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DISSERTATION

Voices of the Valley: **Unveiling Sustainability Insights from Binntal Landscape Park's Nature Guardians**

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Abstract

This dissertation examines the understanding of sustainability among individuals in nature-based professions within Swiss nature parks, specifically focusing on the Binntal valley. Despite global efforts towards sustainable development (SD), progress remains modest, and there is a pressing need to re-evaluate the practical implementation of sustainability goals. Integrating first-hand experiences and insights from professionals closely engaged with nature could provide a valuable perspective often overlooked in academic discourse. The study employs qualitative research, including photo elicitation and in-depth interviews with a dairy farmer, a gardener, a gamekeeper, a forestry worker, and a mountain guide aiming to bridge the gap between traditional sustainability education and the complex realities these professionals face.

The research reveals that a deep connection with nature—cultivated through physical activity, spiritual engagement, and adherence to tradition—fortifies an intrinsic understanding of sustainability. It uncovers the pivotal roles individuals play in ecological stewardship and the importance of recognizing systemic thinking for SD. Challenges identified include overpopulation and overconsumption, with personal growth and self-awareness posited as essential for overcoming these hurdles. The study advocates for an educational paradigm shift, emphasizing experiential learning and spiritual, as well indigenous knowledge to foster a comprehensive appreciation for sustainability. Ultimately, the dissertation argues for the integration of practitioner experiences into the sustainability dialogue to facilitate a more profound, action-oriented understanding that resonates with both present and future generations.

Preface and Acknowledgements

I'm not crazy. My reality is just different than yours.

Lewis Carroll

This dissertation is dedicated to warriors against ignorance, nurturer of curiosity, and heroes of courage.

With this ethos in mind, I extend my heartfelt gratitude to my companions Annina Hahn, Pat Clarke, and the Las Sorts community, whose unwavering inspiration propels my journey.

1 Introduction

1.1 Context of the study and significance

The United Nations (UN, 2023) state in the latest *Sustainable Development Goals Report* that, despite decades of efforts by the international community to create a sustainable and fairer world, progress has been relatively modest. Berg (2020) uses his example of rising CO_2 emissions to illustrate that, despite all efforts, there is no discernible reduction. In his book, Berg (2020) poses a provocative question to his readers — *"Is sustainability utopian?"* — and challenges as to whether Sustainable Development (SD)[1] has failed.

1 For the purposes of this paper, the terms sustainability and sustainable development (SD) are used as synonyms.

Despite Berg's concerns, Hofmann (2018) states that SD is attainable, but reliance solely on technological solutions, political regulations, or financial measures falls short. The shift in thinking and behaviour of individuals and societies is imperative for the realization of long-term SD. The United Nations Educational, Scientific, and Cultural Organization, UNESCO (2017) asserts that education is the pivotal factor in bringing about this transformative change. But teaching and understanding sustainability is a complex process. Washington (2018) confirms this complexity by emphasising that there is often confusion and misunderstanding, as the practical implementation of sustainability goals is often complicated and multi-layered. This raises the question of why the people who deal with sustainability in daily practice are not involved in decision-making processes. Caniglia *et al.* (2021) call for the integration of these practitioners and presents their experience and knowledge as a valuable resource that can be helpful in the design and implementation of sustainability measures. Such professionals working in nature-related professions can be found in the Swiss nature parks, which are considered models for sustainability. So far, only a few studies have been conducted on understanding sustainability among the inhabitants of Swiss nature parks. There has yet to be a study that specifically addresses the understanding of sustainability among people in nature-related professions in a Swiss nature park.

The following quote from UNESCO (2005, p.59) aptly summarizes the first section of this dissertation:

> *"We are faced with a paradox: Is education the problem or the solution in working toward a sustainable future?"*

In other words, given the present situation of unsustainable actions and excessive consumption, it may be deduced that education contributes to the issue. Should education be considered a remedy, it would demand a more thorough analysis and the creation of a wider perspective for what is to come. In this sense my dissertation aims to provide a new perspective by integrating the experiences and understanding of people in nature-based professions. Their perspectives could make the concept of sustainability more teachable and understandable.

1.2 Objectives and research goals

The aim is to discuss how people in nature-based jobs understand sustainability and what role their relationship with nature plays in this. The following research objectives are guiding:

1. To describe the working lives of a gardener, a dairy farmer, a gamekeeper, a forestry worker, and a mountain guide in the Binntal valley.
2. To identify the participants' perceptions of nature through photo elicitation and interviews.
3. To identify the participants' understanding of sustainability through photo elicitation and interviews.
4. To explain the differences and commonalities between the participants perceptions of nature and understandings of sustainability.
5. To draw conclusions that can be used to develop or support environmental education projects in the Binntal Valley.

It should be noted that the results relate to the period from April 2023 to October 2023, when the data was collected.

1.3 *Structure of the dissertation*

Chapter 1 offers a detailed overview of the various Swiss parks, including their objectives, sustainability philosophy, and educational commitments. Appendix 1 provides a brief portrait of the Binntal Landscape Park, which enables readers to better understand the participants' living and working environment. Chapter 2 critically analyses previous studies and discussions on sustainability in Swiss parks and schools. Chapter 3 deals with the methods used and explains the questions asked during the interviews. Chapter 4 presents the results, which are discussed in chapter 5. The dissertation concludes in chapter 6 with possible implementation strategies for the Binntal Landscape Park educational programme.

1.4 *Overview of Swiss Nature Parks*

1.4.1 WHAT IS A NATURE PARK?

The category of Regional Nature Parks was included in Swiss legislation in 2007. According to Swiss Parks Network (2023) there are now 20 parks in Switzerland, most of which are regional nature parks such as the Binntal Landscape Park which is the subject of this dissertation. In contrast to Switzerland's only national park (*shown in red on Figure 1*), they focus less on nature conservation but are model regions for SD and, therefore, do not necessarily have to have a core protection zone.

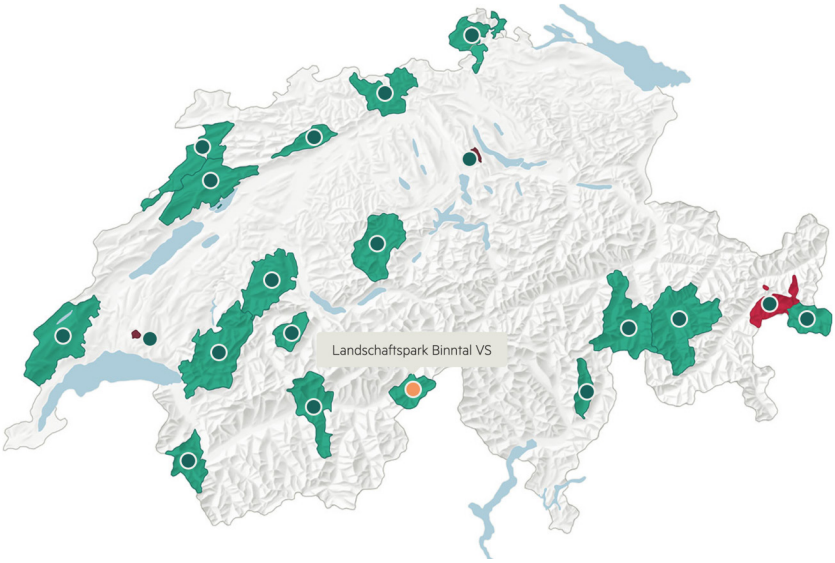


FIGURE 1 *Swiss Park Map* (Swiss Park Network, 2023).

According to Federal Office for the Environment, FOEN, (2023) regional nature parks are:

> *"partially populated, rural areas characterised by high natural, landscape, and cultural values. They promote the quality of nature, landscape, and sustainable development in the regional economy."*

The parks are thus obliged to ensure a balance between the protection and benefit of those areas. FOEN (2023) defines the strategy for achieving the overall target, while the cantons, in cooperation with the parks, define detailed objectives and record them in a performance agreement. Based on the performance agreement, the parks receive financial support from the federal government and the cantons. These subsidies represent most of the funding for the parks.

According to FOEN (2023), a primary strategic goal of the federal government for nature parks is to increase awareness and environmental knowledge among visitors and park residents. In this way, the parks make a significant contribution to SD.

In conclusion, Switzerland's legislation has fostered the growth of 20 Regional Nature Parks since 2007, including Binntal Landscape Park, emphasizing SD over strict conservation. The FOEN's (2023) strategy and cantonal cooperation, supported by federal and cantonal funds, ensure these parks contribute substantially to the SD and environmental awareness of the region.

1.4.2 SWISS NATURE PARKS AND EDUCATION

As FOEN (2023) states environmental education is one of the primary missions of the parks. Scheidegger *et al.* (2013) provided the foundation for implementing educational objectives through the federal education concept, complemented by each park's self-drawn education concept, which allows for the accommodation of local social characteristics.

Scheidegger *et al.* (2013, p.10) write that the federal education concept only serves as a rough guide to

> *"strengthen the understanding of sustainability and promote the willingness and ability to act sustainably in one's own living environment".*

According to Scheidegger *et al.* (2013), parks enjoy a great deal of freedom when drafting educational concepts. The implementation is often characterised by the understanding of sustainability of those responsible for education. Agten J. and Clausen P. (2022) state in the educational concept of the Binntal Landscape Park that environmental education aims to offer direct, multisensory experiences. Local experts should enable guests to experience authentic situations. The park's education programme mainly comprises one-day excursions for all age groups and craft workshops for adults. The park offers children regular nature experiences in their free time and at school. As a guideline for the school programmes, the park is guided by the public-school curriculum (Lehrplan21), in which education for sustainable development (ESD) is anchored. According to Lehrplan21 (2023), education is not regarded as a separate subject but instead treated as a cross-disciplinary core idea.

In conclusion, the park's mission to foster environmental education is supported by both national and local educational frameworks. While the federal education concept provides a broad outline for promoting sustainability and sustainable actions, individual parks have the flexibility to tailor their educational strategies to suit their specific social and environmental contexts.

1.4.3 THE UNDERSTANDING OF SUSTAINABILITY IN SWITZERLAND AND IN THE SWISS NATURE PARKS

Sustainability is not just a fad of our time but has long been enshrined in the Swiss Federal Constitution. According to Federal Office of Justice (2023), article 2 stipulates that the Confederation is responsible, among other things, for ensuring:

> *"the permanent protection of the living environment, in particular, the preservation of the natural basis of life and the conservation of natural resources as well as the promotion of sustainable and environmentally sound development".*

As specified by Education21 (2023), the signing of Agenda 21 during the United Nations Earth Summit in Rio de Janeiro in 1992 committed many countries to sustainability. Agenda 21 is an action plan for SD adopted by heads of states and governments worldwide. By signing, Switzerland committed itself to implementing strategies and measures to promote environmental protection, social justice, and economic development in line with the needs of present and future generations.

According to the Federal Department of Foreign Affairs (2023), Switzerland has devised a strategy named Agenda2030 to advance the Sustainable Development Goals, with a particular emphasis on education as a pivotal component. Organisations such as Education21 and the Swiss parks are essential collaborators in implementing ESD. Education21 focuses on promoting ESD in Switzerland. It supports schools, teachers, and education authorities in integrating ESD into the curriculum, developing teaching materials and training teachers.

All actors commissioned by the federal government to implement ESD refer to the federal government's understanding of sustainability. According to the Federal Office for Spatial Development (2023), Switzerland understands SD as a concept that,

> *"ensures the fulfilment of the basic needs of all people and a good quality of life, both today and in the future, everywhere in the world. It considers the three dimensions — environmental responsibility, social solidarity and economic performance — in an equal, balanced and integrated manner and recognises the limits to the carrying capacity of global ecosystems."*

The following graphic illustrates the dimensions of sustainability:

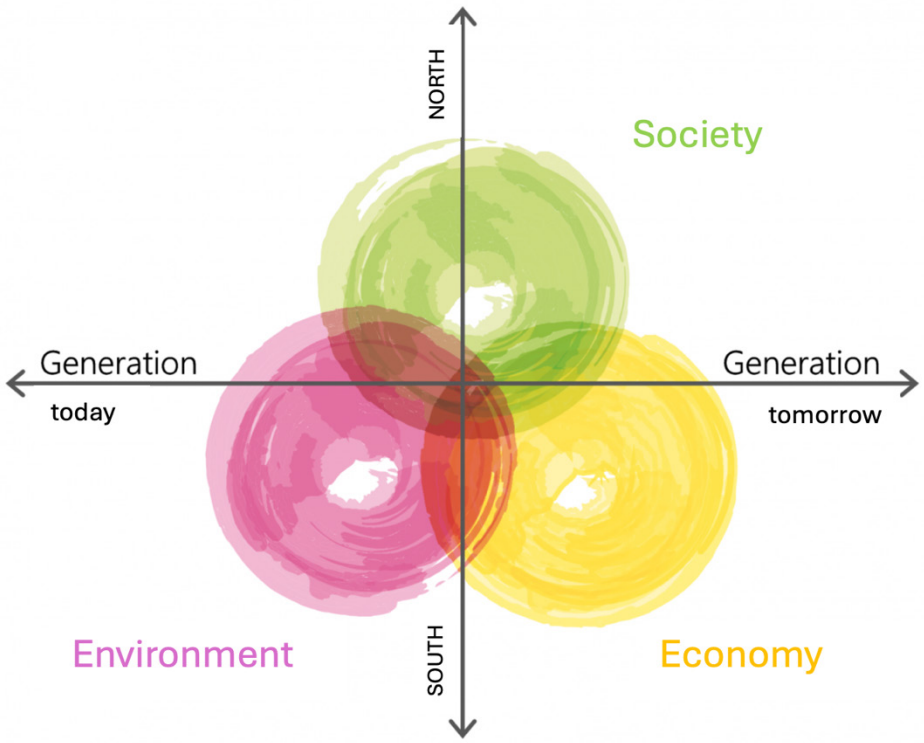


FIGURE 2 *The Three Dimensions Concept of the Confederation of Switzerland* (Hermes, 2022).

The parks' sustainability understanding is based on Switzerland's broader perspective on SD, which emphasizes fulfilling basic needs and ensuring a good quality of life for all while considering environmental responsibility, social solidarity, and economic performance. In addition to the three dimensions, there is a vertical (north-south) and a horizontal (today — tomorrow) axis. The spatial perspective of sustainability, which considers a fair distribution of natural, financial, and human resources at local and global levels, is represented along the vertical axis. At the same time, the horizontal axis considers the temporal perspective by depicting past experiences and the satisfaction of the needs of future generations according to the precautionary principle from the past to the present and into the future. Thus the understanding of SD in Nature Parks is more detailed than the national understanding which is closely aligned to the Agenda 21 commitments.

2 Literature review

The literature review provides a comprehensive overview of the current state of research and understanding of sustainability education in Swiss Nature Parks. It encompasses a wide range of topics, from the complexities of defining sustainability to the challenges of implementing Education for Sustainable Development (ESD) in state schools and the understanding of sustainability among park residents.

2.1 The challenges of defining sustainability

According to the latest United Nations Sustainable Development Report (United Nations, 2023), it is sobering to note that, eight years subsequent to the ratification of the Sustainable Development Goals and the Paris Climate Agreement, a mere two out of the thirty-six ambitious targets have been reached. In essence, it appears that nations globally have diverged from the designated trajectory. However, Berg (2020) identifies the reasons for unsustainable behaviour as an entanglement of intrinsic, such as short-term thinking, and extrinsic barriers, such as international law. Furthermore, Berg (2020, p.67) points out the cognitive limitations of humans to properly understand exponential growth or multifaceted systems without intensive training. In other words, complexity in multiple ways hinders a comprehensive understanding and effective implementation of SD. Complexity can be seen, on the one hand, in the many sustainability goals defined by the UN (17 goals with 167 sub-goals) and, on the other hand, in the conflicting goals they contain. However, Ruggerio (2021) vividly illustrates that the definition of SD is complex — a complexity that has sparked intense debate among scientists. It has led to different schools of thought. Thus, if academics already disagree on what sustainability means, and if the goals are too complex to allow understanding and effective implementation, it raises the question as to whether and how effective measures can be implemented.

To conclude this complexity and the resulting challenges, sustainability requires a deep and lasting reflection on our priorities and a significant change in our thinking and actions.

In addition to Ruggerio (2021), Hofman (2018) points to the definition debate of sustainability by highlighting the conflict in the practical implementation of sustainable goals because of the impreciseness of interpretations. Wendt *et al.* (2019) also recognizes the problem of the ambiguity of sustainability, but he points out that the term can be misused for contradictory social phenomena. Therefore, Rouhiainen and Vuorisalo (2019) argue that interdisciplinary collaboration is necessary to come closer to a unified definition or consensus on sustainability. They point out that neither an expert nor a layperson can fully understand the sustainable dimensions — economy, environment, and society — and their interactions. In this sense, the United Nations (2023) recognized the complexity of SD. They acknowledged that it is a challenge for the individual to understand the interconnected nature of SD. Therefore, the United Nations (2023) sees an urgent need for action to simplify the explanation of the terms. To better understand the complexity, Rouhiainen and Vuorisalo (2019) call for different disciplinary and value-based perspectives that can lead to the development of creative and relevant sustainability solutions for other stakeholders in different contexts. Fritz and Binder (2020) also emphasize the crucial role of practitioners in SD, too. In their view, practitioners clearly understand relevant problems and solutions due to their experience and expertise. Fritz and Binder (2020) continue to emphasize the importance of integrating practitioners into the research agenda to ensure that scientific research contributes directly to shaping a better future. Caniglia *et al.* (2021) support this statement by referring to an action-oriented approach, as they are convinced that knowledge pluralism can improve sustainability science. They suggest that research becomes more effective and relevant by recognizing different perspectives and integrating them into action processes. Caniglia *et al.*, (2021) clarify that pure knowledge generation through research and its transfer to society is impractical. They suggest that such a technocratic approach could be rejected by some social actors, as it often needs to include a participatory process, and many recommendations cannot be implemented in practice. Thus, the literature shows the need for participation of practitioners in the definition of sustainability and in the development of solutions.

I therefore agree with the opinion of Rouhiainen and Vuorisalo (2019), who argue in favour of the need for interdisciplinarity in SD and ESD. Unfortunately, this interdisciplinarity is not reflected in the composition of the Education21[2] team. In response to an enquiry, Education21 (2023) clarified that only employees with an academic background are employed in the field

2 Education21 is a leading organisation in Switzerland that has been commissioned by the Swiss government to promote ESD in state school (Education21, 2023).

of education. It remains to be seen why educators, who should be aware of the importance of innovation through diversity, favour such a homogeneous profile among their staff.

In summary, the complexity of SD has led to disagreements in the definition of the term, which influences the understanding of social actors. In addition, intrinsic and extrinsic barriers make implementing measures for successful SD difficult. This situation underlines the need for interdisciplinary cooperation to utilize pluralistic knowledge. The involvement of practitioners is significant as they can positively contribute to shaping the future.

2.2 Education for Sustainable Development in state schools

Since the Brundtland Report (1987) and Agenda 21 publication (1992), introduced at the conference in Rio de Janeiro, ESD has been firmly anchored in the school curricula of all UN member states. Various studies dealing with implementing ESD worldwide are presented below.

To begin with Palmberg *et al.*, (2017) note in their comprehensive literature review that schools still need to achieve the goals for sustainable education. In their opinion, this is mainly because teachers worldwide need to be sufficiently trained in environmental education. Kopnina (2020) supports this statement and criticizes the insufficient understanding of SD among teachers and students. She particularly emphasizes that the complexity and inherent contradictions of the SD Goals need to be adequately addressed. Thus, the process of implementing ESD seems problematic.

A study was also carried out in Switzerland by Gavin and Audrin (2023), which examined the understanding of SD among pupils and teachers. The study found that comprehensive knowledge of sustainability is lacking among groups of pupils in particular. Groups who have difficulties understanding SD mainly come from socially disadvantaged families and usually pursue vocational education. These students often show a passive attitude towards sustainability and randomly apply environmental measures without fully understanding their meaning in the context of sustainability. Gavin and Audrin (2023) have yet to explore why these students show a lower

understanding of SD than their peers on academic pathways. Jickling (2016) may offer an answer to the insufficient understanding of SD by blaming the Western school system. He criticizes the abstract, theory-heavy approach that only considers some types of learners. Furthermore, Jickling (2016) points to the need for more understandable and practically implementable ESD in the curricula. The question arises as to whether there are more effective methods to reach pupils with a lower level of understanding and interest in sustainability. Jickling's (2016) findings that the curriculum is inadequate for implementing ESD also apply to the Swiss school system. However, it is unclear what exactly Jickling (2016) and other researchers mean by comprehensible education about SD, or what skills students and teachers should acquire to put the principles of SD into practice effectively.

Many researchers agree that an interdisciplinary and pluralistic approach to teaching and learning is essential. Jickling (2016) recommends using and integrating experiential education related to sustainability to enable students to understand and engage with the concept better. Additionally, Palmberg *et al.* (2017) emphasize ecological literacy, which requires a more profound knowledge of systems and an understanding of the relationship between species identification, biodiversity, and SD. Kopnina (2020) concludes that critical reflection, the consideration of alternative educational approaches, and the integration of traditional knowledge systems into the educational framework are of great importance. Kopnina (2020) refers to indigenous learning, ecocentric education, or degrowth pedagogy in describing "alternative educational approaches". Vesterinen and Ratinen, (2023) emphasize the need to integrate systems thinking, collaboration, future orientation, value thinking, and action-oriented competencies into the learning and teaching of SD. All these approaches indicate that the solution for a successful implementation of ESD may not lie in concrete teaching methods, but rather in ontological and epistemological questions.

In considering how ESD is implemented in Switzerland, Gavin and Audrin (2023) need to be more specific in their recommendations, mainly when they refer to necessary pragmatic tools, such as teaching arrangements, without going into detail. Gavin and Audrin (2023) need to make more specific recommendations for action, since they are two of the few researchers in Switzerland who have worked intensively on students' understanding of sustainability. Berg says aptly (2020, p.329) that "What works well in one region may not be the case elsewhere." He states that culturally specific characteristics

must be considered. However, this requires reliable data and recommendations, which barely exist in Switzerland.

Returning to the global discussion about ESD, I have noted that recommendations for ESD have certain parallels with the reform pedagogues that emerged at the end of the 19th century and the beginning of the 20th century. Hänggi *et al.* (2022) emphasise the holistic, life-, development- and action-oriented approach of the reform pedagogues, whereby the students are expected to take on more responsibility. It seems potentially valuable to consider the relevance of the ideas of John Dewey and Rudolf Steiner for ESD. According to Zurbriggen (2009), Dewey strongly emphasized the value of learning by doing, while Steiner also promoted spiritual and creative elements. In addition, many reform pedagogues regard nature as a valuable learning and experience space for pupils, whose importance is emphasised by researchers of our time. Modern researchers such as Richardson *et al.* (2022) and Soga and Gaston (2016) also emphasize the aspect of closeness to nature, which could be important for understanding sustainability. Richardson *et al.* (2022) suggest that regular time spent in nature helps strengthen the relationship between people and nature and fosters an appreciation for the natural environment. This, in turn, contributes to sustainable behaviour and the protection of natural resources. Soga and Gaston (2016) found in their literature review that for adults and children, participation in nature-based activities enhances the emotional connection to nature and positively impacts pro-environmental behaviour. Thus, the link between closeness to nature and understanding sustainability seems to have a considerable history. However, this may be overly simplistic. Some nature educators take the approach that regularly bringing children and adults into contact with nature is enough to encourage them to adopt sustainable behaviour. This approach seems too short-sighted because sustainable behaviour is also determined by other factors (such as intrinsic and extrinsic barriers).

In summary, nature parks in Switzerland could pursue innovative education approaches for SD. As extracurricular places of learning, they are not bound by school structures and curricula, which gives them a certain degree of flexibility and freedom. In addition, the legal requirements of the federal government offer sufficient scope allow to become genuine model regions for ESD. These could inspire and motivate teachers with their innovative approaches and practices. Furthermore, nature parks have intact ecosystems in which the connections could be experienced, and where the bond with nature could be renewed.

2.3 Education for Sustainable Development in Swiss Parks

There are few studies on how sustainability is understood and how ESD is implemented in nature parks. The fact is that Switzerland's nature parks and ESD research are relatively new phenomena, and this could explain the research gap.

The study by Wiesli *et al.* (2020) discusses various dimensions of sustainability in three Swiss nature parks and including how their inhabitants perceive them. Their work does not deal explicitly with the understanding of sustainability. Their focus is more on which sustainable factors influence the population's quality of life. They found that some residents have a view of sustainability that is tightly focused on a few environmental issues. In contrast, others recognize the importance of sustainability in various aspects of their daily lives without recognising connections between the dimensions. The study found that there is a strong demand for strengthening knowledge, awareness, and behaviour regarding sustainability, nature, and the environment in the education system. Wiesli *et al.* (2020) also identified a need for more information regarding the roles, importance, and purpose of parks and their responsibilities and activities.

Like Wiesli *et al.* (2020), Sigrist (2020) also confirms that the population perceives nature parks primarily as promoters of the environmental dimension. In her study, she looked at young people's understanding of parks and SD in Swiss nature parks. Sigrist (2020) states that young people do not understand sustainability completely and see little interdependencies between the dimensions. This could be because understanding the various dimensions of sustainability depends on individual experiences, educational background, and personal interests.

Sigrist's (2020) findings about the population's insufficient knowledge of sustainability are supported by Imhof's (2018) study which refers to the acceptance of the Binntal Landscape Park among the population. She indicates the need for more awareness of sustainability among the residents of the Binntal Landscape Park. In her research, she found that the park is only partially perceived as a model region for SD (particularly regarding tourism and nature conservation). Only 2% of respondents associated the Landscape Park with ESD. It is worth noting that since the Imhof study, the Binntal Landscape Park has recognized this problem and placed more emphasis on

education and information. A new survey would clarify whether the park's objectives and the concept of sustainability are better understood. Although the studies by Sigrist (2020), Wiesli *et al.* (2020) and Imhof (2018) did not deal explicitly and in-depth with the understanding of sustainability, it is noteworthy that the nature parks studied were only partially successful in establishing themselves as model regions for sustainability. Unfortunately, the studies do not provide any information as to whether these difficulties are due to the complexity of the concept of sustainability, whether park employees insufficiently understand the idea of sustainability or whether there are completely different reasons.

The somewhat older study by Paulson (2011), which looked at implementing the educational mission in Swiss parks, could help answer this question. Paulson (2011) found that the federal guidelines demand a high degree of autonomy from the parks and offer those responsible for education a great deal of creative freedom. According to Paulson (2011), the educational goals and the parks' understanding of their role heavily depend on the knowledge and experience of those responsible. He also emphasizes that explaining the various dimensions and objectives can be complex.

Scheidegger *et al.* (2012) have also recognized the divergent and sometimes inadequate communication of sustainable goals in parks. Scheidegger *et al.* (2012, p.10) note that parks often use traditional teaching and learning methods and should, therefore, consider the findings of current environmental education research. Consequently Scheidegger *et al.* (2012) drew up a conceptual framework for education in parks and nature centres, which is still valid today. Scheidegger *et al.* (2012) emphasize that environmental education in parks needs to be professionalized and provides guidelines for implementation, but without naming specific goals.

Despite the 2012 education concept, from my experience as education project manager at the Binntal Landscape Park, I enjoy considerable freedom in implementing the educational objectives. However, this freedom also risks sustainability being interpreted by those in charge very individually, which could impact ESD's effectiveness.

In summary, the understanding of sustainability among the residents of parks has not yet been sufficiently researched. From the sparse research results, nature parks still need to be perceived as model regions for sustainability. The

ecological dimension, in particular, is recognized by park residents but cannot be related holistically to the other dimensions. For this reason, inhabitants might not sufficiently recognize parks as model regions for sustainability. The studies do not investigate whether this is related to the complexity of sustainability and its formulation. The federal government's obvious loose and outdated education park concept might offer those responsible for education too few options for concrete implementation options, which could influence the ESD's success. A study on the understanding of sustainability among those accountable for education could provide fascinating insights into this.

3 Methodology

3.1 Research Design

My work focuses on the perceptions and experiences of sustainability among people working in nature-related professions. Instead of statistical representativeness, I use in-depth interviews to explore specific cases to gain insights into the lives and opinions of those involved. Following Gratton and Jones (2015), the qualitative study focuses on the exploratory "how and why" rather than the quantitative aspects. The objective of this research is not to test predetermined hypotheses but to develop or extend existing concepts in my work. These concepts are based on the data obtained in the research and are intended to provide implications for the park's educational programs. In doing so, I follow the inductive approach of grounded theory, in which the participants' statements are compared. In this process, Rodner (2019) recommends collecting, coding, and analysing data to identify patterns and concepts. Therefore, the data for my study was collected and analysed using in-depth interviews.

Grounded theory is a suitable methodology for my work, as it corresponds to my constructivist perspective and places the individual with their experiences, worldviews, and hopes at the centre. Rodner (2019) emphasizes the constructivist character of grounded theory and describes the process as a mutual generation of knowledge between the researcher and the participant, whereby the context also shapes the findings. Context in this study means not only were findings shaped by individual experiences, but that, for example, the type of interaction and cultural characteristics influenced the outcome.

To ensure the credibility of this study which is expressed through the principles of Tracy (2010), I emphasize rich rigour, achieved by linking data sets to the literature. Furthermore, I demonstrate sincerity through self-reflexivity and transparency about my methods and the associated challenges. Finally, my focus is on the credibility of my study, which I express through a detailed description and explanation of the tacit knowledge.

3.2 Data collection

Five semi-structured interviews were conducted and recorded on tape, transcribed, coded, and then analysed. The duration of the interviews varied between 50 and 90 minutes. To clarify unclear answers and gather more information in specific areas, I asked the participants follow-up questions. These additional interviews lasted 15 to 20 minutes each. The saturation level was reached through the combination of primary interviews, follow-up questions, and notes.

The interview was a suitable method for this study, as the limited number of appropriate participants and the diversity of information make a survey obsolete. Due to the varying responses of the participants, I opted for semi-structured interviews. This flexible approach to data collection allowed me to vary the order of questions and delve deeper into specific areas of interest with additional questions. Edwards and Holland (2013, p.29) emphasize that a guide in a semi-structured interview should provide enough leeway to ask pre-formulated questions, steer the conversation's course, and address the participants' specifics with targeted follow-up questions. For this reason, an interview guideline (Appendix 2) was created following Wiesli's (2020) example. According to the table, I conducted the interview horizontally from an open narrative to specific questioning. The topic was introduced with an open, narrative-generating question (narrative impulse). Then, the content of the interviewee's narrative was followed up, and corresponding specific questions about this content were asked (topic-specific follow-up questions). Finally, questions that arose after the interview were asked and were essential for answering the research questions but still needed to be clarified (important follow-up questions).

When conducting the interview, I decided to use visual stimuli. Over six months, the participants were asked to take 20–30 photos of their daily work. They also had the option of choosing existing images from their photo archive. The pictures were intended to show the diversity of their work on the one hand and aspects of sustainability within their activities on the other. During the interview process, the participants could choose from the images they had created that best answered the questions posed and seemed most relevant. In doing so, I followed the participant-led and semi-structured interview recommendations by Bates *et al.* (2017), in which the researcher asks questions, and the participant selects and responds to relevant images.

I decided to use the photo-elicitation method because sustainability is a complex phenomenon that is difficult to describe. Photos can help to access both conscious and unconscious feelings and thoughts. According to Harper (2000), images can create a connection to human consciousness that is difficult to convey through words. Therefore, images can highlight aspects that might not have occurred to the participants in a conventional interview. In this context, Bates *et al.* (2017) speak of new dimensions that can emerge during the interview, which can easily be overlooked or viewed in a new light. A photo-elicited interview is, therefore, a dynamic process in which meaning is constructed during the interview process. Harper (2000) deepens this aspect by speaking of a connection between researcher and participant who are involved in the process because of their personal, social, and historical backgrounds. Thus, it is not only the participant who creates meaning for the researcher by interpreting their images but also the researcher actively involved in the meaning-making process. In this intimate act of the shared meaning-making process, trust is key to the quality of the data. Consequently, I accompanied my participants for a day, not only to get to know their work and lend a hand myself, but also to familiarize myself with the specialist vocabulary that served as the basis for my interview questions. In the process, we built up mutual trust and got to know each other as people with different skills.

In terms of the limitations of my dissertation, Gratton and Jones (2015, p.113) emphasise that a small number of participants limits the generalisability of the results, as the sample may not be representative of the overall population. They also point out gender-specific discrepancies that can lead to biased results. In my study, the under-representation of women (one in five) and limited generalisability due to the small number of suitable participants in a specific research area was unavoidable (Chapter 3.3 Sampling methods). I was aware of the risks of subjective interview bias that may arise due to the interviewer's behaviour or the participants' desire to respond in a socially desirable way. Gratton and Jones (2015, p.28) also note that subjectivity can affect the analysis, where the researcher's interpretations can bias the results. To minimise such biases, I have set high standards of neutrality and objectivity in my research methodology.

3.3 Sampling methods

Selective sampling allowed me to choose my participants, as the potential group is small due to geographical and professional criteria. Due to my selection criteria, I could only find a few people within my research group. Gratton and Jones (2015, p.112) recommend selective or purposive sampling in cases where participants have specific characteristics. Therefore, the criteria for the research group were:

- Participants must complete at least 80% of their annual work in and with nature.
- They should have at least 20 years of professional experience.
- They must work and/or live in the Binntal Landscape Park.

The three criteria are based on participants extensive expertise and technical acumen through years of daily outdoor labour, enriching their comprehension of nature and sustainability. Moreover, their extensive experience honed their ability to discern subtle shifts within the natural environment over time. It is important that the participants have a similar local cultural background so that their statements can be compared with each other, and adjustments can be made to the park's educational program.

The biographies of the participants can be found in Appendix 3 and can help the reader to place certain statements in a biographical context. The biographies contribute to the achievement of the first research objective, which is:

> *To describe the working lives of a gardener, a dairy farmer, a gamekeeper, a forestry worker, and a mountain guide in the Binntal valley.*

The participants were not anonymised because they would have been nevertheless recognizable due to the limited nature of the study area and the uniqueness of their profession.

When choosing the participants, I followed the suggestions of my work colleagues. These recommendations, however, were not based on any knowledge of the questions in my dissertation but on the positive experiences my colleagues had had with these people in the past. As I had moved to the park very recently, participants were previously unknown to me, which could prevent a convenience bias. Gratton and Jones (2015) support this statement by saying that implies a certain randomness in the selection of participants and increases the reliability of the study.

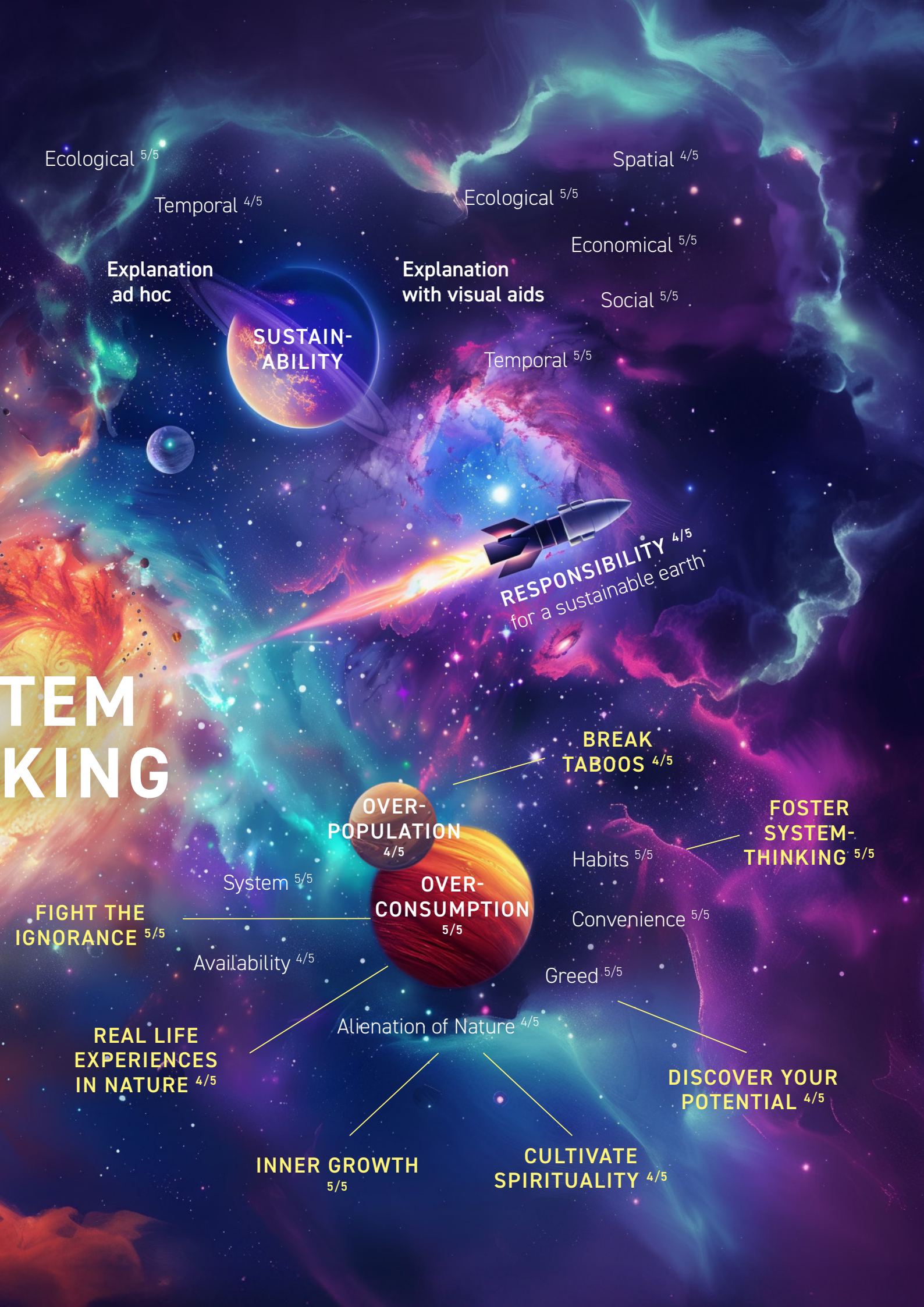
3.4 Data Analysis

I utilized thematic analysis to uncover patterns in my data, specifically exploring the potential connection between exposure to nature and understanding sustainability. Starting with a basic thematic analysis, I progressed through stages of prioritization and integration, until arriving at key themes for a model. The Delve software (Appendix 4) proved invaluable for its ability to discern recurring themes, categorize them effectively, and was particularly well-suited for analysing in-depth interview data. Further, I linked the identified key themes with each other. I was guided by Charmaz (2006, p. 70), who recommends memo writing to increase creative thought processes during data analysis. In an ongoing reorganisation process, I used

Post-it® Notes to search for meaning in my data. Rodner (2019) emphasises how essential it is for data analysis to go through several cycles before a clear picture can emerge and conclusions can be drawn. While creating the first drafts, I added further considerations to my Post-it® Notes wall, and previously hidden connections became visible. Gratton and Jones (2015, p.28) describe this process as uncovering meanings, not so much looking for a single truth as trying to understand the participants' perspectives. My Post-it® Notes wall eventually evolved into a *galaxy-like* representation (*Figure 3*), which now forms the basis for my final report; the conclusions of which are supported by current literature. The individual *planetary systems of the Galaxy* also guide the reader through the report. The chapter titles are linked to the *Galaxy* representation.

FIGURE 3 *The Galaxy* (MidJourney, 2024, modified by author) – see next page.

4/5 means 4 of 5 participants.


Ecological 5/5
Temporal 4/5
Explanation ad hoc
SUSTAIN-ABILITY
Explanation with visual aids
Ecological 5/5
Spatial 4/5
Economical 5/5
Social 5/5
Temporal 5/5
RESPONSIBILITY 4/5
for a sustainable earth
TEM
KING
BREAK TABOOS 4/5
OVER-POPULATION 4/5
FOSTER SYSTEM-THINKING 5/5
Habits 5/5
System 5/5
OVER-CONSUMPTION 5/5
FIGHT THE IGNORANCE 5/5
Convenience 5/5
Availability 4/5
Greed 5/5
Alienation of Nature 4/5
REAL LIFE EXPERIENCES IN NATURE 4/5
DISCOVER YOUR POTENTIAL 4/5
INNER GROWTH 5/5
CULTIVATE SPIRITUALITY 4/5

4 Findings

The first section of the presentation looks at the relationship between people and nature. Specifically, this means that the participants' emotions towards nature are described, in order to illustrate their connection to it. The presentation then discusses how individuals view the value of nature in this relationship. Finally, the presentation uses Bogert *et al.*'s (2022) classification scale (Appendix 5) to identify anthropocentric or ecocentric[3] tendencies among the participants.

In the second section, the focus is on the participants' understanding and personal experiences of sustainability. The process begins with a spontaneous definition and leads to the concept of sustainability, according to the Swiss Confederation, to gain a more comprehensive picture of the participants. Finally, the challenges and the strategies to overcome obstacles towards SD are outlined, providing a deeper insight into the participants' understanding and experiences of sustainability. The photographs were selected through specific questions or spontaneously by the participants and served as the basis for the interview. It should be noted that not all statements were directly triggered by the pictures. Therefore, not every statement is assigned to a picture.

3 Anthropocentrism is a human-centered world view that leads to human needs and interests being placed above those of non-human beings such as the environment or other species (Kopnina *et al.* 2018).
Ecocentrism: Ecocentrism is a non-human-centered ontology that ascribes moral value to both non-human species and the environment. It recognizes the well-being of all non-human entities (Kopnina *et al.* 2018).

4.1 Human – Nature Relationships

4.1.1 FEELINGS

People often reveal a deep connection and intuitive understanding of the environment by expressing their feelings towards nature. Such emotional expressions can reflect a sense of admiration, dependence or even protection towards the natural world. The expression of feelings indicates how engaged someone is with nature issues and can show their awareness of the importance of natural resources.

FIGURE 4 *The Feelings Planetary System* (MidJourney, 2024, modified by author).

4.1.1.1 Respect

The term 'respect' in this context encompasses reverence and regard for the immeasurable power of nature and a profound understanding of the interdependence of all living things. It emphasises the responsibility as humans to preserve the earth and its ecosystems for future generations.

FIGURE 5 *Regeneration of nature* (Blatter, 2023).

The Galenstock is losing steadily its glacier and the question is how long it will still have ice. This inspires respect, if not a little fear. We need water to live — how can we overcome this challenge? Nature will regulate itself; we must think about how to organise it to survive (1).

Forestry Worker

The forestry worker expresses a deep concern caused by the witnessed dwindling ice mass of the Galenstock and the associated water problem. This concern is coloured by a respect for the inevitable forces of nature and a particular fear of the future challenges facing humanity. The realisation that water is essential for survival and the uncertainty about how these environmental changes can be countered resonate in his words.

FIGURE 6 *A summer of hard work* (Gurten, 2023).

I respect my animals (cows) because they do a lot of good for us (milk production). Of course, we farmers also do a lot of good for them (2).

Dairy Farmer

The relationship between the dairy farmer and his animals is deeply rooted in respect and interdependence. The farmer provides his animals with food, care, and medical attention to ensure their well-being and productivity. In return, the cows offer valuable resources such as milk, which form the basis of the farmer's livelihood. This symbiotic relationship reflects the essential principles of agriculture, in which animal care and respect for nature take centre stage.

4.1.1.2 Connectedness

The close connection to nature is multi-layered and manifests through sensory perceptions, profound metaphysical experiences, and the cultivation of time-honoured traditions. Such associated feelings may deepen the participants' awareness of the environment and evoke a sense of connection.

> *I touch something to grasp nature and become a part of it. I feel it with my hands. The eyes and hearing also help to send messages to my brain. At the school, learning was all about abstract learning, having an exam, and forgetting everything again (3).*
>
> Gardener

FIGURE 7 *An intern connects with nature* (Corbellini, 2023).

The gardener suggests a tactile and sensory engagement with nature, where the person touches things to understand and become connected to the natural world. This experience involves using not just the hands but also the eyes and ears to perceive and process information, which then gets sent to the brain. The second part contrasts this direct, sensory-based learning with the more abstract, and perhaps disconnected, learning experience at school. It highlights a cycle of studying for exams without truly retaining the knowledge for long-term understanding or application.

> *These pastures are remote. We ask ourselves why we go to make hay in these steep pastures. It's simply a deep connection to the land. Like my ancestors, I also want to farm this land (4).*
>
> Dairy Farmer

FIGURE 8 *Clod connectedness* (Gurten, 2023).

The farmer expresses a profound sense, an almost metaphysical connection, and a respect for the traditions of his ancestors. This emotional connection to the land and the continuation of farming practices are integral to his identity and heritage. The farmer recognises that the pastures are not economically viable, but this does not stop him from harvesting the hay.

4.1.1.3 Tradition

The participants explain the connection with nature through family traditions and professional practices in childhood that are deeply rooted in agriculture and craftsmanship. This usually triggers positive memories for the participants. This cross-generational closeness to nature manifests in the knowledge passed down by caregivers and the hours spent outdoors. Whether herding cattle or tending the forests, these activities are seen as sources of income and opportunities to appreciate and protect the natural environment.

> *My grandfather was a forestry worker, and my father was a dairyman and hunter. We were always out in nature. My grandparents and my uncle were farmers. Our summer holidays were spent haymaking and herding cattle. That's how you become closely rooted in place and nature (5).*
>
> Gamekeeper

The gamekeeper expresses how his family has been connected to nature through their professions for generations. He lists activities and traditions that describe a heritage, emphasising respect, and living in harmony with the environment. Summer holidays spent not on leisure, but hard agricultural work shaped his relationship with nature and the seasons.

> *My father was a farmer and carpenter. I benefited a lot from his skills and knowledge. He showed me the beauty of nature. He let me do a lot and gave me responsibility. He was a great role model (6).*
>
> Dairy Farmer

The dairy farmer sees in his father a man of many skills as a farmer and carpenter. It is clear how the narrator has gained valuable lessons and skills through direct involvement in the work and the responsibility he has been given. The father not only serves as a master craftsman but also opens an understanding of the beauty and value of nature, which is presented as formative for the narrator's life.

4.1.1.4 Spirituality

The following section reflects a connection with nature, presented by feelings of inspiration and transcendent experiences. The participants show their connection aesthetically and metaphysically. They see nature as a force that enables and protects life. In doing so, they transcend the normal boundaries of human experience and consciousness.

> *The Finsteraarhorn area is a place of power for me. I like being there, and it is lovely with its glaciers. It isn't easy on the Grand Combin. There are a lot of rockfalls and accidents. Grand Combin has an unexplainable dark energy (7).*
>
> Mountain guide

FIGURE 9 *Finsteraarhorn* (Julier, 2022).

The mountain guide describes two mountains on a personal and metaphysical level. He describes the Finsteraarhorn as a personal place of power that radiates peace and positive energy. In contrast, the Grand Combin is perceived as a place with a more challenging, almost frightening energy, where the forces of nature are present in the form of falling rocks and accidents. This juxtaposition points to the experience that certain places can have a harmonious aura even within nature, while others are perceived as challenging or threatening.

> *For me, nature is the ultimate force that makes life in this world possible. It's like a mother in a way who is caring for us. It's a fundamental thing or entity (8).*
>
> Gardener

The gardener perceives nature as an all-encompassing, nurturing presence, similar to a mother figure. In doing so, she expresses a spiritual level because she is striving for a higher power or self. For her, nature is the basis of life, an essential entity that provides security and vitality. It conveys the impression that nature is a fundamental, indispensable part of our existence.

4.1.2 THE VALUE OF NATURE

FIGURE 10 *The Value of Nature Planetary System* (MidJourney, 2024, modified by author).

All participants distinguish between instrumental and intangible values of nature. Instrumental values refer to the material and practical benefits people can derive from the environment, such as raw materials and food. On the other hand, intangible values include aesthetic, spiritual, and cultural meanings that people derive from their relationship with nature.

4.1.2.1 Instrumental value of nature

> *Look at this carpet, which is made of wool. Wool alone does not make a carpet. It needs a process in which the hairs are woven together. Hair is like living beings that are interwoven and interdependent. The result is a whole. People need the goods of nature to survive. If one hair is missing, the whole carpet may fall apart (9).*
>
> Gardener

With this metaphor, the gardener reflects the deep connection between nature and human existence. Just as individual strands of wool must be woven together to create a robust carpet, all organisms interact with each other in a dependent manner and form a supporting network. The comparison emphasises that the absence of a single organism has the potential to disrupt the ecological connection and, therefore, impact human survival.

FIGURE 11 *Clients on the Aletsch Glacier* (Julier, 2021).

> *The environment must be preserved so that I can earn money. I can take people into the mountains if the environment is not destroyed (10).*
>
> Mountain guide

The mountain guide has a strong financial interest in preserving the environment, as his income depends on taking people to the mountains. His dependence on a healthy environment for his livelihood creates a sense of urgency and concern about environmental degradation and its impact on his business.

4.1.2.2 Intangible value of nature

> *It is the beauty of nature, the far-sightedness, the different weather—the extremes — from beautiful to lousy weather and the challenge of finding your way. You see people happy and content (11).*
>
> Mountain guide

The mountain guide sees nature as a source of inspiration and tranquillity. It allows him to escape the hectic pace of everyday life and immerse himself in a world of silence and inner contemplation. In harmony with nature, many people find their way back to themselves and draw new strength. He perceives the importance of resilience as he learns to adapt to the changing environment conditions, which allows him and his clients to experience self-efficacy.

> *We have a lot of volunteers here who can't cope with life. They feel at home because they like it here, and their souls are improving (12).*
>
> Gardener

FIGURE 12 *Working together* (Corbellini, 2023).

The gardener emphasizes the importance of community and volunteer engagement. It shows how involvement in social projects provides a place for people struggling in their personal lives to feel useful and experience healing. The point is that volunteering benefits the gardener and the volunteers by offering them a sense of purpose, belonging, and emotional well-being.

> *This region, with its nature, is home to me. I am rooted here. Through my job, I have been able to walk around the area and thus connect with experiences I can tell my friends. That shapes and connects (13).*
>
> Gamekeeper

The gamekeeper describes his roots in his homeland as the personal history and deep emotional ties that are strengthened by shared experiences and stories with friends. This sense of belonging shapes the author's identity and creates a lasting bond with the region.

4.1.3 OVERVIEW AND CLASSIFICATION OF NATURE – HUMAN RELATIONSHIPS

FIGURE 13 *The Humans Role Planetary System* (MidJourney, 2024, modified by author).

The analysis of the interview statements using the Bogert scale reveals that different forms of nature relationships exist, ranging from anthropocentric to ecocentric. The scale developed by Bogert *et al.* (2022) is based on a synthesis of current specialist literature and identifies twelve distinctive relationship types and their characteristics. The analysis of the participants' quotes shows that individual participants can occupy different positions on the Bogerts scale (Figure 16). Nevertheless, all participants can be assigned to a specific human-nature relationship type. The following texts summarize the analysed statements. The attached statements and the references to statements in the report are some examples that underpin the participants' views (S1, p.6 refers to statement 1, page 6).

The mountain guide often sees nature as a romantic retreat compared to civilization. He appreciates the wilderness for its beauty, unspoilt nature, and honesty, as it can have destructive and healing aspects. As the guardian of nature, the mountain guide sees it as his responsibility to preserve and protect it, above all for human beings (for their benefit) (S10, p.35). Among the participants, the mountain guide has the strongest tendency towards an anthropocentric worldview.

The gamekeeper considers humans to be above nature, as they can shape the environment, but at the same time, he recognises humans' dependence on nature for their survival and well-being. He endeavours to maintain a balance between human needs and the protection of the environment through nature management, using techniques such as regulating wildlife populations. Overall, he sees the relationship with nature as a partnership in which humans take on a responsible role as custodians and managers to ensure the long-term health and diversity of the natural world (S14, p.38)

Gamekeepers regulate the game population through hunting. This reduces browsing, disease and accidents on the road and railway. As a gamekeeper, I must ensure the population is utilised sustainably. There must be a balance between male, female, young, and old among the animals (14).

Gamekeeper

FIGURE 14 *The last bite* (Imhof, 2023).

The forestry worker sees nature as a partner, as he understands that his actions directly impact it and vice versa (S1, p.31). Collaboration enables them to develop sustainable management practices that consider the forest's and society's needs (S17, p.42). It respects and promotes natural processes to ensure the long-term health of the forest and continuously adapts to changing environmental conditions. This partnership approach leads to sustainable forest management that combines ecological, economic and social objectives.

The dairy farmer's relationship with nature is deeply rooted and characterised by a strong identification with their land (S4, p.32). He sees nature not just as an external environment but as an integral part of his self-image and intangible values, such as the aesthetics of a landscape. As a custodian of the land, he recognises the complexity of the ecological system. He strives for sustainable management practices to maintain the health of the land and the diversity of species for the benefit of all (S15, p.38).

FIGURE 15 *Rye field with grasshopper* (Gurten, 2023).

By cultivating the land, you contribute to biodiversity. Through cultivation, you are part of the whole. You create the basis of life for people, plants, and insects (15).

Dairy Farmer

The gardener takes a holistic view of nature, whereby the human being is considered part of the whole (S8, p.34). She identifies with nature as part of her self-image and recognises its self-regulating processes. Intervention is often regarded as unnatural, as nature

HUMAN-NATURE RELATIONSHIP TYPES

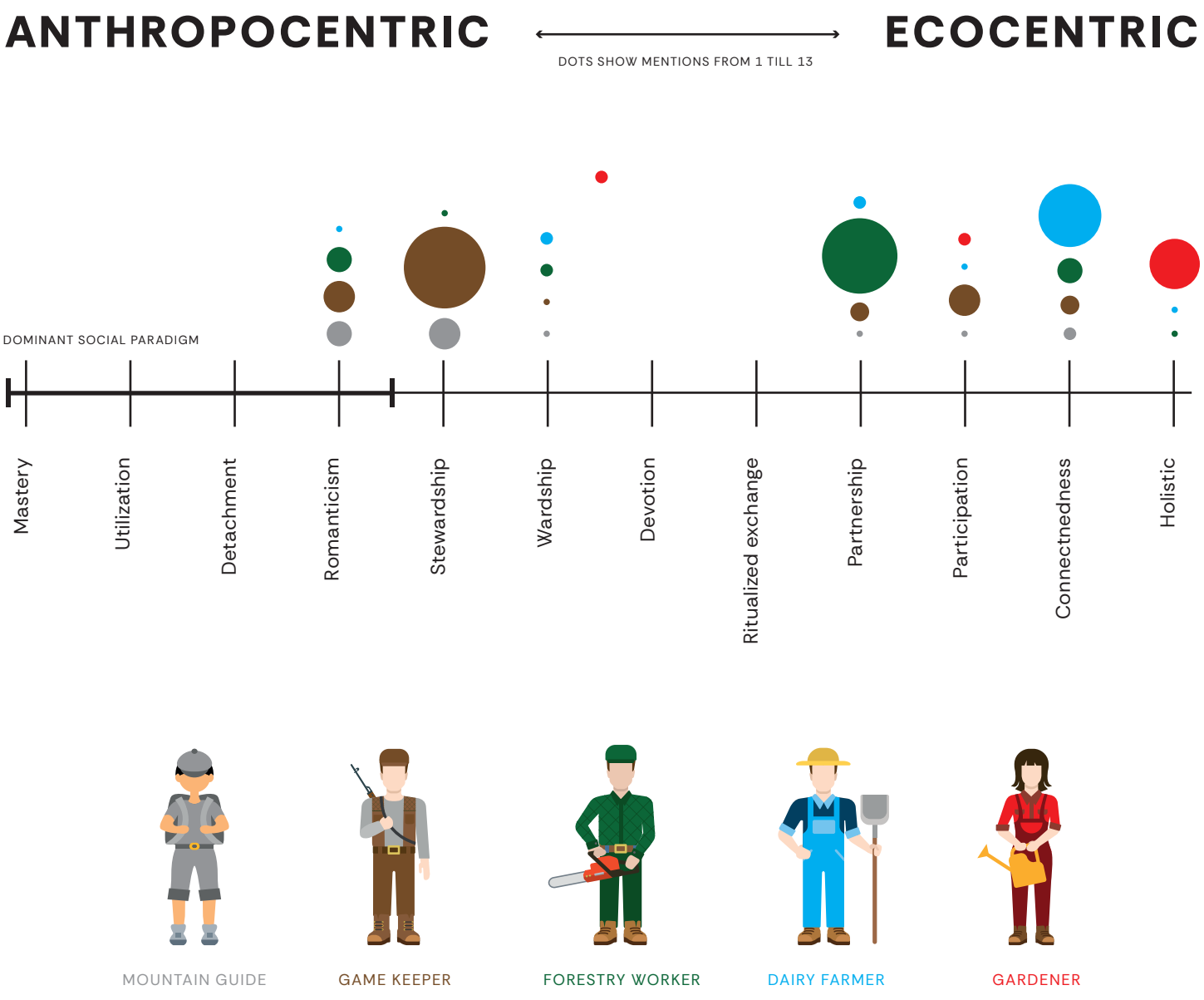


FIGURE 16 *Human-Nature Relationship Types* (Freepik, 2024, modified by author).

can regulate itself. The gardener endeavours to work in harmony with natural rhythms and to support nature's self-regulating powers. She deeply values the diversity and complexity of nature, striving to nurture and protect it (S15, p.38).

> *My role is to preserve nature. I must ensure that nothing is damaged, that nothing is broken, that everything stays healthy. My job is in the interests of all creatures (16).*
>
> Gardener

In conclusion to Chapter 4.1 on Human-Nature Relationships, the diverse range of perspectives expressed by participants, including romanticism, stewardship, wardship, partnership, participation, connectedness, and holism, offers invaluable insights into the complex dynamics between individuals in nature-related professions. Shaped by their distinct roles and personal experiences, each participant presents a unique approach, collectively embodying an ecocentric worldview.

4.2 Sustainability

4.2.1 AD HOC EXPLANATION

I asked the participants to explain ad hoc what sustainability means to them personally. I analysed their statements, and the table (Figure 18) shows the extent to which they correspond to the dimensions of sustainability as understood by the Swiss Confederation (See Chapter 1.4.3).

FIGURE 17 *The Sustainability Planetary System* (MidJourney, 2024, modified by author).

AD HOC SUSTAINABILITY DEFINITION

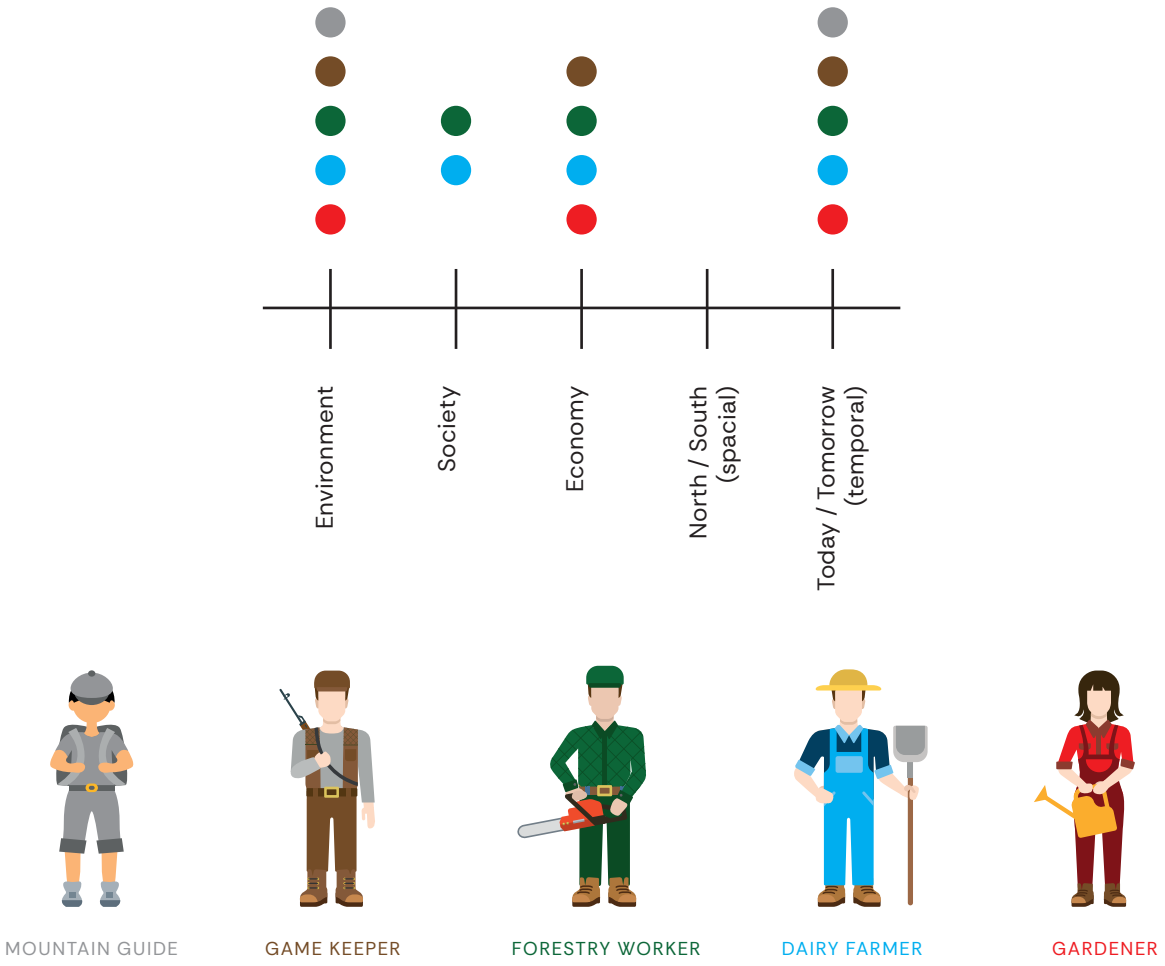


FIGURE 18 *Ad hoc sustainability definition* (Freepik, 2024, modified by author).

All participants mentioned the ecological dimension and the temporal axis of sustainability. The mention of the social dimension was significantly weaker, and the spatial axis was not mentioned at all. The participants' understanding of sustainability dimensions varies significantly, with the forestry worker exhibiting a comprehensive grasp, while the mountain guide presents a more fragmented perspective.

For me, sustainability means not taking more wood from the forest than can grow back. The raw material, wood, will always be available, and the forest will fulfil its ecological function. The wood is sold regionally as firewood, pellets, or construction timber. The sawmill saws the wood, and the carpenter makes tables and benches. Locality keeps transportation routes short and creates regional jobs (17).

Forestry worker

FIGURE 19 Making light for the next generation (Blatter, 2023).

The forestry worker emphasizes that sustainable forest management is ecologically, economically, and socially beneficial. Ecologically, by regrowing the same amount of removed wood, the forest is preserved, serves as a habitat and carbon store. The local processing and selling of wood products create regional jobs and supports the local economy. Social aspects affect the community, which benefits from the jobs created and the opportunity to use local products, strengthening regional crafts and traditions.

For me, sustainability means leaving nature so future generations will find nature without waste. That's why hikers should stay on the paths so that flowers, for example, are not destroyed (18).

Mountain guide

FIGURE 20 *Spring flowers* (Julier, 2021).

The mountain guide sees sustainability primarily in ecological terms, with protecting nature and preserving biodiversity at the forefront. An awareness of the need to treat the environment with care is emphasized, particularly by avoiding pollution and respecting hiking trails to avoid damaging the flora. Economic and social dimensions are not directly addressed.

4.2.2 EXPLANATION USING VISUAL AIDS

In the second step, I showed the participants a scheme of the Swiss Confederation's understanding of sustainability (Figure 2, p.13). I clarified any questions from the participants and, where necessary, explained the scheme using examples. I asked the participants to search for aspects that address the dimensions of sustainability in their day-to-day work, with or without photos. Based on the statements and the number of mentions, the participants assigned their statements to the sustainability dimensions shown in Figure 21.

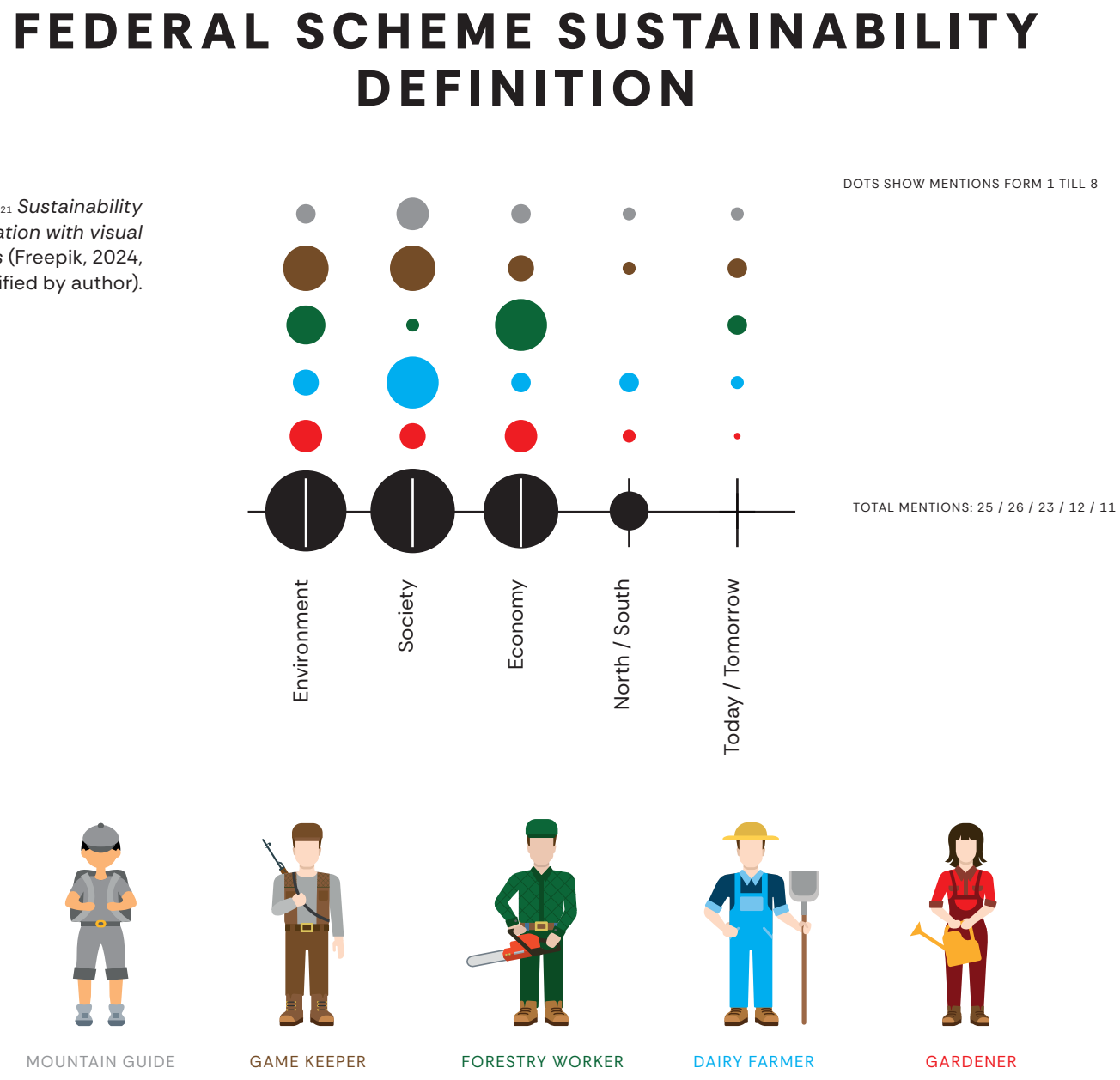


FIGURE 21 *Sustainability explanation with visual aids* (Freepik, 2024, modified by author).

It is clear from the diagram that the three dimensions of sustainability — environmental, social, and economic — have been placed in a balanced relationship using everyday examples. Although the participants grasp the concept of sustainability as it is understood at the federal level, they must first familiarise themselves with the interpretation of the scheme. It is striking that the social and economic dimensions suddenly were much more prominent than in the ad hoc definition. The inclusion of the spatial perspective is mentioned for the first time in the participants' definition of sustainability. The spatial and temporal perspectives were less associated with everyday examples than the three dimensions of sustainability, which explains why they were mentioned less often than the three dimensions. However, the following quotes illustrate how the spatial axis was considered in the scheme and how the mountain guide, in contrast to the ad hoc definition, was able to combine dimensions other than ecology with his everyday working life.

> *In Switzerland, everything is too much, such as that most people can often go on holiday. On the one hand, we consume too much; on the other hand, countries in the south don't even have enough to eat (19).*
>
> Dairy Farmer

The farmer describes the problem of inequality between consumer behaviour in wealthy countries, such as Switzerland, and the lack of basic needs in less developed countries. While people in wealthy regions can afford the luxury of multiple holidays and generally overconsume, other countries suffer from chronic food shortages.

> *My profession as a mountain guide is very sustainable from an economic point of view. The entire catering industry in the mountains benefits from my groups. On the other hand, I abuse nature more as a mountain guide than I would if I worked in an office (20).*
>
> Mountain guide

FIGURE 22 *Accommodation for Alpinists* (Julier, 2023).

The mountain guide sees himself as part of an ecological and economic system in which he makes more demands on nature than someone who works in an office but, at the same time, supports the local economy by using the services of the catering trade. Here, he reflects on the duality which underscores the nuanced relationship between human activities and the environment, prompting reflection on the balance between economic prosperity and ecological responsibility.

To summarise, the environmental dimension is at the forefront of the ad hoc explanations, while the social and economic aspects are taken into account to varying degrees. Introducing visual aids leads to a more balanced consideration of all three dimensions and their temporal and spatial axes.

4.2.3 BARRIERS TO SUSTAINABILITY

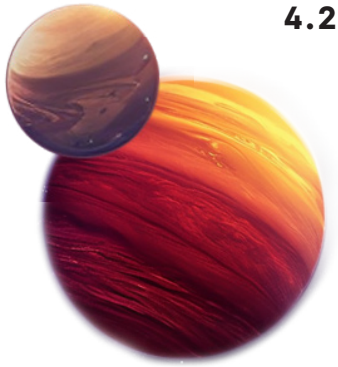


FIGURE 23 *The Barriers Planetary System* (MidJourney, 2024, modified by author).

The participants identify overpopulation and excessive consumption as major obstacles to sustainability. Both factors significantly strain our planet's natural resources and are seen as significant barriers to SD.

4.2.3.1 Overpopulation

When I was born in 1972, Switzerland had 5 million inhabitants. Now, there are 9 million people in Switzerland, and they all want to eat and drink. They also want to entertain and occupy themselves in their free time. I notice more people out and about in nature, snowshoeing or collecting mushrooms. All these people are putting more pressure on our resources and the habitats of animals. I do not know for how many people our planet can provide food and space (21).

Gamekeeper

FIGURE 24 *Nature loving tourists* (Imhof, 2022).

The gamekeeper reflects on the continuing population growth in Switzerland and the resulting challenges for natural resources and habitats. He

emphasises the growing popularity of outdoor activities and raises the question of our planet's capacity in supply and space for an ever-increasing population.

> *We are certainly more than the planet can bear. Fewer children will be conceived in the future so that people will self-regulate (22).*
>
> Gardener

The gardener hypothesises that the current human population is larger than the planet can support long-term. She predicts that there will be a decline in births in the future, which could lead to a natural self-regulation of population numbers.

> *I am not against immigration, but immigration means that Switzerland will soon have 10 million inhabitants. This could be problematic for nature. But somehow it will sort itself out (23).*
>
> Mountain guide

The mountain guide is concerned that the population in Switzerland could soon rise to 10 million due to increased immigration. The participant sees this growth as potentially problematic for the environment but also believes these problems will solve themselves.

4.2.3.2 Overconsumption

The second major hurdle to SD is cited as being overconsumption. The participants see human greed, the desire for convenience, and the power of habit as interacting with consumption.

> *It should be enough to be in the black at the end of the year (24).*
>
> Forestry worker

The forestry worker symbolises an economic philosophy that avoids greed and focuses on sustainability and responsibility. The goal of a "black zero" does not symbolise profit maximisation at any price but rather the achievement of a balanced budget.

Consumption does not make us happy. We always want to have more, but we must also recognise the consequences of excessive consumption. Although everything is affordable and available, the Swiss should consume consciously. As farmers, we don't have time to consume anyway. So, if we eat out twice a year, we can enjoy it more than those who go out every day (25).

Dairy Farmer

The farmer suggests that the constant desire for more consumption does not necessarily lead to greater happiness. He urges us to consider the adverse effects of greed and pleads for a more conscious use of our resources. He mentions the constant availability and affordability of goods, which can further fuel consumption. He points out the benefits of mindful consumption based on his situation as a farmer, which allows for little consumption due to his heavy workload.

We humans need more and more material, but we could do with much less. But humans favour the comfortable and avoid the uncomfortable. Convenience and progress are associated with more material (26).

Gamekeeper

The gamekeeper says that the constant search for comfort and progress often leads to increased consumption of resources. He suggests that people consume more material goods than is necessary out of convenience.

People have become comfortable; I don't exclude myself from that. I take the car and get it straight away if I need something. I do it because I can (27).

Mountain guide

The mountain guide reflects on the modern conveniences and habits of people in today's society. He suggests that he tends to choose the path of least resistance to satisfy his needs, such as using the car for short journeys. He emphasises that the car is affordable and available to him.

> *Consumption is constantly exemplified because everyone must have everything to be perfect. You only have social status if you have everything. It has become the standard (28).*
>
> Gardener

The gardener talks about the habit of consumption as a social norm. This habit reflects the tendency to define and continually increase one's value and status through material possessions.

In conclusion, the perspectives shared by the participants collectively highlight the pervasive influence of overpopulation and overconsumption on sustainable development. In the light of overconsumption, they underscore the interconnectedness between human desires for convenience, comfort, and social status as well as the relentless consumption of resources. Everyone reflects on the need to shift towards mindful consumption, emphasizing the importance of balance, responsibility, and consciousness in our relationship with the environment.

4.2.4 MEASURES TO OVERCOME OVERCONSUMPTION

Although the participants recognised overpopulation as an inhibiting factor for sustainable development, they focused exclusively on proposals to combat overconsumption. To overcome the hurdles of consumption, all of the participants suggest intra-personal techniques as most effective action. It becomes clear that they focus on self-care. The following statements invite us to look at the different perspectives and lifestyles that remind us to listen to our inner selves and set our standards of happiness and success.

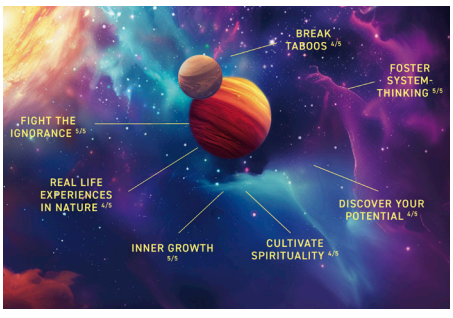


FIGURE 25 *The Stardust Belt* (MidJourney, 2024, modified by author).

4.2.4.1 Self-awareness

> *The problem today is the fast pace of the world. It is, therefore, necessary for us to slow down so that we learn to perceive things consciously and focus on what is important (29).*
>
> Gamekeeper

The gamekeeper emphasises the need to sharpen our perception and better understand our personal needs. In a world that is constantly in a hurry, we must learn to take breaks to reflect and prioritise what promotes our well-being.

> *Question yourself more. What is possible, and what is good for me? Don't chase after a false ideal. As in America, many people get into debt and live on credit. They get into a vicious circle that they can't get out of (30).*
>
> Dairy farmer

The farmer recognises the importance of self-reflection and examining one's values. By asking ourselves what is possible and reasonable, we can escape the trap of unquestioningly emulating an ideal that does not meet our actual needs.

> *Money is secondary in my job. Sure, I need it, but the passion is more extraordinary. I would be retired but only have a few francs in my pension scheme. That's the price of being self-employed, but I still enjoy my work (31).*
>
> Mountain guide

The mountain guide reflects a deep appreciation for personal fulfilment and passion. It emphasises that recognising one's values and recognising personal potential are often more important than material wealth. The dedication to the mountains shows that success is defined individually and is not necessarily linked to financial wealth.

4.2.4.2 Responsibility

Self-awareness enables participants to reflect on habits, values and the impact of our actions on the environment. Through this deeper insight into their behaviour, they can identify where to make changes to live more sustainably. The process of self-reflection enables them to take responsibility for themselves and others.

FIGURE 26 *The Responsibility Rocket* (MidJourney, 2024, modified by author).

> *Above all, I have a responsibility to myself. Is it also suitable for me and the next generation (32)?*
>
> Gardener

The gardener appeals to consider both one's integrity and the consequences for the future in every action. Mentioning the next generation also reveals a deep consideration of one's legacy and the long-term effects of one's decisions.

> *My children had to learn to take responsibility in small steps. I gave them responsibility early on. They must look after the rabbit; otherwise, it's dead (33).*
>
> Dairy Farmer

The farmer emphasises the importance of teaching children responsibility from a young age. As in this rabbit example, caring for a pet is a practical lesson about life and the consequences of one's actions. Through such tasks, children learn directly what it means to care for another living being, their actions have direct consequences, and they experience self-efficacy.

Many people are not sensible about — the introduction of energy bonus points. A certain amount of energy is available per person. And then you are also responsible for what you want to use your points for. That's my vision of how the energy issue could improve a little (34).

Gardener

The gardener suggests that the state's and individuals' responsibility in dealing with energy resources could be a key to more efficient energy management. This vision aims to create an awareness of the value of energy and to make people directly responsible for their energy consumption.

In conclusion of the Chapter 4.2 Sustainability, exploring sustainability revealed a nuanced understanding among participants. Initially, ecological aspects were prominent, but social and spatial dimensions were less emphasized. Visual aids deepened comprehension, highlighting the interconnectedness of environmental, social, and economic factors as well as spacial and temporal axis. Participants identified overpopulation and overconsumption as key challenges, emphasizing the need for mindful consumption and responsible resource management. They stressed the importance of balance, responsibility, and awareness in our environmental impact. To tackle overconsumption, participants advocated for self-awareness and responsibility, recognizing the significance of personal values and legacy. By fostering these qualities, individuals can contribute to a more sustainable future.

5 Discussion

After the interview results have been presented in the findings section and supplemented with the qualitative data collected, the following discussion section is concerned with interpreting the most relevant patterns, placing them about each other, and discussing them based on the current state of research. The aim is to discuss how people in nature-based jobs understand sustainability and what role their relationship with nature plays in this. References are made to the participants' statements in the findings chapter.

5.1 Human-nature relationship

The pronounced closeness to nature of the study participants, is reflected in an increasing shift towards an ecocentric worldview, which differs from the social dominant paradigm (Figure 16, p.39). The close connection to the nature of my participants manifests itself in their emotional attachment. I have illustrated, categorised, and explained this emotional bond in detail in Chapter 4 through various feelings. Based on the strong emotional connection to nature, in this chapter, I discuss what might have led to this connection in the daily lives of my participants.

5.1.1 CONNECTING WITH NATURE THROUGH PHYSICAL ACTIVITY

This section aims to explore the depth of the human-nature relationship of my participants with a focus on how hands-on interaction with nature affects their emotions and relationship with it.

Soga and Gaston (2016), Ingold (2000), and Woods *et al.* (2021) have elucidated the exploration of the intricate relationship between human interaction with the natural world and the cultivation of emotional bonds as a pivotal aspect in modern environmental dialogue. Murer (2023) states that although there is a recognized imperative to expose children to nature, logistical and financial constraints hinder state school from establishing consistent contact with natural environments. Nevertheless, as highlighted by Soga and Gaston. (2016), active participation in nature-based activities remains paramount

in fostering profound emotional ties to the environment. Ingold (2000) expands on this perspective with his theory of 'enskilment', which sees skill building as directly linked to a specific place in nature. According to Ingold (2000, p.416), it is not just the general contact with nature that counts; it is the particular place where we acquire learn skills which are inextricably linked to physical activities and the surrounding environment. Woods *et al.* (2021) state that emotions play a crucial role in the enskilment process, as it deepens perception and increase awareness of aspects of the environment, promoting integration and merging with nature. The assimilation with nature becomes visible when the farmer describes an almost metaphysical connection through his deep rootedness with his land (S4, p.32). Woods *et al.* (2021) argue that in enskilment, individuals not only gradually become familiar with their tasks but also gain an intimate knowledge of their immediate surroundings. In other words, regular activity — be it in sports or, as with the participants in my study, at work — can significantly influence the sense of place expressed as a sense of home. This sense of home is also seen by my participants as a crucial intangible natural value, as illustrated by the gamekeeper's statement (S13, p.36). My analysis emphasises the importance of enskilment, which is not limited to theoretical concepts, but is deepened through direct, sensory experience in the natural environment. My study results confirm the multisensory experience emphasised by Woods *et al.* (2021); learning processes that appeal to different senses promote a more intensive connection to the environment. Its also shows the importance of experiential learning reflected in the study participants' reports (S3, p.32), who emphasise the relevance of holistic encounters with nature within their professional work. The gardener's (S3, p.32) critical comments on the prevalent theory-centred approach to learning in today's educational landscape highlight the need for practical, experiential learning. As a teacher, I appreciate holistic teaching methods, but I also recognise the advantages of traditional approaches, such as the simplified organisational effort. The most important thing for me is to bring ontological diversity to my lessons.

The results discussed draw parallels between the theory of enskilment and the deep connection to nature of my study participants. The participants in the study emphasise the relevance of multi-sensory experiences in a professional context and discuss how these can contribute to a deeper understanding and appreciation of a specific place or nature in general. The participants criticise conventional, theory-centred teaching methods, while at the same time, they call for practical, experience-based learning to strengthen the connection to nature.

5.1.2 CONNECTING WITH NATURE THROUGH SPIRITUALITY

In the interviews, the statements increasingly emerged pointing to a dimension beyond the material — a preoccupation with transcendental, metaphysical or spiritual themes. To create conceptual clarity, I subsume these aspects under the term spirituality. This term is deliberately used independently of a purely religious interpretation. In the context of my talks, spirituality symbolises the personal encounter and connection of the individual with a higher authority or the environment. Such spiritual encounters enable us to gain a new perspective on ourselves and nature, which goes beyond the boundaries of everyday rationality and thus establishes a deeper connection.

My participants, except the forestry worker, recognise a profound spiritual or philosophical meaning in nature, which can lead to a feeling of connectedness. Bucher (2014) describes this spiritual connectedness as experienced, on the one hand, horizontally through relationships with the social environment, nature, and the cosmos, as expressed by the mountain guide through his close connection to the Finsteraarhorn (S7, p.34). On the other hand, spirituality also contains a vertical dimension that suggests an ultimate power that reaches beyond human existence, as the gardener feels when she names nature as the ultimate power (S8, p.34). A wide range of studies underpin the connection between experiencing nature and spiritual feelings. Kamitsis and Francis (2013, p.140) confirm the positive connection between closeness to nature and spirituality by stating that "greater engagement with nature was associated with higher scores on the spirituality scale". This understanding is also shared by Kapyrka and Dockstator (2012), who emphasise the influence of nature on indigenous cultures, in which it is seen as a living, spiritual being. Kopnina (2020) establishes a connection between indigenous learning and new Western teaching methods that could lead to a more intensive connection with nature. At the same time, Kapyrka and Dockstator (2012) urge caution in applying indigenous approaches in Western contexts to preserve the integrity of indigenous cultures. I agree that indigenous concepts and eco-spiritual approaches might have the potential to enrich our education system and lead us to a deeper appreciation of the natural world.

The connection between spirituality and nature is also essential in some Western philosophies. As Hänggi *et al.* (2022) show that for Rudolf Steiner, the founder of anthroposophy, the universe represents a unity of material and spiritual reality in constant exchange. In Steiner's view, people can establish a more

intensive connection with nature and the spiritual aspects of the world through intuition and spiritual training. The connection between spirituality and nature is reflected in the practice of the vegetable gardener, who bases her cultivation methods on Steiner's biodynamic principles (Appendix 3 *Participants' biographies*).

5.1.3 CONNECTING WITH NATURE THROUGH TRADITION

Traditions can strengthen the relationship between humans and nature. My study showed that habits, practices, and values conveyed by caregivers in childhood had a strong influence on my participants' connection to nature.

Early experiences of nature and the development of an emotional connection to nature in later life have been analysed by urban planners, environmental educators and sustainability researchers in the UK and Japan. The study by Soga and Gaston. (2016) indicates a significant connection: People who had frequent contact with nature in their childhood tend to develop a deeper emotional connection to the environment and experience it more intensely. This is emphasised by the gamekeeper who describes how involvement in his family's nature-related work created a deep connection with nature (S5, p.33). At a time when leisure activities were more limited, and many people worked in agriculture, children came into contact with nature more often by helping with the work than is usual today. Louv (2008) describes in his book *Last Child in the Woods* the socio-cultural change from agriculture to a service society and its effects on children's time spent in nature. Louv (2008, p.11) states that the increasing alienation of children and young people from nature has a negative impact on their closeness to the natural world and their health. The gardener also takes up the health aspect of nature, who describes the positive impact of gardening as an intangible value for her volunteers (S12, p.36).

In the relationship between humans and nature, not only traditional habits, and practices but also caregivers play an essential role. Chawla (1998) emphasises how lasting caregivers can foster love and appreciation for the environment. My studies show that attachment figures are significant in childhood. For example, the gamekeeper (S6, p.33) reports that he not only learned skills and knowledge from his father but was also sensitised to the beauty of nature. Naess *et al.* (2000) recognise the influential role of mentors in giving students a deeper understanding of nature and sustainable behaviour.

He emphasises the importance of teachers acting like "nature gurus" to get students to recognise the hidden through personal relationships and non-verbal communication. This is not only about hidden ecological processes but also about the intangible values of nature, such as its beauty (S11, p.36) and its role as a place that provides emotional and physical security.

To summarize, Fritz and Binder (2020) highlight the pivotal role of practitioners in facilitating connections with nature. This connection among participants is forged through physical activity, spiritual awareness, and cultural tradition. Drawing on the insights from Caniglia *et al.* (2021), we recognize a form of knowledge pluralism within environmental comprehension, which underscores the varied functions of practitioners in nurturing nature bonds. Practitioners promote "enskilment", a concept that encourages experiential learning in natural environments to create emotional connections and a sense of place. Spiritually, they are inclusive, incorporating nature-based spiritual experiences to cultivate a wider, secular reverence for the environment. Additionally, practitioners are key in preserving traditions that forge emotional ties to nature, thus serving as mentors to foster environmental appreciation and guardianship for future generations.

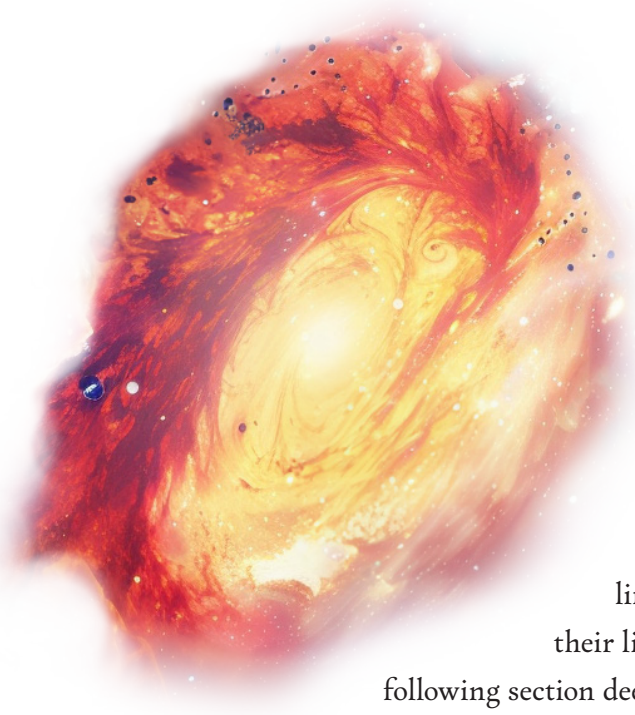


FIGURE 27 *Birth of a New Planet* (MidJourney, 2024, modified by author).

5.2 Sustainability

5.2.1 FROM THE RELATIONSHIP BETWEEN HUMANS AND NATURE TO AN UNDERSTANDING OF SUSTAINABILITY

The first discussion section observes a close link between the participants' professional roles and their life stories about the nature-human relationship. The following section deepens how the current literature reflects and enhances the participants' understanding of sustainability and their nature experiences.

The analysis of the participants' understanding of sustainability revealed that initial difficulties with the ad hoc definition could be primarily due to the complexity of the term. Only the forestry worker (S17, p.42) presents a comprehensive picture of sustainability, while the mountain guide (S18, p.42) limits sustainability mainly to ecological aspects. It would be too short-sighted to make a final judgement about my participants' understanding of sustainability based on the ad hoc definition. Using tools such as the federal government's sustainability scheme and the photos made it clear that my participants' understanding of sustainability was far more comprehensive than initially assumed as the example of the mountain guide (S20, p.44) shows most clearly. In contrast to the ad hoc explanation, all participants showed a pronounced awareness of all aspects of sustainability. Thanks to the scheme and their pictures, the spatial (North-South) aspect (S19, p.44), which was completely forgotten in the ad hoc definition, was also mentioned.

The spatial and temporal axis of sustainability was discussed less frequently than the sustainability dimensions. This is not necessarily due to a lack of understanding among respondents, but rather, as Berg (2020, p.231) says, because people struggle to plan and think long-term, which is what the spatial and temporal axis requires. This could mean that the long-term effects of decisions on future generations and spatial inequalities in the distribution of resources are neglected and therefore less mentioned in the interview.

Photographic material in the interviews proved effective, enabling participants to articulate their conscious and unconscious thoughts, feelings, and experiences. The following paragraphs discuss in more detail the aspects of the participants' understanding of sustainability and why they have a holistic view.

The model of SD involves a complex interplay of social, ecological, and economic factors. Berg (2020, p.13) confirms that sustainable dimensions are closely interwoven, influence each other and function together as a system. Current research, presented by scientists such as Hofman-Bergholm (2018) and Demssie *et al.* (2023) emphasises the complexity of this system. They argue it is difficult to penetrate due to the numerous interconnections and feedback loops. Hofman-Bergholm (2018), Demssie *et al.*, (2023) and Vesterinen *et al.* (2023) suggest promoting systemic thinking and integrating real-life experiences as a more effective and holistic approach to promoting SD. The competencies in demand, anchored in the daily work and biography of the study participants, could represent a valuable resource for improving the understanding of SD. Palmberg *et al.* (2017) define systems thinking as a holistic method for analysing how the individual components of a system are interconnected and how the system behaves over time and in the context of larger systems. SD has a systemic character, which is all also reflected in ecology, a complex network of interdependencies between organisms and their environment. In the course of their work, the participants have daily ecological experiences. They understand human existence, for example, is based on the services provided by nature (S2, p.31). The gardener metaphorically compares the ecological structure and its dependencies to a carpet and points out the fundamental reliance of humans on nature (S9, p.35).

In addition to the experiential and spiritual experiences discussed, acquiring empirical knowledge about nature is another way to connect with it. The participants' ecological knowledge is also based on their formal and informal education (Appendix 3 *Participants' biographies*). Palmberg *et al.* (2017) emphasise the importance of so-called ecological literacy for the understanding of sustainability. They emphasise that insights into vital ecological concepts and processes help people better understand complex interactions in natural and human systems. Chawla (1998) also emphasizes cognitive knowledge about the environment can contribute to a deeper understanding of the natural world and its processes and thus strengthen nature awareness. Building ecological literacy is essential to establishing a deeper connection to nature and is crucial in promoting systemic thinking.

The participants demonstrate their ability to think in systems using the example of their perception of population growth and the negative global consequences. Using the example of the gamekeeper, it becomes clear (S21, p.45) how the increasing pressure from human activities and population growth has a detrimental effect on ecological systems and, thus, the natural balance. The consideration of population growth as a central factor for sustainability problems is current and controversial in scientific and ethical discourses. Despite the sentimental charge surrounding family planning, Jucker (2019, p. 67) calls for a rational discourse, without fear of being labelled racist or anti-natalist, in order to find good long-term solutions.

In their publication, Wynes and Nicholas (2017) shed light on the demographic perspective and describe the decision to have fewer children in industrialised nations as the most effective individual measure for reducing CO_2. However, the topic is often seen as taboo, as Jucker (2023)[4] confirms when asked:

> *"Overpopulation is one of the most central drivers of unsustainability and is taboo. It is not allowed to be mentioned. If we ignore such central drivers of sustainability, no 'sustainability project' will be able to take a step forward."*

The participants recognise the importance of systems thinking and are not afraid to discuss taboo subjects — an approach that goes beyond mere criticism of consumption. Demssie *et al.* (2023) mentioned also the importance of identifying and naming different actors in a system to get a comprehensive picture of the problem. Regarding overpopulation, the participants do not take a simplistic or anti-natalist view but include the time factor, such as the reduction in birth rates (S22, p.46) as well as other influences, such as population growth in Switzerland by migration (S23, p.46), in their considerations on demographic development.

From the ability to think in systems and the understanding that humans are dependent on nature, the role of humans within the ecosystem could be derived, including considerations of demographic development. The participants identify to varying degrees with roles as stewards or protectors of nature (Figure 16, p.39). The gardener (S16, p.40) takes a step further towards a strong ecocentric view, advocating for preserving nature for human benefit

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and recognizing its right to exist independently of humans. Chakrabarty (2021) echoes this perspective on the inherent value of nature, aligning with the gardener's ecocentric attitude. Chakrabarty (2021) criticises that the term sustainability is too strongly oriented towards human needs. He, therefore, prefers the term habitability, as it recognises the right to life of all organisms without reducing them to their benefit for humans. Independent of nature's instrumentality for humans or not, Soga and Gaston (2016) and Richardson (2022) recognise a connection between the degree of closeness to nature, the assessment of its importance and the motivation to preserve it. The need to protect something often goes hand in hand with personal involvement. When people witness ecological changes, like the melting of the glacier ice (S1, p.31), this can shape their understanding of their role and their behaviour. According to Berg (2020), anthropogenic environmental change is an abstract, cognitive matter for many, but direct experiences are crucial for developing personal values and sustainable behaviour.

In conclusion, it can be said that direct and personal experiences with nature can influence awareness and commitment to environmental protection. Chakrabarty's (2021) critique of the concept of sustainability and his preference for the idea of "habitability" challenge us to think beyond the anthropocentric view and recognise the right of all organisms to exist.

5.2.2 BARRIERS TO SUSTAINABLE DEVELOPMENT

By identifying and overcoming barriers to sustainability, conclusions can be drawn about the participants' understanding of sustainability and their values and behaviour. The participants see population growth on the one hand and excessive consumption on the other as the main barriers preventing SD.

5.2.2.1 Overpopulation

As we have seen in the last chapter, it is essential to recognise that population growth cannot be viewed in isolation but must be seen in the context of SD and global resource distribution. Therefore, a differentiated view on family planning is essential to consider cultural, religious, and ethical dimensions. While Galbiati (2022, p.139) does not see population growth as an immediate problem, Plüss (2020, p.75) argues in his work "Less is Less" that responsible family planning is a very effective approach in the SD debate. Some participants think that natural regulation (S22, p.46) — particularly the decline

in birth rates — will reduce the population, while others have no concrete solutions to the problem of overpopulation (S23, p.46). This perplexity may show how emotionally charged and complex issues such as family planning, population growth, and overpopulation are. Nevertheless, some experts cited in this paper, such as Hofmann (2018) and Kopina (2020), agree that global population growth represents a significant hurdle to SD. Wynes and Nicholas (2017) are surprised that despite being recognised as a primary driver of ecological problems, population growth is rarely addressed in education in Western countries. To back up Wynes and Nicholas (2017) statement, my research has confirmed that population growth is not a decisive factor for either Education21 (2024) or the Worldwide Fund for Nature-WWF (2021) in Switzerland. This reluctance on the part of the participants and the evidence provided by the literature leads me to conclude that overpopulation is mainly taboo in today's discussion on SD. I am convinced that in an open society, everything should be subject to open discussion. Otherwise, the future of a fair and liveable world is jeopardised.

In summary, despite recognising population growth as an essential driver of ecological problems, it is neither discussed in education nor by sustainability organisations in Switzerland. The different expert opinions and the general reluctance indicate that overpopulation is often taboo in the sustainability debate.

5.2.2.2 Overconsumption

The issue of overpopulation seems to be an obstacle to SD, but the participants see overconsumption as a more pressing problem. They differentiate between two types of barriers: On the one hand, intrinsic barriers originate in the physical make-up of our world, human nature, or social interaction. Secondly, extrinsic barriers arise from systemic and institutional conditions such as the market and political structures. The participants' clear realisation that these two types of barriers are intertwined underlines their profound systemic thinking, which is highlighted by the following statement from the farmer:

> *On the one hand, many people want to eat and drink as cheaply as possible. On the other hand, politicians promote factory farming. Consumers must once again recognise the value of elaborate, high-quality Alpine cheese.*
>
> Dairy Farmer

The farmer addresses the dilemma between the consumer desire for affordable food, a policy that fulfils this desire through intensive animal husbandry, and the resulting political and ecological challenges. He appeals to consumers' sense of responsibility to recognise and appreciate the importance and value of high-quality food, such as Alpine cheese, produced with more significant effort and under better conditions.

Although the interviews repeatedly discussed extrinsic barriers, the participants saw the most significant potential for SD in overcoming personal, intrinsic barriers. Accordingly, the discussion focuses on the intrinsic barriers to consumption and the skills required to overcome them.

5.2.2.3 Sustainable development is personal growth

According to the participants, the obstacles to overcoming excessive consumption lie in patterns such as greed, convenience, habit, and availability (S24–28, p.46). The participants vividly describe the interaction of these hurdles, saying that consumer behaviour is closely linked to feelings such as greed, the desire for convenience and the power of habit. Greed can lead to overconsumption, the desire for convenience and availability encourages the purchase of products that make life easier, and habits can encourage recurring consumption behaviour, even if this is not in the person's best interest or harms the environment.

Jucker (2019, p.27) argues that breaking through such entrenched patterns of consumption and traditions requires interpersonal skills. Jucker (2019, p.26) states that we already have the appropriate tools to recognise our limitations and overcome mental illusions, but this requires practice. Jucker's statements make me think of a phrase of unknown origin that says that in the West, we may be cognitively at the university level, but emotionally, we are often not above kindergarten age. The transformation from the inside out is vividly described by the monk Thomas Merton (1970, p.11):

> *"What good is the conquest of space if we are unable to bridge the chasm that separates us from ourselves?"*

There is no one-size-fits-all path to personal growth because everyone encounters different hurdles that must be overcome individually. The following section will discuss commonalities in overcoming inner barriers based on the experiences of my participants.

The technique that my participants recommend for bridging personal discrepancies can be briefly described with the concept of self-awareness. Libertson (2023) posits that a profound awareness of one's thoughts, feelings, behavioural patterns, and values can lead to responsible action, a notion that aligns with my participants' understanding of self-awareness (S29–S31, p.49). Fehring (2019, p.9) adds that it is only when we recognise our inner potential and obstacles that we can begin to shape our future in a targeted manner. The above statements indicate that both the sharpening of perception or mindfulness and the ability to self-reflect are crucial for developing self-awareness. Mindfulness, according to Huth (2016, p.10), is, on the one hand, the ability to engage with the current experience and to observe without judgment. In this sense, the gamekeeper describes the sharpening of perception (S29, p.49), and the farmer (S30, p.49) expresses mindfulness by recognising needs. Libertson (2023) views self-reflection as a metacognitive process that enhances our ability to self-observe and gain insight into our own thought patterns and actions. Fehring (2019) argues that only awareness of our habitualised behaviours, thoughts, and feelings enables us to break entrenched patterns. Self-reflection also leads us to recognise our strengths and weaknesses and how our actions influence the world around us. Fehring (2019) emphasises the importance of self-reflection for understanding our values and motivations and poses the essential question of whether we shape our lives according to our convictions or unconsciously adopt the motives of others. Recognising one's potential, as the mountain guide shows by living his passion (S31, p.49), is also a critical aspect that enables individuals to take responsibility (S32–34, p.50) in the first place — an essential starting point for SD.

To assume that inner growth processes and their complexity can be dealt with briefly and concisely would be to underestimate this multifaceted subject area. Instead, this discussion aims to emphasise how participants understand sustainable development (SD) primarily as a process of personal transformation. Recent studies by academics, including Denton *et al.* (2022), Thiermann and Sheate (2021) and Wamsler and Bristow (2022), confirm the view that actual SD is not possible without profound individual change. However, which inner competencies are desirable and who should be responsible for teaching them remains an open question for future discourse.

Another point to remember when discussing personal growth is that the participants' statements about personal growth say nothing about their actual behaviour. Berg (2020, p.78) has described the gap between professed value

awareness and actual behaviour as the value-action gap, the reasons for which are complex.

Nonetheless, the study participants' emphasis on the imperfection of human nature and overcoming barriers through the development of self-competence makes it clear that individual inner growth processes are essential to enable a sustainable and just future for the world. Even while recognising the discrepancy between values and actions, this chapter concludes with the timeless words of the Oracle of Delphi's inscription:

"Know thyself."

Since ancient times, this call to introspection has reminded pilgrims seeking advice and wisdom that progress and a promising future begin with self-awareness.

6 Implementation

Creating a better and more sustainable world requires a deep understanding of the complex interactions between ecological, social, and economic systems. Despite the challenges posed by a lack of insight into SD, even among park residents, my participants demonstrate that close, every day, and multi-faceted contact with nature can foster an informed awareness of sustainability. Their insights gained from practical experience significantly enrich the discourse, which is primarily dominated by academic voices, and help ensure that the idea of SD is better understood, and that concrete progress is made.

The Binntal Landscape Park, with unwavering dedication, is already making significant efforts to offer practice-oriented lessons in nature that incorporate everyday life, as desired by the participants in the studies. However, the irregular integration of nature experiences into the lives of many adults and students often prevents a deeper understanding of sustainability. In addition, state school often face financial constraints, structural challenges, and a lack of specialized expertise among teachers. These factors make it difficult to integrate systemic knowledge and practical examples into everyday lessons, which are essential for a comprehensive understanding of SD.

Although schools within the Binntal Landscape Park often have the opportunity to move lessons outdoors, I wonder if this is enough to foster a deep connection with nature and a comprehensive understanding of sustainability. Despite such challenges, there are nevertheless educational institutions that successfully integrate a lively, multi-sensory, and interdisciplinary teaching approach into everyday school life. A small private school in the Swiss Alps stands out here and could serve as an example for ESD. This school is featured in the documentary *Bratsch — Ein Dorf macht Schule (2023)*, broadcast by Swiss Television. It is characterized by involving experts from the field and implementing projects that promote systemic thinking. According to the report, the pupils acquire theoretical knowledge and develop manual skills, for example, by building a chicken coop—the experience of actively achieving something meaningful often rooted in my participants' childhood. The participants remember mastering complex and tangible tasks under adults' guidance, an experience valued as a lasting learning event. The school in Bratsch stands out positively by offering practical lessons, an opportunity denied to many state schools.

Such multi-sensory and interdisciplinary teaching approaches often fail due to a lack of financial resources or a lack of time and willingness on the part of adults. However, the Binntal Landscape Park is committed to providing practical learning opportunities in nature, as long as the financial resources and rigid structures of schools allow. The aim is to integrate practitioners into the learning processes to create a link to the real world of work. These professionals serve as "green role models" who take active responsibility for themselves and their environment. To bring about a bottom-up renewal process in both the state school system and society, many committed professionals and teachers are needed. Here as well, the Binntal Landscape Park could act as a pioneer, as the federal guidelines see it, and create special programs to promote ecological and systemic competence.

In modern society, the concept of a real-life school in which knowledge is imparted through projects and nature experiences offered daily seems to be a distant idea. Nevertheless, the vague formulation of the federal government regarding educational design offers Swiss parks a unique opportunity. The Binntal Landscape Park could establish itself as a sustainable model region by integrating spirituality and indigenous knowledge into its environmental education program. My research suggests that spirituality, beyond religious dogma, can foster a deep connection to nature. Feelings of unity, reverence, and gratitude, inspired by the perspectives of my participants, could offer a new level of environmental education. These approaches can be found not only in indigenous traditions, but in reform educational philosophy, represented by thinkers such as Rudolf Steiner. The *Coyote's Guide to Connecting with Nature* by Young (2010) is an exemplary textbook incorporating indigenous perspectives and spirituality. The book supports real-life sustainability based on the oral traditions of indigenous peoples. Collaboration between indigenous and non-indigenous teachers not only preserves the authenticity of indigenous cultures but also allows these approaches to be successfully integrated into the Western educational context.

Overconsumption and population growth pose immense challenges to SD that require systemic change and personal insight. At the heart of the debate on population growth is the need for an open and honest discourse that considers individual happiness and the well-being of the global community. Tabooing or one-sided finger-pointing are not effective solutions. Binntal Landscape Park could also examine its options to take on a pioneering role here, although this sensitive issue could meet with resistance from both park employees and the general public.

According to the participants the path to a more sustainable lifestyle requires self-reflection and the pursuit of personal development. The Swiss Television report *Can happiness be learned? (2023)* showed that the progressive approaches some Swiss schools take, promote intrapersonal skills in their students. Students learn to take responsibility for themselves and others through the subject "Happiness", which focuses on mindfulness exercises and examining personal values and strengths. The positive results of this initiative underline that the key to a more sustainable future could lie in the inner transformation of each individual. One more time, the Binntal Landscape Park could take a leading role in the development of such programs.

However, this transformation could pave the way for an education that is closer to life and more inclusive. It is crucial to nurture people who can think in complex ways and move beyond simple black and white thinking to shape a sustainable and fairer world. Both individuals and society must take responsibility for development and change. Everyone must recognize and overcome their psychological barriers and emotional immaturity, while also engaging in disciplined self-improvement practices. At the same time, we must strive to deepen our social relationships and understanding to align our inner progress with outer successes. The park could lead the way in promoting sustainability as well spiritual and intrapersonal skills. Instead of fear, curiosity should lead us to question cherished beliefs. Innovative educational concepts can significantly contribute to solving the challenges of unsustainable development. So let's take responsibility for our future together.
Let's light the rocket!

7 References

7.1 Literature

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8 Appendices

APPENDIX 1
THE BINNTAL LANDSCAPE PARK – A BRIEF PORTAIT

The website of the Binntal Landscape Park (2023) locates the park in Upper Valais, in the south of Switzerland, bordering on Italy. The park area, with its four municipalities, covers an area of 16471 ha, making it one of the smaller nature parks in Switzerland. A total of 1091 inhabitants live in 4 municipalities, some of whose sites are of national importance. The Swiss Parks Network (2023) also writes that the core area of Binntal Park was placed under nature protection as early as 1964. Today, it is one of the landscapes and natural monuments of national importance. The Binntal's fame is primarily due to its wealth of minerals. There is no other Alpine region with such an abundance. The area's unique geological and topographical features, combined with Valais's sunny climate reveal a remarkable diversity of flora and fauna. The vibrant habitats range from 900 to 3250 metres above sea level, offering an impressive cross-section of Switzerland's biodiversity.

The Swiss Parks Network (2023) says the park is known for its species-rich natural landscape and valuable cultural landscape, which is maintained with great dedication and commitment. The Binntal Landscape Park (2023) exemplifies how this park and many other mountain areas changed from an agricultural society to a service society (mainly tourism) at the end of the 20th century. A loss of crafts and trades also accompanied this transformation process. From the 1990s onwards, the region experienced a substantial migration to the cities. However, thanks to advances in mobility and digitalization, there has been a slight increase in the number of inhabitants in recent years.

Despite the challenges and changes over the years, the Binntal Landscape Park remains an example of harmony between man and nature, harbouring great potential for sustainable development.

APPENDIX 2
THE INTERVIEW GUIDELINE

THEME	NARRATIVE IMPULSE	THEMATIC SPECIFIC ENQUIRY	IMPORTANT FOLLOW-UP QUESTIONS
Socio-cultural characteristics / Ice breakers *Professional life of the participants*	What is your job title and job description? What activities does your job involve? What training or work experience prepared you for this position? How long have you worked for the organisation? How old are you? Tell me about your organisation. What are the goals/tasks?		
Perception of nature	What does nature mean to you?	Can you give examples of how you see your role in nature? How do you perceive nature? Which photo best illustrates your role in nature? Describe the photo. Has your relationship with nature and your role in nature changed in recent years because of your activities? Give some examples. Why did you take up this profession in and with nature? What does the Binntal Valley mean to you?	What means home to you? Can you perceive a spiritual dimension in nature? Is there a picture that illustrates this connection?

THEME	NARRATIVE IMPULSE	THEMATIC SPECIFIC ENQUIRY	IMPORTANT FOLLOW-UP QUESTIONS
Understanding of sustainability	Which images best represent sustainability in your daily work?	Can you describe the image in question? What is your understanding of sustainable living? Has your understanding of sustainability changed in the last years of your career? Give some examples. Does your professional activity have an influence on how sustainable you behave in your private life? Where do you reach the limits of sustainability in your professional and private life? Give examples of personal (un)sustainable behavior. What prevents you from living more sustainably?	To what extent do ecology, social issues, and the economy play a role in your understanding of sustainability? Give examples of what the pillars of sustainability mean to you. What do you think about - Sufficiency - Responsibility towards the next generation - Responsibility towards other people in this world - Family planning and population growth
Park and sustainable development	Do you perceive the park as a model region for sustainable development?	Give examples of sustainable projects in the park. Where do you see the potential for the park to become a model region for sustainable development? Based on your professional experiences, how should education for sustainable development be structured?	What role do practical learning, self-efficacy, and sustainable development play in education? What term would you replace sustainability with? What skills should the next generation develop to lead a good life?

APPENDIX 3
PARTICIPANTS' BIOGRAPHIES

THE GARDENER

FIGURE 28 *Daniela Corbellini* (Image by author, 2023).

Daniela is 64 years old and has been a landlady for 34 years, specialising in growing vegetables and herbs. She acquired all her knowledge through self-tuition. In between, she leads mule treks in the region. Her gardening business is part of the Berglandhof community, which consists of a hotel, restaurant, animal husbandry, vegetable and herb cultivation, grain cultivation and farm produce shop. The goals of the Berglandhof are sustainable development in the mountain region and a model for working for the socio-economic common good instead of profit-orientation.

Daniela usually works alone between the vegetable and herb beds but always has help from Berglandhof residents or interns. She works according to the guidelines of Demeter, which is the organic label with the strictest guidelines. Biodynamic agriculture is a system based on the mutual strengthening and support of all those involved. It regards soil, plants, animals, and people as interconnected elements of a comprehensive cycle.

THE MOUNTAIN GUIDE

FIGURE 29 *Rudi Julier* (Image by author, 2023).

Rudi, 67, has 40 years of experience as a mountain guide and ski instructor. His wide-ranging offer includes mountain guiding, avalanche training, and climbing courses. When not out guiding for his business, he can often be found in a ski school, passing on his knowledge. Although he originally trained as a carpenter, Rudi only worked briefly in this field before devoting himself entirely to his passion for the mountains. As the owner of his mountain guide company, Rudi attaches particular importance to the safety of his guests. He is not only concerned with technical skills but also with raising awareness of the beauty of nature. He also cultivates long-standing friendships and helps his clients to overcome challenges. Rudi wants his guests to learn to love the mountains as much as he does.

THE DAIRY FARMER

FIGURE 30 *Max Gurten* (Image by author, 2023).

Max, a 62-year-old mountain farmer, initially worked as a policeman before taking over his father's farm. He runs a 33-hectare rearing and dairy farm with his wife, on which they produce all the fodder. He occasionally receives help from family members and friends with the intensive manual labour required due to the area's steep topography. The Gurten family delivers their milk to a local cheese dairy, which is also responsible for marketing and selling its dairy products. As co-owner of the cheese dairy, regional added value is essential to Max. During the summer, the cows graze in the Alps, and the Gurten family sells their products directly to their regular customers. A large proportion of the meat from the retired cows is purchased by a major distributor, while the Gurten family processes and consumes some of it. Max runs his farm according to IP (Integrated Production) standards, a method recognized in Switzerland that distinguishes between organic and conventional farming.

THE FORESTRY WORKER

FIGURE 31 *Roman Blatter* (Image by author, 2023).

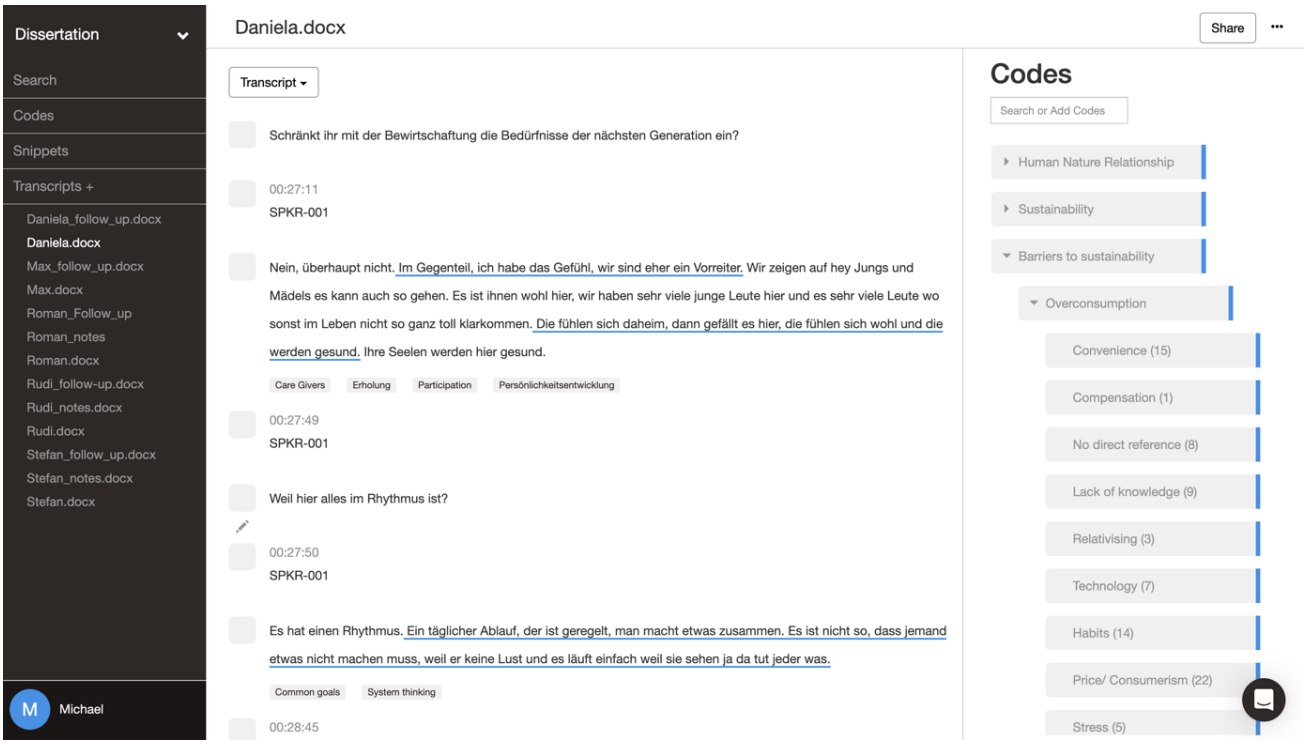
Roman, a 43-year-old forestry worker, has had an impressive career over the last 20 years. He began his career in his training company, where he now works as a foreman. His extensive experience and expertise are based on more than 20 further training courses in the forestry sector. As foreman, he is responsible for the planning and execution of forestry work and manages the forestry group. He is instrumental in maintaining his company's sustainability goals, including the ecological and economic management of the forest and the preservation of its protective function against natural hazards. He also focuses on promoting regional value creation and maintaining the 40 jobs that his company provides.

THE GAME KEEPER

FIGURE 32 *Stefan Imfeld* (Image by author, 2023).

Stefan, 46 years old, has 19 years of professional experience in the same game district where he started his career. Despite his training as a bricklayer, he has turned his passion for hunting into a profession and achieved the prestigious title of gamekeeper through extensive further training. The Cantonal Office employs him for wildlife conservation and regulation, but he works mainly independently on his game district. His objectives are closely aligned with the legal requirements for wild animals. The main priorities include conserving biodiversity and its habitats, managing wildlife damage, informing the public and contributing to research. Stefan is currently entrusted with the challenging task of regulating the rapidly increasing wolf population in Switzerland, an issue that is arousing strong public emotions.

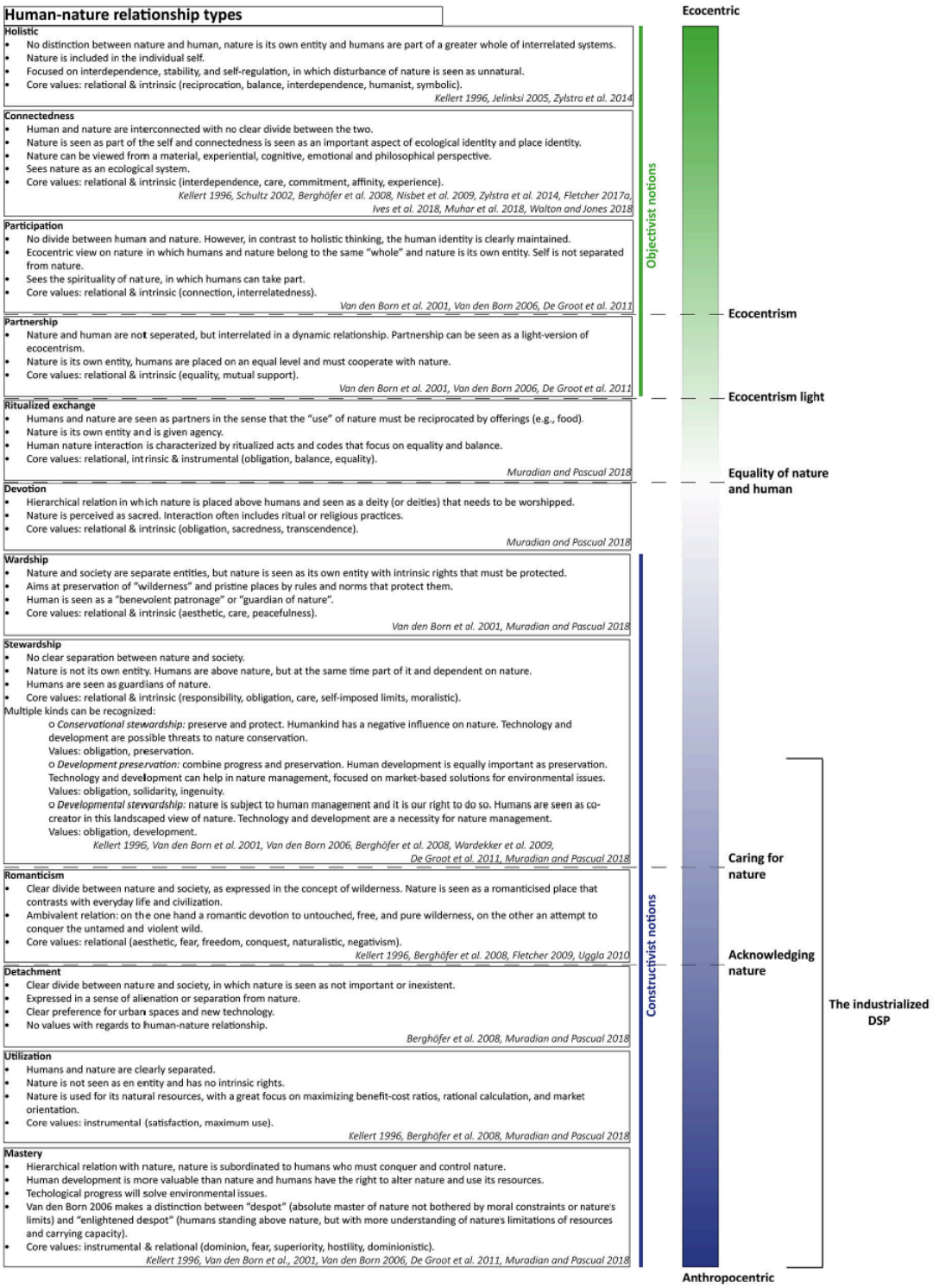
APPENDIX 4
SAMPLE OF DATA ANALYSIS — DELVE



APPENDIX 5
THE BOGERT'S SCALE

Ecology and Society 27(2): 7
https://www.ecologyandsociety.org/vol27/iss2/art7/

Fig. 1. Distinct relationships between humanity and nature as identified by their respective characteristics and core values, placed alongside a gradient of anthropocentrism to ecocentrism. DSP = dominant social paradigm.



APPENDIX 6
ETHICAL APPROVAL

Ethics Application

Your application for Ethical Approval has been submitted. You will be able to upload any supporting documents and make any further comments on this page.

Student:	Michael Murer
Email:	MURM1_21@UNI.WORC.AC.UK
Institute:	School of Sport and Exercise Science
Student Status:	Current Student
Supervisor:	
Tutor:	Colin Wood
Module Leader:	Colin Wood
Reference:	82017091200
Documents:	UW Participant Information Sheet MM_ger.docx UW Consent Form MM_ger.docx UW Participant Information Sheet MM_eng.docx UW Consent Form MM_eng.docx
Project Title:	Exploring the experiences and understandings about sustainability amongst people working in nature related jobs in the Binntal Landscape Park of Switzerland.

Ethics Application Approved

S solehelp@worc.ac.uk

To: Michael Murer (Student)

Reply Reply all Forward

Thu 21 Sep 2023 11:53

You don't often get email from solehelp@worc.ac.uk. Learn why this is important

The ethics application for Michael Murer has been approved by Colin Wood.

To view the application on your SOLE page click here.

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