Methodological framework for intersectionality analysis

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Editors: Anita Thaler[1]*, Sandra Karner[1]

Authors: Anita Thaler[1]*, Sandra Karner[1], Yennie Bredin[2], Geraldine Brown[3], Helene Figari[2], Alex Franklin[3], Vegard Gundersen[2], Robert Home[4], Geeta Ludhra[5], Ammalia Podlaszewska[6], Ghezal Sabir[4], Zafar Saydaliev[6], Ilkhom Soliev[7], David Steinwender[1], Torsten Wähler[7]

[1] Interdisciplinary Research Centre for Technology, Work and Culture (IFZ)
[2] Norwegian Institute for Nature Research (NINA)
[3] University of Coventry (CU)
[4] Research Institute of Organic Agriculture (FiBL)
[5] DADIMA'S C.I.C. (DC)
[6] Culture Goes Europe (CGE)
[7] Martin Luther University of Halle-Wittenberg (MLU)

* Corresponding editor/author, email: anita.thaler@ifz.at

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PLANET4B

BETTER DECISIONS FOR BIODIVERSITY AND PEOPLE

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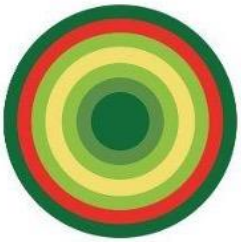

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Based on Winker and Degele's (2011) elaborate eight-step model of intersectional multilevel analysis, a refined methodological framework for context-specific intersectionality analyses (D1.3) will be co-created through 3 online workshops with case study (WP3) partners (M1-M6).

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Håkon Aspøy (NINA); Marta Bonetti (UNIPI); Yennie Bredin (NINA); Geraldine Brown (CU); Katherine Despot-Belmonte; Helene Figari (NINA); Alex Franklin (CU); Roberto Gronda (UNIPI); Robert Home (FiBL); Eszter Kelemen (ESSRG); Giacomo Lampredi (UNIPI); Borbála Lipka (ESSRG); Geeta Ludhra (DC); Subash Ludhra (DC); Vinícius Mendes (RU); Andreas Motschiunig (FUG); György Pataki (ESSRG); Ammalia Podlaszewska (CGE); Ghezal Sabir (FiBL); Zafar Saydaliev (CGE); Mirjam Schleiffer (FiBL); Barbara Smith (CU); Ilkhom Soliev (MLU); David Steinwender (IFZ); Simeon Vaňo (CG); Matteo Villa (UNIPI); Torsten Wähler (MLU)

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Executive summary

The world is not on track for achieving most of the targets of the sustainable development goals, and rising inequalities and biodiversity loss are among the trends that move in the opposite direction, and the consequences of biodiversity loss on rising inequalities have to be addressed (Independent Group of Scientists, 2019).

To tackle this interlinkage of inequalities in the field of biodiversity, PLANET4B aims at utilizing the concept of intersectionality (Crenshaw, 1989). Intersectionality highlights that race, gender, disability, sexuality, class, age, and other social categories are interrelated and lead to different levels of power and oppression influenced by forces like colonialism and neoliberalism (Rice et al., 2019).

The concept itself is not a theory with clear methodological considerations, thus this report provides insight into relevant theories and methods, and documents a co-creation process of the PLANET4B consortium, in order to facilitate a shared understanding of using the intersectional lens for upcoming biodiversity case studies.

This co-created framework for PLANET4B case studies comprises three elements:

- Using intersectionality as a starting point of reflexivity of researchers.
- Considering intersectionality and positions of privilege when approaching actors.
- Doing case studies with an intersectional lens.

Each element of this framework is introduced with a guiding principle, which stems out of the co-creation workshops, and useful questions.

All five PLANET4B place-based case studies, where learning communities will be established to trigger transformative change, explored their intersectional focus through consortium workshops, and also by undertaking supporting literature reviews. A draft synthesis of findings is compiled in Section 3.4.

1 Introduction

Author: Anita Thaler

In the 2030 Agenda for Sustainable Development, seventeen goals and 169 targets have been defined to eradicate poverty and guarantee an equitable future for all. According to the expert report “The Future is Now” (Independent Group of Scientists, 2019), the world is not on track for achieving most of those targets. Moreover, the report names four trends which are moving in the opposite direction: rising inequalities, climate change, biodiversity loss and increasing amounts of waste (Independent Group of Scientists, 2019, p. 20).

It has been recognised that: “Effective action in any of those areas requires acknowledging and addressing the links among them – the close ties between climate change and human health, for instance, or the ways in which biodiversity loss and deterioration of ecosystem services exacerbate inequalities.” (Independent Group of

Scientists, 2019, p. 23). Taking care of human well-being, and empower people's capabilities is the key to bring about change towards sustainable development.

Systems of oppression such as patriarchy, ableism, racism, ageism, colonialism and imperialism still marginalize people, often in multiple ways. Intersectionality is seen as a concept, which helps to understand these interlinked complexities of discrimination (Monjurul Kabir & Thomson, 2022).

> *"Women occupy the front lines of the present ecological crisis, making up 80 percent of climate refugees. In the global South, they constitute the vast majority of the rural workforce, even as they also bear responsibility for the lion's share of social-reproductive labor. Because of their key role in providing food, clothing, and shelter for their families, women play an outsized part in coping with drought,3ollution, and the overexploitation of land, likewise, poor women of color in the gobal North are disproportionately vulnerable. Subject to environmental racism, they constitute the backbone of communities subject to flooding and lead poisoning." (Arruzza et al., 2019, p. 47 f.)*

This introduction provides an overview of the intersectionality discourse with a focus on publications with relevance for biodiversity research. The volume of scientific publications on intersectionality has grown rapidly in the last twenty years, with some articles also addressing how this rather vague concept can be tackled methodologically. Despite this growth, however, there are not so many papers which broach the intersectional issue of biodiversity, or how intersectionality can be practically applied by transdisciplinary research teams.

Therefore, this report will utilize the concept of intersectionality for the field of biodiversity and provide an insight into relevant existing theories and methodologies. It will also document a co-creation process, which aimed at facilitating a shared understanding of using the intersectional lens for the biodiversity case studies of the PLANET4B consortium.

1.1 The roots and ideas of intersectionality

In 1989, Kimberle Crenshaw published a "black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics" and introduced in this article an intersectional analysis of a legal case of discrimination of Black women in the US. Crenshaw's legal argument builds upon previous work, like bell hooks' (1981) famous book "Ain't I a Woman", in which she states:

> *"… I voiced my conviction that the struggle to end racism and the struggle to end sexism were naturally intertwined, that to make them separate was to deny a basic truth of our existence, that race and sex are both immutable facets of human identity." (ibid., p. 13)*

Crenshaw elaborated that single-axes frameworks are discriminating Black women, because race-discrimination cases tend to forget sex- and class-under-privileged

Blacks, and in sex-discrimination cases she observed the neglect of race- and class-underprivileged women.

> *"No other group in America has so had their identity socialized out of existence as have black women. We are rarely recognized as a group separate and distinct from black men, or as a present part of the larger group 'women' in this culture." (p. 7)*

Thus, Crenshaw argued that by re-centring the *"… discrimination discourse at the intersection … we may develop language which is critical of the dominant view and which provides some basis for unifying activity."* (1989, p. 167)

Moreover, it has been substantiated by Crenshaw and further feminist scholars that intersectionality is more than adding up social categories:

> *„An intersectional research project examines categories at multiple levels of analyses — not simply by adding together mutually exclusive analyses of the individual and institutional levels but by means of an integrative analysis of the interaction between the individual and institutional levels of the research question." (Hancock, 2007, p. 251)*

Although intersectionality is rooted in structuralism[1], individuals' resistance against categorization led to poststructuralist, queer and new materialism discourses seeking for anti-essentialist approaches (Rice et al., 2019). For instance, queer scholars address race and racism together with issues of heteronormativity, biphobia and the inclusion of trans* people. Elizabeth Evans and Éléonore Lépinard (2019) collected examples of how intersectionality has been taken up by queer movements in order to reveal and resist privilege. Common to these poststructuralist and postmodern perspectives is the social construction of social categories, which adds a process character to the intersectionality approach:

> *"But to say that a category such as race or gender is socially constructed is not to say that that category has no significance in our world. On the contrary, a large and continuing project for subordinated people - and indeed, one of the projects for which postmodern theories have been very helpful - is thinking about the way power has clustered around certain categories and is exercised against others. This project attempts to unveil the processes of subordination and the various ways those processes are experienced by people who are subordinated and people who are privileged by them. It is, then, a project that presumes that categories have meaning and consequences. And this project's most pressing problem, in many if not most cases, is not the existence of the*

[1] In order to analyse inequalities based on social identities, identity markers like gender have to be defined. In structuralism and essential feminist theories 'women' and 'men' are seen as rather fixed categories, whereas new materialist, queer and post-structural theories are emphasizing the fluidity of social categories like gender, and the processes of their social construction.

categories, but rather the particular values attached to them and the way those values foster and create social hierarchies." (Crenshaw, 1991, p. 1296 f.)

1.2 Methodological considerations of intersectionality

Intersectionality highlights that race, gender, disability, sexuality, class, age, and other social categories are interrelated and lead to different levels of power and oppression influenced by forces like colonialism and neoliberalism. The concept itself is not a theory with clear methodological considerations (Rice et al., 2019). However, several feminist scholars have developed methods to conduct intersectional analysis in various research contexts. In this section, two very different methodological approaches have been selected to give readers an idea of the possibilities of including intersectionality in various research methodologies. One from sociology with a very structured step-by-step approach of analysing empirical social data (Winker & Degele, 2009, 2011) and the other one from policy research, with a more open approach usable in setting with various stakeholders and actors, with the aim to analyse and implement policies (Hankivsky et al., 2012).

Gabriele Winker and Nina Degele (2009, 2011), for example, transferred the US-centred discourse to the German and (Western-)European context and developed a methodological framework to analyse social research (e.g. interview transcripts) with an intersectional lens. This framework answers which social categories should be considered (gender, race, class, sexuality, etc.), and on which level of analysis (social structures, constructions of identity or symbolic representations). The approach of Winker and Degele (2011) is based on a praxeological methodology using a sociological analysis of empirical data (here, the authors describe the example of data generated through the use of narrative interviews):

"Against this backdrop, we focus on methodological issues in discussing intersectionality. How can we realize socially relevant categories of inequality methodically and comprehend them empirically? In order to be able to undertake empirical intersectional research a methodologically grounded method is required. … Starting out from a multi-level approach, we consider social structures, including organizations and institutions (macro and meso level), as well as processes of identity construction (micro level) and cultural symbols (level of representation)." (ibid., p. 52)

Winker and Degele's analysis of social inequities follows eight steps (ibid., p. 58 ff.): describing identity constructions, identifying symbolic representations, finding references to social structures, denominating interrelations of central categories on the three above mentioned levels, comparing and clustering of subject constructions, supplementing structural data and analysing power relations, deepening the analysis of denominated representations, and elaborating interrelations in the overall demonstration.

The Intersectionality-Based Policy Analysis (IBPA) is another method. It was developed by Olena Hankivsky and colleagues for applying the intersectionality

concept to policy analysis and implementation in an equity-based and socially just way. The framework was elaborated in a participatory process and builds on two core elements: eight guiding principles and twelve supporting, overarching questions (Hankivsky et al., 2012, p. 35 ff.).

The guiding principles are defined as follows:

- Intersecting social categories are co-constituting unique social locations
- The "multi-level dimension of intersectionality" (ibid., p. 35) needs a consideration of inequities across levels of structure, identity and representation
- The relational nature of power can lead to experiencing power and oppression in varying contexts at varying times
- Practicing reflexivity requires ongoing dialogue and deconstruction of positioned knowledges (of all involved actors) and their respective influences on policy
- Privileges and disadvantages change over time and place
- Understanding the mechanisms of privileging certain knowledges and the implications of up-taking diverse knowledges
- A social justice approach has the potential to transform social structures
- With an intersectional lens the impacts of the intersections of multiple positions of privilege and oppression are taken into account

To analyse policy processes and mechanisms of policy problems, these descriptive questions support researchers to detect underlying assumptions of stakeholders' priorities and created inequities and privileges (Hankivsky et al., 2012, p. 38 ff.):

1. What knowledge, values and experiences do you bring to this area of policy analysis?
2. What is the policy 'problem' under consideration?
3. How have representations of the 'problem' come about?
4. How are groups differentially affected by this representation of the 'problem'?
5. What are the current policy responses to the 'problem'?
6. What inequities actually exist in relation to the problem?
7. Where and how can interventions be made to improve the problem?
8. What are feasible short, medium and long-term solutions?
9. How will proposed policy responses reduce inequities?
10. How will implementation and uptake be assured?
11. How will you know if inequities have been reduced?
12. How has the process of engaging in an intersectionality-based policy analysis transformed structures of power and inequity; policy development, implementation and evaluation; effects of power asymmetry in the everyday world?

Despite the above examples of methodological application, and a fast-growing number of theoretical papers (see for instance Hancock, 2007; Walgenbach, 2012; Rice et al., 2019; Bauer et al., 2021), Kathy Davis (2008) argues that *"…, paradoxically, precisely the vagueness and open-endedness of 'intersectionality' may be the very secret to its success."* (p. 69); a good 'feminist' theory – according to Judith Butler and Joan Scott – would *"… open up space for critique and intervention, while enabling us to be reflexive about the range and limitations of our own theoretical enterprise" (ibid., p. 78),* Davis interprets, and she sums up:

"In this sense, intersectionality has precisely the ingredients which are required of a good feminist theory. It encourages complexity, stimulates creativity, and avoids premature closure, tantalizing feminist scholars to raise new questions and explore uncharted territory." (Davis, 2008, p. 79)

1.3 Intersectional perspectives in the biodiversity discourse

Environment-related goals and mainstreaming biodiversity on a global scale need measures on a local level, relevant for local communities and resulting in collective actions (IPBES, 2019). Addressing differing degrees of access to resources, differing impacts on diverse groups of actors, and the differing effects of certain privileges are essential, if the biodiversity discourse is to achieve environmental and social justice:

"The biodiversity discourse generates and mobilizes a complex network of actors: from international organizations to mostly Western NGOs; from transnational bioprospectors, extending over indigenous communities, to social movements (Escobar, 1998). It creates (or denies) access to resources, depending on whether biodiversity is framed as "common heritage of humanity" (in the economic sense of "global commons") or rather as a good under the sovereign control of nation states or even local communities (Turnhout et al., 2013). Eventually, it privileges certain forms of knowledge, while delegitimizing and therefore marginalizing others (Vadrot, 2014)." (Mangelsdorf et al., 2016, p. 6)

Thus, the previously discussed complexity of intersectionality (Davis, 2008) goes well together with the manifold empirical approaches and contexts of PLANET4B. This is particularly so with regards to its place-based case studies, which address different local communities, tapping into diverse knowledges, and share a commonality in combining the topic of biodiversity with intersectionality:

"Intersectional analysis allows to understand and remove structural barriers perpetuating systemic exclusion, discrimination, and social inequalities (Roig et al., 2020). Environmental justice and the biodiversity crisis must include an intersectional lens, because '… looking at biodiversity is inseparable from looking at the diversity of human communities …'" (Mangelsdorf et al., 2016, p. 7)

By asking where potential intersections of discriminations in biodiversity research are, where and for whom access is limited (by education, etc.), and if certain knowledges might be under-represented or under-valued, awareness is raised of potential structural social barriers. Ultimately, PLANET4B case studies have to ask whether a loss in biodiversity has different effects on people at the intersections of social categories and how biodiversity research and case studies can be carried out in a socially just manner.

Critically reflecting on knowledge production means also analysing how colonialism has shaped scientific discourses focusing on biodiversity. This can be done by learning from feminist postcolonial criticism in human geography (see Schurr & Segebart,

2012). Intersectionality may not always be named as a concept in those debates, but the discussions are very similar: how the standpoints of researchers influence their access to the field and their methodological approaches, and how social identities, and therefore diverse positions of power, shape knowledge production.

> *"The contrast between Western scientific systems and indigenous epistemologies and systems of medicine is not the only issue here. It is the colonialist and corporate power to define Western science, and the reliance on capitalist values of private property and profit, as the only normative system that results in the exercise of immense power. Thus indigenous knowledges, which are often communally generated and shared among tribal and peasant women for domestic, local, and public use, are subject to the ideologies of a corporate Western scientific paradigm where intellectual property rights can only be understood in possessive or privatized form. All innovations that happen to be collective, to have occurred over time in forests and farms, are appropriated or excluded." (Mohanty, 2003, p. 512)*

Robin Wall Kimmerer (2013), for example, illustrates how her training as a scientist privileged certain aspects of understanding nature and of knowing over others. Today, in her ecology classes, she incorporates a mindful language and is *"bilingual between the lexicon of science and the grammar of animacy"*, referring for instance to trees as 'someone' not as 'something'. By objectifying nature *"we put a barrier between us, absolving ourselves of moral responsibility and opening the door to exploitation."* (ibid., p. 57).

Also, Donna Haraway (1988) discusses scientific 'objectivity' in relation to responsibility and explains that objectivity claims are connected to partiality and not as promised to unlimited truths. Consequently, she makes *"…an argument for situated and embodied knowledges and an argument against various forms of unlocatable, and so irresponsible, knowledge claims. Irresponsible means unable to be called into account."* (ibid., p. 583). What Haraway says about situated knowledges can be directly connected to PLANET4B, and its approach of working with learning communities in biodiversity case studies, because the only way of generalising knowledge is to be specific:

> *"The science question in feminism is about objectivity as positioned rationality." (Haraway, 1988, p. 590)*

In her book 'Staying with the Trouble' (2016), Haraway cumulates her thoughts consequently in the call for "multispecies justice" (ibid., p. 3; see also Chao et al., 2022) and the requirement of making "oddkin" (ibid., p. 4) with non-human actors. She tells stories of animal-human becoming-with, like urban pigeon projects, and describes how marginalised children learned to see sadly often "*despised birds as valuable and interesting city residents, as worth notice".* (ibid., p. 24). Along similar lines, Robin Wall Kimmerer (2013) emphasises how the mindfulness of language and our relationships with each other can *"lead to whole new ways of living in the world, other species a sovereign people, a world with a democracy of species …"* (ibid., p. 58), whilst Cristina

Yumie Aoki Inoue and Matías Franchini (2020) refer to "socio-biodiversity" and also call for broadening our notions of knowledge:

> *"… relations between society and nature should be reconstructed and re-organized in the way we produce, consume and relate to each other as groups and individuals. Epistemologically and theoretically, this means looking for other ways of conceiving or broadening our notion of knowledge." (Inoue & Franchini, 2020, p. 309)*

1.4 Practical considerations for doing intersectional biodiversity activities

PLANET4B's case studies are conceptualised as "situated solidarities" (Nagar & Geier, 2007), which can be translated as "practices of scholar-activism", connecting academic work to social change and working with marginalised groups (Routledge & Derickson, 2015).

Carolin Schurr and Dörte Segebart (2012) point out that too little emphasis has been placed on how diverse social identities can strengthen alliances in research – what Nagar and Geiger called "situated solidarities" (2007) and Chandra Talpade Mohanty (2003) "transnational feminist solidarity":

> *"A transnational feminist practice depends on building feminist solidarities across the divisions of place, identity, class, work, belief, and so on. In these very fragmented times it is both very difficult to build these alliances and also never more important to do so." (Mohanty, 2003, p. 530)*

Paul Routledge and Kate Driscoll Derickson (2015) explain, based on research with farmers in Bangladesh[2], the following six practices of situated solidarities:

- Being moved ("to collaborate with (non-academic) others is frequently inspired by the collective visions and critiques that we share with our collaborators") (ibid., p. 6),
- Dispersing power ("to dismantle the 'fences' that separate those with access to resources from those who don't") (ibid., p. 7),
- Resourcing potential ("generate and resource potential rather than only provide intellectual critique") (ibid., p. 9),
- Resourcing solidarity ("resource both material (e.g. physical resources) and immaterial production (e.g. knowledge) and create space and time for communities/social movements that they cannot always provide for themselves") (ibid., p. 10),

[2] Paul Routledge was working on "an organisational, educational and solidarity building platform for social movements concerned with the interrelated issues of climate change, food sovereignty and gender", called the "Climate Change, Gender and Food Sovereignty Caravan" (short "Climate Caravan", Routledge & Derickson, 2015, p. 6). Biodiversity has been identified by the authors as re-occurring theme in the multi-faceted discourses of food sovereignty informing the project's concept of "Peasant farmer counter power" (ibid., p. 9).

- Challenging assumptions and norms (“scholar-activists need to challenge their own assumptions about academics’ ‘power’”) (ibid., p. 11),
- Sustaining collaboration (“communities with which we collaborate are interested in engaging in knowledge exchange with scholars with whom they have relationships of trust”) (ibid., p. 12).

To build relationships of trust and sustain collaborations, culturally meaningful rituals like shared meals help to establish connections. Simultaneously, ideas can be shared and strategies discussed, and thus rituals like shared meals can support shaping political imaginaries (Routledge & Derickson, 2015).

The PLANET4B case studies are not only conceptualised as learning communities in the sense of situated solidarities, but moreover researching in transdisciplinary teams with an intersectional lens. For that purpose, a toolkit for applying intersectionality to educational purposes and to research developed by Joanna Simpson (2009) will be introduced. First of all, she recommends for research teams who want to apply an intersectional perspective to look for people who value similar approaches to research, especially valuing a bottom-up approach to research. One way of involving participants in this form of research is by co-constructing the research question(s). Simpson emphasizes to communicate the benefits of the research for the participants, for instance by sharing resources, sharing skills and information and creating networks among participants. Using an intersectional approach is especially important when participants who experience marginalization are involved. Simpson (2009) developed a wheel diagram of intersectionality (see Figure 1) to explain the concept for these cases. The wheel displays four circles, the innermost, first circle representing individual circumstances, the second representing identity aspects (like gender, age, class background), the third circle representing different types of discrimination and attitudes which impact identity, and the fourth outermost circle representing the overarching forces and structures that reinforce exclusion.

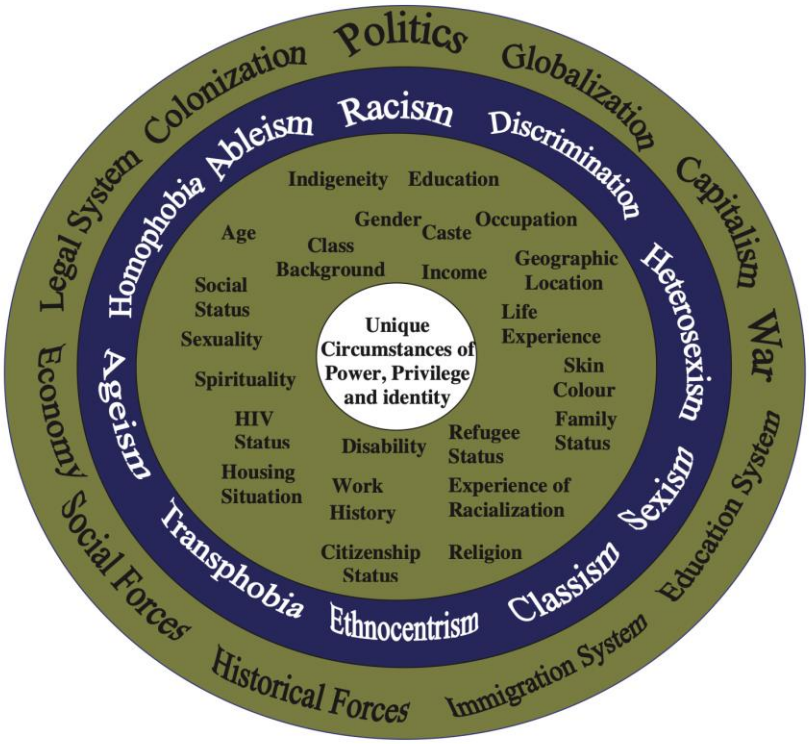

Figure 1. "Intersectionality displayed in a wheel diagram" (Simpson, 2009, p. 12).

Finally, Simpson (ibid.) recommends asking participants for feedback, with four basic questions being asked in the context of evaluating intersectionality informed activities:

1. What worked and why? (Assessing accessibility)
2. What did not work and why? (Improving accessibility)
3. What could have been done differently? (Reflecting on inclusiveness)
4. What adjustments and changes are required now? (Improving the intersectional approach)

2 Methodological approach: Transdisciplinary workshops to co-create a shared understanding of intersectionality in biodiversity research

Authors: Anita Thaler, Sandra Karner

Based on the literature overview on intersectionality with a focus on biodiversity research in chapter 1 of this report, a series of online PLANET4B consortium workshops were then organised. The purpose of the workshops was to co-create a methodology for context specific multilevel intersectionality analysis, in order to identify vulnerable groups and inequity in biodiversity interventions. The co-creation of knowledge approach has been tested in other research projects (using various workshop formats, joined writing activities, etc.) as a useful methodology to mend the gap between scientific knowledge and policy or practice brought into action in various fields from sustainable food systems (Karner et al., 2011) to implementing gender equality plans in science and research organisations (Thaler et al., 2022).

2.1 Background and context of co-creation workshops

During the kick-off meeting of PLANET4B (December 13-15th 2022 in Halle, Germany) the authors presented the concept of intersectionality and connections to biodiversity briefly. The tasks for partners comprised case study specific literature reviews as well as three co-creation workshops.

On February 1st, February 20th, and March 1st 2023 three-hour long online consortium workshops were conceptualised and facilitated by the authors of this report, in order to co-create a shared understanding of intersectionality for the intensive case studies[3] of PLANET4B. The workshops were hosted on the online platform Zoom, with the virtual whiteboard Miro used for plenary and small group activities.

In sum, 22 PLANET4B team members from 12 organisations participated in the three workshops. Most of participants are affiliated with the five intensive, place-based, action-learning case studies, which aim at triggering pathways towards transformative change in various contexts:

- Children with disabilities and outdoor recreation in Greater Oslo, Norway.
- Ethnic minority communities and access to nature and the outdoors, Central England, UK.
- Urban youth, intersectionality, and nature in Germany.
- 'Bio-Diverse Edible City Graz': Urban food for biodiversity and inclusion in Graz, Austria.
- Agriculture, Religion and Biodiversity agriculture-biodiversity, Switzerland

Additionally, a fourth online workshop was organised for all interested partners of PLANET4B to share the co-created knowledge. 14 persons from eight organisations, including partners working on extensive case studies, participated in this three-hour long workshop on March 20th.

2.2 Process and elements of co-creation workshops

All co-creation workshops followed the general concept of introducing the participants, followed by interactive core-activities, plenary discussions, and a reflection and feedback phase as closing element.

The introduction element of all workshops pursued three goals. Firstly, to become familiar with each other, which is of utmost importance in order to share knowledge and experiences in the thematic field of intersectionality. Secondly, to give all participants an equal possibility to speak right from the beginning. This has been proven as a successful strategy in online settings to increase the general activity level of the group and especially of more introverted participants. Thirdly, the introduction exercise was biodiversity-themed (e.g. introducing oneself as a non-human actor), and thus sensitised the group to intersectional aspects of biodiversity like multispecies justice.

[3] PLANET4B works on intensive, local-based and extensive, global case studies. Intensive case studies are conceptualised as learning communities in specific biodiversity related research activities.

The levels of previous experiences with the concept of intersectionality differed very much among the participants. Some transdisciplinary research teams already used various feminist, post-colonial and/or social justice theories, while others were relatively new to the thematic area[4]. Thus, the core-activities in the three workshops for the intensive case studies followed an adult education approach of meeting participants at their starting points and connecting the concept of intersectionality step-by-step with their case studies.

Workshop 1

In the first workshop the transdisciplinary teams reflected on their planned case studies along seven areas and specific questions (see Figure 2): Description of the case study (1) and its context (2), explaining the relevance of transformative change (3), aspects of inclusion and expected problems with the learning communities of the case studies (4), the values behind the teams (5), the existing and needed capacities for setting up learning communities (6), and the restrictions and expected resistances, and deduced needs (7).

Figure 2. Case study reflection exercise in workshop one (Miro board by authors).

[4] This variety in gender knowledge was known before the workshop, due to the introduction and discussion of the topic at the first consortium meeting in December 2022 in Halle. After that all five intensive case study partners drafted literature reviews, connecting intersectionality to their specific topics. This phase of writing the drafts was accompanied by Anita Thaler, she was consulted by three teams respectively researchers, one team asked for advise face to face (after the meeting in Halle), another one by telephone and the third via e-mail.

Workshop 2

In the second workshop the 'academic wheel of privilege' (Elsherif et al., 2022) was introduced and used as an individual reflexivity exercise[5], to illuminate own privileges and raise awareness for the diversity of social markers and categories, which can lead to multiple discrimination and systemic injustices (Figure 3). After a plenary discussion, the participants exchanged, in three small groups, starting points for intersectional perspectives (involving who, why and how) in their respective case studies.

Figure 3. Academic wheel of privilege by Elsherif et al. (2022) (Supplementary Figure 2, adapted from Sylvia Duckworth).

[5] All participants worked individually on their own wheel of privilege, placing themselves in the respective characteristics of each category. Afterwards, participants shared their experiences with the exercise, reflecting from an individual perspective and on a meta-level, about how useful the exercise is for the purposes of PLANET4B.

Workshop 3

For the third workshop, participants were asked to read two articles as a preparation: Mangelsdorf et al. (2016) and Kaijser and Kronsell (2016)[6]. In the workshop, all previous steps were summarised: from the presentation of the topic during the kick-off meeting and the draft versions of case study literature reviews[7], to the reflection of case studies within the first two workshops, as well as the discussions around intersectionality as reflexivity tool. From here on, the core elements of this workshop were, firstly, small group discussions of dualistic constructions of 'otherness' (according to Kaijser and Kronsell 2016 these are processes of "backgrounding", "exclusion", "incorporation" and "objectification", ibid. p. 46) in all case studies and ideas of overcoming them. Secondly, in a plenary discussion the most important insights were collected on a "doing biodiversity studies with an intersectional lens" board (see Figure 4). Finally, the multi-level analysis of Winker and Degele (2011) was discussed as a possibility to analyse empirical data, like interviews, with an intersectional approach (see chapter 1.2 of this report).

[6] Participants asked to receive articles beforehand to not lose time in the workshops for explanations of theories and studies. The article by Kaijser and Kronsell (2016) about "Who gets to know about nature? Biodiversity and ecosystem services through an intersectional lens" was chosen because of its immediate relevance for PLANET4B. However, the immediate feedback was that the article is not easy to grasp and was then complemented by the editor's introduction (Mangelsdorf et al., 2016) of the special issue Kaijser and Kronsell were published in.

[7] The draft versions were sent in a time period between the first and shortly after the second workshop, then improved by all teams after completing the series of co-creation workshops, and then finalised for the final version of this report.

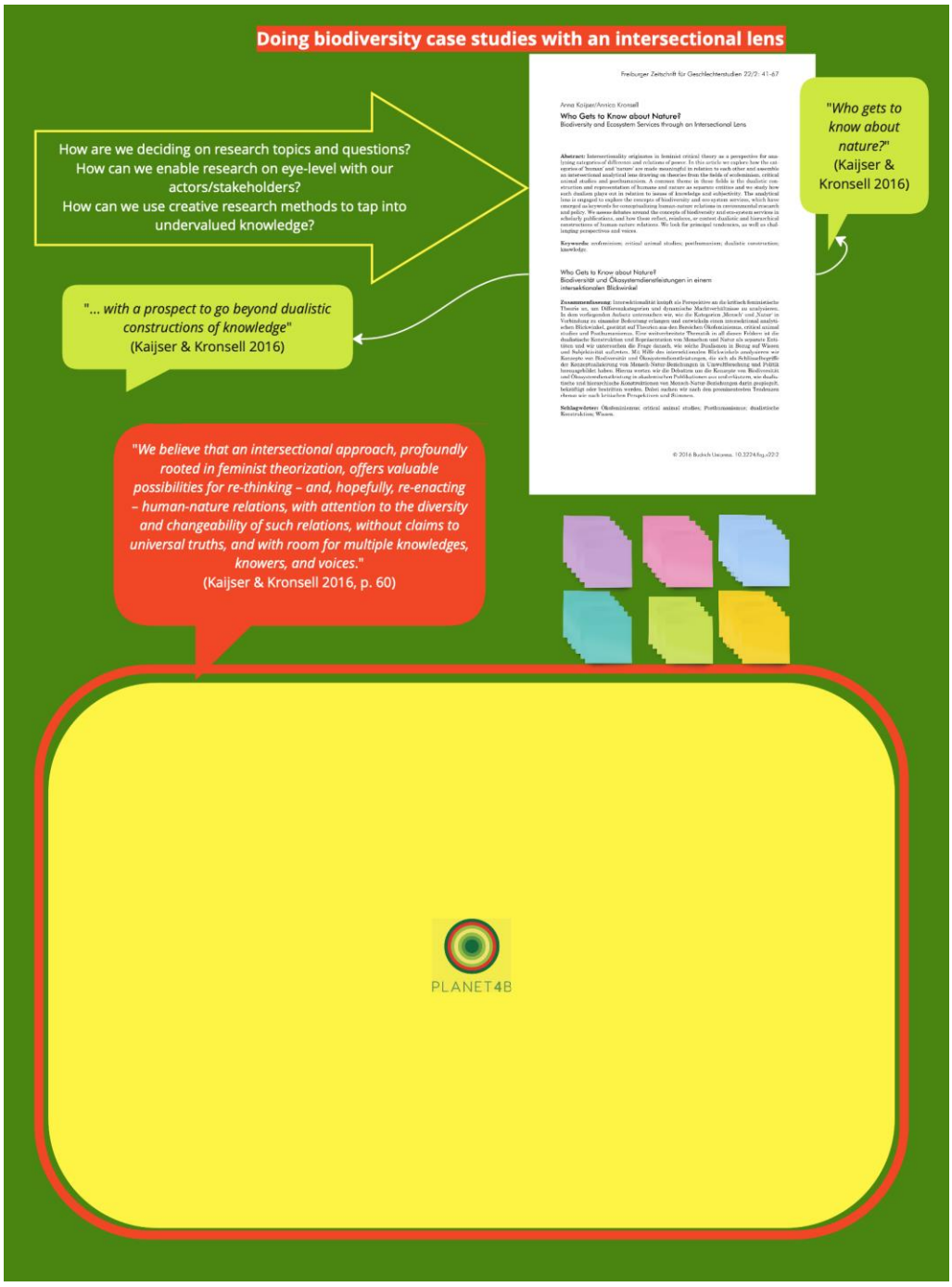

Figure 4. Doing biodiversity with an intersectional lens (Miro board by authors).

Workshop 4:

The fourth workshop was an additional workshop asked for by PLANET4B partners working on extensive case studies and interested in understanding the concept of intersectionality better also for their work. The workshop had two purposes, firstly to give new participants a good overview of the discussed topics and an insight in specific tools. Secondly, also participants from the three workshops before were invited to offer the possibility of discussing the previously co-created knowledge with 'new participants' offering a 'critical friends'-perspective. For this workshop, participants were asked to read two papers as a preparation: Mangelsdorf et al. (2016) and

Haraway (2016, p. 15-29)[8]. In the workshop the outcomes of the three previous co-creation workshops were shared, and then all participants discussed in two groups (moderated by the two facilitators) the methodological considerations along their interest:

- Group 1. “Analysing empirical material with an intersectional lens” (ref. to the eight-step model of interview analysis by Winker and Degele, 2011, see chapter 1.2 in this report).
- Group 2: “Doing biodiversity case studies with an intersectional lens”[9] (ref. to co-created knowledge of the three workshops before, using for instance Kaijser and Kronsell, 2016).

The closing and reflection part of each workshop served to potentially improve following workshops, and to receive feedback on how useful the participants assessed elements of the workshop.

3 Results and discussion: Doing biodiversity case studies with an intersectional lens

Authors: Anita Thaler, Sandra Karner

The methodological approach discussed in this report followed an iterative cycle. It began with a literature review on intersectionality in biodiversity research, which informed the first co-creation workshop with partners of the five case studies (in the fields of inclusive nature recreation and outdoor activities, urban biodiversity and food, and biodiverse agriculture). Findings from the first draft case study specific literature reviews were integrated in the co-creation workshops on intersectionality (with literature informed inputs and experience-driven discussions on reflexivity, privileges, situated knowledges, etc.), which led to improved case study literature reviews, and an overall framework of doing biodiversity case studies with an intersectional lens. This is why beside the key elements of the methodological framework, the refined case study specific literature reviews are presented in this results section, as they are another outcome of the described process.

[8] The two papers, which should be read in advance, were the editorial article by Mangelsdorf et al. (2016) because it proved to be a good introduction, and the pigeon chapter of Haraway’s (2016) book “Staying with the trouble”, with examples of multispecies activities with intersectional relevance.

[9] This is one of the articles, which informed the framework of the shared understanding of intersectionality in biodiversity case studies of PLANET4B, which will be explained in chapter 3.

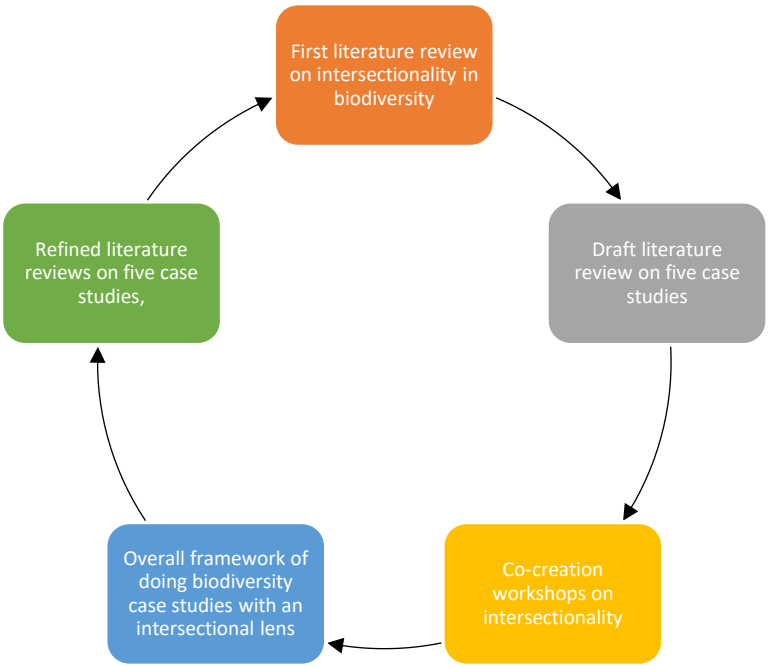

Figure 5. Iterative cycle of co-creating a shared understanding of intersectionality in biodiversity case studies.

3.1 Reflexivity of researchers informed by intersectionality

> *"I am arguing for politics and epistemologies of location, positioning, and situating, where partiality and not universality is the condition of being heard to make rational knowledge claims. These are claims on people's lives. I am arguing for the view from a body, always a complex, contradictory, structuring, and structured body, versus the view from above, from nowhere, from simplicity. Only the god trick is forbidden." (Haraway, 1988, p. 589)*

When research aims at using an intersectional approach, the guiding principle for the first methodological step of this process is to think about one's own standpoint. Reflecting on one's own privileges and experiences of discrimination and shame is a difficult exercise for researchers. It contests all ideas of objectivity and distance to the field by positioning oneself within one's own research context, for instance the very learning community within the respective PLANET4B case study. One tool which can be used for academics is the academic wheel of privilege (by Elsherif et al., 2022), but in order to accurately fit the specific intersections of inequality within the respective community, adjustments of this tool should be taken into consideration[10]. Some of those intersections might be known from previous research and even published in

[10] The academic wheel of privilege is an adaption specifically for academics and researchers, discussing categories like career stage or funding situation, these categories are most probably not relevant to the biodiversity case study participants of PLANET4B. On the other hand, additional categories might be useful, thus it could be one type of exercise to work with interested participants to create their own meaningful wheels of privileges.

scientific articles; some might be known through conversations with community centres or other intermediary organisations[11].

Discrimination can be very deep, with prejudices and stereotypes affecting the learning community. Identifying potential intersections of discrimination and making them visible, will be a task for the case studies. Tools like an adapted wheel of privilege exercise (see Figure 3 in chapter 2.2 in this report) or other established community education activities for exploring intersectionality can be used. The latter includes, for example:

- Intersectionality String Game
- How Many of You.....exploring our own oppressions
- Invisible Backpack of Privilege Activity

(see Simpson, 2009).

Useful questions to start biodiversity research with a self-reflexive intersectional lens are:

- Where do I stand?
- What are my privileges?
- Where are my connections to the case study?
- Where are my entry points?
- Who can help us connecting to human and non-human actors?

3.2 Approaching actors of biodiversity case studies using an intersectional perspective

> *"Situated knowledges require that the object of knowledge be pictured as an actor and agent, not as a screen or a ground or a resource, never finally as slave to the master that closes off the dialectic in his unique agency and his authorship of 'objective' knowledge." (Haraway, 1988, p. 589)*

The most important guiding principle for approaching actors, is the need to build trust with new learning communities. This means that the whole transdisciplinary research team must inform themselves about the context of the community, and prepare activities very carefully to avoid triggers[12].

Connecting to people in local learning communities is dependent on individual entry points of researchers and harmonised motives within each case study:

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[11] The relevant social categories, which lead to social inequities and discrimination in specific case studies should not be assumed, but be informed by empirical evidence and reported experiences from case study actors.

[12] Triggers refer to words, images, narratives which could cause emotional harm by activating old painful memories and traumas.

- Which of the privileges or experienced discriminations are shared?
- Which interests and activities do facilitators and local communities have in common?
- What drives different actors, for example, are they motivated by environmental concerns, health related issues or social justice?
- What are local communities gaining by planned biodiversity activities?

To find good entry points means to reflect on one's own standpoints as well as to analyse the intersections of potential and actual discriminations in the specific case. The motives of different actors have to be aligned with the intervention plans of each case study and its limits. The benefits for local communities have to be communicated clearly. Practically, cooperation with community representatives or groups and with existing initiatives can alleviate access.

The knowledge about intersectional aspects of the biodiversity case studies will grow during the intervention activities. This is the action research part of these case studies. By doing the activities, the knowledge about the interlinkage of intersectionality and biodiversity in the respective community will get broader and deeper, activities might be adapted, new actors approached, new methods applied.

Useful questions to approach and include actors of biodiversity case studies with an intersectional lens are:

- Who are we doing research with?
- What knowledge is valued and how?
- Who are we missing and why?
- How diverse are the people we are missing?

3.3 Doing biodiversity case studies with an intersectional lens

> *"We believe that an intersectional approach, profoundly rooted in feminist theorization, offers valuable possibilities for re-thinking – and, hopefully, re-enacting – human-nature relations, with attention to the diversity and changeability of such relations, without claims to universal truths, and with room for multiple knowledges, knowers, and voices." (Kaijser & Kronsell, 2016, p. 60)*

A further guiding principle of doing biodiversity research with an intersectional lens is illuminating dualisms of nature and humans to understand power relations. This means instead of focusing only on certain aspects of social categories as sites of domination (e.g. masculinity vs. femininity), following Kaijser and Kronsell (2016, p. 46, referring to Plumwood, 1993) we suggest to analyse and work on four processes of dualistic construction:

- Processes of 'backgrounding': Backgrounding sets an un-challenged 'master practice' as the norm and downgrades 'the other', via dualistic thinking, as deviant. These backgrounding processes can only be challenged by critically reflecting on one's own privileges and the intersections of discriminations in the specific case study, which can devaluate practices.

- Processes of ‘incorporation’: Incorporating characteristics of one side of a dualism and seeing those as of higher value leads in turn to devaluation of the other side and to hierarchical relationships. Incorporation functions like a relational standardisation process, where only privileged actors, who meet the exact incorporated characteristics or virtues are valued, and those who do not meet the standards are devalued.
- Processes of ‘exclusion’: By devaluing ‘others’ (which do not meet the set standards or are essentialised ‘others’), groups of ‘us’ and ‘them’ are established, with the privileged group becoming exclusionary. Dualistic differences are magnified and essentialised (often in connection with social categories, which are not seen as socially constructed and fluid, but as fixed and genetically determined), with exclusion processes leading to naturalised hierarchies and oppression (ibid.).
- Processes of ‘objectification’: Objectifying humans and nature leads to a denial of their needs and rights, and acknowledges only their perspectives if doing so is useful for one’s own agenda. In this fourth process of dualistic construction, it becomes very visible that all four mentioned mechanisms are relevant for an intersectionality-informed biodiversity discourse, which aims at environmental justice, inclusive of both social and multispecies justice.

Interventions can be organised from the top-down or bottom-up, and the intervention can be invited or not; these issues have to be considered carefully to establish a common understanding of the kind of societal contract the activity aims for.

The accessibility of learning communities is dependent on a range of factors. Individuals may be excluded due to the location of case studies (e.g. taking into account differing physical abilities), they may be excluded due to their resources (time, money, mobility), their language skills, their education, or due to their attitudes and values, which might contest the equity-driven biodiversity activity (at first)[13]. Creating a sense of belonging for people, including those who are not easily reached, or who are not already part of environmental discussion, is integral to biodiversity case studies with an intersectional lens.

In the co-created shared understanding, we concluded:

- We need trust!
- We need to have flexibility (in our thinking and) in using categories.
- With whom are we doing what and where? The biodiversity activity needs to make sense for all actors involved.
- Why are we doing what we are doing? It is important to include all participants in this.
- How do we give something back to communities?
- What is a way of ‘imposing’ which is acceptable? We need to carefully listen, try out things and learn together.

[13] For instance, some participants in learning communities might have experienced discrimination based on their class background or gender themselves, but they not be aware of others experiencing discrimination based on their sexuality or body size.

- We have to start with people who do not have a voice in the biodiversity discourse yet, and use their connection to nature as a starting point.
- We have to overcome limiting images of people, and overcome objectification. How is nature or biodiversity in our case study objectified? For instance, how is nature represented in maps?

Useful questions for doing biodiversity case studies with an intersectional lens are:

- How are we deciding on research topics and questions?
- How can we enable research on eye-level with our actors/stakeholders?
- How can we use creative research methods to tap into undervalued knowledge?

4 Literature reviews on biodiversity case studies

Reflections on specific aspects of intersectionalities for the five intensive, place based cases were underpinned by literature reviews carried out by the case study teams. The following sections briefly present the cases and the (preliminary) findings regarding intersectionality aspects and related considerations.

4.1 Children with disabilities and outdoor recreation in Greater Oslo, Norway

Authors: Helene Figari, Yennie Bredin, Vegard Gundersen

The aims of the Oslo case study are a) to explore paths for enabling children with disabilities to connect with biodiversity, b) to facilitate activities in nature that take the children's particular needs into account, and c) give children with disabilities a "voice" regarding which natural areas or qualities of biodiversity that are important to them, and hence deserve to be considered in mappings and evaluations of outdoor recreation areas.

Spending time in nature through outdoor recreation activities has been firmly linked to reduced stress and better physical and mental health (Wolch et al., 2014). Outdoor recreation is, moreover, an arena for connecting with wildlife and nature, thereby promoting awareness about nature's intrinsic value. Hence, from an anthropocentric as well as an ecocentric point of view, outdoor recreation could have the potential of influencing societal prioritisation towards the preservation and restoration of biodiversity.

In the struggle over scarce land resources, biodiversity is nevertheless systematically deprioritised against large infrastructure projects supporting for example the production of energy and goods, transportation and housing. The competition over land is particularly evident in cities. Approximately 75% of the European population now live in urban areas (United Nations, 2019) where biodiversity degradation has immediate effect people's everyday life, with, among other things, reduced opportunities for recreational activities that take place in natural areas.

Urbanisation is often accompanied by rising socio-economic inequality (Glaeser et al., 2009; Musterd et al., 2017) which tends to manifest spatially in the unequal distribution

of access to green space. In the European context, the strongest urban densification over the last three decades has taken place in the Nordic countries, and Oslo has been in front with a particularly high increase in population density (Næss, 2022). Despite its reputation as one of the greenest cities in the world (Huang et al., 2021), Oslo stands out as a city with a particularly strong and persistent pattern of geographical segregation of wealth (Haandrikman et al., 2023; Wessel, 2016). Recent studies have demonstrated that approximately 55–76 % of the Oslo population now live in areas that do not satisfy the WHO targets for exposure to green space (Barboza et al., 2021), and that the negative effects of reduced access to greenspace and water is unequally distributed across socio-economic segments of the population (seaside, lakes, rivers) (Venter et al., 2023). In light of this, there is an urgent need for improved urban planning processes that take not only the wider public's need for access to green space into account, but also the needs of vulnerable groups.

According to the United Nations, woman, children, older persons and persons with disabilities that live in cities are particularly dependent on easy access to safe, inclusive and accessible green and public spaces to live healthy and good lives (Daniel, 2015). The Oslo study case is oriented towards persons at the intersection between two of these groups, targeting specifically children with disabilities. Child activities in Norway have become steadily more adult-organised. Less free time is spent outdoors in nature-like environments, and social differentiation in outdoor recreation is increasing, not least since the covid pandemics (Wold et al., 2022). Remmen and Iversen (2022) have assessed social inclusion and differentiation among children and youth in outdoor recreation activities in Oslo. One conclusion is that organised recreation activities are biased in the sense that not all age groups are equally included. Moreover, there are very few organised outdoor recreation activities for children and youth with disabilities (see also Klima- og miljødepartementet, 2018).

In everyday life it is the residential green space that seems to have the greatest impact on children's health and well-being (Engemann et al., 2019). However, children have very little impact on the planning of outdoor recreation areas. They are usually spoken *on behalf of* rather than *with* (Vidal & Castro Seixas, 2022). Since children with disabilities tend to be excluded from outdoor recreation, we suspect that being both children and disabled also entails a double disadvantage when it comes to influencing planning and prioritisation of outdoor recreation areas (Porębska et al., 2021).

The objective of the Oslo case study is twofold:

1) We will analyse strengths and blind spots in existing valuation maps of recreational areas in Oslo (called M98 maps), regarding the inclusion of vulnerable or "invisible" groups, focusing on children with disabilities.
2) In order to do so, we will extract and synthesize:
    a) Data from a broader nationwide NINA survey on children's outdoor recreation activities. The survey will include questions about potential disabilities.
    b) Information from roundtable discussions with representatives from organisations working at the interface between child disability and outdoor activities to:

- gain insight into barriers and opportunities to enable children with disabilities to spend time in nature, including barriers related to stereotypical representations of disability and outdoor recreation
- establish a framework for pilot activities in nature that includes disabled children

c) Observational data from real life pilot activities in nature that includes disabled children, combined with a creative method such as asking the children or their caretakers to take photos of elements and places in nature that are likable or important to them.

In collaboration with The Larger Oslo Recreation Council, we will compare the extracted information from the survey, the roundtable discussions and the pilot activities to existing maps of selected recreational areas in Oslo and suggest improvements for a more inclusive M98 valuation methodology. We will strive for recommendations that benefit children and vulnerable groups more broadly. As part of the analysis, we will attempt to bring to light implicit social representations of what outdoor recreation is, or is supposed to be, and how these representations are embedded in mapping instruments such as M98. Previous research has, for instance, shown that most children prefer more biodiverse and less designed natural areas than adults do, and that this is largely overseen in planning processes since the children themselves tend to be excluded from those processes (Skår et al., 2016). Although the M98 methodology is inclusive in the sense that stakeholders participate in the actual valuation of outdoor recreation areas, children are not among those stakeholders. As for children with disabilities, we do not know how biodiversity comes into their lives or how. This is something we have set out to learn more about in the Oslo study case.

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4.2 Systemic exclusion: Ethnic minority communities and access to nature and the outdoors. Central England, UK

Authors: Geraldine Brown, Alex Franklin, Geeta Ludhra

This intensive case study will be co-produced, with Coventry University working collaboratively with DADIMA'S C.I.C. and participants attending their activities. The overarching aim is to engage participants in DADIMA'S C.I.C. nature walks through a process in which participants are encouraged to share their biodiversity stories and knowledge. DADIMA'S C.I.C. is a UK-based case study situated in the Chilterns Area of Natural Beauty (AONB), a White rural locality outside of Oxford city. The organisation, led by two South Asian Walk leaders, aims to diversify access to and engagement with the outdoors through creating a safe space that brings people from diverse backgrounds together to explore and support the development of biodiversity knowledge and understanding using creative and inclusive nature-informed activities.

The case study will also capture a broader range of stories from participants from ethic minority communities engaging in community led nature-based initiatives. The overarching aim is to adopt a case study approach that will be centred around the lived experiences of people from ethnic minority communities, with the stories they share serving as a gateway to guide a wider dialogue with key stakeholders working across the environmental sector (NGOs, policy makers and practitioners), and serving as a tool for action and change.

In the UK, the term ethnic minority usually refers to racial and ethnic groups that are in a minority in the population and thus it is used to categorise diverse populations (Dacosta et al., 2021). People from backgrounds of migration heritages have different life histories and levels of affluence, there are people from ethnic minority backgrounds across all socio-economic categories, sectors, and professions (Rishbeth et al., 2022). An intersectional approach will enable us to capture similarities and differences within and between participants and capture a nuanced understanding of how racialised communities' experience nature and the outdoors.

The case study will explore:

- Knowledge and hidden stories about biodiversity held within ethnic minority communities.
- What biodiversity means to ethnic minority communities engaged in nature-based initiatives and the impact of these initiatives in engaging people with action associated with addressing biodiversity loss.
- Barriers that ethic minority communities experience in gaining access to nature.
- The role of creative intervention methods in understanding and responding to biodiversity loss and engagement in biodiversity decision making at the (micro, meso and macro level).
- The impact of community led initiatives in engaging ethnic minority communities with biodiversity agendas.
- Practical actions participants engaged in a community led nature-based initiative take to help improve biodiversity at a local level.
- How decision makers can enhance ethnic minorities' access and engagement with nature.

- Alternative ways of knowing ledge and how to make visible/explicit the stories that are often hidden or not considered as relevant.
- The case study will adopt a multi method approach. Methods will be identified in consultation with research partners.

Literature to support CASE study Systemic Barriers: Ethnic minority communities and access to nature and the outdoors

Research shows that involvement in and attitudes towards issues related to biodiversity, such as soil conservation, biodiversity upkeep, water management, and communal or cultural practices are shaped by groups' intersecting identities and their interactions (or lack of interaction) within social-ecological systems (Kaijsera & Kronsell, 2014; Gippoliti & Battisti, 2023; Htay et al., 2022; Dinh, 2020). This work illustrates the importance of multiple social locations, relations, and structures of power, and factors such as socio-economic circumstances, ethnicity, age (etc.) for the delivery of equitable resilience and the importance of engaging ethic minority communities.

A starting point for this work is a pressing concern with 'a green inequality' (Howard Boyd, 2022). Such 'green inequality' is characterised by ethnic minorities encountering barriers leading to a disconnect from the natural environment. This concern is not unique to the UK; rather, disparities associated with access and engagement with and/ in the natural environment are a common trend reflected across a plethora of Western nations. This has ramifications for reversing biodiversity decline, strategies aimed at raising awareness, individual and policy prioritisation of biodiversity and understanding and responses to biodiversity loss. This intensive case study sets out to explore how biodiversity is understood, perceived, engaged with, and valued by ethnic minority communities.

Ethnic minorities, exclusion, and the natural environment

Research shows that the above-described pattern of exclusion is not new. There is a longstanding body of work conducted in North America exploring participation in outdoor recreational activities among populations divided by social and racial characteristic early as 1962, Mueller and Gurin's publication highlighted variations in participation in the outdoors between White and Black Americans. Research in this area over time reaffirms disparities in access and engagement in the outdoor and recreational activities between groups (Walker, 2001; Krymkowski et al., 2014; Winter et al., 2019). This green inequality is also evident across Europe. Gentin (2019), for example, posits that, despite the increasing ethnic and racial diversity across European countries, persistent inequities exist in access and engagement to the natural environment across European nations, with a clear disparity between how majority and minoritised communities access the natural environment within urban and rural localities.

In relation to the UK and of specific relevance to this case study, there is a small but growing body of evidence (research, policy, grey and community and statutory organisational reports) documenting disparities associated with ethnic minority communities' access to the natural environment. Collier (2020) notes that ethnic minority communities are more likely to live in urban areas with a deficiency of access to green spaces, less access to private gardens and public parks and a higher

percentage of people from ethnic minorities living in areas most lacking in access to nature. Similarly, research by Natural England in 2017, showed Black and Asian people are less likely to regularly visit natural settings. This low presence means that people from ethnic minorities miss the pleasure, health benefits and involvement in caring for natural spaces. Moreover, the recent Coronavirus pandemic exposed and amplified how factors including age, ethnicity and socio-economic status seem to play a role in this picture (Rishbeth et al., 2022).

There have been attempts by a range of stakeholders (researchers, NGO.s government actors) to identify and understand people's access and engagement with the natural environment. Alongside exploring ethnic minority communities' access to green spaces, research has also examined volunteering activity; there is considerable evidence that shows a lack of ethnic diversity amongst volunteers in the natural outdoors. For those who do engage in outdoor volunteering opportunities, there is variation in participation rates between ethnic groups (HOCS, 2003). Alongside this, there is also a lack of ethnic diversity across the wider environmental sector at all levels from accessing services, to opportunities, employment, board membership, etc. This is despite Black, Asian, and Ethnic groups being open to working within the sector, but also wanting leadership opportunities to be part of the change within communities (Johal & Brown, 2021).

How is the problem understood?

Gentin et al.'s (2019) research suggests that the relationship between race, ethnicity and leisure/outdoor has been primarily understood in terms of a marginality and ethnicity hypothesis used to explain differences. Hence, participation patterns are explained as an outcome of limited socio-economic resources resulting from historical patterns of discrimination (e.g. Stamps & Stamps, 1985) or ethnicity, whereby differences in participation are viewed in terms of different norms, values and social organisation between the minority and majority populations (e.g. Washburne, 1978). However, Gentin (ibid.) argues that more recently, researchers have questioned the validity of the marginality–ethnicity hypothesis and this has led to a shift to provide a more nuanced understanding that considers the intersection of race, ethnicity, gender, age, and social class in relation to leisure and outdoor recreation. Moreover, there is recognition that discrimination is a factor that should not be overlooked (e.g. Floyd & Gramann, 1995).

The work of Bhardwaj (2023) calls for an alternative framework, including for example, by considering theories of the environment and a growing group of postcolonial, Indigenous, and Black geographers who are also theorizing the relationship between racism and land.

Our co-produced study offers an opportunity to contribute alternatives ways of understanding ethnic minority communities in the UK, relationship to biodiversity and, through intercultural dialogue with decision makers within the environmental sector in the UK, identify new and creatives ways of engaging with ethnic minority communities in strategies associated with addressing biodiversity loss. Through focusing attention on engagement in the natural environment facilitated by community self-organised initiatives, the study will advance and promoting ways in which community led initiative(s) can be a site for citizen engagement in nature and a means of contributing to biodiversity decision making processes. Alongside this, it provides an opportunity to

capture similarities and differences within and between communities and how factors such as ethnicity, age, gender shapes individual's experiences and what this may mean for addressing barriers to nature for ethnic minority communities and biodiversity decision making. This case study offers a way of critically examining – and potentially intervening with current thinking around ethnic minority communities and biodiversity - creating knowledge and action that support more inclusive policy making and practice.

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4.3 Urban youth, intersectionality, and nature in Germany

Authors: Ilkhom Soliev, Ammalia Podlaszewska, Zafar Saydaliev, Torsten Wähler

The case study in Germany will explore a) to what extent young people, including those with less privilege, are and feel empowered to influence biodiversity and nature prioritisation in decision making; and, b) if and how various intervention methods, including experiential learning and behavioural games, as well as creative and deliberative interventions, can have empowering effects to allow them to improve biodiversity decision making.

The expected outcomes of the case study in Germany are:

- Better understanding of to what extent young people (with intersectionality focus on age, migration, gender) in Germany feel empowered about influencing prioritisation of biodiversity and nature in decision making
- Better knowledge of the status quo of regional policies and initiatives (Saxony-Anhalt & Thuringia) on youth participation and social-ecological transformation
- Co-designed scalable experimental interventions that provide space for expressing (particularly previously marginalised) voices of youth in relation to biodiversity and nature
- Lessons from experimental interventions to facilitate empowerment among young people to influence prioritisation of biodiversity and nature in decision making
- Evidence on empowered groups of young people and particular factors that have facilitated this process of empowerment. Also, what makes them empowered.

As the case study will trial experimental interventions, the subsequent steps following these trials can be adjusted to maximize impact with those interventions that yield the most promising results.

Planned activities:

- Exploratory workshop(s) and research (mapping actors)
- Interviews with local experts and survey on how empowered young people feel in relation to biodiversity/nature decision making (with the possibility to analyse by migration background and gender, and scale to be decided)
- An iterative work with the learning community:
    - Initiating and establishing a learning community and coordinating the activities and their timeline with the learning community
    - Co-creation of a methodology and in house co-development, testing of and planning of interventions
    - Continuously co-developing a strategy for deploying interventions in the field (beyond project team – selecting the most promising activities)
    - Institutionalization of empowering and transformative intervention elements
- Understanding transformative change through interviews and workshops on lessons with the involved participants

Methodologically, the case study in Germany is committed to exploring interventions that create space for expressing voices among young people (especially previously marginalised ones), for experimenting with and social learning about decision making in simulated environments, trying out creative and deliberative actions that facilitate improved decision making in relation to nature and biodiversity.

The case study focus has been sharpened and updated based on the discussions in the intersectionality workshops (T1.3) and case study conversations between the project partners (T3.1 & T2.1).

Inequalities – Intersectionalities

Youth are typically not well-represented in decision making and feel powerless about decision making, particularly in relation to nature (Hickman et al., 2021; Wu et al., 2020). We hypothesise that the feeling of powerlessness by young people is an important barrier in prioritisation of nature and biodiversity. In the last years, this process has been observed particularly in relation to dissatisfaction of urban youth with environmental policies (ibid.), with urban settings being the areas with most youth-inspired environmental movements. The anxiety and the feeling of powerlessness might be stronger in young people with less privileged intersectionality backgrounds (e.g. migration) (e.g. Borho et al., 2022), who might have less access to various political systems (e.g. elections) and might face additional challenges of social acceptance/inclusion/integration, all potentially explaining the level of nature and biodiversity prioritisation. Yet, recent research from five multicultural cities in Europe (Fischer et al., 2018) found that higher valuation of biodiversity rich areas prevailed among different sociocultural groups, indicating some links between migration background and attitudes towards biodiversity.

Thus, there are two guiding questions for the case study in Germany.

1) To what extent do young people, including those with less privilege, feel empowered to influence biodiversity and nature prioritisation in decision making? To address this question, we will use the empowerment theory (e.g. Zimmerman, 2000) that defines empowerment as “a process in which efforts to exert control are central” and highlights that “participation with others to achieve goals, efforts to gain access to resources, and some critical understanding of the socio-political environment are basic components” of empowerment (ibid. p. 44). We will distinguish between processes (empowering) and outcomes (empowered) and different levels of analysis – individual, organisational, community.
2) To what extent can various intervention methods, including experiential learning and behavioural games, as well as creative and deliberative interventions, have empowering effects on younger age groups? The empowering effects are here understood both as processes (e.g. learning decision-making skills, working with others, opportunities to participate in decision making, understanding towards diversity) and as outcomes (e.g. sense of control, critical awareness, participatory behaviours, policy influence, building coalitions, leadership). We hypothesise that empowerment of young people could facilitate prioritisation of nature and biodiversity in decision making, both in terms of processes and outcomes.

Understanding the continuum of decision making

The question is how we can understand nature and biodiversity-relevant decision making. The scholarship on environmentally significant behaviour offers a useful categorisation for conceptualising decision making that is relevant here (e.g. Stern, 2000; Soliev et al., 2021). This scholarship argues that one can categorise behaviour by its impact: into those with direct impact (private decisions, e.g. consumption decisions) and indirect impact (decisions e.g. affecting public policies). Additionally, the same scholarship suggests that it is useful to acknowledge environmentally significant behaviour by its intent. This highlights that having or lacking an intent, rather than impact, can be a cause of environmental change; and that sometimes intent might not coincide with impact. The latter can be explained, among others, for example by path dependencies from the existing behaviour of individuals (habits, preferences), social norms (peer pressure), and institutional arrangements (infrastructure, policies, laws, opportunities) that might create constraints for the intent to materialise into impact.

Overall, biodiversity and nature relevant decision making (and behaviour), where individuals are primary agents, can be categorised as follows:

- Individuals' intentions/decisions to make own behavioural adjustments (e.g. consumption decisions) – private sphere decision making;
- Individuals' willingness/decisions to support or oppose stricter policies (e.g. have attitudes in support or opposition of various policies) – non-activist decision making/behaviour in public sphere;
- Individuals' willingness/decisions to influence others more directly (discussions with family, friends, engagement in the community, joining a demonstration, running for political office, etc.) – activist decision making/behaviour in public sphere;
- Individuals' willingness/decisions to integrate own beliefs in relation to nature/biodiversity in workplace (e.g. architects designing sustainable buildings, teachers integrating nature/biodiversity in their classes, etc.) – integrative decision making/behaviour at the intersection of private and public sphere.

Interventions for empowering youth with focus on biodiversity and nature-related decision making

Our hypothesis is that experiential learning, games, exhibitions, or other events will create space and tools for the participants to 1) experience the impact of individual decisions on others in a simulated environment (for example, games), which is otherwise very difficult to experience or observe in real life as we usually do not see the impact of our decisions on biodiversity and others directly – and then how that can impact us can take years and decades (see e.g. Falk et al., 2023); 2) understand the relationships between case-specific intersectionality (age, migration, gender) and biodiversity (see e.g. Zhang et al., 2022); 3) facilitate knowledge sharing, awareness raising, critical discussions on the perceptions of young people in cities (Campbell-Arvai, 2018) particularly related to the ongoing biodiversity crisis; and 4) influence participants' intent to make improved decisions on nature and biodiversity in the future. Overall, the participants are expected to become more empowered both directly (having interactions with peers and decision-makers) and indirectly (learning knowledge and skills that can facilitate more civil action in the future).

Generally, there is growing evidence that experiential learning, particularly through role-playing games (e.g. see a review of over 50 games by Edwards et al., 2019) and framed experiments (e.g. see a narrative review by Janssen et al., 2023), improves knowledge, increases social capital, and empowers communities in dealing with social-environmental dilemmas. One of the reasons cited is the creation of a safe environment, where participants can experiment with decisions and institutional arrangements which in real life would be very difficult to try, thereby letting participants develop the first imagination and experiences of change.

Understanding and impacting policies

Policy developments in urban settings are also particularly important in terms of whether they encourage inclusive decision making – with direct access for young people in urban settings. Urban use policies can differ in how far they integrate inclusive and participatory governance overall, but also specifically in policies related to biodiversity in urban settings. As an example, Campbell-Arvai (2018) provides an aggregate analysis of the different approaches to address biodiversity in urban setting. The initiatives, actions, strategies and policies are categorised by three types of subcomponents: education and enjoyment, landscaping for biodiversity in urban settings and systematic city planning (see Table 1).

Table 1. Classification of approaches of biodiversity policies in urban settings (Germany). Source: adapted from Campbell-Arvai (2018).

Education and engagement (formal + non-formal)	Landscaping for biodiversity in urban settings	Systematic city planning
- Access to parks and greenspace - Biodiversity education and - Informative programs: awareness - Involvement residents and visitors - Tourism engagement with biodiversity use. - School programs e.g. raingardens, wildlife gardens - Activities with indirect benefits, e.g. recycling - Interactive programs: art and educational games	- Planting trees - Low impact development - Creating healthy soil - Water features, e.g. ponds, bird and bee baths - Permaculture - Constructed wetlands - Re-meandering rivers and streams	- Accountability in decision making - Involve communities in decision making - Incorporate biodiversity into all aspects of city decision making - Longer time frame for decision making - Identify high value areas and permanently protect green areas in the city - Data collection and monitoring - Identify less valuable areas for multi-use

These essentially represent a set of policies that may or may not encourage participatory and inclusive approaches for young people in urban settings. Few empirical investigations have been conducted on the public perception of biodiversity in urban settings in Germany. Mathey et al. (2016) demonstrate that the number of investigations on the perception and valuation of biodiversity is increasing rapidly since 2010. Yet, in urban settings, they identify that the research focus is predominantly on formalised urban forests and parks, while important informal greenspaces (social processes around them) are largely neglected. Another gap in this field is that throughout the evaluation of public perception hardly any study addresses the cultural

diversity of urban inhabitants, including socio-economic and cultural differences (Fischer et al. (2018) being a rare example), even less so with focus on age groups. Literature on this is even more scarce when it comes to the academic analysis of youth perception of biodiversity, in Germany (with some existing studies focusing on climate – Bundesumweltministerium/Umweltbundesamt, 2020), and overall. Nonetheless, multiple non-governmental organisations and think tanks state that children and youth are increasingly interested in the theme of urban biodiversity, characterised by a strong affinity for nature and a desire to protect it (Nöske & Zedda, 2013).

Since first-hand experience with green spaces and wildlife can be a source for *experiential learning* about and developing appreciation towards nature and biodiversity, lessons from the interventions should be considered for institutionalisation particularly within the policies that shape urban green spaces. However, urban areas often present barriers to the appreciation of urban biodiversity. For example, air and noise pollution, lack of green spaces, and high-density housing can make it difficult for children and youth to experience and appreciate the natural world. In addition, urban areas can be dangerous for wildlife (and vice versa), with many species facing threats from habitat loss, climate change, and other human activities, while cases of wildlife posing threat to urban residents are also well-known. Despite these challenges, there is evidence to suggest that children and youth are interested in and motivated to learn about nature and biodiversity in urban settings (Diels et al., 2022). Within this case study we will explore to what extent some of the findings can be institutionalised particularly within the policies on urban biodiversity.

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4.4 ‚Bio-Diverse Edible City Graz': Urban food for biodiversity and inclusion in Graz, Austria

Authors: Sandra Karner, David Steinwender, Anita Thaler

The Graz based case study will initiate the establishment of an edible city initiative, which links the planning of urban (green) spaces with aspects of biodiversity, sustainable and just food provision and social justice.

The PLANET4B-team's vision is that a ‚Bio-Diverse Edible City Graz' should:

- strengthen social cohesion and integration of marginalised groups
- create biodiverse ecosystems
- contribute to a favourable microclimate (climate protection & adaptation measures)
- valorise unused spaces as de-commercialised spaces for recreation, experimentation and education (nutrition/food literacy, health, environmental education, sustainability, art & culture, etc.)
- promote citizens' mental, physical and psychosocial health
- promote agro-biodiversity (e.g. as a lab for seed conservation)
- contribute to environmental, climate and food justice (these concepts are to be defined in more detail)

Currently there is no strategy within the city of Graz, which considers the idea of an edible city concept yet. Although there are already several strategies (e.g. urban development[14], community work[15], economic development[16], etc.), which tackle issues relevant for an edible city, they are not coordinated with one another, they have been elaborated top down (at least without broader engagement processes), and they do not consider intersectional aspects (sufficiently).

With the planned Planet4B activities around the initiation of an edible city, several existing activities already targeting the aims listed above could be linked, and potential interlinkages between different city strategies could become more visible. This is particularly relevant against the background of very recent developments: Firstly, the city of Graz needs to translate the national biodiversity strategy into a municipality strategy, which is to be started soon. Secondly, in March 2023 a unanimous municipal council decision was taken to set up a sustainable food strategy for Graz in the coming months. For both strategies neither the process of how they will be elaborated, nor responsibilities and actors to be engaged are clear yet. These circumstances offer a window of opportunity to intervene in the elaboration of these new strategies by pro-actively implementing various participatory multi-actor activities, which engage various stakeholders in discussions around the idea of a ‚Bio-Diverse Edible City Graz' with an intersectional perspective. As the concept of edible cities is very broad, it involves various topics and leaves room for being tailored according to the specific context in

[14] 4.0 Stadtentwicklungskonzept Graz, 2015.

[15] Leitbild Stadtteilarbeit in Graz, 2015.

[16] Wirtschaftsstrategie, 2023.

Graz. By engaging stakeholders from different sectors and societal subgroups including disadvantaged groups and minorities, the planned discourses around the concept could serve as a useful vehicle for making inequalities and vulnerabilities more visible and explicit. Finally, the project team also expects their approach to reveal needs for integrated solutions and policy making in tackling biodiversity issues as well as intersectionality.

Planned activities

- Preparatory & exploratory work (mapping actors, exploring already existing initiatives & resources)
- Initiation of a multi-actor-platform (MAP)
- Collecting and discussing ideas for BDECG
- Realization of individual pilot activities (first ideas discussed: edible city art; market garden)
- Development of a strategy for establishing a ‚Bio-Diverse Edible City Graz', which includes a vison and clear goals is coordinated with other relevant strategies of the City of Graz
- Creation of an action plan that builds on a road map that indicates steps, milestones and responsibilities needed to reach the goals outlined in the strategy
- Institutionalization of the discussion and development processes

In terms of methodological framing for our intervention, we will build on the Living Lab concept (e.g. De Kraker et al., 2016): on the one hand as an approach (multi-actor governance, MAP interactions), on the other hand as a 'space' for innovation (piloting some activities; institutionalisation of the MAP).

Inequalities – Intersectionalities

Our starting point is that 'good food'[17] is not equally accessible to everybody. "*Inequality, not unavailability, is the main driver of food insecurity"* (Interview from 2015 with Johan Swinnen[18]), and this does not only affect people from developing countries, but developed countries across the globe as well (e.g. Ball et al., 2009). This goes along with socioeconomic disparities in dietary quality (Robinson et al., 2004) and potential health impacts, such as malnutrition, obesity and cardiovascular disease (e.g. McLaren, 2007; Mente et al., 2009; Cooksey-Stowers et al., 2017). Particularly in cities, such inequalities are also area-based: residents of low-income and ethnic minority

[17] The notion of 'good food' represents already the first, and very important point for our reflexivity: What is 'good food'? What does it mean for whom? How is it defined what 'good food' should be? Who is defining this? Which implications does the framing of 'good food' have on public policies, and consequently on 'food environments'? The notion of 'good food' might refer to various aspects, such as good for health, the environment, economies, culinary and aesthetic aspects, and refer to diverse actors and stakeholders within the food system and geographies. Thus, there might be various perspectives on what may be considered as 'good food', ranging from food that is good for the biosphere, the planet, the physical and living world, the human species, vulnerable populations, hands-on producers and makers, the people of a certain geography, and the individual.

[18] https://ec.europa.eu/research-and-innovation/en/horizon-magazine/inequality-not-unavailability-main-driver-food-insecurity-prof-johan-swinnen

neighbourhoods have disproportionately poorer access to healthy food than residents of more affluent neighbourhoods. This has been proven for the US, Australia, Canada, the UK (Black et al., 2014), and for other European countries as well (e.g. Augustin, 2014). Particularly areas with little or no provision of healthy foods are believed to contribute to disparities in various diet-related public health conditions (Whitacre et al., 2009), such as e.g. obesity and diabetes (Larson et al., 2009; Walker et al., 2010). These areas have been coined as so-called 'food deserts' (e.g. Jaskiewicz et al., 2016), which describes the food insecurity in a certain area, where access to healthy (fresh, nutritious, unprocessed) food is challenged. However, such food deserts are not only simply linked to spatial aspects; rather, as shown in the typology of food deserts developed by Hillary Shaw (2006) based on empirical work, the causes are complex. Shaw distinguishes between 'ability-related food deserts' (physical access determined by physical capacities of individuals), 'assets-related food deserts' (financial affordability), and 'attitude-related food desert' (knowledge, awareness, food literacy, values) and thereby illustrates that food deserts are a matter particularly affecting specific population groups. There is also evidence of inequalities in access to less healthy and sustainable foods in so-called 'food swamps' (Rose et al., 2009; Cooksey-Stowers et al., 2017): neighbourhoods with higher levels of deprivation and ethnic populations have greater access to fast and junk food outlets than more affluent, predominantly white neighbourhoods (Black et al., 2014).

Such inequalities in access to good food might be even more the case for the growing urban population, e.g. due to their physical distance to the places, where food is grown (mostly in rural areas). 'Alternative (agro-) food systems' (AFS)[19] aim to overcome this growing 'de-localisation' of food within the currently prevailing corporate food regime (McMichael, 2005), and bring food production and consumption closer in physical (short physical distances, 'short food supply chains'), as well as in social terms (direct and close relations between consumers and producers building on fairness and trust) (Callon et al., 2002). Thereby AFS represents an opposition to the corporate food regime (industrial food production, big retail companies, highly market power driven) (Renting et al., 2003). Alternative food systems advocate more ecologically sound and socially just farming methods, marketing and distribution, and healthier food options. They aim at a re-embedding of the food system to local communities beyond market relations (Goodman et al., 2012), and thereby contribute to a broader social justice goal (e.g. linking with food sovereignty and food justice movements). However, even though the AFS movement originally evolved in response to food inequity, and aimed to solve issues of access to good food for vulnerable people by means of locally-based bottom-up solutions (Allen, 1999), in practice it turns out that they tend to be elitist and exclusive (Guthman, 2009). Initiatives are very often lacking social diversity, mainly addressing people of medium and higher socioeconomic backgrounds. People participating in AFS are often well educated, have good knowledge regarding nutrition, health and environment, and consider themselves active citizens ('ceatizens' or food citizenship: Wilkins, 2005, food democracy: Hassanein, 2003). Moreover, instead of actually producing social justice, alternative food initiatives often reproduce inequality and hegemonic domination which is referred to as 'defensive localism' (Winter, 2003; DuPuis & Goodman, 2005). Julie Guthman (2004) even indicates that there are raced

[19] Alternative (Agro-)Food Networks (AFN) is often synonymously used in the literature (e.g. Renting et al., 2003; Watts et al., 2018).

aspects to organic food production, and to the social movements promoting these practices (Allen et al., 2003).

Particularly the shortcomings in social exclusiveness are well described in the academic literature (e.g. Hinrichs & Kremer, 2002; Dupuis & Goodman, 2005; Guthman, 2009; Kirwan et al., 2013; Reynolds & Cohen, 2016; and many more), and it can be observed for the Graz-based AFNs as well (Steinwender et al., forthcoming 2023). This general lack of equal access to participation in AFNs[20] represents the starting point for the identification of inequalities in the specific context of Graz, and our hypothesis for restrictions refers to the following aspects (Steinwender et al., forthcoming 2023): price (food pricing, 'food mirage', 'food gentrification'), time (individual time budgets, opening hours), space (location of AFNs, distribution, individual mobility), knowledge and awareness (access to information, food literacy, education), belonging (community, values, identity), and (meal) culture (culturally appropriate food, dietary needs, eating habits).

The Bio-Diverse Edible City Graz will aim at establishing a diverse foodscape, which will not only cover the food system in its narrow sense (food production and supply perspective), but also green spaces as edible landscapes and areas for learning, recreation and social interaction (societal perspective) as well. As part of the EU financed project RESISTERÈ, a living lab in Graz has tested a gender-sensitive use of green spaces in a neighbourhood in Graz (Steinwender & Kienreich, 2021). Based on a series of surveys and conversations, a programme of activities was developed, to get in touch with different user groups to identify their needs and to make green spaces more attractive for under-represented groups, especially women at the intersection of gender, age and migrant background. The project team learned that access to specific target groups is very limited if the project team differs in important identity markers or social categories (i.e. middle-aged white male Austrians versus young women speaking German not as a first language). They suggest working with intermediary organisations or persons who already established trust within the respective groups (Steinwender & Kienreich, 2021).

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[20] Another self-reflexive consideration: our approach to identifying inequalities in regard to AFNs is certainly also a bit narrow by focussing on AFN as very specific socio-physical clusters as primarily described in the literature, which follows a 'western' (and 'white'?) ideology concerning healthy and sustainable food. However, the concept of AFNs might embrace a broader variety of modes for the provision of healthy and sustainable food, depending on the specific perspective on 'good food'.

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4.5 Agriculture, Religion and Biodiversity. Switzerland

Authors: Robert Home, Ghezal Sabir

Farmers, by virtue of their non-mediated engagement with nature through agricultural activities, play a direct role in biodiversity preservation. There are currently over 50 thousand farms in Switzerland covering an area of 10,500 km^2 (Federal Statistical Office (FSO), 2019). However, only 14% of the farms were organic farms in 2018, covering an area of less than 15% of total agricultural land (FSO, 2019). Despite policies to promote organic farming, conversions from conventional to organic farming have stagnated over the last decade (Home et al., 2018). This indicates that there is more at play than simply external factors influencing farming decisions (Celio & Gret-Regamey, 2016).

The centrality of motivations in influencing individuals' behaviour has been established (Michie et al., 2011). Moon and Cocklin (2011) write that motivation will be more successful in leading to the desired behaviour if incentives or directives are tailored to both complement existing or intrinsic motivations and to remove barriers, which requires aligning measures with the worldview of farmers. This in turn requires gaining an understanding of their worldview. Siebert et al. (2006) wrote that most analyses of biodiversity protection by agriculture are dominated by neo-classical or rational choice behaviour, while less attention has been given to broader study that combines individualist approaches with constructs describing the influence of social norms and expectations. Home et al. (2018) suggested the importance of countering the perception among farmers that nature conservation is equal to non-productivity, which can be achieved by expanding the definition of production so that providing the conditions for nature is perceived by farmers to be producing nature, rather than simply not producing. In that study, they found that the non-farming partner (usually the wife) in the typical family run Swiss farm is not included in the day-to-day decisions on the farm, but they are strongly involved in the major decisions, such as whether to convert to organic production (Home et al., 2018). Furthermore, Lokhorst et al. (2011) have criticised the observed tendency of researchers to measure only farmers' attitudes, rather than other constructs that might influence behaviour. An example of such a construct is the ideology of the farmer, which can be expressed in their religion.

This value-based case study will investigate the application of religion as a higher value factor influencing motivation (Minton et al., 2015) to the framing of biodiversity or biodiversity promoting farming practices. Mikusiński et al. (2014) call upon the scientific community to attend to the potential of engaging faith communities in nature conservation via the moral and ethical obligations embedded in religious teachings. More elaborately, as per Hartmut Rosa's Theory of Resonance (López-Deflory et al., 2022), people's experience of a good life is attained when their experiences have horizontal resonance along their relationship with their peers, family members and community, diagonal resonance along objects, institutions, acts like consumption, sport, work, and school, and vertical resonance along religion, art, music and history. Biodiversity and its various extensions or components have been in public discourse for decades with increased prevalence in the last two decades. How this discourse has been framed and presented in politics, academia, and the public media needs an in-depth examination. Specifically, the role of spirituality and religious beliefs on biodiversity has not been adequately explored. This lays the ground for the case study.

It should be noted that certain spiritual practices have been employed for behaviour change interventions with promising effect regarding health (Isaac et al., 2016) including dietary behaviours (Mason et al., 2016). How it is and can be embedded in biodiversity promoting behaviours, especially in the context of farming practices in particular, require further inquiry. With Christianity being the world's religions with the largest number of followers, 32% of the global population, respectively (Jenik, 2021), discovering effective ways of leveraging faith to encourage biodiversity promoting practices can have substantial reach.

The case study shall be guided by the following ambitions:

- Leveraging religious or spiritual beliefs in establishing vertical resonance for enhancing the adoption of biodiversity promoting behaviours and farming practices among farmers.
- Creating a platform that can bring different spiritually driven groups together for a common beneficial purpose.
- Contributing to better understanding of effective behaviour change techniques in promoting biodiversity in value-based communities.

An in-depth understanding of faith-based motivations related to biodiversity promoting behaviours will be explored to discover leverage points for its strengthened uptake. To achieve this the following activities are planned:

1. Discover the underlying motivations and religious/spiritual beliefs related to biodiversity related farming practices and personal behaviours of farmers;
2. Utilize an Appreciative Inquiry approach (Cram, 2010) in conducting this study allowing for the participants to share their practices and to reflect on how they can be strengthened to support biodiversity.
3. By way of intervention, we propose using deliberation theory (Bächtiger et al., 2018) by inviting a member of each religious group to present their position on biodiversity to other groups (so that each group hears three alternative positions). Each group can then reflect on their interpretations of their moral code and think about whether and what practices they might want to adapt in light of the newly heard perspectives.

Inequalities – Intersectionalities

Religion and gender are the two axes along which intersectionalities will be included in this study. In Switzerland, the majority of farms are managed by male farmers. Home et al. (2018) identified a gender dimension in on-farm biodiversity conservation. The majority of Swiss farmers being male is largely due to the social structures that favour sons over daughters in questions of farm inheritance. Hence, males are more likely to gain education in agriculture, which indirectly means that women have fewer knowledge resources to participate in strategic discussions. Less is known about the relationship between religion and biodiversity decisions. Switzerland's population is predominantly Christian, with catholic and protestant the dominant doctrines, depending on the region. Mennonites are a minority group with a history of persecution in Switzerland (Osborne, 2008). Mennonite farmers who were forced to settle in high altitudes may have a different view of biodiversity and agricultural practices, which can provide valuable findings in this study.

The identified farmer groups that will be approached to further our understanding of how the aforementioned dimensions influence biodiversity-related behaviour, include the following:

1. Christlicher Bauernbund Kanton St. Gallen, which is a Catholic farmers' association (https://katholische-bauernvereinigung.ch/)
2. Bauernkonferenz Schweiz. A non-denominational Christian farmers association, (but mainly reformed) (https://www.bauernkonferenz.ch/startseite/)
3. The group of nature interested farmers in Fricktal region in Switzerland. This group is not overtly religious and include a mix of organic and conventional farmers who are interested in the topic of practices that promote and/or protect biodiversity. (www.ig-nundl-ag.ch/)
4. Mennonite farmers.

This study shall explore pervasive beliefs, intertwined with gender norms, in relation to biodiversity decisions and practices.

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5 Limitations of the methodological framework

Authors: Anita Thaler, Sandra Karner

The methodological framework is specifically co-created for PLANET4B biodiversity case studies with an intersectional lens. This means the intervention level in this report addresses predominantly the individual respectively local learning community level. As the case studies have not been carried out now, the translation of case studies results into policy interventions, which are informed then by intersectionality, is not part of this report.

Another limitation is the potential lack of analysis of systemic causes of inequities based on intersectionality (this lies within the respective case studies, and can only be evaluated at a later point of the project).

A weakness identified during the co-creation workshops, the missing connection of the nature-based case studies to a biodiversity intervention, could be addressed in the upcoming local learning community activities. The openness of the case studies in this regard could also work as a possibility for participants of the local learning communities to shape the research questions and scope, and gain co-ownership in the process.

Lastly another limitation of the proposed methodological framework is the vagueness how (using which theory of change) exactly the intersectional lens can support changes in behaviour and systems concerning biodiversity.

6 Conclusion and outlook

Authors: Anita Thaler, Sandra Karner

Rising inequalities, climate change, and biodiversity loss are named as trends which are currently moving further away from the goals and targets of the 2030 Agenda for Sustainable Development (Independent Group of Scientists, 2019). The recognition of interconnections between biodiversity loss and rising inequalities is at the centre of Planet4B and this methodological framework for intersectional analysis.

The co-creation approach presented in this report began with a literature review on intersectionality in biodiversity research, which informed co-creation workshops with partners of five case studies (in the fields of inclusive nature recreation and outdoor activities, urban biodiversity and food, and biodiverse agriculture), which led to improved case study literature reviews, and an overall framework of doing biodiversity case studies with an intersectional lens. On a process level, the co-creation workshops helped not only to get a greater awareness on intersectional issues, but also to plan the case studies in more detail.

Using our proposed intersectional perspective to establish biodiversity learning communities and policy discourses aiming at environmental and social justice can also be used by other research projects.

The first methodological step in this framework is the use of intersectionality for the self-reflexivity of researchers. Reflecting on one’s own privileges and experiences of

discrimination and shame is a difficult exercise for researchers. It contests all ideas of objectivity and distance to the field by positioning oneself within one's own research context.

A second step in case studies establishing local learning communities, is using an intersectional perspective for approaching actors by connecting to potential participants and building trust. Being aware of the situatedness of knowledges means to value all knowledges and enable co-creation within the case study.

A third step is the actual biodiversity case study research with an intersectional approach, which uses multiple knowledges and thus offers possibilities for re-thinking and potentially changing relations between humans and nature.

The overview of literature on intersectionality in and useable to biodiversity research and the co-created framework will be used in the upcoming PLANET4B case studies, and also build a solid basis for future publications on the very topic: How can biodiversity research use intersectionality as a practical approach to include diverse actors and aim for multispecies justice?

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