

GRANTEE EXPERIENCE REPORT

Indo-German Centre for Sustainability (IGCS)
IGCS Research Exchange, Grant Period 2023

research brief

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Research Brief from IGCS Grant Period 2023

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Research Topic

Sustainable Urban Development

Starting/End date of the student exchange period

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The banner features a smiling woman with long dark hair, wearing a yellow polo shirt and a backpack, set against a dark red background with a white mandala pattern behind her. The IGCS logo is in the top right corner. The text reads: 'Grants For Students and Researchers', 'Conduct Research on sustainability topics in India or Germany', 'APPLICATION OPEN', and 'Floating deadline for the year 2024'. At the bottom, it says 'For more information: <https://www.igcs-chennai.org/grants/>'. Logos for funding partners (DAAD, German Ministry of Education and Research) and associated institutions (RWTH Aachen University, CIAU, TU9) are at the bottom.

About the IGCS Grants

IGCS awards scholarships to students and researchers from India and Germany with excellent academic records, very good English, and intercultural communication skills. The scholarship consists of a mobility grant and an accommodation grant according to DAAD funding rates, as a rule. Learn more about the funding opportunities at IGCS [here](#).

1. Introduction

My research stay at IIT Madras was part of the research work for my master thesis in the M. Sc. “Sustainable Urban Development” at the University of Duisburg-Essen. The scholarship I received from the Indo-German Centre for Sustainability (IGCS) allowed me to do the data collection for my master thesis on-site in Chennai. It was granted for the period from 01.02.2023 to 30.04.2023. The period of my stay in Chennai (24.04. - 14.08.2023) differs from the funding period, as the preparation and visa process took a little longer than originally planned and I wished to stay longer than three months to have more time to conduct my research and get to know the local culture. My supervisor from IGCS was Christoph Woiwode. He is also the first examiner of my master thesis. My official guest professor and faculty host at IIT Madras was Prof. Swarnalatha R from the Department of Humanities and Social Sciences.

In my master thesis, I want to examine in a qualitative, exploratory approach what spiritual and cultural relationships urban dwellers in a non-Western context have with nature and which role spirituality and culture could play in (re)connecting people with nature as part of a deeper transformation towards (urban) sustainability. In the context of India in general and Chennai in particular, and based on the research gaps I had identified, the following main research questions were defined:

- A. Which relationships do people in Chennai have with (urban) nature?
- B. Which roles do spirituality and culture play in these relationships?
- C. Which nature experiences (in Chennai) might foster a feeling of connectedness with nature?

Based on the answers to these questions, I want to derive possible implications for urban planning practice and theory by addressing some overarching questions like: What values should form the basis of urban nature planning and management? How could urban green and blue spaces help in revitalizing and strengthening spiritual and cultural connections of urban populations with nature? How could culture and spirituality be better incorporated into sustainable urban development in order to (re)connect people with nature and to invoke processes of (inner) transformation towards sustainability?

As the analysis and evaluation of the collected data has not yet been completed, there are no results that can be presented in this report. In the following, however, I will describe the course of my research work at the IGCS during my stay in Chennai.

2. My research work in Chennai

Due to the multilayered and complex meaning of human-nature connectedness (HNC) and spirituality as well as the context-specific and intangible nature of human-nature connections and spiritual values, qualitative approaches are used and recommended to explore spiritual phenomena, humans' relationships with nature, spiritual and cultural dimensions of these relationships and the role of spirituality for sustainability (Schroeder 1992; Fischer & Young 2007; Moberg 2010; Hedlund-de Witt 2013; Zylstra et al. 2014; MacDonald et al. 2015; Gupta et al. 2016; Giusti et al. 2017; Muhar et al. 2018; Müller et al. 2023; Artmann 2023). Ethnography is a type of qualitative research that aims at understanding "the social meanings and activities of people in a given 'field' or setting" (Brewer 2000: 11). In addition, Fallon & Jaiswal (2012: 7) point out that "ethnography is helpful when looking at the local and small-scale circumstances for greater understanding of the details, which may then be seen in a wider context". Hence, qualitative, ethnographic research methods were chosen to assess the open ended-research questions of this work in the local and cultural setting of Chennai embedded in the wider context of an urban sustainability transformation. Participant observation and semi-structured interviews were the main source of data-collection complemented by non-participant observation, group discussion and qualitative content analysis (Hammersley 2006; Thelen 2015; Schnell et al. 2023). Such qualitative techniques "allow the values of a particular culture or population to be understood in much greater depth but make generalisation difficult" (Ives & Kendal 2014: 68). Therefore, and considering the limited scope of this work, this study is exploratory without claiming to be representative.

2.1 Observation

Ethnography places "great emphasis on the researcher's participation in, and first-hand observation of, the culture being investigated" (Hammersley 2006: 8). Participant observation in which the observer immerses in and interacts with the observed group or subject is thus a central element of ethnographic research (Hammersley 2006; Thelen 2015). For this work, I lived in India for nearly six months from end of February until mid-August 2023. During that time, I was stationed at IIT Madras campus in Chennai and was in close contact with many fellow Indian as well as international students and researchers. Starting from campus, I went on a lot of excursions, especially in the first few weeks, to explore the city and get a feeling of the local culture. This included strolling through different neighbourhoods in Chennai, visiting cultural and historical sites as well as joining religious and cultural festivals and ceremonies.

Moreover, I visited various green and blue spaces in Chennai. Since urban natural spaces are the primary places where urban residents come in contact with and experience nature, UGBS can be considered as key areas for learning about the ways in which humans interact with nature (Dunn et al. 2006; Andersson et al. 2014; Fischer et al. 2018; Jakstis et al. 2023). Hence, I put a special focus on observing people's behaviour in and interaction with the natural environments and elements that I encountered in the city as well as the appearance and conditions of these places

in order to draw possible conclusions regarding the research questions. The visited sites in Chennai comprise several parks like the Natesan Park in T. Nagar or the Semmozhi Poonga Botanical Garden, urban forests like the Kotturpuram Urban Forest or Miyawaki forests, the Katurba Nagar Community Garden, several of Chennai's beaches, the Cooum and Adyar river including their estuaries, a few lakes and the Pallikarnai marshland. Furthermore, temples with sacred trees and temple tanks were relevant settings for observations. Among others, the Kapaleeshwarar Temple in Mylapore, the Marundeeswarar Temple in Thiruvanmiyur, as well as several smaller temples in the neighborhoods of IIT Madras campus were visited.

In addition, I engaged and participated in several nature related activities including urban gardening, a public turtle walk along Chennai's shoreline conducted by the Students Sea Turtle Conservation Network (SSTCN), volunteering at the SSTCN turtle hatchery, a guided tour at the Adyar Eco Park, an open air nature journaling session and walk along the Adyar river organized by the Kasturba Nagar Community Garden, and a nature walk on campus with a member of the Prakriti Wildlife Club of IIT Madras. To get a feeling for the impacts of the relocations related to the restoration projects of Chennai's water bodies, I got in contact with the founder of the Information and Resource Centre for the Deprived Urban Communities (IRCDUC) who advocate for relocated, marginalized communities and implement projects in the resettlement colony in Perumbakkam. Together with a member of IRCDUC I visited a community garden in Perumbakkam. In most of these excursions and activities I engaged in informal conversations with tour guides, other visitors, participants, and volunteers. During and after the fieldwork, notes were taken in a fieldwork journal to record relevant observations, experiences, and learnings.

The places visited and activities carried out were selected through my own research as well as tips and information from my supervisors, friends, and other contacts. Some places were also discovered by chance while exploring the city. Other places that I wanted to visit turned out to be not accessible to the public e.g. the Besant Gardens in Besant Nagar, the area of the Theosophical Society in Adyar or the Guindy National Park where only the Snake Park at the entrance but not the whole area is accessible.

2.2 Interviews

In addition to the observations, I chose to conduct semi-structured interviews with selected individuals as they allow for an open way of conversation and interaction with the interviewees that leaves scope for customized questions and detailed, personal responses. Thereby, the interviews facilitate the in-depth discussion of complex topics, taking into account the individual context and cultural background of the respondents while at the same time the use of an interview guide guarantees at least a basic comparability of the interview results (Hedlund-de Witt 2013; Muhar et al. 2018; Schnell et al. 2023).

Interview preparation

The first step in preparing the interviews was to create an interview guide. I developed the interview guide based on my fieldwork experiences and the theoretical background presented in chapters 2 and 4. Moreover, various scales for measuring human-nature relationships (Kals et al. 1999; Schultz 2002; Mayer & Frantz 2004; Nisbet et al. 2009; Perkins 2010; Nisbet & Zelenski 2013; Kleespies et al. 2021; Clayton et al. 2021) as well as spiritual values and experiences (Hood 1975; Piedmont & Leach 2002; Underwood 2011; Garfield et al. 2014; MacDonald et al. 2015) were consulted as inspiration for the selection of relevant questions and topics for the guide.

Although I had originally planned to focus only on spiritual dimensions of human-nature connections in this work, I soon realized during my fieldwork in Chennai and the complementary literature research that culture, and spirituality is hardly separable in the Indian context. Therefore, I decided to include cultural dimensions of human-nature relationships in my work and, hence, integrate related questions in the interview guide. As I was planning to interview people from various backgrounds, it was clear that I would not be able to ask all of my interview partners the exact same questions, but that the questions would have to be adapted to the respective context. In order to nevertheless enable comparability between different interviews, I defined several topic areas in the guide that should be addressed in all the interviews. I structured the guide into preliminary questions about the personal and professional background, followed by questions about the personal relationship and experiences with nature, about the role of culture in the relationship with nature, about spirituality in general and questions regarding the interplay of spirituality and nature connection. To offer a wide scope for individual answers and to reduce bias, I mostly started into the different subject areas with general, very open questions e.g. “How would you describe your relationship with nature?”, “Which role does culture play in your relationship with nature?”, “What does spirituality mean to you in your life?” or “Which role does spirituality play in your relationship with nature?”. Particularly with regard to spirituality, given the variety of meanings related to this term, I wanted to allow the respondents to describe their understanding of spirituality as freely and unbiased as possible. This is supported by Taggart (2001, as cited in Ratnakar & Nair (2012)) who highlights the restrictive power of definitions. The general questions were usually followed by more specific questions. The interview guide ends with general questions about the respondents’ religious identity and age.

A first version of the interview guide was tested in an interview with a fellow student of IIT Madras. This test interview revealed the difficulty of assessing spirituality and spiritual values in the unspecified way that I had envisaged. The interviewee was clearly struggling with answering the open questions and wanted to know what kind of spirituality I mean. Based on these experiences, I adapted the interview guide. I decided to keep the direct, open question about the personal understanding of spirituality, but combined it with indirect, more specific questions relating to individual dimensions of spirituality. These dimensions include feelings of

connectedness with nature, the performance of spiritual practices and aspects of meaning-making. Considering the importance of emotional dimensions of HNC for fostering a strong sense of HNC and pro-environmental behaviour as well as the potential of (spiritual) nature experiences to evoke such emotional connections, I put a special focus on questions related to these topics. I also tried to establish a reference to urban planning by asking questions related to UGBS, urban sacred natural sites and about the spatial localization of (spiritual) nature experiences in Chennai. In interviews with experts, not only questions about their personal relationship to nature but also regarding their professional expertise were integrated. After the first two proper interviews, the interview guide was adjusted again and questions that turned out to be redundant or less relevant were removed. A shortened version of the guide with sample questions from interviews with environmental activists is included in the appendix (5.1).

Apart from the guide, I prepared a consent form for the interviewees to obtain written consent of the respondents to their participation in the study and to the processing of the data collected. Among other things, the form provided basic information about the content, purpose, and implementation of my research. It also offered several options for respondents to choose from regarding the incorporation of the interview content in my work. The final consent form can be found in the appendix (5.2).

Selection and contact of interview partners

The selection of suitable interview partners was based on my fieldwork experiences in Chennai, literature research and recommendations from colleagues, friends and other contacts. Related to a profound spiritual transformation towards sustainability, Dhiman & Marques (2016: 5) argue that “something has to change fundamentally at the level of a common person in the street.” In a similar line of thought, my initial idea was to interview visitors in UGBS and temples in Chennai to learn about the kind of (spiritual) relationships that common inhabitants of the city have with nature and sacred natural sites. This initial plan was abandoned for two main reasons: First, while developing the interview guide, I realized that interviews with spontaneously selected and approached people in public spaces would not provide the suitable setting to enable interviews of the length and depth that I considered necessary and appropriate to answer the research questions. Second, my encounters with locals during fieldtrips revealed considerable language barriers, as I do not speak the local language Tamil and several of the locals spoke only rudimentary English, which made conversations - especially those beyond simple small talk - very difficult or even impossible. Based on these findings, further fieldwork, and research, I decided on two main target groups to conduct interviews with who were easier to get in contact and communicate with and who were assumed to have a strong connection to nature: a) Environmental activists (working as professionals or volunteers for environmental organizations and groups), and b) members of the fishermen communities in Chennai. Some of the main reasons for choosing these two target groups are presented in the following.

As already mentioned earlier, environmental activists often show high levels of HNC and their strong connectedness with nature is one of the primary motivations for engaging in nature conservation projects (Nisbet et al. 2009; Zylstra et al. 2014; van den Born et al. 2018). Research results from Hedlund-de Witt (2013: 161) also indicate that “environmentalists and nature-lovers appeared to be committed to spiritual practices and beliefs almost as much as the spiritual practitioners”. As the study by Giusti et al. (2017) shows, interviews with experts enables benefiting from their professional expertise in connecting people with nature. Moreover, social and environmental activists are often already working towards positive change (Lockhart 2011).

Local communities and the values and knowledge they hold are increasingly acknowledged as valuable pillars for environmental management and biodiversity conservation (Restall & Conrad 2015). Houart (2023: 55) highlights that local communities like fisherwomen and fishermen “have been historically involved in relations of reciprocity and kinship with different beings [...] and have developed practices – such as conservation and restoration efforts – to respond to threats to their common lives and to protect and uphold the existence and lifeways of both the human and the other-than-human beings who are involved in these relations.” Also, the fisherfolk of Tamil Nadu and Chennai live in close relationship with their environment as they depend on aquatic ecosystems for their livelihood (Nagarajan et al. 2022).

In total, I interviewed 7 people with an environmental activism background: the founder of the Kasturba Nagar Community Garden who has also been active in environmental volunteering, a Senior Research Associate at Care Earth Trust, a Nature Educator at Palluyir Trust for Nature Education and Research, the Chief Admin Manager at Environmentalist Foundation of India (E.F.I.), a founder trustee of the NGO Nizhal and two volunteers at the Kotturpuram Urban Forest (KUF) which is maintained by Nizhal. The number of interviews conducted was determined based on the saturation of information (Hedlund-de Witt 2013). Moreover, I talked to several people from the fishermen community in Kovalam in the South of Chennai: With two members of the community, I had individual interviews. Both are not working as fishermen but grew up in the fishermen community, went fishing with their fathers and still have jobs that are related to the sea: One is surf and dive instructor, the other one is surf instructor and yoga teacher. I also spoke to a group of fishermen of different ages, several of whom were still actively working as fishermen and others who had already retired.

Beyond these two main target groups, I also interviewed individuals from other social and professional backgrounds to widen the scope of perspectives and knowledge included in the research: To learn more about nature and human-nature relationships from the viewpoint of a Hindu spiritual practitioner, I interviewed a priest from the Shiva temple on IIT Madras campus. In order to strengthen the connection of my research to the field of urban planning, I talked to an IIT Madras professor with a background in Urban Studies, and to an executive from the Chennai Rivers Restoration Trust (CRRT) to find out which role spiritual and cultural values played

in the planning and implementation process of the prestigious eco-restoration project of the Adyar creek.

Contact with the interviewees was established in various ways: through targeted contact with relevant institutions, through encounters on fieldtrips and through private contacts of colleagues, friends and other interview partners according to the snowball sampling method (Schnell et al. 2023). Access to the fishermen community in Kovalam was enabled through an IIT student that I had met at the turtle walk that I took part in. He knows the community because he lives in the fishermen's neighbourhood and was able to put me in touch with some of his friends and other familiar members of the community.

Conducting the interviews

The interviews were conducted between mid-May and beginning of August 2023. Two of the interviews took place online, the rest were conducted face-to-face. Some of the interviewees invited me to their homes or workplaces, others met me outside at their place of influence: the priest at the temple, the CRRT executive at the Adyar Eco-Park and the Nizhal founder trustee and volunteers at the KUF. At the beginning of each interview, consent for participation and audio recording was requested. For expert interviews, this was done via the prepared consent form; for interviews in a more informal, private setting, consent was requested verbally, as the official consent form would have seemed inappropriate and perhaps even intimidating/daunting. If consent was given, I started the recording. In the single cases where audio recording was refused, I took notes during and after the interview instead. Based on the interview guide, different questions were asked, adapted to the course of the conversation and individual context of each interview. If the setting and the conversation allowed, I also addressed the paradox between the sacred status but simultaneous destruction and pollution of nature in India and discussed possible explanations with the interviewees. The length of the interviews varied from around half an hour to two and a half hours. Most of the interviews lasted about an hour. Several of the interviews ended in private small talk. One of the interviewees even introduced me to her mother and altogether we explored the garden surrounding their house while the mother provided valuable insights into the use and meaning of several plants in the garden.

The group discussion with fishermen in Kovalam was not planned as such but emerged spontaneously from the situation. As I had told my contact person after the two individual interviews with members of the fishermen community that I would also like to talk to older and active fishermen, he led me to a popular meeting point, a roofed storage area for the fishing nets at the beach. Several fishermen were already gathered there. We sat down with them and after a short introduction started a conversation by asking questions. Since the fishermen hardly knew English, my contact person - who speaks the local language Tamil - translated for me. Some of the fishermen stayed with us throughout the conversation, which lasted about an hour, others left in between, some came back, or new ones joined. In this way, there were usually up to ten

fishermen sitting around us at the same time, some of whom observed the situation rather passively while others actively took part in the discussion.

2.3 Learnings and difficulties

Major learnings for me during my research work in Chennai were how much the range of possibilities for ethnographic research in a specific local context is determined by language, access, contact and sometimes even coincidence. On more than one occasion during my fieldwork, I found myself standing in front of closed doors because places I wanted to visit were closed at the time or were no longer open to the public at all. The guided tour at the Adyar Eco Park turned out to be in Tamil only and therefore incomprehensible for non-Tamil speakers like me. As described earlier, also the communication with locals was sometimes hindered by language-barriers. This limited the amount of information that could be obtained through the fieldwork and was one of the crucial factors in the selection of the target group for interviews. I also learned how valuable and helpful contact persons can be who support the research work and who are well informed and connected in the group and context being studied. One of these key contacts for me was the founder of the Kasturba Nagar Community Garden. After we met for the first time in the community garden, she showed interest in my research topic, kept me informed about events and activities inside and outside the garden, agreed to an interview and provided me with several other contacts - some of whom I also interviewed. Another key contact who proved very valuable was the student I met by chance on the turtle walk who put me in touch with members of the fishermen community in Kovalam. Without his support in terms of contact and translation, access to the community would not have been possible.

In several other cases, getting access or establishing contact to individuals, communities or institutions was less successful. In some cases, I received no response at all to inquiries, sometimes contact broke off after a while - sometimes even after a first personal contact had already been made - or a meeting could not be organized due to time constraints. In particular, I would have also liked to talk to members from other fishing communities in Chennai, but even after several attempts in different ways, no contact could be established with fishermen in the Adyar river during the period of my stay. However, an even longer research stay would certainly have permitted further possibilities in this regard.

Also, the local climatic conditions influenced the research work. Since I stayed in Chennai during the hottest period of the year, the intense heat - especially during its peak in May and June - limited the possibilities for fieldwork activities and affected the choice of time and place for meetings with interview partners. Most of the interviews took place in the slightly cooler morning or evening hours or in air-conditioned indoor locations.

Despite the barriers regarding language and access that I had as a foreign researcher and the skepticism that I sometimes felt from locals towards me, my social and cultural background has

also brought advantages and opened up opportunities. As a young, white European woman in a not very touristy Indian city like Chennai, I attracted a lot of attention and interest from locals during my fieldwork trips. People were eager to get in contact with me, to invite me, to help me and to provide information to an interested foreigner like me. Many seemed happy to be able to show me their culture and to share their knowledge and experiences with me. All in all, an important realization for me was also how much - despite all the effort - I enjoyed the fieldwork, getting to know an ever-growing network of locals and committed activists, and I would have liked to dive even deeper into the local scene and culture.

3. Further research work and outlook

In Chennai as well as back home, the audio files recorded during the interviews were converted into text files using the online programs Transkriptor (2021) and Cockatoo (Cockatoo Inc. 2023). The resulting transcripts were checked and corrected manually. Handwritten notes were digitalized.

The interview transcripts are analyzed using the software program MAXQDA 2022 (VERBI Software 2021) based on the Qualitative Content Analysis according to Mayring (2015). Due to the explorative character of the study, deductive content analysis based on the literature findings and the interview guide is combined with inductive content analysis in which the development of categories during the content analysis are derived inductively from the material (Mayring 2015). The notes taken during fieldtrips and interviews are analyzed accordingly.

The results will be presented and discussed in my master thesis with the title “Cultural and spiritual dimensions of human-nature (re)connection in an urban context - An explorative study from Chennai, India”. The thesis will be submitted in February 2024.

4. References

- Andersson, Erik; Barthel, Stephan; Borgström, Sara; Colding, Johan; Elmqvist, Thomas; Folke, Carl; Gren, Åsa (2014): Reconnecting cities to the biosphere: stewardship of green infrastructure and urban ecosystem services. In: *Ambio* 43 (4), pp. 445–453.
- Artmann, Martina (2023): Human-nature resonance in times of social-ecological crisis – a relational account for sustainability transformation. In: *Ecosystems and People* 19 (1).
- Brewer, John D. (2000): *Ethnography*. repr. Buckingham: Open University Press (Understanding social research).
- Clayton, Susan; Czellar, Sandor; Nartova-Bochaver, Sonya; Skibins, Jeffrey C.; Salazar, Gabby; Tseng, Yu-Chi et al. (2021): Cross-Cultural Validation of A Revised Environmental Identity Scale. In: *Sustainability* 13 (4), pp. 2387.
- Cockatoo Inc. (2023): Cockatoo - Convert Audio and Video to Text with AI. Available online at <https://www.cockatoo.com/>, accessed 12/30/2023.
- Dhiman, Satinder; Marques, Joan (eds.) (2016): *Spirituality and Sustainability. New Horizons and Exemplary Approaches*. In collaboration with Joan Marques und Ian I. Mitroff. Cham: Springer International Publishing AG. Available online at <https://ebookcentral.proquest.com/lib/kxp/detail.action?docID=4557021>.
- Dunn, Robert R.; Gavin, Michael C.; Monica C. Sanchez; Jennifer N. Solomon (2006): The Pigeon Paradox: Dependence of Global Conservation on Urban Nature. In: *Conservation Biology* 20 (6), pp. 1814–1816. Available online at <http://www.jstor.org/stable/4124710>.
- Fallon, J. M.; Jaiswal, N. K. (2012): Sacred Space, Sacred Water: Exploring the Role of Water in India's Sacred Places. In: *RASAALA: Recreation and Society in Africa, Asia and Latin America 2012* (Vol. 3, No. 1).
- Fischer, Anke; Young, Juliette C. (2007): Understanding mental constructs of biodiversity: Implications for biodiversity management and conservation. In: *Biological Conservation* 136 (2), pp. 271–282.
- Fischer, L. K.; Honold, J.; Botzat, A.; Brinkmeyer, D.; Cvejić, R.; Delshammar, T. et al. (2018): Recreational ecosystem services in European cities: Sociocultural and geographical contexts matter for park use. In: *Ecosystem Services* 31, pp. 455–467.
- Garfield, Andrew M.; Drwecki, Brian B.; Moore, Colleen F.; Kortenkamp, Katherine V.; Gracz, Matthew D. (2014): The Oneness Beliefs Scale: Connecting Spirituality with Pro-Environmental Behavior. In: *Journal for the Scientific Study of Religion* 53 (2), pp. 356–372.

- Giusti, Matteo; Svane, Ulrika; Raymond, Christopher M.; Beery, Thomas H. (2017): A Framework to Assess Where and How Children Connect to Nature. In: *Frontiers in psychology* 8, pp. 2283.
- Gupta, Kanupriya; Agrawal, Rajat; Sharma, Vinay (2016): Sustainability from the lenses of spirituality: a new perspective. In: *IJIE* 3 (3/4), pp. 297.
- Hammersley, Martyn (2006): Ethnography: problems and prospects. In: *Ethnography and Education* 1 (1), pp. 3–14.
- Hedlund-de Witt, Annick (2013): Pathways to Environmental Responsibility: A Qualitative Exploration of the Spiritual Dimension of Nature Experience. In: *JSRNC* 7 (2).
- Hood, Ralph W. (1975): The Construction and Preliminary Validation of a Measure of Reported Mystical Experience. In: *Journal for the Scientific Study of Religion* 14 (1), pp. 29.
- Houart, Carlota (2023): Engaging with Water and Rivers from a Multispecies Justice Perspective. In: *Blue Papers* 2 (1), pp. 50–57.
- Ives, Christopher D.; Kendal, Dave (2014): The role of social values in the management of ecological systems. In: *Journal of environmental management* 144, pp. 67–72.
- Jakstis, Kristen; Dubovik, Maria; Laikari, Arto; Mustajärvi, Kaisa; Wendling, Laura; Fischer, Leonie K. (2023): Informing the design of urban green and blue spaces through an understanding of Europeans' usage and preferences. In: *People Nat* 5 (1), pp. 162–182.
- Kals, Elisabeth; Schumacher, Daniel; Montada, Leo (1999): Emotional Affinity toward Nature as a Motivational Basis to Protect Nature. In: *Environment and Behavior* 31 (2), pp. 178–202.
- Kleespies, Matthias Winfried; Braun, Tina; Dierkes, Paul Wilhelm; Wenzel, Volker (2021): Measuring Connection to Nature—A Illustrated Extension of the Inclusion of Nature in Self Scale. In: *Sustainability* 13 (4), pp. 1761.
- Lockhart, Helen (2011): Spirituality and Nature in the Transformation to a More Sustainable World: Perspectives of South African Change Agents. Thesis (M. Phil.). University of Stellenbosch, Stellenbosch, accessed 4/20/2023.
- MacDonald, Douglas A.; Friedman, Harris L.; Brewczynski, Jacek; Holland, Daniel; Salagame, Kiran Kumar K.; Mohan, K. Krishna et al. (2015): Spirituality as a scientific construct: testing its universality across cultures and languages. In: *PloS one* 10 (3), e0117701.
- Mayer, F.Stephan; Frantz, Cynthia McPherson (2004): The connectedness to nature scale: A measure of individuals' feeling in community with nature. In: *Journal of Environmental Psychology* 24 (4), pp. 503–515.
- Mayring, Philipp (2015): *Qualitative Inhaltsanalyse. Grundlagen und Techniken*. 12., vollständig überarbeitete und aktualisierte Aufl. Weinheim: Beltz (Beltz Pädagogik).

- Moberg, David (2010): Spirituality Research: Measuring the Immeasurable?
- Muhar, Andreas; Raymond, Christopher M.; van den Born, Riyan J.G.; Bauer, Nicole; Böck, Kerstin; Braito, Michael et al. (2018): A model integrating social-cultural concepts of nature into frameworks of interaction between social and natural systems. In: *Journal of Environmental Planning and Management* 61 (5-6), pp. 756–777.
- Müller, Susanne; Artmann, Martina; Surrey, Caroline (2023): Opening the human spirit to sustainability transformation: the potential for individual human–nature resonance and integrative rituals. In: *Sustain Sci*.
- Nagarajan, Vikas Madhav; Yuvaran, M.; Srinivasan, Rohith; Satagopan, Nanditha Ram; Asokan, Aswathi; A., Anooja (2022): Status of important coastal habitats of North Tamil Nadu: Diversity, current threats and approaches for conservation. In: *Regional Studies in Marine Science* 49, pp. 102106.
- Nisbet, Elizabeth K.; Zelenski, John M. (2013): The NR-6: a new brief measure of nature relatedness. In: *Frontiers in psychology* 4, pp. 813.
- Nisbet, Elizabeth K.; Zelenski, John M.; Murphy, Steven A. (2009): The Nature Relatedness Scale. In: *Environment and Behavior* 41 (5), pp. 715–740.
- Perkins, Helen E. (2010): Measuring love and care for nature. In: *Journal of Environmental Psychology* 30 (4), pp. 455–463.
- Piedmont, Ralph L.; Leach, Mark M. (2002): Cross-Cultural Generalizability of the Spiritual Transcendence Scale in India. In: *American Behavioral Scientist* 45 (12), pp. 1888–1901.
- Ratnakar, Rajesh; Nair, Shreekumar (2012): A Review of Scientific Research on Spirituality. In: *Business Perspectives and Research* 1 (1), pp. 1–12.
- Restall, Brian; Conrad, Elisabeth (2015): A literature review of connectedness to nature and its potential for environmental management. In: *Journal of environmental management* 159, pp. 264–278.
- Schnell, Rainer; Hill, Paul B.; Esser, Elke (2023): *Methoden der empirischen Sozialforschung*. 12. Auflage. Berlin, Boston: De Gruyter Oldenbourg (De Gruyter Studium).
- Schroeder, Herbert W. (1992): The spiritual aspect of nature: A perspective from depth psychology. In: *Proceedings of the 1991 Northeastern Recreation Research Symposium*. Radnor, PA.
- Schultz, P. Wesley (2002): Inclusion with Nature: The Psychology Of Human-Nature Relations. In: Peter Schmuck und Wesley P. Schultz (eds.): *Psychology of Sustainable Development*. Boston, MA, s.l.: Springer US, pp. 61–78.

- Thelen, Tatjana (2015): Ethnographische Methoden. In: Raj Kollmorgen, Wolfgang Merkel und Hans-Jürgen Wagener (eds.): Handbuch Transformationsforschung. In collaboration with Gudrun Mouna. Wiesbaden: Springer VS, pp. 255–264.
- Transkriptor (2021): Transkriptor. Available online at <https://transkriptor.com/>, accessed 12/30/2023.
- Underwood, Lynn G. (2011): The Daily Spiritual Experience Scale: Overview and Results. In: Religions 2 (1), pp. 29–50.
- van den Born, Riyan J.G.; Arts, B.; Admiraal, J.; Beringer, A.; Knights, P.; Molinario, E. et al. (2018): The missing pillar: Eudemonic values in the justification of nature conservation. In: Journal of Environmental Planning and Management 61 (5-6), pp. 841–856.
- VERBI Software (2021): MAXQDA 2022. Computer Software. Berlin, Germany: VERBI Software. Available online at maxqda.com.
- Zylstra, Matthew J.; Knight, Andrew T.; Esler, Karen J.; Le Grange, Lesley L. L. (2014): Connectedness as a Core Conservation Concern: An Interdisciplinary Review of Theory and a Call for Practice. In: Springer Science Reviews 2 (1-2), pp. 119–143.

5. Appendix

5.1 Interview Guide

A. Preliminary questions

I. Introduction

Could you tell us a bit about your personal and professional background and the work/projects that you are currently engaged in?

II. Motivation

What was your motivation to engage in this work/ environmental activism?

B. Questions about relationship and experiences with (urban) nature

I. Relationship/connectedness to nature

How would you describe your relationship with nature?

How connected do you feel with nature?

II. Nature experiences

How do you feel when you spend time in nature?

In which moments do you feel particularly connected to nature?

What is it that makes you feel connected to nature?

Are there any experiences that changed or fostered your connection to nature?

III. Places of nature experiences in the city

Where do you go in Chennai if you want to experience nature? And why?

Where else do you see and perceive nature in Chennai?

Is there anything you are missing in terms of green and blue infrastructure in Chennai and why?

C. Questions about the role of culture

Which role does culture play in your relationship with nature?

Do you think that your relationship with nature is influenced by your cultural background?
If yes, in what way?

D. Questions about spirituality in general

I. Understanding of spirituality

What do you think of when I say spirituality?

What does spirituality mean to you?

II. Meaning of spirituality in life

How important is spirituality for you in your life?

Do you consider yourself to have a spiritual orientation?

Do you engage in spiritual (or religious) practices/rituals either alone or in community with others?

E. Questions about the interplay between spirituality & nature connection

I. Relation between nature and spirituality

Which role does spirituality play in your relationship with nature?

Does it influence how you experience and value nature?

II. Spiritual nature experiences

Did you ever have a nature experience that you would call spiritual?

If yes, can you tell me something about it? In which moments/settings do you have a spiritual experience in nature? What was it that made it spiritual?

III. Urban places for spiritual nature experiences

Are there any places in Chennai in which you had a spiritual nature experience?

- If yes, where and what enabled this experience?
- If not, what is missing for having a spiritual nature experience in an urban setting?

IV. sacred natural sites

Are there any places or natural elements in Chennai that you would call sacred or holy?

What is your relation to those places or elements?

V. Meaning-making

Does your connection to and experience of nature help you to make sense of this world and find a purpose in life?

Do you find meaning and purpose in nature/ nature conservation?

VI. Motivational force

Which role does your (spiritual) connection to nature play in your engagement in environmental activism?

In what way does your (spiritual) connection with nature influence your behavior towards nature?

F. Questions relating to professional expertise

From your professional experience, how do people connect to nature?

Which role does spirituality and culture play in peoples relationship to nature?

Which role could spirituality and culture play in reconnecting people with nature?

What other aspects could play an important part in (re)connecting people with nature?

Which role could urban green and blue spaces play in (re)connecting people with nature?

How important could urban sacred natural sites be in that context?

G. Concluding and general questions

Which religion do you identify yourself with?

What is your age?

5.2 Consent Form

Interview Consent Form

Research Project Working Title:

The potential of spirituality in the conservation and planning of urban nature

Name of Researcher: Katrin Isabelle Bernard

Name of Research Participant: _____

Nature of the Research:

This research is part of my master's thesis for obtaining the degree M.Sc. in "Sustainable Urban Development" at the University of Duisburg-Essen, Germany. It aims to examine the spiritual and cultural dimensions of human-nature connectedness in relation to urban green and blue spaces and, on this basis, will try to derive potential implications for the conservation and planning of urban nature in the context of a deep sustainability transformation. For this purpose, interviews with local experts and citizens in Chennai will be conducted. The data collection is carried out in cooperation with the Indo-German Centre for Sustainability (IGCS) at the Indian Institute of Technology (IIT) Madras.

Research Implementation and Participant's Involvement:

For conducting the interview, I will approximately require one hour of your time. The interview will be recorded, and a transcript will be produced. If you wish, you will be sent the transcript and given the opportunity to correct any factual errors. The transcript of the interview will be analysed by Katrin Isabelle Bernard as research investigator. Access to the interview transcript will be limited to the research investigator and academic colleagues and researchers with whom she might collaborate as part of the research process. The contents of the interviews will be directly incorporated into the master's thesis.

With regards to being quoted in the thesis, please mark the statements that you agree with:

- I wish to review the notes, transcripts, or other data collected during the research pertaining to my participation.
- I agree to be quoted directly.
- I agree to be quoted directly if my name is not published and a pseudonym is used.
- I agree that the researchers may publish documents that contain quotations by me.

Consent to Participate in the Research:

By signing this form, I agree that:

- I am voluntarily taking part in this project. I understand that I don't have to take part, and I can stop the interview or refuse to answer any question at any time.
- The transcribed interview or extracts from it may be used as described above.
- I don't expect to receive any benefit or payment for my participation.
- I can request a copy of the transcript of my interview and may make edits I feel necessary to ensure the effectiveness of any agreement made about confidentiality.
- I have been able to ask any questions I might have, and I understand that I am free to contact the researcher with any questions I may have in the future.
- I have read and understood this consent form and been given a copy of it.

Signature of Participant

Date:

Signature of Researcher

Date:

If you have any further questions or concerns about this study, please contact:
Katrin Isabelle Bernard
Indian Institute of Technology Madras, Chennai, Tamil Nadu 600036
Tel: +91 7358107403, E-mail: katrin.bernard@web.de