but the positive impacts were outweighing the negatives for the most part. Migration has led to a whole new perception of ‘modernity’, which is finding

its realization in housing and corresponding architectural styles. The well-visible expansion towards the fringes of the community is directly correlated to migrants' quest for building new houses in the outskirts of the village. In addition, migration is also perceived to be responsible for the recent surge in bicycles and motorbikes as well as the increase in hygienic conditions by contributing to establish separated toilet facilities. What all of these material improvements have in common is the fact that migrants experienced these 'new ways of living' during their journeys and subsequently proceeded to introduce them in the community. Moreover, migration is also causing the introduction of mobile phones, TVs, and other electronical devices, as migrants increasingly started to spread them within the community. For most respondents, migration is thus greatly improving perceptions of local habitability and constitutes a vital source of household security and stability.

On the other side, respondents were also well aware that migration can comprise severe negative consequences and is a risky undertaking that has to be carefully planned and well executed. Some interviewees recounted that they had 'failed' in the city jungles, which was associated with a considerable mental burden. Migration is also associated with the spread of teenage pregnancies and can thus represent a double burden for those left behind, as the newborn child and the mother now have to be taken care of by the respective household. Moving to other places is also costly, and when migrants cannot fulfill the high expectations and cannot make up for the initial monetary investments, the respective households can be confronted with dire financial circumstances. Quite generally, migration was perceived as a waste of resources when migrants were not able to contribute to the household in any meaningful way, implying that the pressure on outgoing migrants is high. One of the most important negative consequences of migration is related to the loss of workforce for the respective household, which means that farming practices have to be divided between the remaining members, often correlating with an overburdening and a reduction in agricultural productivity. As a result, and notwithstanding the plethora of positive impacts perceived by the respondents that especially pertain to the material means necessary to sustain a living, migration was also evaluated with a certain ambivalence. This especially holds true for the interrelation of migration with the underlying socio-cultural context.

5.4 Zooming in on the interrelation of socio-cultural dimensions and migration for habitability

When conducting assessments whether particular places are habitable or not, a mere focus on climatic conditions or socio-economic capabilities of social units is not enough. In order to render a given locale habitable, subjective, emotional and psychological aspects feature into the human calculus, likewise. This, in turn, implies that the underlying socio-cultural context(s) have to be taken into account because of their seminal role for (re)configuring subjective well-being. Whilst migration as a signifier of connectivity between places was evaluated positively by the large majority of research participants and contributes to an increase of perceived habitability by enhancing the means necessary to sustain a living, migration also contributes to alter and (re)produce the underlying socio-cultural dimensions. The effect of this interrelation is double-tracked, indicating that migration can both impact the underlying socio-cultural dimensions and, conversely, the specific socio-cultural context at hand contributes to shape migrant trajectories. Because both migration and socio-cultural dimensions assume a critical role for fully comprehending local levels of habitability in complex socio-ecological systems, an analysis of their interrelations is indispensable.

5.4.1 Migration evokes declining levels of community cohesion and support

Throughout the research, there was a commonly shared agreement that community cohesion has been reduced drastically over the last 20 years, which indicates an increasing lack of togetherness, a breakdown of support and safety nets, and a reduction in collective communal labor. People blamed both migration and the onset of ‘modernity’ for this loss, whereby the latter especially correlates to an introduction of new modes of living and an influx of new and often urbanized lifestyles. This also relates to a well visible change in family and cohabitation structures. Whereas the extended family system still holds a high value in rural Northern Ghana, characterized by a culture of reciprocal assistance, the emergence of the nuclear family system commences to break up those family and kinship ties. The effects of this break-up are vividly depicted in the following comment of a respondent that had to split with his family homestead just recently: *“When people have to move out of their household, there is a separation and this is not good for cohesion. The house of my family is somewhere down in the*

center of the village. We are now struggling on our own, both of the households. If we would still live together then we would manage a lot better" (SSI10). Although they are still living in relative geographical proximity, the effects of this loss of family interaction is clearly felt. Such insights were also confirmed in the expert interviews, arguing that the nuclearization of families has to be considered as a major reason for changes in community cohesion, which entails that communities increasingly *"transform from a very cohesive and community-based life to a very individual lifestyle"* (EI6). Another expert interview foregrounds community cohesion as the socio-cultural dimension where the changes are especially distinctive: *"The change of social cohesion stands out. Formerly, it was a concept and tradition that people are each other's carekeeper, but now much more families live in nuclear systems"* (EI2).

Generally, participants also criticized that mutual support in times of crisis was much stronger back in the days: *"When you look at the past, our parents used to support each other. It would mean if you don't have something, nobody would have it. And if you have something, everything would be shared. Now everybody is fending for him or herself and only aspires to make life better for him or herself"* (SSI3). In a similar vein, an elderly community member bemoaned that *"there is no collective spirit now anymore"* (SSI23). However, intact community cohesion can be crucial with regard to intra-community support and provides a vital safety net. This loss also involves a reduction of collective action on issues that affect the whole community, which is particularly relevant with regard to arising environmental challenges. For instance, one of the religious leaders unequivocally criticized the recent lack of interest in collective community action: *"If we want to call out for community work or clean-up, everybody used to come out. But these days, it is not the same anymore"* (SSI11).

Many participants directly related the loss of cohesion with the increasing role of migration. When people have to leave the village – that was the general tonus – connections between friends, family or neighbors are put to the test, even when considering seasonal migration that entails an eventual return. Many people nostalgically remembered the olden days when people still used to gather and enjoy the time together, but the advent of modernity and the institutionalization of migration have reduced many of those practices to a bare minimum. In this vein, a male respondent describes that *"in the past, three men would gather at a place at home and would eat a meal altogether, all out of the same bowl, and it is a sign of respect."*

Now, this is no more and people are eating alone and are not gathering anymore. The reason for this is especially through migration, because people go elsewhere and are gone” (SSI23).

But not only the absence of migrants weighs heavy on intra-community support, also returning migrants contribute to reshuffle the social configurations in the community. For example, one respondent claimed that *“migrants are trying to isolate themselves from the indigenous and the other way around, this segregation and separation is causing the cohesion to loosen”* (SSI8). Others remarked an increasing detachment of return migrants from the community, which is manifested in a demise of active participation and a declining willingness to leave the comfort of the house. This is closely correlated to the impact that migration has on certain lifestyles and can be understood as an indirect effect on cohesion. For example, migrants were often equated with those people that increasingly indulge on the abuse of alcohol, cigarettes, and drugs, which was perceived unequivocally negative. In addition, the influence of migration on styles of clothing, dressing and physical appearance were equated with a ‘bad attitude’, which then serves to impact the level of mutual trust and togetherness.

Some respondents were particularly drastic with their perceptions in that regard, arguing that migration spreads the presence of thieves and liars and is connected to a loss of intra-community trust and well-being overall: *“Migration is breeding thieves and liars in the community as people want to upkeep their way of living with the money they got, but here they cannot earn as much and do not get the same money, so they turn to thieves and also make other people in the community to thieves. They infest all others and eventually, the whole community is infected. The level of trust in the community is also down because migrants bring these bad lifestyles and attitudes and migration is related to diseases and hatred”* (SSI23). The very specific, urban-inspired lifestyles and therewith associated experiments of rebellious demeanor that were brought along from southern Ghana also relate to feelings of arrogance and superiority. This entailed that returning migrants considered themselves ‘too good’ to help on the field. For example, one respondent explained this interrelation of social status and community cohesion, because *“especially when the person has had changes in lifestyles, he might not want to help you and as a result, the overall cohesion is loosening”* (SSI24). These examples serve to conspicuously illustrate how various socio-cultural dimensions, such as social status, lifestyles and community cohesion, altogether interact with migration and subsequently impact perceptions of subjective well-being, in this case to a negative end. This

was perceived to be highly relevant for subjective well-being. People were dependent on supportive community structures, especially those with less resilience, and the satisfaction with the particular place was contingent upon the social relations that were shared in situ.

Without these interactions, perceived levels of habitability are prone to decline, sometimes even to a level where some respondents, quite paradoxically, considered out-migration itself as a response. For example, one female respondent recalled that *“people have even left because of a loss of unity and cohesion, it is really upsetting people”* (KII3), showcasing the fundamental role of social connections in the underlying socio-cultural context. As such, declining levels of habitability, inter alia induced by migration, can also contribute to steer and invoke further out-migration. On the other hand, strong mechanisms of both positive and negative place attachment were often counterbalancing such perceptions and led many people to rethink their ambitions of departure: *“The place attachment is making the place habitable for me, although we are not together as much as we used to be. (...) Although people are not helping each other so much anymore, the attachment I feel for this place weighs more than the loss of cohesion”* (SSI4). Ultimately, declining levels of community cohesion, ignited both by the high prevalence of migrant absentees and by returning migrants that do not uphold the same community values, was placing a considerable strain on perceived levels of subjective well-being. Participants were longing for the ‘good, olden days’ where cohesion and support were stronger and argued that these safety nets were vital for household and overall community security. As such, an intact level of community cohesion has to be recognized as a seminal aspect of local habitability and can tip corresponding perceptions in both positive and negative directions.

5.4.2 Migration causes lifestyle changes that showcase diverging impacts on subjective well-being

Changes in lifestyle, in parts already circumscribed in the section beforehand, were intensely discussed within the community and represented a popular talking point. Many of those changes were perceived to be heavily influenced by migration, and a good share of respondents even stated that migration brought these interfering changes from afar. These changes in lifestyles go hand in hand with a general perception of ‘modernity’, whereby migration serves as a mechanism that has opened up the village towards the rest of Ghana

and the world at large. Because migration was – for the most part – directed towards the vibrant urban agglomerations in the South, including Accra and Kumasi, and has been a designated responsibility of the younger generation, the ‘modern’ and pop culture-inspired changes in attitude, appearance and behavior especially resemble attempts to reproduce urban lifestyles that open up an increasing space for intergenerational conflicts. Many of these changes indeed originate from the South and increasingly find their way into rural northern areas, as *“people copy the clothing and the dancing 1:1 from Accra. What the migrants are bringing here is exactly copied from Accra, they dance the same and dress the same”* (SSI9), which mirrors similar developments in many rural and peripheral areas around the globe.

For some, this general loss of valorization for the traditional ways of life that held up the integrity of the overall socio-cultural contexts is particularly painstaking: *“People also come back and have forgotten the history of the place. They don’t even know their history and do not want to learn it anymore because they are busy preparing another migration venture. It used to be in the olden days to sit together with the family and all, after eating in the evening, people would gather around the eldest in the house and he would tell stories. But now, the eldest are only viewed as old relicts who are not respected anymore and nobody is listening anymore”* (SSI23). Even more so, some migrants seem to forget the traditional ways of practicing agriculture, which is foreshadowed in statements like this: *“People are coming back and are forgetting the way of life here. People do not even recognize some of the agricultural tools for sowing anymore, they don’t know what it is. They have forgotten many of the traditions, values and old ways whilst they have been out, which is a shame”* (SSI21). The decreasing interest in local culture, traditions, and history can have far reaching effects for the socio-cultural integrity of the community and can entail the disaggregation of very effective and well-adjusted strategies to cope with stress and external disturbances.

Migration has also contributed to shape and alter many of the everyday practices, for instance regarding the way of cooking and eating. New ingredients are introduced, novel meals have found their way onto local menus, and the act of eating together is undergoing changes as well. One participant stated that people are exposed to different ways of consumption in Accra or Kumasi which they subsequently adopt upon their return to the community. This implies a general assimilation to southern Ghanaian and global practices that is discernible in many rural areas nowadays: *“Even with the food we eat, when you walk around, you can see*

noodle and other joints. It used not to be around but all the migrants brought it here and implemented it here" (SSI13). One female in-migrant from Techiman in central Ghana insinuated that she has brought new ingredients and meals along. In a society with a patriarchal structure of organization, many respondents also scrutinized the changing social role of women that is concomitant with an increasing involvement in mobile practices: *"The female migration is relevant here. They go out somewhere else and learn about the other practices and see that others usually only cook for small groups and that not everybody is eating in huge circles. So they also adopt this thinking and only want to cook for their small family, something good for their husband and their kids, but no big meals anymore"* (SSI23).

Many respondents also stated that migration directly influences the increasing prevalence of new hairstyles, new clothes, and modified preferences for physical appearance. Such styles were well visible and resembled a means of receiving recognition: *"The way of life is influencing them a lot (the migrants, note). They will come back with a lot of new clothing, very nice clothes and will look fresh"* (SSI25). Particularly incisive for local perceptions of subjective well-being is the introduction of alcohol, cigarettes, and drugs by means of migration. For these changes, people uttered serious concerns about the general community well-being and were emphatically emphasizing that these practices are 'spreading like a wildfire' and 'infect' or 'infest' others. Quite often, connotations that resemble the spread of an infectious disease were utilized by the respondents, implying that opinions about this development were undoubtedly negative.

Interestingly, when we asked participants of the participatory walking journals to show us a place in the community where migration-induced changes in lifestyles might be visible, almost all of the participants led us to a little shop very much on the outskirts of the community. When keeping a close eye on the ground, we could identify little plastic bags of gin, cigarette stubs and the packaging of diverse pills, items that were basically invisible in the other parts of the community. In this shop and the immediate vicinity, people come together to drink and smoke, practices that are not very well perceived within the community and are thus pushed towards hidden sites of vice. When we asked the female that was currently selling from the shop, filling in for the actual owner who was on migration at that time, she recalls that all the drinking and the practices that are associated with it are *"a negative influence. It is not good for well-being. My kid is gradually getting exposed to these bad lifestyles and all the bad habits*

we spoke about before, it's not good for the security of the place. One guy, for example, stole 7000 GHC, and it does not make the place well and does not enable a habitable surrounding" (SSI18). The introduction of alcohol, drugs and cigarettes also goes hand in hand with new forms of violence, both openly shown and domestic. The female participant comments that *"many people who go to Accra and Kumasi they bring Alcohol and cigarettes and smoking to the community. When they drink, they became abnormal, they be fighting with each other"* (SSI18). In this vein, people were firmly accentuating the negative outcomes of alcoholism and emerging drug addictions for health, community cohesion, and mutual trust, which in turn reduced subjective well-being for many to a considerable degree.

Notwithstanding all the negative sentiments vis-à-vis changing lifestyles, people were also thankful for some aspects of this 'new modernity' and proudly postulated the demise of 'barbarism' in their community. This was delineated in one of the expert interviews as well, where a certain trade-off between the positives and the negatives was indicated: *"As much as these lifestyles changes are not desirable, they also come with a lot of opportunities. And because these opportunities outweigh the negatives, people tend to live with these changes, like markets, clinics and so on. Communities are increasingly introduced into the exchange system by absorbing new cultures. People do not like these cultural changes but there is also a generational angle"* (EI3). Overall, and albeit people were displeased with the negative changes in appearance, behavior and attitudes, many also resorted to a certain state of acceptance and were aware about the trade-offs they had to endure.

Furthermore, people also highlighted that migration does indeed affect some lifestyles to a positive end. For instance, the continuous spread of Islam was positively ascribed to in- and return migration. In the last 20 years, *"there is a lot more increment of Islam, which is spreading a lot. The reason for this is also migration, people moving and bringing the word of Islam"* (SSI6). Indeed, some of the respondents we interviewed were either in-migrating Islamic scholars or had returned from a religious mobile practice employed to study the Quran in schools. In the following example, an elderly community member depicts his journey: *"I was an Islamic scholar already before. I brought the Islamic religion from migration, from Sunyani and I have promoted it here. This is why the change of traditional religions to Islam is very good for my quality of living here"* (SSI5). As a result, many respondents believed that migrants and their newly acquired religious knowledge were responsible for the steady decline of

traditional spirituality, which was perceived positively by the large majority. Common statements in that direction included *“we have now abandoned the old and bad traditions and continued using only the good ones”* (SSI8), indicating that subjective well-being has improved with the stability and security that is provided by Islamic practices.

Overall, migration has been accompanied by a pervasive and extensive range of lifestyle changes that have significantly altered the day-to-day lives and means of social organization in the community. In one of the expert interviews that were conducted prior to the field visit, almost all of the mentioned lifestyle changes were mentioned as well, showcasing how *“migration contributes indirectly to shift some of the socio-cultural dimensions in the community. (...). Young people that come back from the city, sometimes they do not want to do what their parents did because of what they learned in the city. Also, ways of eating are changing. Usually, and in the traditional way, you eat together from a big bowl in a traditional lifestyle and now they want to vary how they take their food in and what they eat in general. They also do not want to wear traditional clothes at all times, or want to eat alone because they learned so in the South. Migration also impacts what they drink, for example alcohol. All these things are impacted by migration and the change it brings about”* (EI2). In another expert interview, similar observations were made, highlighting the fundamental transformations that transpire in northern Ghanaian rural areas nowadays: *“There is a lot of change going on. Mobility and migration, access to internet or TV and education have brought about a lot of new modes of living and influenced cultural practices, especially those practices that maybe are considered outdated or barbaric. There are many examples, for example the ways of clothing, smoking, or playing loud music and dancing. Also, things like fried rice or fufu, or also new clothes come from migration influence from the South. A lot of these practices in fact came from the South”* (EI3). These migration-induced lifestyle changes have modified perceptions of habitability in different ways, and have been responsible for both positive and negative impacts on subjective well-being. Generalized conclusions on the interwoven relationship of lifestyle changes and migration for locally perceived habitability are accordingly mixed. Generally speaking, many indicated that these changes might be a necessary evil. Bar the increasing prevalence of alcoholism and drug addictions, which were seriously dampening perceptions of subjective well-being for the majority, most of the lifestyle changes were accepted to some degree in order to allow for the transformative power of positive changes.

5.4.3. Place attachment undergirds perceptions of well-being and serves to (re)direct migration

The frequent occurrence of statements like ‘I was born and bred here’ or ‘this is my hometown’ is a testimony for the high relevancy of place attachment in the Northern Ghanaian context more broadly, and in this community in particular. Ultimately, these well-rooted feelings of belonging to the birthplace can be explicated with the ‘hometown concept’, which holds a high value in Northern Ghana and is explained in more detail in the scientific article. As such, intentions to build up the own community, aspirations to return from migration, and entrenched feelings of responsibility vis-à-vis the hometown bear a high relevancy in the local context and significantly steer migratory pathways.

Changes in place attachment were only discernible on an individual basis and are fairly difficult to generalize on a community level. Generally speaking, place attachment has rather increased for the majority due to a combination of improved prospects in the research locale and a gradual process of realizing the benefits offered by the community when contrasting it to other places. The first aspect is closely tied to the very positive perception of the material and infrastructural changes that have significantly improved the quality of life in the community and have contributed to a positive trend with regard to the means necessary to sustain a living. For example, a female respondent stated the following when asked about the changes in her connection to the community: *“My attachment to this place was weak and shaken in the past but now, because of the amenities and the development here, my attachment has increased a lot”* (SSI3). In that vein, a respondent during one of the transect walks asserted that *“people are very proud of the community and want to stay here because there are many amenities and steady improvements now that even increase this pride”* (TW1).

Conversely, there have also been few respondents arguing that their level of place attachment declined as a result of getting to know other places. Oftentimes, these other places have been perceived as more modern and less backwards. For the most part, however, negative changes in place attachment were correlated to increasing perceptions of looming environmental risks and therewith associated fears about a future in subsistence agriculture. Emanating from these accounts is the realization that socio-cultural dimensions, like place attachment, retain a seminal role for configuring evaluations of habitability by influencing subjective well-being.

There are two major axes along which migration, place attachment, and habitability interrelate. The first of these axes postulates that migration can impact sentiments of place attachment in various and intricate ways, and thereby also serves to influence underlying levels of subjective well-being. Migration opens up communities to other places, which implies that notions of place attachment will undergo certain transformations. Eventually, increasing encounters with other locales in Ghana and beyond, and thus with differing socio-cultural frames, have the potential to reinforce, maintain or weaken existing place-based bonds to the community of origin. This analytical direction has been highlighted in more depth within the corresponding scientific article, but a few further examples will be expounded here as well.

Across the interviews and participatory walking journals, community members that have migrated often explained that these ventures, denominated 'travels' in the local language, in fact increased their place attachment. This realization pertained to the majority of participants and was based on a range of reasons. First, research respondents frequently highlighted that they have come to appreciate the security and tranquility of the research locale. More than one respondent explicitly foregrounded the fact that this community stood out in terms of peaceful cohabitation and lauded the conflict-free environment at hand, which was often contrasted to the experience of various intra- and inter-community quarrels in other rural locations. People were also eager to accentuate the freedom and the range of possibilities that this research locale offers to them, which was in stark contrast to the perception of other places, where the ownership of land and the opportunities for employment were characterized by high costs, constraining dependencies and pervasive insecurity. During one of the transect walks, a participant stated that *"this place offers independence, another reason why people come back. You have your own place here and you own fields, you can do what you want within the common community customs and rules. (...). When you are in your community, your home, and the place you belong, you know the rules and you know what is going on"* (TW1). This stance finds its expression in the ambivalent attitude towards migration, as this example from a female respondent illustrates: *"It is not by their will that my brothers migrate. When they migrate, the intention is to leave and make life better and get money, and they would also always come back"* (SSI12). As such, migration was critically scrutinized more often than not, and many respondents remarked that human movements have indeed shifted their perceptions of place, and in many cases, this entailed to view the hometown in a more positive light.

In any case, we would argue that a distinction has to be made in terms of positive and negative place attachment sentiments. A great deal of respondents clearly remarked positive levels of attachment that were correlated to the beauty of nature, the tranquility and calmness of the rural area, the sense of security and peace, neighborhood and family relations, friendship networks, and positive attachments to the farm. Such positive feelings are mirrored in very simple but deeply meaningful and emotionally-charged statements like *“most important to me is the farm where I feel happy”* (SSI8), *“in this place there is a lot of peace”* (SSI14), *“you are free and independent here”* (TW1) or *“I am very happy for my friends, they are all most important for my attachment”* (SSI5), which express a well-founded satisfaction with the rural day-to-day life and the possibilities given within this spatial frame. When asked about objects or issues that defined people’s place attachment to the community, many respondents picked valued objectives, places or formations of thought that seemed negligible and prone to oversight on first glance, but inhibit deeply rooted associations with the place at hand. For example, one respondent stated that she loved the act of collecting firewood in very close proximity and as a means to enjoy the natural surroundings. Another participant stated that the sound of the rain whilst being in her house was tranquillizing, compared to the stress and the noise experienced in the city, and yet another participant mentioned the market place as the location of familiar meetings and fortuitous encounters. On the other hand, negative sentiments of attachment included family responsibilities and obligations, such as taking care of children, an elderly family member, or the household at large. Notions like ‘this is my birthplace’ or ‘I am born and bred here’ were somewhat in-between positive and negative feelings of place attachment and were vacillating quite evenly between the two dimensions of attachment. In any case, such feelings of connection were seminally informing subjective well-being and intact people-place relations were considered as very important for a healthy, happy, and prosperous life in the community.

Being away for a prolonged period of time can evoke strong sentiments of grief and sorrow, emotions that are closely correlated with existing place-based connections. In particular, the longing for social interactions played a crucial role in many people’s perception of subjective well-being. When asked about the things that he missed the most whilst he was absent from the community, a respondent fittingly answered *“I missed happiness when I was away, so I wanted to come back. I also missed my friends and my relations that I have here. And lastly, I really missed my family”* (SSI14), which plainly underlines the feelings of loss and deprivation

that many migrants experienced. Place attachment can also be correlated to the role of ancestors and deceased family members that have their last resting place in the community. In one example, a respondent emphasized that *“my father died here and my mother died here, and my brothers as well, senior or younger, they died here and they are buried here and they are very unique to me and keep me here. If I go, they will always be in my head and I don’t want to leave them here”* (SSI20), implying that for him, migration is synonymous for leaving his loved ones behind, a sacrifice he is not willing to take.

This also leads us to the second axis of the interrelation between migration, place attachment, and subjective well-being. Ultimately, the high valorization for the hometown and fairly pronounced levels of attachment also serve to influence migration pathways and presuppose that migration trajectories are – for the most part – of a short and cyclic nature, entailing a return ‘back home’ for the majority. The example of one participant that migrated to Kumasi several years back serves to show that the period of sojourn in places other than the hometown can be correlated to a loss of cultural identity: *“Particularly me, I have a deep connection with traditions and want to stay connected to it. Whilst I was on migration and in Kumasi, those traditions are one of the major reasons why I felt such a pain to be away and this even increased my attachment. I also saw in Kumasi that people are having their own traditions and ways and I said to myself that I need to keep up my own traditions”* (SSI20). Moreover, people that were staying in the village – either voluntarily or not – were often citing a certain sacrifice that community members have to undertake in order to contribute to the maintenance of community cohesiveness and development: *“I believe, if people like me are not here regularly, there will be no development, and all the people and migrants would not bring the development if they do not return. (...). I am sacrificing myself by being here so that the positive developments for the community can happen”* (SSI2).

People held these perceptions whilst being highly aware of the potential risks that this place can offer, particularly regarding volatile environmental conditions: *“Although this place can be tough, you are from here and have to come back, it is the place of your roots”* (SSI26). The pronounced emphasis on the own hometown or the ‘roots’ also find its expression when undertaking comparisons to other places, most of which are assessed as a mere backdrop for making quick money and returning home: *“Accra is not even my hometown. Accra is owned by other people. Here is my hometown, nobody can chase me out of the community”* (PWJ4).

The entrenched role of place attachment involves return aspirations for many migrants, and these intentions are often connected to a certain 'desire' to build something in the community and 'make it great': *"I hope to improve the community and also built it up like Kumasi, and then we would not have to migrate all the time to Kumasi and other places. I went to Kumasi and never wanted to stay, but I always have the dream to improve this community and build something here"* (SSI20). Such intentions are closely related to the high valorization for people with an esteemed social status, which will be expounded in the next section. In any case, sentiments of place attachment are not only impacted by migration, but such manifestations of place-based identity can also contribute to steer migration pathways accordingly. We thus have a double-tracked relation between migration, place attachment, and habitability, which can serve to explain many migration-based strategies in this local context.

5.4.4. The role of migration-induced social status serves as a magnifier for subjective well-being

Social status, whereby this study especially focuses on the social status that is correlated to being an (un)successful migrant, holds a high value in the community. Almost all the mechanisms of social differentiation, and thus means of acquiring a position of status, can be connected to migration. In this particular local context, migration has often been utilized as a catalyst for obtaining an esteemed and widely-respected social status, with important implications for subjective well-being and habitability. Migration can greatly improve the social position of a person due to the value and meaning that is attached to migration. This stance is illustrated with example of a female migrant that had just returned from the South, which evokes the common perception that *"you are like the special person that does stuff and has seen a bit of the world and has been to places that other people have not seen. So your head will be held very straight and high up when you walk"* (SSI2). Moreover, the high valorization for migrants also pertains to a certain admiration for the bravery and the courage that is needed to embark on such hazardous journey. Many of the responses indeed mirrored images of 'traveling' into dangerous and faraway lands that offer the prospect of wealth and prosperity. Once the 'traveler' returns, the anticipation for intriguing stories, newly acquired knowledge, and material benefits is palpable. In turn, this can be reflected in a renewed level

of recognition for the migrant: *"When you leave, you can be nothing. You can just leave with an empty sack. But when you come back, nobody will ever know that you were the person leaving with an empty sack. You will have made something of yourself"* (SSI19).

However, high anticipations also come with high expectations, which puts a considerable burden on migrants' shoulders and implies that an elevated social status from migration is not tied to movement per se. Much rather, migration has to be connected to a certain benefit for the respective household or even the entire community at large. A respondent blatantly explains this link with the following statement: *"If you migrate to a different place and come back with money, then people will respect you. If you return without money, however, it will be more like: 'Why did you not bring anything' and then these people will be rather disrespected"* (KII4). This heavy burden is aptly depicted in the testimony of a return migrant who scrutinizes his own journey: *"The year I went to Accra, I went with someone else, and was struggling at first. After some time, the other person was already successful and bought a motorbike and brought it to the community. I wasn't able to do it and then I decided to better come home in order not to suffer a loss of respect in the community. I do not get lucky over there, which is why I don't want to go again. It was better for me to go home here and farm, because when I am away, people expect a lot and say 'why didn't you bring a motorbike?' But I couldn't do it, and so I rather went back in order not to have the shame of a bad migration trip and less pressure on my shoulders"* (SSI21). Argumentations like this vividly illustrate that people very well realize the correlated highs and lows of migration, whereby the height of fall can be considerable when expectations are not met.

A successful trip, however, is very well perceptible and proudly shown and accentuated in the community. In the end, it is crucial to exhibit the fact that the migration venture has been a success, because *"when you migrate, it only expresses itself when people see a difference"* (SSI10). One of these markers comprises the physical appearance of migrants, according to respondents signified by a certain aura of success and 'looking fresh'. Therewith correlated are certain material items that testify for a triumphant return, including the acquisition of bicycles or motorbikes, fitments and furniture in the house, electronic devices like TVs or mobile phones, or jewelry and cosmetic products of value. The following statement from one of the interviewees serves to further emphasize this intriguing relationship: *"The way of life is influencing them a lot (the migrants in Accra or Kumasi, note). They will come back with a lot*

of new clothing, very nice clothes and will look fresh. Some people will also go and hustle a lot and will get motorbikes. The migrants then come back and look very well and powerful on their motorbikes and have a certain aura, and other people also want to be like them and wish to copy their lifestyles and also aim to go and gain the same position” (SSI25). However, there is an important caveat to the public presentation of being a successful migrant. An elevated social position is only guaranteed, especially for a prolonged period of time, when people also underline it with the right attitude, and this was emphatically emphasized throughout. Simply put, *“if you do not conduct well upon return, the status is gone very quick”* (PWJ1), which implies that a good and righteous attitude is always the foundation for a respected social standing. This in turn implies that a high social position that solely stems from showing off and owning money is not earmarked by a long duration. Rather, a lasting and well-respected social status only emerges when the returning migrant has contributed with something that aids the respective household or even the entire community for years to come.

This implies, in turn, that a social status is not solely based on migration alone, but migration much rather offers the ability to improve a given social position in the community. A great example for a migration-induced uplift in status is provided by a farmer, who was able to significantly expand his business with the knowledge he acquired during his journey. In the area of Kumasi, he learned the craft of raising animals, but was always longing for a return because of his profound attachment to the community. Upon his return, he proceeded to build up a poultry farm himself, utilizing the experience he gained from his migrant occupation, and soon broadened his portfolio by rearing rabbits as well. This was entirely unknown in the community and represented a migration-induced innovation. Whilst the community members were skeptical about his plans and thought that rearing rabbits would be prone to failure because of their elusive nature, the right skills brought from migration enabled him to persevere. Now, he is one of the most successful farmers in the community and people regularly visit him for advice. He is well respected and has a high social status, which, according to his perceptions, improves his subjective well-being to a great extent.

A high level of respect was also reserved for those that went on a migration journey and redirected the benefits towards the entire community, for instance by setting up public facilities or investing in various community needs. In such cases, migration can directly contribute to bring people together and subsequently feeds back to improve the level of

community cohesion and support. A successful migration venture and the corresponding award of a prestigious position also involve trickle-down effects, which can contribute to elevate the social status of the whole family. Such effects can transpire along different axes and ensures to engrave the social standing of the respective catalyst: *“Even if they (migrants, note) do not come with money, they come with experience. They come with ideas and bring tools for a shed, or can build something for the father or can make a cloth for the mother. Also the parents then have a higher social status because the migrants use their money or experience to improve their parents’ life and thus increase their level of respect”* (SS18).

During one of the transect walks, the respondent stopped at a large house and told us the story of the owner, a successful farmer who had worked very hard until he was able to collect enough money to facilitate a migration venture for his son to Dubai. The son, well-established in Dubai at the time of the interview, has now utilized the money from the occupation abroad to enable his father a visit to Mecca. As a result of this trip, the father now holds the title of an Al-Hadj, which is a highly respected title of a spiritual leader that has been to Mecca and can now teach the Quran in the community. Ultimately, the migration venture to Dubai that has been ignited by the hard work of the father has paid off for this family, who is well respected and benefits from this social position. Positive impacts of migration for the avail of the whole community were also raised in one of the expert interviews: *“Some benefits, like a new beautiful house or a shop, can also trickle down. For example, newly built houses can upgrade the community landscape or a business can lead to work. So migration impacts might trickle down on the community and have some community impact”* (EI2). In this case, intrinsic dynamics of prestige and recognition play a crucial role and underpin the process of actively striving for such community-wide benefits that enhance subjective well-being.

The intention to ‘climb up the ranks’ and become a respected member of the community had a great role to play in many people’s ambition to ‘stay here and build something’ by themselves, which correlates with migration pathways in intricate ways. Because other people in the community can visibly perceive what kind of admiration migration can entail, this underlying relevancy of social status directly contributes to ignite further migration. However, the prerequisite to exhibit the success of migration in situ, combined with well-entrenched sentiments of belonging to the ‘hometown’, also imply that most of the migration benefits, and indeed most of the migration pathways per se, are in fact (re)directed back to the

community. When we asked one of the participants whether people are proud of the community, and if that is a reason for the high number of returnees, he answered with an emphatic sign of consent: *“There are many things that make people come back to the village: First and foremost, family ties and relationships, then also friends, and especially the status that you acquire when you come back, which is a major factor for people to come back”* (TW1).

This relationship between place attachment and social status also becomes apparent through the fact that most of the long-term migrants build houses in the community. This is independent from their actual return aspirations and is part of a culturally-embedded valorization for the hometown in Northern Ghana, where it is considered an obligation to own a house in the community of birth. A noncompliance with these tacit rules is not well esteemed: *“If you have no house or no place to sleep, you have to ask a friend and stay at his place, which is very embarrassing. So many migrants build a house here once they return or when they visit”* (TW2). Such well-rooted physical anchorage of social status was also mentioned in one of the expert interviews, where the increasing relevancy of such practices was underlined with the ascertainment that *“people are now trying to influence where they come from and want to build something. You lose a certain status or standing when you do not have a house or a structure where you are from. So your social status as a male will be defined by this attachment as well”* (EI6). The meaning associated to the ownership of a house in the birthplace is crucial in the respective socio-cultural context and adds another layer of complexity to grasp the interrelation of migration, socio-cultural dimensions, and habitability.

Another example perfectly aids to illustrate the close connection of migration-induced social status to various other socio-cultural dimensions in the community and demonstrates how the boundaries between these dimensions are indeed fluid. During one of the participatory walking journals, the female respondents stopped in front of a mosque in the center of the village and commenced to narrate a story about a man from the community who was not known for a high social position, but was fairly successful on a migration journey. When he came back, he started to build this mosque, one of the first in the village, with the funds that he had acquired, and thus provided the community members with a shared space of prayer and mutual encounter. As a result, his social standing in the community rose considerably and people were praising him for his efforts. More than that, he also contributed to bring along the influential role of Islam and thus directly contributed to the ongoing transformation of

lifestyles. Lastly, he has helped to bring people together and ignited a sense of community cohesion on a neighborhood scale. The female respondent herself was deeply impressed with this background and correspondingly ended her story with the words *“the social status has influenced me in a way. (...). If I migrate to gain a good, formal education, I also want to come to the community and build something here, make a development”* (PWJ5).

As such, social status is closely interlinked with all of the other socio-cultural dimensions and, based on its complex interrelation with migration, serves to reinforce and preserve the socio-cultural integrity of the community. For some members that had not migrated yet or had done so only with limited success, the omnipresent portrayal and embodied valorization of social status in the community served as the ultimate impetus to improve the community and receive the associated recognition. Correspondingly, migration-induced peculiarities of social status exhibit ample potential to influence subjective well-being to a positive end. Moreover, this interrelation also underlines how socio-cultural dimensions have the potential to alter migration trajectories and thus serve to impact perceived habitability, likewise.

6. Discussion

This discussion section serves to merge the extended results with the findings in the corresponding scientific paper by embedding them both in hitherto research on environmental change, migration, and the role of socio-cultural context. The empirical results of the research in Northern Ghana have yielded some important insights on the role of socio-cultural dimensions for configuring perceived habitability in an environmental change-prone area and have highlighted the important, mediating role of migration in the process. In particular, the study has illustrated that place attachment, social status, lifestyle changes, and community cohesion represent some of the underlying socio-cultural dimensions that are of seminal relevance for perceived subjective well-being in the community and substantially undergird overall conceptions of habitability by interacting with migration. Indeed, human well-being is more complex than tallying all material and tangible needs, but also extends towards immaterial conditions, all of which are tied to cultural context (Camfield and Esposito 2014). Assessing the habitability of places without an incorporation of socio-cultural context(s) and migration patterns will ultimately render fragmentary and incomplete results, which can have severe repercussions for the design and the implementation of adaptive strategies.

Perhaps the most important socio-cultural dimension for subjective well-being in the community is place attachment, conveying notions of belonging and a profound place-based identity. In other works, place attachment has been earmarked as a crucial component with regard to well-being because people can derive meaning and security from a well-rooted sense of place, which is ultimately contributing to resilience (Fresque-Baxter and Armitage 2012, Adger et al. 2013). Importantly, communities that showcase high levels of attachment and a distinct place-based identity, which can be influenced by migration to both positive and negative ends, have been found to show more incentives towards collective action, perceive environmental changes to a higher degree, and seem to share the responsibility of environmental change adaptation and sustainable resource utilization (Mishra et al. 2010, Devine-Wright 2013, Smith et al. 2012). As such, people often assume certain tradeoffs between their aspirations of movement, for instance with the aim to increase livelihood security or in order to obtain a better educational career, and their culturally-informed understanding of subjective well-being that is essentially rooted in their close connection and attachment to the place they value the most (Adams 2016).

Moving away from the place where people have formed an attachment to invoke changes in sentiments of place attachment, in particular through comparisons with the other experienced localities. In research works of Tschakert et al. (2013) and Tschakert and Tutu (2010) in Northern Ghana, an 'endemic sense of belonging' to the community of origin clashed with narratives about scarcity and environmentally-induced loss. Whilst our study largely found positive notions of attachment in our community, serving to redirect many migratory pathways and the therewith associated benefits, the case of Tschakert et al. (2013) and Tschakert and Tutu (2010) rather points toward an increasing loss of hope with regard to the situation in rural and resource-dependent areas. On the other hand, Jarawura and Smith (2015) also found that many former migrants stated their conscious decision to remain in their respective community from now on, emerging largely from the fact that the experience of other places did not meet respondents' expectations. This is quite similar to our case, where many former migrants stated that the time spent away from the community actually served to increase their place attachment, and thus revitalized notions of subjective well-being upon return. Connecting these findings with our results, where a range of material improvements served to increase place attachment and corresponding levels of subjective well-being, we suggest that the gradual amelioration of rural livelihoods and more promising future prospects can serve as an important impetus for social units to remain in or return to the place they value and where they have formed their place-based identity.

Migration has brought along a plethora of lifestyle changes in the community, ranging from modified ways of eating and preparing meals, alcoholism and drug abuse, a shift in religion and spirituality, up to the incremental refurbishment of the community by means of modern block houses. In a study in Northern Ghana, Cassiman (2008) found similar transformations emerging through both male and female migration that sees the introduction of new cooking pots, furniture, modern electronic devices, or a change in physical appearances and style. Most important in her study, however, is the change of housing and corresponding means of cohabitation. In this example, the increasing set-up of modern exterior and interior architectural styles starts to nibble on traditional ways of living. In an example from Tanzania, Salazar (2010) found that returning migrants likewise mirror the adoption of 'Western' and urban practices, whereby he especially mentions the growing spread of mobile phones as well as practices of smoking. As such, they are contributing to transform the places of return and increasingly introduce glimpses of different worlds. This shift in lifestyles thus also serves to

refurbish the role of agriculture and pastoralism. Most returning migrants uttered their “*wish to remain pastoralists (albeit not in a traditional way, but making use of modern commodities and new information and communication technologies) and politically as well as socio-culturally independent*” (Salazar 2010: 63). Especially the latter addendum is of vital importance and mirrors findings from our study where participants longed for the maintenance of their very own cultural integrity. This notion is also present in two research cases in Mozambique, where farmers explicitly stated their desire to remain in place because of a strong adherence to traditional ways of life. Even in a situation of increasing environmental hardship, the quest for upholding these lifestyles weighted more than potential benefits of relocation (Arnall 2014, Artur and Hillhorst 2014).

Migration impacts subsequently also served to influence the subjective well-being of the respondents, albeit not in a straightforward and clear-cut manner. Opinions were quite diversified and were dependent on the respective speed and the impact on personal and community-based cultural values. Comparable evidence is delivered by a study of Agyemang (2012) in Northern Ghana, stating that the underlying cultural dimensions have been significantly altered over the recent years, mostly due to an increasing influence outside lifestyles. Similar to the results depicted in this paper, such transformations included an eminent change in values and morals, especially concerning the younger generations, that ultimately served to undermine efforts to protect the natural environment. However, not all lifestyle changes in our community were correlated to negative perceptions of habitability. For instance, the migration-induced transformation of religion and spirituality was perceived to influence subjective well-being positively. Similar evidence emerges from a study by Tschakert et al. (2013) in Northern Ghana, stating that the shift in beliefs tallies with a “*newfound presence of morality*” (Tschakert et al. 2013: 21). Taking the role of lifestyles seriously is also advocated by Adger et al. (2013), stating that an acknowledgement of locally-based values and corresponding lifestyles is vital for avoiding discrepancies in the perception of adaptive strategies that are designed by external government bodies.

Our study has shown that migration also tallies with existent levels of community cohesion and bears ample potential to decrease intra-community support, interaction, and togetherness. In a similar vein, Adger et al. (2013) connect a decline of population through increasing out-migration with a loss of community cohesion, cultural continuity and adaptive

capacity. However, intact levels of community cohesion have been perceived as fundamental for subjective wellbeing, especially because of much needed social exchanges, family relationships, and safety nets in times of need. For instance, Qin and Flint (2012: 5) expound on the relationship between an intact level of community cohesion and habitability: *“When higher community interaction leads to improved community structure and quality of life, individual households are more likely to achieve livelihood security.”* Other studies have also found that such interactions are fundamental to enhance community resilience, which eventually feeds back on the maintenance or the improvement of subjective well-being as an important part of locally perceived habitability (Brown and Westaway 2011, Chaskin 2008, Qin and Flint 2012). In a study in Northern Ghana, the absence of community-based institutions and collective values was directly linked to the uncontrolled spread of detrimental human practices, thereby including bush burning, firewood cutting, or unsustainable farming practices (Agyemang 2012). Additionally, Robson and Nayak (2010) also found evidence that increasing out-migration and a subsequent loss of intra-community interaction can threaten collective adaptive strategies and resource management responsibilities in both India and Mexico. As such, intact levels of community cohesion and therewith associated collective action capacities substantially shape the effectiveness of common adaptive practices and directly feed back to affect subjective well-being as important proxy for habitability.

Lastly, another socio-cultural dimension that emerged to be highly relevant for subjective well-being during the field research concerns the role of social status. Because social status assumes such a seminal role in selected socio-cultural contexts, the option to enhance one’s social status with migration is a well-adopted practice. In another study in rural Ghana, migration journeys were perceived as *“small adventures”* that offer *“the chance to see some city lights”* (Schraven and Rademacher-Schulz 2015: 272). Migration as a form of social mobility (Sow et al. 2014) thus has a high relevancy in the Ghanaian context and suggests that migration impacts are also affecting prevalent modes of societal organization. The importance of social status as culturally-rooted dimension that informs existing social structures is also highlighted by Carr (2019, 2020), who shows that farmers in rural Ghana adhered to their social status as a signifier for authority and power in any circumstance, even if giving up parts of this social status would lead to improved means to sustain a living. Comparable to our case study, Jarawura and Smith (2015) found that the recognition that is tied to migration can entail that other community members *“are keen to follow in the footsteps of their peers”* (Jarawura

and Smith 2015: 262), which correlates with heightened incentives for movement. This is vividly depicted in the case of Cassiman (2008) as well, also pertaining to a Northern Ghanaian context, where the migrant is compared to the mythic figure of the nomadic hunter. The emergent position is highly valued in the socio-cultural context of the Kasena, and correlates with the ambition to *“return to one’s homelands with one’s savings and purchased goods, and become a “big man””* (Cassiman 2008: 15). In line with our results, many migrants opted for the redirection of migration benefits to their community of origin, for instance by building up modern housing structures. The relevancy of social status thus contributed to steer migration impacts back to the community. Social status emerging from migration can have an important role of fostering subjective well-being and resilience by bringing people together. This especially holds true for people with a high social status that emerge as respected carriers of knowledge (Qin and Flint 2012, Barnett and Webber 2010).

Taking the role of both migration and the underlying socio-cultural dimensions seriously is absolutely crucial to guarantee effective and well-adjusted responses in areas that have to grapple with the accruing impacts of environmental change. Following Adger et al. (2013: 115), *“new insights into how culture interacts with climate-related risks could radically alter understanding of social responses to climate change, and affect how adaptation policies are designed.”* In addition, however, we also have to consider that migration as a dynamic social mechanism has the potential to impact those underlying socio-cultural dimensions, and thus contributes to shape perceptions of subjective well-being. Ultimately, the interrelation of migration and socio-cultural dimensions, and their combined effect on subjective well-being, will inform whether individuals or social units perceive particular places to be (still) habitable. Eventually, this comes down to the substantial role of places and their own socio-cultural distinctiveness. Eriksen (2016: 470) states in that regard that *“the drive to standardization, simplification and universalization is usually countered by a defence of local values, practices and relationships”*. Migration as a means of connectivity between those globalizing forces and sites of rurality can severely shape this tension and contributes to ignite transformative socio-cultural change, with ample relevancy for perceived habitability. Taking this interrelation seriously thus emerges as a momentous task for future research in order to allow locally-embedded social units to enhance or maintain their livelihoods all the whilst retaining their desired level of cultural integrity.

7. Conclusion

The combined research results from both the framing text and the corresponding scientific article indicate a double-tracked interrelation of migration and the underlying socio-cultural dimensions at hand. On the one hand, migration serves to impact local levels of habitability by affecting the underlying socio-cultural dimensions and thereby ignites social and cultural change, which ultimately feeds back on the subjective well-being of community members. On the other hand, the relevancy of the underlying socio-cultural dimensions for subjective well-being in situ also contributes to steer and shape migration pathways and thus caters for the (re)direction of corresponding migration impacts – both positive and negative – back to the community of origin. Whilst the first direction of this relation is portrayed in detail in the scientific article, this framing text has added additional insights on the latter aspect. As such, migration assumes a vital role of mediation between predominant socio-cultural context(s) and perceptions of overall habitability in the study area. This cultural embedding of migration and the importance of subjective well-being thus has to be considered for analyzes that identify the habitability of places under the aegis of environmental change and calls for well-tailored and context-appropriate strategies that aim to improve local levels of resilience.

8. Scientific Article “Shifting the boundaries of habitability? The impact of migration on subjective and culturally-embedded well-being in a context of environmental change in Northern Ghana”

Title: Shifting the boundaries of habitability? The impact of migration on subjective and culturally-embedded well-being in a context of environmental change in Northern Ghana

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Paper submitted at ERDKUNDE – Date of submission: 21.03.2023

8.1 Abstract

Environmental and climate change is increasingly threatening the habitability of places around the world, particularly with regard to resource-dependent rural areas in the Global South. Migration is a well-established household risk diversification strategy that has the potential to increase people’s adaptive capacity, their well-being, and influences the way people perceive the habitability of places. We argue that subjective well-being is an important constituent of habitability, which is inherently influenced by the respective socio-cultural context(s). Any assessment of habitability therefore necessitates the exploration of underlying socio-cultural dimensions. This study utilizes a process-based and human-centered approach to habitability in order to unravel the impacts of migration on culturally-embedded subjective well-being in a rural community in Northern Ghana which faces increasing pressure of environmental and climatic changes. Based on qualitative empirical research, our results illustrate that migration can modify perceptions of subjective well-being to both positive and negative ends through its effect on place attachment, social status, and community cohesion. Positive impacts on these socio-cultural dimensions can enhance subjective well-being and serve to undergird (collective) responsibility and adaptive action towards improving local habitability in parallel to maintaining cultural integrity. Integrating this knowledge in future habitability assessments can pave the way for context-sensitive and locally-adjusted resilience-building strategies that take the potential benefits and disadvantages of migration into account.

Die Bewohnbarkeit von Orten wird durch weitreichende ökologische Veränderungen zunehmend unter Druck gesetzt, was insbesondere ressourcenabhängige ländliche Gebiete vor Herausforderungen stellt. Migration kann als Anpassungsstrategie dazu dienen, das von Populationen wahrgenommene Maß an Bewohnbarkeit zu verbessern. Subjektives Wohlbefinden kann als wichtiger Bestandteil von wahrgenommener Bewohnbarkeit aufgefasst werden und ist inhärent mit den jeweiligen soziokulturellen Kontexten verbunden. Diese Studie verwendet ‚Habitability‘ als prozessbasierten und menschenzentrierten theoretischen Rahmen um die Auswirkungen von Migration auf das kulturell eingebettete, subjektive Wohlbefinden in einer ländlichen und von Umweltwandel geprägten Gemeinde im Norden Ghanas zu analysieren. Die Ergebnisse dieser empirischen Studie veranschaulichen, dass Migration die Wahrnehmung des subjektiven Wohlbefindens durch Auswirkungen auf Place Attachment, den Zusammenhalt in der Community, und sozialen Status als wesentliche sozio-kulturelle Dimensionen sowohl positiv als auch negativ verändern kann. Positive Auswirkungen können das subjektive Wohlbefinden steigern und dazu dienen, (kollektive) Verantwortung und adaptives Handeln zur Verbesserung der lokalen Bewohnbarkeit zu fördern, was parallel auch mit der Wahrung kultureller Integrität einhergehen kann. Eine Berücksichtigung solchen Wissens in zukünftigen Bewertungen von ‚bewohnbaren‘ Orten kann eine wichtige Grundlage für angepasste und kontextspezifische Strategien zur Stärkung der Widerstandsfähigkeit in ruralen Gemeinden darstellen.

Key words: Habitability, migration, environmental change, socio-cultural dimensions, Northern Ghana

8.2 Introduction

The evolving and intensifying process of environmental and climate change is increasingly threatening lives and livelihoods of people around the world – particularly regarding vulnerable populations in the Global South (ADGER et al. 2003, THOMAS et al. 2019). Fittingly, FRESQUE-BAXTER and ARMITAGE (2012: 261) projected in 2012 that *“climate change will redefine the relationships people have with place”*. The question of habitability is therefore moving into the center of the global climate change debate (BORDERON et al. 2023). However, it is well acknowledged that environmental and climate change will not affect everybody in the same manner, as impacts are socially differentiated across places and accompanied by a broad spectrum of diverse societal responses (HERBECK 2015, ADAMS and KAY 2019, BRACE and GEOGHEGAN 2011). One of the key strategies to deal with environmental and climate risks is human migration, which has the potential to increase people’s adaptive capacity, their well-being, and influences the way people perceive the habitability of places (FAIST and SCHADE 2013, HORTON et al. 2021, BARNETT and WEBBER 2010, ADAMS and ADGER 2013a).

Apart from the influence on the material foundations of habitability, migration can also have an effect on subjective well-being, which can be considered as an important constituent of habitability. Because subjective well-being is inherently tied to the underlying socio-cultural context(s) (THOMAS et al. 2019, ARMITAGE et al. 2012, DENEULIN & MCGREGOR 2010), an analysis of migration impacts on habitability presupposes a recognition of underlying socio-cultural dimensions. Indeed, *“culture, and its analysis, is central to understanding the causes and meaning of, and human responses to climate change”* (ADGER et al. 2013: 112), and thus has to feature more prominently in studies that link habitability, migration, and environmental change. However, COTE and NIGHTINGALE (2012: 479) posit that *“the reliance on ecological principles to analyse social dynamics has led to a kind of social analysis that hides the possibility to ask important questions about the role of power and culture”*. In hindsight, existing portrayals have remained remarkably abstract and detached from real life-worlds, ostensibly omitting the fact that environmental change is a highly subjective matter (HULME 2008, OFFEN 2014). At last, it seems that socio-cultural dimensions *“still remain a significant missing piece of the puzzle”* (WIEDERKEHR et al. 2019: 11), which urgently demands for further research efforts.

The paper seeks to close this gap by analyzing the socio-culturally mediated impact of migration on perceived habitability by using subjective well-being as a proxy. The research is based on a mixed-method qualitative fieldwork which has been carried out over six weeks in a rural and risk-exposed community in Northern Ghana. Northern Ghana is a particularly suitable example due to its diverse migration history and the continuing importance of human movement. We apply a dynamic and human-centered approach to habitability, which is informed by a socio-ecological systems perspective, and thereby analyze subjective well-being from a socio-cultural lens. We identify place attachment, social status, and community cohesion as important socio-cultural dimensions of habitability, which are substantially impacted by diverse migration processes. We further show that this influences subjective well-being to both positive and negative ends, with corresponding implications for local perceptions of habitability.

Comprehending both the relevancy of underlying socio-cultural context(s) and the mediating role of migration can foster our understanding how societies render rapidly changing socio-ecological systems 'habitable' and can partly explain the differentiated responses within and between populations to similar environmental risks. An understanding of migration impacts on subjective well-being then serves to facilitate the implementation of well-tailored approaches for increasing resilience and strengthens the level of acceptance for measures that will likely fail without an appropriate cultural background check. In the following section, we provide a synopsis of hitherto research on socio-ecological systems, the role of socio-cultural dimensions, and migration, whilst we proceed to present the underlying habitability framework in the third section. Fourth, we delineate our methodological approach before presenting our results in the fifth section. Lastly, we embed our results into existing studies on environmental change, migration, and the role of socio-cultural context(s). The study contributes to the application of the habitability framework by accentuating the underestimated role of socio-cultural dimensions for configuring 'habitable' spaces and gives rise to a more rounded understanding of corresponding migration impacts, thereby providing fresh incentives for fully comprehending the complexity of the environment-migration nexus.

8.3 Understanding the habitability-migration nexus socio-culturally

The concept of habitability is gaining importance in research on environmental and climate change (FARBOTKO and CAMPBELL 2022, SHERWOOD and HUBER 2010, DUVAT et al. 2021, STORLAZZI et al. 2018, HORTON et al. 2021). However, habitability is often viewed from a standpoint that centers changes in the natural environment, thereby neglecting the crucial human dimensions in coupled socio-ecological systems. For instance, the IPCC defines human habitability as “*the ability of a place to support human life by providing protection from hazards which challenge human survival, and by assuring adequate space, food and freshwater*” (IPCC 2022: 2911). We contend that such definition, whilst certainly applicable in contexts of high or even existential risks (KEMP 2023, HUGGEL et al. 2022), is too narrowly focused on hazards and basic needs as the primary and unequivocal determinants for habitability. This focus downplays the crucial role of social, economic, political and cultural factors for habitability. Furthermore, the dimension of subjective well-being, which we argue to be central for understanding how people perceive the habitability of a certain place, is neglected so far. In their paper, HORTON et al. (2021: 1280) define habitability as “*the environmental conditions in a particular setting that support healthy human life, productive livelihoods, and sustainable intergenerational development*” and add that environmental change might compromise basic human survival, livelihood security and a society’s capacity to manage risks. Our work builds on this seminal contribution with the aim to expand the understanding of the human dimensions of habitability. We do so by focusing on the impacts of migration on culturally-embedded and subjective well-being as a crucial building block for local perceptions of habitability.

Our understanding of habitability draws on the socio-ecological systems (SES) research, which emphasizes that a separated analysis of social and ecological systems is inherently counterproductive (BERKES et al. 2003, GLASER et al. 2008, MILKOTREIT et al. 2018). Such understanding is related to the assumption that the social ultimately acts as either catalyst or obstacle for transformative change in socio-ecological systems (CARR 2019). Concomitantly, recent research has incrementally highlighted the role of culture in perceiving and understanding environmental changes and underlines the close correlation of socio-cultural dimensions with the ability to adapt and build resilience (FRESQUE-BAXTER and ARMITAGE 2012,

THOMAS et al. 2019, ADGER et al. 2013, DOW et al. 2013). DENEULIN and MCGREGOR (2010) state that people's perceptions essentially determine their scope and intent for action, whereby such cognitive processes are ultimately coined by culturally-embedded values and norms. This notion is essential for grasping how different social units perceive their subjective well-being and subsequently render specific locales 'habitable'.

Recent contributions on the role of socio-cultural aspects in research on the environmental change-migration nexus (e.g. PARSONS 2019, ADAMS 2016, WIEDERKEHR et al. 2019, ADAMS and ADGER 2013b) have created a fertile ground to expand HORTON et al.'s (2021) elaboration on the role of migration for habitability through a stronger acknowledgement of the underlying socio-cultural context(s). The increasing engagement with socio-cultural dimensions also stems from the plethora of dendritic results in hitherto environment – migration research, even when pertaining to similar environmental risks or comparable geographical settings. This has led to the predication that *“human mobility (and lack of mobility) is driven by many cultural, psycho-social and emotional factors that can present little external logic and seem to defy generalization”* (ADAMS and KAY 2019: 130). Several studies have found that people explicitly express their desire not to move in spite of deteriorating environmental conditions, which can be explained with close cultural affiliations and place-based belonging for the most part (ADAMS 2016, ADGER et al. 2013, MORTREUX and BARNETT 2009, KHANIAN et al. 2019, WIEGEL et al. 2019). A reluctance to leave can tally with a certain paralysis towards (collective) adaptive action (DE DOMINICS et al. 2015), and thus undergirds the substantial need to better understand these emotional bonds. Because both decisions of migration and non-migration involve the reconsideration of underlying place-based identities, such decisions will ultimately affect subjective well-being. When people have to leave a place behind, the habitual routines that they have developed in their accustomed surrounding, and the place-based identities they have formed as a result, will undergo significant changes, shaped both by the loss of the customary place and the experiences gained in new locations (KELLY 2009, TSCHAKERT and TUTU 2010, TSCHAKERT et al. 2013, HUOT and RUDMAN 2010). However, positive ties to a place that are arising from social relations, positive memories, and a sense of security and safety can also serve as major impetus for returning home (RIETHMÜLLER et al. 2021, ISLAM and HERBECK 2013, HAUG 2008), which bears crucial effects for the subjective well-being of both returning migrants and the community. Following from these insights is the basic assumption that both

migration and (in)voluntary immobility can assert impacts on place attachment, which in turn effects the perception of subjective well-being.

Migration has also been found to impact levels of community cohesion, either by weakening existing social support systems, or by bringing the remaining members of the community closer together (ADGER et al. 2013, QIN and FLINT 2012). Social status represents another socio-cultural dimension that is linked to migration. In many contemporary African societies, such as in SALAZAR's (2010) example of Tanzania or the case of SCHRAVEN and RADEMACHER-SCHULZ (2015) in Ghana, migration is often correlated with upward socio-economic mobility and embodies perceptions of an urbanized and powerful identity. As a result, return migrants often emerge as highly respected carriers that can implement recently acquired knowledge to the benefit of the whole community, illustrating their potential as *"active agents of collective community response to ecological problems"* (QIN and FLINT 2012: 7, see also MORAN-TAYLOR and TAYLOR 2010). The effect of such migration impacts on culturally-embedded subjective well-being has not been high on the research agenda and thus mirror some of the human dimensions in socio-ecological systems that urgently require further empirical insights.

8.4 Conceptual approach

In this research, we use a human-centered and process-based framework of habitability that has the ability to incorporate conceptions and ideas from both physical and social sciences. Following STERLY et al. (forthcoming), we propose a wider framework that is more suitable to include an emic, human-centered perspective and also considers the crucial role of connectivity, implying that multiple places are linked across scales. STERLY et al. (forthcoming) define habitability as the material or immaterial properties of places (or socio-ecological systems) to afford a certain way of pursuing livelihoods that is linked to the ability of individuals, households and communities to sustain a living and their perceived understanding of well-being. With this definition, the habitability of a given locale is based on both ecological, physical properties of a place, and comprises the perceived, experienced and (co-)constructed social structures, emphasizing that habitability is ultimately based on the lived realities of the respective societies (STERLY et al. forthcoming). Such a framing of habitability is thus appropriate to uncover the *"deeply human assemblages of sociocultural, institutional, and*

biotic elements” (CARR 2020: 6) in socio-ecological systems altogether. We thereby combine the means to sustain a living with the notion of well-being, which is explicitly underlining the socio-psychological and subjective elements of human-nature relations. The underlying framework is based on many years of research on socio-ecological systems and derives rich insights from prior studies. These incorporate, inter alia, research on place utility (ADAMS and ADGER 2013a, 2013b, ADAMS 2016), nature’s contribution to people (DÍAZ et al. 2018, WIEDERKEHR et al. 2019), human carrying capacity (WARNER et al. 2010), and (societal) limits to adaptation (DOW et al. 2013, ADGER et al. 2009). Taking the framework of STERLY et al. (forthcoming) as a starting point, we explicitly aim to understand how migration can affect subjective and culturally-embedded well-being as a proxy of habitability by providing substantiating empirical evidence. In order to do that, however, we have to identify whether and to what extent underlying socio-cultural dimensions contribute to perceptions of subjective well-being in the first place.

Migration is linked to the concept of habitability via the notion of connectivity, which is broadly indicating that places are in steady and miscellaneous interrelation with other places, and across various scale levels. For instance, a local community can be interwoven with globe-spanning terms of trade for specific agricultural products, can be connected to political decisions made in the respective capital on a national scale level, or can be part of locally embedded networks and exchange relations (STERLY et al. forthcoming). Migration is one out of an array of mechanisms that enables such connection between people and places, facilitates the flow of both the material and the immaterial, and thereby influences all those interconnected places to varying degrees (STERLY et al. forthcoming). Migration interacts with habitability in a double-tracked fashion. First, migration as a vital household-based adaptation strategy involves perceptions of risk and an assessment of a locales’ underlying habitability (ADGER et al. 2021, HORTON et al. 2021). This implies that shifting levels of habitability can also alter migration patterns, for instance by reducing migration flows or by changing the seasonal character of mobility. On the other hand, migration also has the ability to influence habitability by contributing to heightened levels of resilience and mitigating changes in ecosystem service provision (ADAMS and ADGER 2013a, BLACK et al. 2011), but also by impacting the well-being dimension of habitability, shifting norms and values, and thereby igniting social and cultural change (NOWOK et al. 2013, CASSIMAN 2008, CASTLES 2012). In this paper, we specifically focus

on the latter aspect and show how migration can alter subjective perceptions of well-being by affecting underlying socio-cultural dimensions.

Our study attempts to specifically foreground the notion of subjective well-being within the habitability framework and heavily draws from ARMITAGE et al.'s (2012) rich theorization of well-being from a social lens: *"Although resilience thinking is predicated upon a social-ecological systems view, an entrée into the 'social' is required that moves beyond material assets, economic incentives, and individual rational behavior. In this regard, the social conception of well-being offers a holistic lens to understand the relational and subjective dimensions of the social world (along with the material)"* (ARMITAGE et al. 2012: 1). They define well-being as *"a state of being with others and the natural environment that arises where human needs are met, where individuals and groups can act meaningfully to pursue their goals, and where they are satisfied with their way of life"* (ARMITAGE et al. 2012: 3, adapted from MCGREGOR 2008), and specifically emphasize the tripartite structure of material, relational, and subjective well-being. Moreover, we tally with the idea that *"human wellbeing must be comprehended as being socially and psychologically co-constituted"* (DENEULIN and MCGREGOR 2010: 510), implying that human perceptions, experiences, and actions are ultimately embedded in the societal and cultural contexts they are part of. We explicitly center the notion of subjective well-being, which focuses *"on people's feelings and evaluations"* (CAMFIELD 2006: 4) and circumscribes *"cultural values, norms, and belief systems"* (ARMITAGE et al. 2012: 4), thus providing the link to our application of socio-cultural dimensions.

With regard to socio-cultural dimensions, we utilize the delineation of ADGER et al. (2013: 112), who define cultural aspects as *"the symbols that express meaning, including beliefs, rituals, art and stories that create collective outlooks and behaviours"* and tally with the idea that *"climate change threatens cultural dimensions of lives and livelihoods that include the material and lived aspects of culture, identity, community cohesion and sense of place."* A much broader scope by THOMAS et al. (2019: 8), defining culture as *"the shared and patterned meanings held by members of social groups"*, also aids our understanding of culture as mutually agreed and collectively expressed practices that are bound up in a certain social unit whilst at the same time overlapping and co-evolving in reciprocal relation to other cultural frames. We specifically focus on place attachment, social status, and community cohesion as socio-cultural dimensions of seminal meaning in the specific local setting at hand and

foreground their relevancy for subjective perceptions of well-being. Our situation of socio-cultural dimensions within the notion of subjective well-being is rooted in the idea that *“the ‘well-lived life’ is in significant measure culturally defined and is likely to find a different realization among Alaska Natives, Chesapeake Bay watermen, and Oakland urbanites.”* (THOMAS et al. 2019: 10), thereby emphasizing that diverse cultural frames also condition different conceptions of ‘what well-being is’. Eventually, resilient livelihoods in socio-ecological systems are based on a continuous balancing act between material needs and well-being in such a way, that emergent changes within SES are integrated into existing social configurations (CARR 2020). Following these considerations, we are able to conceptually comply with the imperative need to bring *“hard, structural dynamics”* and *“softer intimate and normative dimensions”* (PARSONS 2019: 10) closer together in a framework that is first and foremost based on locally-anchored, subjective accounts of those who are affected by environmental change the most.

8.5 Study design and methods

Based on our research framework, a qualitative mixed-method research design has been implemented to collect empirical data for the study. The research design is underpinned by the logic of a place- (FRESQUE-BAXTER and ARMITAGE 2012, HULME 2008, BRACE and GEOGHEGAN 2011, HERBECK 2015) and perception-based (ADGER et al. 2021, PARSONS 2019) research which also acknowledges the need for flexibility (KLENK and MEEHAN 2015) during the fieldwork. Whilst a place-based starting point counterbalances the prominence of large-scale analyses that *“remain at an abstract level of scale, which is not where life takes place”* (ERIKSEN 2016: 471), the focus on local perceptions seeks to prevent an *“epistemological falsehood”* (PARSONS 2019: 13) of interpreting culturally-specific processes from an ‘ivory-tower view’. We purposefully kept the delineation of ‘what environmental change is’ and which changes emerge to be relevant for local habitability up to the respondents. Moreover, the final selection of socio-cultural dimensions was only conducted after the initial phase of data collection and resulted in the exemplary display of social status, community cohesion, and place attachment as the aspects that exhibited the most interesting linkages with migration and habitability. As a result, we had to omit certain other socio-cultural dimensions that would

have gone beyond the scope of this paper but are every bit as relevant. Most of them have been subject to other research endeavors in Ghana and include, inter alia, the role of family and kinship relations (SOW et al. 2014, ABDUL-KORAH 2011), the transformation of lifestyles (CASSIMAN 2008), changing linguistic dynamics (ANSAH 2022) and gender-based mechanisms of social differentiation (MERSCHROTH et al. forthcoming, AHMED et al. 2016).

The empirical field research was carried out in a rural community in the Tolon district of Northern Ghana between August and September 2022 by the first and last author of the paper. Exposure to environmental and climate risks, the prevalence of resource dependent livelihoods, as well as the historically-embedded importance of migration were criteria which guided the site selection. It was our aim to gather information on community as well as individual levels of analysis. Whilst the first phase of the fieldwork placed a particular focus on the changes in locally perceived habitability over the last 20 years and centered the respective relevancy of socio-cultural dimensions in the process, the second phase turned towards the impact of migration on the three selected socio-cultural dimensions. In total, 26 semi-structured interviews (SSI), 10 expert (EI) or key informant (KII) interviews, 2 focus group discussions (FGD), 2 transect walks (TW) and 5 participatory walking journals (PWJ) were conducted, involving 21 males and 15 females, excluding the expert interviews and the FGDs. The utilization of participatory walking journals is derived from TSCHAKERT et al. (2013) and constitutes a mobile interviewing technique employed to understand participants positioning in space and place. Through 'knowing by walking' (INGOLD 2010) and 'peripatetic interviewing' (WIEDERHOLD 2015), participants can actively situate themselves within their surrounding and can show places, objects, or formations of thought that are of relevance to their own perception of habitability, migration, and cultural identity. Participants were selected on the basis of their migration background and with the intention to delineate a diversified community migration profile. The selection thus includes current migrants (visiting home at the moment or have migrated in the last year), former migrants (have returned for a period of one or more years already), and non-migratory actors altogether. The latter group incorporates those segments of the population that are immobile, either voluntarily or involuntarily. The data collection process was undertaken with the help of two locally-embedded research facilitators, involving the simultaneous translation of respondents' information and the co-coordination of participatory methods. The obtained data were later transcribed and clustered into segments of results using MAXQDA coding software.

8.6 Results

The following section circumscribes the main results of the empirical study and thereby especially foregrounds the seminal relevancy of socio-cultural dimensions and the respective impacts of migration on culturally-embedded and subjective well-being in the study locale. The research area is located in the West African Guinea savannah belt, characterized by a unimodal rainfall regime that exhibits one annual rainy season, usually from April/May to October, and a dry season from November to late April. The large majority of the population is dependent on rain-fed subsistence agriculture and major crops include maize, beans, groundnuts, guinea corn, and rice. Participants estimated the size of the community with about 3000 to 4000 inhabitants, a number that has been exponentially growing in the last 20 years. Migration is highly prevalent and plays a vital role for livelihood security, which will be explicated in more detail in the following.

8.6.1 General perceptions of habitability and the role of environmental change

Participants of the study perceived the overall level of habitability to have developed quite well over the last 20 years, which is pertaining to a steady enhancement with regard to the material means necessary to sustain a living. Such changes were manifold and affected diverse aspects in the day-to-day community life, but most prominently mirrored a range of infrastructural developments. For instance, the road network has improved and the community also saw a true surge in motorized vehicles over the last 20 years, underpinning the general meaning of connectivity for habitability. Infrastructural improvements also concern the set-up of electricity and network, the recent supply of mechanized boreholes that facilitate access to water, the set-up of a small clinic for basic health care and the provision of a high school. Perhaps the most salient change concerns the increasing build-up of ‘modern’ block houses that slowly start to refurbish the community landscape and offer better protection from recurring floods and storms. The spread of small-scale shops and enterprises also pinpoints a gradual economic diversification, congruent with a trend away from exclusively agrarian livelihoods in other rural areas. Taken together, these accounts effectuate a steep rise in the perception of habitability for the majority, albeit subject to social differentiation (MERSCHROTH et al. forthcoming). Crucially, as the participants in the study have highlighted, many of those changes have been greatly influenced by migration.

However, people spoke in a different tone when considering the dry season, where the green scenery and bustling atmosphere of agricultural productivity and trade makes way to barren soil, water shortages, and tedium. This is amplified by increasingly palpable impacts of environmental change on a community that is still first and foremost dependent on the state of the surrounding ecological system. Droughts and floods have been recurrent phenomena, entailing the destruction of crops and igniting food insecurity. Quite a fair share of interviewees also mentioned storms that can affect the crops but mostly damage housing and infrastructure. Despite the fact that the study was carried out in one community, participants were not affected homogenously by environmental impacts. Whilst one respondent stated that *“my farm has been affected by floods in the last 3 years. Where I farm my beans and when the flood came, it took everything away, flooded everything and washed it all away”* (SSI1¹), another interviewee explained that *“I have never been affected by flood where I am farming, but drought is surely affecting me negatively”* (SSI5). Consistent was the shared perception that rainfall has grown increasingly erratic in nature. Moreover, the onset and offset of the rainy season has shifted as well, leading to a scenario where farming is correlated to a high level of insecurity with fluctuating yield outputs from season to season. The eminent decline of soil fertility represented the major driving force for negative perceptions of local habitability. One participant explains the impact of degradation like this: *“There is a decrease in soil fertility and the soil is acidic now, when you plant something it cannot grow, and results in the development of bad weeds that make the fruits go pale and yellowish”* (SSI1). Most participants blamed human mismanagement, for instance regarding the extensive deforestation in recent years, and an overuse of fertilizer. The latter aspect seems to open up a devilish cycle where more chemical inputs are needed annually in order to produce a sustainable amount of crops. Results thus indicate that a combination of both human encroachment and changes in climatic conditions steer negative views on the material means necessary to sustain a living. Altogether, environmental change was the main aspect seriously dampening participant’s perceptions of habitability, which is why we proceed to assess the impact of migration on perceptions of subjective well-being to be embedded in a context of environmental change.

¹ SSI refers to semi-structured interview. Further abbreviations include FGD (focus group discussion), PWJ (participatory walking journal), EI (expert interview), KII (key informant interview), and TW (transect walk).

8.6.2 Migration as institutionalized strategy that shapes habitability perceptions

Migration as a dynamic social mechanism of adaptation and livelihood sustenance is highly present in the community. In the local language, migration is called travel, and is perceived to be exactly that: A travel into the unknown, into faraway lands that are dangerous, exciting, and intriguing at the same time. Migration pathways were preponderantly rural-urban and most of the trajectories led into the urban centers of Tamale, Accra, or Kumasi. A few respondents also indicated to move towards more favorable agricultural areas in Southern Ghana. Migration has been present throughout the community's long history and is not a new phenomenon. However, local accounts suggest a recent increase of migration over the last 20 years with regard to absolute numbers, which people mainly ascribe to the growth in population. Contrariwise, a fair few of respondents perceived a relative decrease in migration, which they correlated to the increasing quality of living in the community by means of the infrastructural improvements and the provision of new amenities. As a result of these changes in habitability, many participants argued that the need to migrate has tapered off, and many people accentuated their conscious decision to return or stay in the community.

Crucially for the underlying context of habitability, migration follows a seasonal and cyclic rhythm for the large majority of movements. Households 'offset' parts of their members in the dry season when farming is only feasible to a fairly limited extent in order to diversify the livelihood portfolio, create additional income opportunities, and have fewer mouths to feed. Most of those migrants return home before the start of the rainy season. Some people have also left the village for permanent migration, both within Ghana or abroad, and now utilize this position to assist their household members left behind. Both men and women migrate and movement is normalized for both genders, but male migration is often favored due to the prescribed female role as caretaker for children and the elderly. Generally, migration is perceived preponderantly positive as it has facilitated many of the material improvements, for instance regarding the introduction of mobile phones, motorbikes, pointed roofs, modern-style block houses, or toilet facilities. Respondents argued that all of these amenities were experienced by migrants that went 'down South', and the subsequent in situ implementation has ignited an increasingly positive evaluation of habitability in the research locale. Migration is also greatly contributing to the material needs of households through monetary and food

remittances, which are either sent from the destination areas or brought home upon the eventual return. The latter form of remittances is quite popular in Ghana (LUGINAAH et al. 2009, KUUIRE et al. 2016) and greatly contributes to food security. Nevertheless, community members were also very aware that migration is a highly risky undertaking and always comes with certain tradeoffs. Negative impacts pertained to high expectations on migrants' shoulders, a loss of workforce, and high costs that can see households blunder into a dangerous spiral of financial trouble. Besides the potential of migration to contribute to the material means necessary to sustain a living, in most cases positively, it has to be equally emphasized that migration also impacts perceptions of subjective well-being through its influence on the underlying socio-cultural context. Accordingly, this effect exhibits relevant implications for individual and community-based habitability and assumes a vital role for fully comprehending local strategies of livelihood sustenance in complex socio-ecological systems.

8.6.3 The impact of migration on subjective well-being from a socio-cultural lens

8.6.3.1 Migration evokes declining levels of community cohesion and support

Next to the abovementioned range of tangible and material changes that led to both positive and negative shifts in the means to sustain a living, the community also underwent significant socio-cultural transformations over the last 20 years that influenced subjective well-being and the satisfaction of participants with the study locale. Study participants firmly bemoaned the apparent loss of community cohesion and togetherness, which has been declining strongly in the last 20 years. People correlated this loss with a) the onset of modernity and b) with out-migration from the community, and nostalgically remembered the 'good, olden days' when people used to gather more frequently, providing a space to share both physical and mental burdens with others. Altogether, the decline in community cohesion was perceived to influence overall habitability negatively, and effects included weakened abilities to cope with environmental stress (*"the way that we were helping each other in the past, you could then still cope even if resources were less"* (SSI3)) or were relating to social contacts and interactions that were perceived to be very important for rendering the study locale habitable (*"I have built relations here: the family, friends, and other relations, they are really important to me. The networks that I have here are one of the key reasons that are making the place livable"* (SSI2)).

In the underlying case study, respondents' perceptions of subjective well-being were significantly shaken by declining levels of community cohesion, and many respondents indeed identified migration as the main driver. The most obvious and direct manifestation of this impact comprises the absence of community members, which puts a considerable strain on social relations and community networks. One female respondent recalls that *"the time that we used together to sweep the compounds, to work together on the farm and to eat together in the night, it is not there anymore. It is migration!"* (SSI6). Migration was perceived to be a necessity in order to cope with increasing environmental challenges, corresponding reductions in yields and food insecurity, but was also asserted as a trade-off with regard to intra-community relations. One farmer summarizes this dilemma in the following way: *"Here, it is only farming and people need to create another avenue of income and security for their livelihood. But then the cohesion is loosened. (...). This is a deep incision into support systems"* (SSI26). People were well aware that *"if you have the cohesion and support, you can achieve more"* (SSI26), but this could not circumvent the shared need to migrate in order to provide the means necessary to sustain a living.

In many cases, the lack of people in the community, especially during the dry season when many opted for seasonal strategies of movement, was connected to a reduction in togetherness, which holds true for family, friendship, and neighborhood connections alike. For instance, people would not come together for meals anymore, laughter and joy would give way to a silent void, and common places of social encounter were left vacant. Popular statements in this vein included *"the community is more empty and quiet"* (SSI17), or *"when they go, the place becomes virtually empty and the place is not enjoyable anymore"* (PWJ2). One participant expounded his disappointment quite forthright and also brings up the respective impact on his perceived level of subjective well-being: *"When all of them go, the community becomes like an empty shell. (...). The community is empty and nobody is there, so it is very bad for my quality of life and it decreases the value of the place"* (SSI21). Critically, a loss of cohesion due to the permanent or repeated absence of community members was also correlated with a decline in communal labor and intra-community activities. This can have serious repercussions for collective action capacities, intra-community support, and the provision of safety nets, especially concerning potential impacts of environmental change. For instance, in order to build or repair the traditional round houses, particularly after storm or flooding damages, additional labor is required, but the loss of support makes it difficult to find

enough participants: *“Migration actually destroys community cohesion. The buildings of my house for example, they are all locally created. To build them, you need people to help and set them up. If your kids are away in Accra, then you would need to beg other people for support. But when you go to another household for support, then the household would say ‘you sent your kid away to Accra, and why should my kid let his work slip and help you’”* (SSI15).

Some respondents also argued that the loss of cohesion and togetherness does not stop when migrants return home again. Such accounts mostly posited that migrants are contributing to form new social groups and prefer to remain amongst each other. In particular, the introduction of negative practices such as smoking, drinking, and drug abuse by migrants has led the way for (re)producing new social formations and has contributed to tear family, kinship and friendship networks apart. However, migration can also influence community cohesion in a positive way, as distinguished community members can act as catalysts and enablers of positive change that can spearhead collective action efforts. Despite the existence of some positive examples, overall evaluations of migration impacts on community cohesion were overwhelmingly negative. This was deemed to be very relevant for subjective well-being, up to a degree where some people even considered out-migration as a result. A vivid and articulate comparison is given by a former migrant who has been confronted with increased out-migration in his immediate circle upon his return: *“Migration is a temporal death or loss of a loved one. We have lost a loved one, you are now not enjoying the same quality of life and it hurts”* (SSI20). Findings like these are highly relevant for strategies of planned adaptation and migration governance, due to the considerable risk of breaking down vital community support systems that undergird resilience and well-being of individuals, households, and communities alike.

8.6.3.2 Place attachment undergirds subjective well-being and serves to (re)direct migration impacts

Particularly important in the community, and in Northern Ghana in general, is the concept of place attachment and therewith associated feelings of belonging. Almost throughout, research participants exhibited a very high level of place attachment and a strong bond to the village. When we asked people for the reasons for this attachment, one respondent quite blatantly stated *“because here are my roots”* (SSI5), whereby the weight of this predication

cannot be underemphasized in this very particular cultural context. The birthplace has a very deep meaning in the local culture and is tied to certain responsibilities and obligations, which are differentiated by gender and age. This is exemplified by the 'hometown concept' that was elucidated in one of the expert interviews: *"There is a high level of pride in the region and people want to uphold their family lineages. Thus we have a high level of place attachment and people strongly believe in their traditions and the hometown concept. The hometown concept especially emphasizes that people want to stick to their hometown and want to make it great"* (EI2). When we asked one expert about the socio-cultural dimension that is most important in the local setting, the answer was simple: *"It is identity. (...). For you to assert your importance, it is connected to your roots. So, there is no permanent migration in the North, people eventually come back. (...). Our societies are not easily assimilative, where your parents come from, it will always define you. This is a major reason for the high attachment"* (EI6). Indeed, place attachment was also perceived as the most important socio-cultural dimension by the respondents. The strong bonds that are associated with the place of origin even serve to eclipse negative perceptions of the environment, as *"people live in certain places even when they are not habitable because of their attachment"* (EI6), which reaffirms the relative importance of place attachment for subjective well-being in the Northern Ghanaian context.

The analogy of one research participant vividly depicts this nexus. He compared his place attachment with water, which is neutral, essential, and always has to be present for a dignified life. When sugar is added to water, then tea emerges, and when water is mixed with salt, the result is a soup. For the respondent, both soup and tea symbolized all the various material developments transpiring over the years within the community, which are sweet and savory. But ultimately, the basis of his habitability is the love for the place that he calls home. He states that *"even when all the other developments were not there, no electricity, no water, no network tower, I would still be here. I built a solar cell on the place by the riverside and I use it to transport water to the place where I stay. And I did it without government help, I did it because of place attachment. It is the most important and basic thing. It comes before everything else, even the community cohesion is in it"* (SSI20). Place attachment in this local context is a deeply rooted feeling of connection with and belonging to a place, which comes from within and cannot be shaken by merely adding 'sugar' or 'salt'. Place attachment is highly relevant with regard to subjective well-being, and hence the overall level of perceived

habitability, and the love and care for the place determined many life-course decisions of respondents to a great extent.

Migration can have a profound impact on such notions of place attachment and evokes a process of cognitive reflection about conceptions of 'home' and 'away'. Former migrants often explained that their 'travels' in fact increased their attachment and love for the community. Research respondents frequently highlighted that they have come to appreciate the peacefulness and tranquility of the research locale, especially when compared to the loud, bustling, and strenuous atmosphere in the urban centers of Southern Ghana. By way of example, one participant stated that *"migration has even aided to increase my attachment to this place. When I went, I learned a lot more about other places and other people. So, I learned that this place here is very peaceful and that it is an important place"* (SSI14). Perceptions of other places eventually found their expression in the collectively shared conception of migration as a risky, dangerous and challenging gamble that was not for the faint of heart. Particularly with regard to the urban jungles in Accra, Tamale, or Kumasi, respondents narrated enthralling stories about hard work, luck, persistence and perilous conditions that had to be overcome in order to provide for the household and render the costly migration venture a success. During one of the participatory walking journals, a respondent inducted us into the compelling narrative of his time in Accra that was characterized by severe hardship and dire straits. Growing with these experiences, he told us *"when you look at the trip to Accra, it rather increased my attachment to this place. (...). The job is very risky in nature and the prospects of having a safe and peaceful area here in the community, I was realizing that more and more, so I am very happy to be here now and my attachment has grown. Some of the risks that I was experiencing were crazy, it was too much"* (PWJ3). Such associations of jeopardy and precariousness were not necessarily contributing to render migration a joyful treat, although some respondents indicated the thrill that emerged by rising to the challenge. Much rather, such awareness directly contributed to view the place of origin in a different light, mostly from a lens that increasingly rediscovers the positive characteristics.

Quite naturally, people were also exhibiting high levels of place attachment because of their family, relatives and friends, and a prolonged absence due to migration invoked feelings of homesickness and loss that correlated with the break-down of social contacts. Such negative feelings of grievance were present in many peoples' narrations and were vividly emphasized

by one respondent, explaining that *“when you are away for longer times, you feel a loss of home, you lose your identity”* (SSI20). Whilst being away, many former migrants recalled that they missed their family and longed for the time spent together with friends in the community. For example, one respondent argued: *“Even when I was in Accra, I have the community at heart all the time. Whenever I have not been part of a wedding or a naming ceremony and I cannot take part I feel like I missed something and it’s not nice for me. I will stay here in the future”* (PWJ4). As such, place attachment is closely correlated to the existence of social relationships and the meaning that is ascribed to an intact level of community cohesion.

Whilst migration was profoundly impacting feelings of attachment on the one hand, and thus also perceptions of subjective well-being, the historic prevalence of deeply-rooted feelings of belonging to the hometown also contributed to steer emerging migration impacts accordingly. This (re)direction is almost entirely geared towards the community of origin. The fairly plain and simple statement *“despite Kumasi being nice, it is not my hometown and I had to go back to my hometown”* (SSI20) thereby perfectly summarizes the thoughts of many respondents and foregrounds the ‘hometown’ as central anchorage point. Return migration resulting from place attachment then serves to revitalize seemingly lost place-based bonds to the community of origin and can significantly improve subjective well-being for both the respective migrants and those that were left behind. In particular, the collectively shared affection for the ‘hometown’ closely correlates with social status, leading to a scenario where the love for the community, the ‘wish to build something there’, and the desire to obtain a corresponding social status merge and ultimately entail well-rooted return ambitions for a considerable share of migrants.

8.6.3.3 Migration can yield a respected social status that serves to magnify subjective well-being

Owning a high social status holds a high value in the community, and the relevancy of a prestigious social position was clearly palpable: The possession of big houses, cars and motorbikes, or the status of being a successful businessman, farmer, or ‘traveler’, was highly admired and proudly shown. Social status has always had a very unique meaning in traditional northern Ghanaian societies, but has changed insofar as there are now a lot more people with a high social status in the community. This evolution was ascribed to a) an overall increase in

the population, b) the augmented range of options to distinguish oneself from the other, and c) the fact that more people have migrated. Social status exists on many different levels in the community, pertaining to the hierarchical social organization, but we especially focus on the social status that can be acquired (or lost) with regard to migration. Throughout the interviews, respondents shared the perception that a migrant is per se well regarded, as long as this is combined with a good attitude as well. This stance is based on the assumption that a migrant is a person that has been outside of the village and has seen the world, which is correlated to gains in knowledge and experience. Although migration is quite entrenched in the community and has been practiced for a long time, it still invokes this adventuresome aura that is mirrored in the admiration for people that have dared to commence such a voyage. The following remark on the role of social status in Northern Ghana, brought up in one of the expert interviews, appropriately sets the frame for the results discovered during the empirical field work: *"Migration is very relevant for status. You can acquire material resources and money with migration and if you come back, you are recognized as an important member of society and the community life. (...). Because if you come back from migration, it shows that a man was able to go into the 'wilderness', the stress and hustle of the city, and was successful. So migrants are important and respected members of society"* (EI3).

In this vein, one respondent in the community of study pointed to the fact that *"some of my kids are in Accra now and they are 'travelers' now. When they come back, they are more respected because they have moved away"* (SSI6), which broadly delineates the well-engrained stance towards migration. Even more important though, a migration-induced social status is inherently dependent on the success of migration and whether the person has brought a benefit to the respective household or the community at large. The potential hopes and gains associated with migration, comparable to the image of an adventurer on a voyage who is leaving the protective harbor and is sailing into the unknown, are deeply entrenched in people's minds. One respondent circumscribed these intentions with the words *"go to hunt and feed home"* (SSI23), which adequately depicts migration as a form of hunting in the nebulous and perilous bush. Accordingly, stakes are quite high and there is a pronounced dichotomy between those who live up to the expectations and those who do not. A common proverb in the local language goes *"When you send a child on a journey and he delays, but comes back with a ripe fruit, it is better than when the child comes back early without any delay, but with an unripe fruit"* (SSI26) and thus encompasses the expectations that are put

on migrants' shoulders. A successful return in the form of a 'ripe fruit' is ultimately preferred in contrast to an 'unripe' return, even if that is at the cost of the household member being away for a prolonged period. When the anticipations for prospective prosperousness are not emerging in reality, the verdicts from family and friends can be harsh at times. This goes to such lengths that unsuccessful migrants are exposed to both intra-household and even public shame, whilst those that returned home successfully are highly admired and respected.

During one of the participatory walking journals, a respondent led us to three different houses that were tied to three different stories of migration, which beautifully scenarize the adumbrated dichotomy between triumphant 'travels' and those that had been for no avail. First, the respondent guided us to a house that appeared quite ordinary at first glance. One of the household members had been on a 'travel' and returned empty handed. In the weeks following his return, he was shy to move out of his house because people would talk negatively about him, making him stay in his room for quite some time. Our second stop was appearing quite similar to the first, but on second sight we spotted that a part of this house was painted in flamboyant colors. This part of the house belonged to another migrant, more successful than the previous 'traveler'. Once he returned, he was not only able to color his house to show his material gains, but also proceeded to furniture his room. Lastly, we were guided to another homestead, immediately standing out due to the large and modern housing structure adjacent to it. In this case, the migrant was very successful and could finance the build-up of this salient structure. Moreover, this person was also able to acquire a new motorbike during his journey, which he brought back to the village and now proudly showcases in public. Whilst the first migrant was rather shamed as his trip was all in vain, the second and third migrants were celebrated in the community for their achievements, whereby the latter received the bulk of praise due to the impressive accumulation of benefits, which in turn awarded him with the highest amount of recognition.

People with such position can ultimately emerge as catalysts for positive change and possess the ability to gather others for collective action, given that *"people with higher social status are also helping the community at large, they can help to bring projects to the community, they can help set up public structures, or can contribute with help in the schools"* (PWJ4). Respondents were also praising people with a high social status for their benevolence and small tokens of assistance, which served to invoke a sense of security and safety for many

households. This statement amply illustrates the crucial patronage role of prestigious people for those that are less resilient: *“Sometimes you are not able to get more from your farm, but then you know that there are certain people in the community that you can go to and visit, and they have a high social status from migration, they can support you. If you do not have these people in the community, you are hopeless and have no one to turn to, then it is definitely worse for you”* (SSI26). Accordingly, a migration-induced social status is deemed to be very beneficial for perceptions of subjective well-being, both for those holding the social position and for those profiting from it.

Ultimately, social status is an incredibly important feature of social life in the community and can be bolstered – but also lowered – with migration. People that migrate successfully, display a good attitude, and build something lasting can acquire a social status that will be highly cherished and admired. For those people, perceptions of subjective well-being have increased drastically, as they feel rewarded and well-perceived in the community. In addition, those that were longing for a similar social position were not necessarily envious, but much rather emphasized that an increasing number of people with a high social status will ultimately contribute to improve perceptions of habitability for the entire community, for instance by beautifying the place or attracting business opportunities. *“The success of migration is measured on what you have built in the village, and what has been done by the migrant in the community, for instance by establishing a business and building new houses. Migration is thus even increased in value by socio-cultural dimensions and rules in place”* (EI4). As a result, a prestigious social status was something that people were striving for, and positive examples served as motivation and stimulus to reach similar heights. Whilst this relation is indeed responsible for sparking additional migration flows, it also entails that both migration and associated impacts are preponderantly redirected to the community, born out of the ambition to demonstrate the success that has been achieved by prevailing in faraway places. A female participant embodied this tripartite desire of migrating, returning and making a difference as she stated *“I want to come back here and do not wish to make a completely permanent migration move (...). I want the place to develop here. You cannot just forget home. If I go and come back, I want to help build a clinic to leave a mark here. Maybe this will then also increase my social status”* (PWJ5). Ultimately, the fact that migration can impact a person’s social status, and the high valorization that is given to such a position in this specific socio-cultural context, can provide a range of beneficial effects for the community at large, including the

ignition of innovation and the ambition to pull collective community resources together. Notwithstanding that the role of social status initially contributes to stimulate a reinforcement of migration flows, the locally-grounded and culturally-embedded relevancy of social status eventually also caters for the (re)direction of accruing benefits back towards the community, thereby implicitly enhancing subjective well-being and positive perceptions of habitability.

8.7 Discussion

The results of the study point towards an important role of underlying socio-cultural dimensions for perceptions of subjective well-being. This further serves to emphasize that *“socio-cultural issues are highly relevant and play a very critical role in the concept of habitability. If you take it out of the equation, it will be very difficult to contextualize the information and the respective set-up of habitability in the local contexts”* (E12). In order to adequately assess the habitability of places, a reinforced consideration of socio-cultural dimensions thus has to appear on the forefront of corresponding research agendas. Migration as a dynamic social mechanism can impact these socio-cultural dimensions, either to a negative or to a positive end, and thus contributes to shift perceived subjective well-being. As such, migration can steer local perceptions of habitability through its effect on the underlying socio-cultural context(s). Knowledge of these mechanisms is of vital importance for migration governance and the design of adaptive strategies, and can help to maintain the cultural integrity of social units in the process. A range of research works from diverse scientific backgrounds, both in Ghana and beyond, has already contributed to accentuate some of these intrinsic connections, which can aid to further sharpen our understanding of habitability.

The research at hand has shown that migration exerts unambiguous, and mostly negative, impacts on community cohesion and support, concomitant with a deterioration of subjective well-being. In that vein, QIN and FLINT (2012) show that migration can influence and transform existent patterns of social interaction, which consequentially bears the potential to feed back into collective efforts to protect the availability of resources and overall levels of habitability. SMITH et al. (2012) likewise found that the presence of a strong community-based identity is positively correlated to the perception of environmental risks and the willingness to resort to anticipative action. As such, community cohesion and therewith associated means of social

interaction, communication, and support, can be conceived as protective mechanisms that serve to maintain both cultural integrity and resilience (BERKES and ROSS 2013, QIN and FLINT 2012, CHASKIN 2008, BROWN and WESTAWAY 2011). Community cohesion can thus feed back into the improvement of subjective well-being as an important part of locally perceived habitability. However, a loss of cohesion, for instance sparked by increasing out-migration, can exhibit negative consequences for subjective well-being and undergirds declining levels of support.

Place attachment was very distinctive in the community, but has been affected by migration as well. Such impacts mostly resembled feelings of loss and grievance, accounting for both migrants and those that were (in)voluntarily immobile – which ultimately contributed to negative perceptions of subjective well-being. This is also emphasized by TSCHAKERT and TUTU (2010) and TSCHAKERT et al. (2013) in their application of the concept of ‘solastalgia’ (ALBRECHT 2005). An environmentally-induced loss of endemic belonging is thereby correlated with migration, whereby the *“longing for the distant home, the lost rural identity, and a place that provides true solace”* (TSCHAKERT et al. 2013: 20) experienced during migration can seriously affect subjective well-being. However, the perceptions of other places during migration also led to a reconsideration of the positive characteristics of the home community for many of our respondents. Such revitalization of place attachment closely relates with beneficial effects for subjective well-being. The importance of taking place attachment seriously is further illustrated by QUINN et al. (2018), showing that perceptions of environmental risks and attitudes towards adaptive action are substantially conditioned by people’s sense of place. People that showcase a high level of place-based pride and responsibility *“can act as catalysts to bring people together in collective action initiatives”* (FRESQUE-BAXTER and ARMITAGE 2012: 260), underlining reciprocal interrelations of place attachment, community cohesion, and social status all at once. Because migration can affect place-based subjective well-being, incorporating this nexus is key to avoid detrimental outcomes in migration and adaptation governance.

The high relevancy of a migration-induced social status in the community also mirrors findings in other studies in Ghana (CASSIMAN 2008, SCHRAVEN and RADEMACHER-SCHULZ 2015, AGYEMANG 2012, SOW et al. 2014, KWANKYE et al. 2009, JARAWURA and SMITH 2015). Migrants can serve as self-propelling embodiment of a successful social status and are often referred to as ‘*big man*’

(CASSIMAN 2008), which also pertains to comparable settings in Western (ALPES 2016) or Eastern Africa (SALAZAR 2010). Although this implies an ignition of further migration in a first instance, the locally-embedded relevancy of social status also serves to redirect migration feedback effects and return aspirations. Crucially, such a dynamic can involve positive repercussions for both individual and collective subjective well-being. Especially in societies with a traditional social order, people with a high social status can substantially impact the directions and pathways of collective community action. For instance, MCLEMAN (2018) shows that collective action to restore a satisfying level of well-being in a threatened rural community in Canada was inherently contingent upon some selected key members of the community that took the initiative. In the case study of CASSIMAN (2008) in Ghana, migrants were admired as the modern embodiment of the mythic nomadic hunter that 'goes to the bush', earmarked by a highly esteemed social position. However, and in line with the results of this study, many migrants also longed to exhibit this social position in their community of origin based on profound feelings of attachment to the 'hometown'. In doing so, migrants actively contributed to refurbish social and material configurations in situ and thus (re)produced new perceptions of subjective well-being that are rooted in the underlying socio-cultural context at hand.

Altogether, impacts of migration on culturally-embedded perceptions of subjective well-being can serve to shift the perceived level of habitability to both positive and negative effect. Knowing the potential pathways of such migration impacts greatly improves the integrity and practicality of habitability assessments and thus has to be considered in future research. Taking this relation seriously can facilitate the acceptance and implementation of strategies aiming to improve local resilience whilst simultaneously enabling social units to retain their desired level of cultural integrity.

8.8 Conclusion

Including migration and corresponding impacts is absolutely key in order to assess how habitable a given place is for its constituent populations, especially with keeping the increasing likelihood of environmental risks for resource-dependent societies in mind. Besides a range of both positive and negative impacts on the material means necessary to sustain a living, migration impacts also extend towards subjective perceptions of well-being through their effect on underlying socio-cultural dimensions. The findings of the portrayed case study in Northern Ghana have added substantial empirical evidence on the relevancy of socio-cultural dimensions for configuring local conceptions of subjective well-being. Migration contributes to alter and (re)produce these perceptions of subjective well-being by transforming the underlying socio-cultural dimensions and can be understood as a catalyst for socio-cultural change. Local manifestations of such impacts can underpin commonly shared objectives for maintaining cultural integrity and feature back into collective responsibilities of sustaining livelihoods. The findings of this study can serve to further refine human-centered frameworks of habitability that strive to identify how particular social units conceive habitable places, even under the aegis of continuous environmental challenges. Ultimately, a consideration of this relation will be fundamental to provide well-tailored and context-sensitive migration governance and undergirds the design of adaptive strategies that not merely consider the respective local backgrounds on a superficial level, but much rather take interest in durable participation and sustainable outcomes.

Acknowledgements

This study has been conducted with the help of the “Förderungsstipendium nach dem Studienförderungsgesetz (StudFG)” scholarship of the University of Vienna and funds from the HABITABLE project. The authors are extremely grateful for the excellent support and knowledge provided by Awaki Sulemana and Habib Adam Maltiba in the field and beyond.

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