

# Workshop report on theory commonalities and conflicts

## Deliverable number: D1.5

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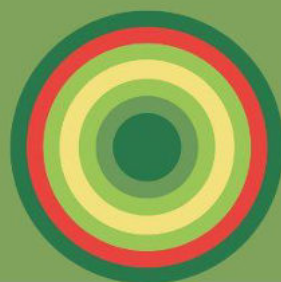
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## PLANET4B

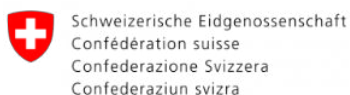
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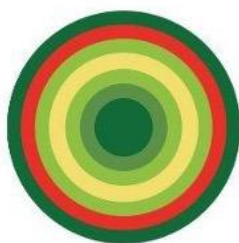


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## Key deliverable information

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## List of abbreviations and acronyms

Acronym	Definition
CG	CzechGlobe – Global Change Research Institute of the Czech Academy of Sciences
CGE	Culture Goes Europe
CM	Consortium Meeting
CU	Coventry University
DC	Dadima's CIC.
ESSRG	Environmental Social Science Research Group
FIBL	Research Institute of Organic Agriculture
FuG	Forum Urban Gardening
GD	Good Issue Ltd.
IFZ	Interdisciplinary Research Centre for Technology, Work and Culture
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
KPI	Key Performance Indicator
MLU	Martin Luther University Halle-Wittenberg
NINA	Norwegian Institute for Nature Research
OOF	Oslo og Omland Frilfutsråd
PLANET4B	understanding Plural values, intersectionality, Leverage points, Attitudes, Norms, behaviour and social IEarning in Transformation for Biodiversity decision making
RU	Radboud University
UNIFI	University of Pisa
Work Package	WP
Workshop 2	WS2

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## Executive summary

- Workshop 2 steered cases to think about what theories underlie their work, what leverage points they aim to address, how and what policy recommendations may entail for them to achieve their goals. Thus, connecting WP1 with WP3 and WP4 through WP1's Task 1.4.
- This workshop took place during the second PLANET4B Consortium Meeting, from October 25<sup>th</sup>-27<sup>th</sup>, 2023, in Nijmegen, The Netherlands.
- All eleven case studies of PLANET4B were asked to connect their cases with a theory of change from the Inventory of theories produced in Task 1.2 and refined in Task 1.4.
- For each theory selected, case study representatives indicated which leverage points would be needed to trigger "transformation" in relation to biodiversity decision-making in the context of the respective case.
- Each case told their story of change for a PLANET4B in 2050, illustrating potential policy recommendations, theories of change, and leverage points that are compatible with the goals, actions and research of their case.
- The exercise prompted the consortium members to revisit the updated theory inventory, and to use it throughout the project as a source of theoretical reference as the case studies progress.
- In conclusion, the workshop helped cases not only to reflect better about their own research goals and processes, but also allowed them to know more and provide suggestions on the work in process of all the other cases.

# 1 Introduction

In sustainability science, storytelling has been used “to understand how citizen science is currently influencing environmental policy and associated decision making” (Wehn et al., 2021, p.1). In this capacity, Uta Wehn and colleagues developed the Citizen Science Impact Story Telling Approach (CSISTA), in which they interactively designed instruments to be used as tools primarily for citizen science practitioners seeking to understand or communicate policy impacts. Others have applied storytelling specifically in biodiversity research. Louder and Wyborn (2020), for example, used the idea of “biodiversity narratives” to revisit “the main contemporary narratives from within the biodiversity space to reflect on their underpinning categories, myths and causal assumptions.” For these authors, the process of revisiting current and (potential) future biodiversity narratives is important to understand the prospect of change towards better biodiversity understanding and prioritisation in decision-making, since “narratives shape human understanding and underscore policy, practice and action. From individuals to multilateral institutions, humans act based on collective stories” (Louder and Wyborn, 2020, p.251). Interacting with narratives through storytelling can guide our way toward transformative biodiversity decision-making, since:

“[...] The transformative potential of narrative may not lie in superficial changes in messaging, but in using narrative to bring multiple ways of knowing into productive dialogue to revisit biodiversity and foster critical reflection” (Louder and Wyborn, 2020, p.251).

Taking the above into account, this report documents the main outcomes of the second workshop (WS2) on theory commonalities and conflicts in PLANET4B, which was organised by Task 1.4, under Work Package (WP) 1. This interactive workshop aimed to identify theory commonalities, complementarities and possible conflicting variables and mechanisms, in order to create a shared language for and understanding of interventions for transformative change among PLANET4B’s wide range of disciplines.

This report has seven parts, including this introduction. Part 1 continues with the background information regarding WS2, as well as the goals and expected outcomes. Part 2 documents the process of planning and organising WS2. Part 3 presents the 11 stories in a nutshell. Part 4 presents potential policy recommendations that emerged from these stories. Part 5 discusses the theories of change and leverage points mobilised by each story. Part 6 discusses some commonalities and conflicts amongst the various theories. Part 7 presents the conclusions and outlook of WS2.

## 1.1 Background information

The WS2 was organised on October 27<sup>th</sup>, 2023, as a back-to-back event with the 2023 Radboud Conference of Earth System Governance (ESG Conference) (October 22<sup>nd</sup>-27<sup>th</sup>, 2023) and the second Consortium Meeting (CM) of PLANET4B, (October 25<sup>th</sup>-27<sup>th</sup>, 2023). This created the opportunity of PLANET4B partners to not



only participate in the project's CM, but also in an international conference that is widely known by the scientific community working in the field of sustainability governance. Some of the PLANET4B partners presented their research connected to the project in a ESG Conference Panel entitled: "Transformative interventions to strengthen prioritisation of biodiversity in decision making" (October 25<sup>th</sup>, 2023, convened by PLANET4B members Soliev, Zolyomi and Franklin).



**Figure 1.** Picture of Fishbowl session in which all cases participated during the Consortium Meeting of PLANET4B on October 26<sup>th</sup>, 2023, at the De Hemel Nijmegen, The Netherlands.

The next section briefly presents the goals and expected outcomes of WS2.

### *1.2 Theory workshop 2: goals and expected outcomes*

WS2 aimed to steer cases to reflect about what theories underlie their work, what leverage points they aim to address, and how and what policy recommendations may entail for them to achieve their goals. Thus, connecting WP1 with WP3 and WP4 through WP1's Task 1.4 The process aimed to create a shared language for *understanding of interventions for transformative change* among the project's wide range of disciplines and case studies. During the workshops, *preliminary findings on key behaviour science theories potentially influencing biodiversity decision-making* were also discussed.

We aimed to achieve the following outcomes from WS2:

- To provide an interactive space for PLANET4B cases to present their ideas in a creative and engaging manner, allowing all consortium partners to better understand the actions, research, processes and idea generation taking place within each case.
- To allow cases to connect their research with potential policy recommendations, theories of change, and leverage points, providing input for other Tasks and WPs in PLANET4B.
- To be a safe space for consortium scientists and practitioners to engage with each other, to understand better their different entry points and epistemological backgrounds, providing an opportunity for cases to receive feedback and questions regarding their research goals, processes, planned interventions, and expected impacts.

Based on this process, at the end of the WS2 cases were able to communicate more clearly the underlying assumptions grounding their research work. In addition, extensive and intensive cases were able to identify the many commonalities existent in the research process of these two categories of cases studies. For example, all cases target “transformative change” in the context of biodiversity decision-making and prioritisation, which can be achieved in varied ways. Transformations towards better biodiversity governance can be achieved, for example, via grassroots groups; urban communities; local and national policies targeting sectors from food to education and beyond; as well as innovative ways of steering (global, regional and local) supply chains in domains as diverse as commodity trade, the fashion industry, and labour migration for agriculture, all in connection to biodiversity decision-making at intra-personal, community and institutional levels.

## 2 Planning and organisation of the workshop

This section briefly addresses the planning process, organisation of the CM (venues, agenda, etc.) and methods for collection and analysis of participant’s input in WS2. After lengthy search and planning, we decided to host the meeting in the following venues:

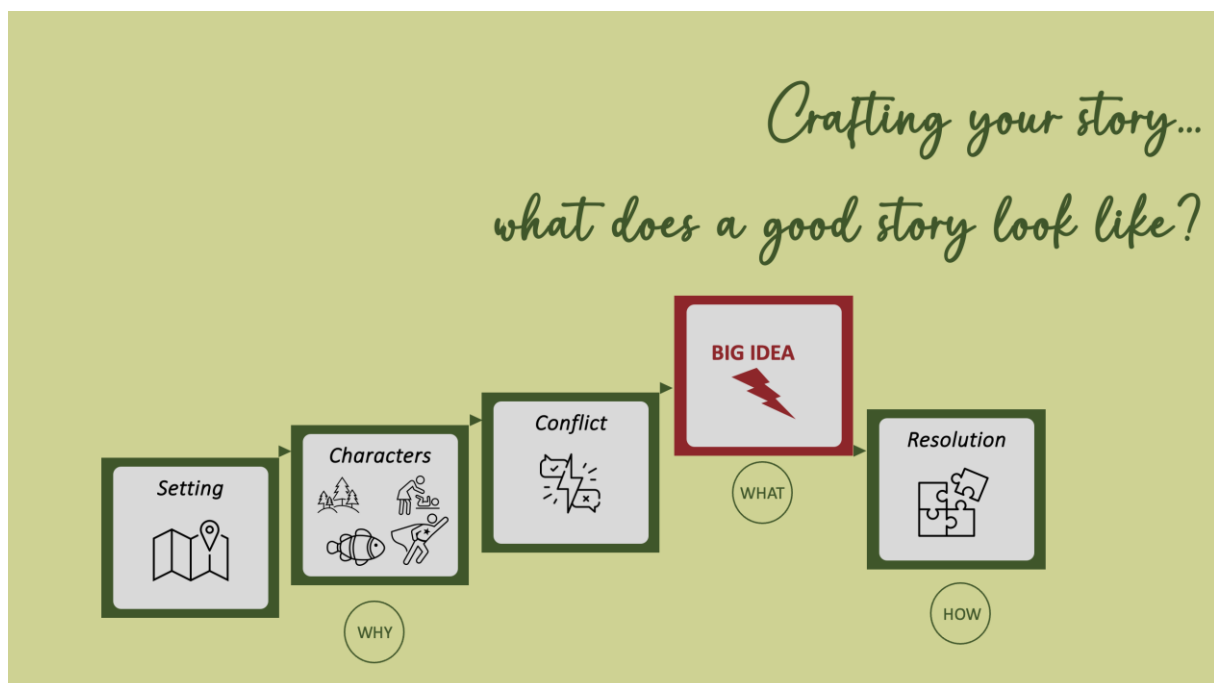
- October 25<sup>th</sup>, 2023 (Day 1): Arrival in Nijmegen  
18:00 – informal get-together and Dinner at In-Credible (Hertogstraat 1, 6511 RV Nijmegen) – PubQuiz, celebration of the completion of the first year of the Project.
- October 26<sup>th</sup>, 2023 (Day 2): De Hemel Nijmegen, Franseplaats 1, 6511 VS Nijmegen  
Activities of the CM during the full day, 9:00 – 18:00  
Dinner at the local vegan restaurant: Veggie India.

- October 27<sup>th</sup>, 2023 (Day 3): Van der Valk Hotel Nijmegen-Lent, Hertog Eduardplein 4, 6663 AN Nijmegen  
WS2 activities from 9:00 until 15:00, and activities of the CM from 15:00 – 18:00.

In the next sections, we discuss the planning and organisation of the activities and materials for WS2. Firstly, we present the recommendations and guidelines for cases to prepare their stories. Secondly, we present some of the materials we developed to help cases tell their stories.

## 2.1 *Crafting the storytelling exercise and the workshop sessions*

The storytelling exercise was intended to evocatively catch people’s attention. Storytelling can include elements and strategies such as modulation of one’s voice, and visual/arts strategies for building a connection and relationship of trust with the audience. Usually, a good story incorporates five components: a setting, the characters, the problem or conflict, the “big idea” that solves the conflict, and the process of resolution. Figure 2, which presents these components step-by-step, was made available to all case study partners in advance of WS2. Additionally, the storytelling exercise was crafted in partnership between RU and NINA. Thus, the development of this exercise was a collective-collaborative effort to create the enabling environment for the exercise aiming at theoretical discussions within PLANET4B.



**Figure 2.** Slide with information about crafting a story, sent to cases to help them prepare their stories of change for a PLANET4B in 2050.

For the storytelling, we originally scheduled for each case to have ten minutes to tell their story, followed by up to ten minutes for the audience to ask questions and provide

comments. In several instances, however, cases took more than ten minutes to tell their stories, and the audience likewise asked questions and commented on the performance for more than ten minutes.

The following section presents some information on the additional materials that were made available to cases to help them craft their stories.

## 2.2 Materials for preparation and participation

Guidelines were developed by Task 1.4 leads in the format of a power point presentation, to help cases prepare their stories. Figure 3 presents one of the slides included in this power point presentation, a template for cases to help them tell their stories. Two, one hour “Help Desk” online meetings were organised to help cases in their preparation process. Cases had approximately three weeks to prepare their stories, before the CM/WS2.



**Figure 3.** Slide with initial guidelines for the storytelling exercise, sent to cases to help them prepare their stories of change for a PLANET4B in 2050.

In one of the guideline slides, we asked cases to be creative in their storytelling, with the following message:

“

- *There are many ways to tell a story...it helps if you plan a bit earlier ..*
- *You can use story visualising elements such as..*
  - *A poster*
  - *Objects or artifacts*

- *Images or photos*
- *Power point*
- *Short video*

*...it helps to create an atmosphere...feel free to innovate!*

- *You can always interact with your audience during the story, ask questions, etc. (keep the audience engaged!).*

”

In regards to the connections of the stories with policies, theories of change, and leverage points (LPs), our power point guidelines had specific slides explaining how to build these associations.

### *2.3 Documenting the activities of the workshop*

During the live storytelling exercise at the WS2, we collected information through the following methods:

- We had two representatives from the Radboud University taking detailed notes about the stories and the storytelling presentations; one of these note takers was also the facilitator of the WS2.
- We took several pictures during the storytelling and of the participants in the audience (to document their reaction to each story).
- Detailed notes were taken during the session of questions and comments arising from the audience.

## **3 “Stories of change for a PLANET4B in 2050...”: connecting cases with policies, theories, and leverage points through storytelling**

This section includes a short summary of all the stories of change told during WS2. We named the exercise (and workshop) "Our stories of change for a Planet4B in 2050..." and invited each case to imagine a future that, although fictional, could illustrate a potential transformation emerging from each local intervention or sector assessment in Planet4B. Importantly, the strategy and methods for crafting and telling the story was decided by each case internally, in a bottom-up process.





**Figure 4.** Slide with introduction to the storytelling exercise, sent to cases to help them prepare their stories of change for a PLANET4B in 2050.

The following presents briefly each story of change for a PLANET4B in 2050. It starts with the 5 intensive (place-based) cases, followed by the extensive (sectoral based) cases.

Furthermore, in the material that was sent to cases with some guidelines for crafting their stories, we asked cases to use the 12 LPs diagram from Donella Meadows (see Abson et al., 2017). Cases should fill in the diagram, connecting their theories of change with specific LPs. Subsequently, cases should write a short paragraph explaining the connections between the theory and each LP and send these paragraphs to Task 1.4 leaders before WS2. Some cases, however, opted to send it afterwards.

### *3.1 Place-based case – Nature recreation in Oslo, Norway (OOF/NINA)*

The nature recreation case in Oslo, Norway, decided to tell their story through a role-play, which consisted of an interview with one person with disabilities taking place in two moments in time: in 2023 and in 2050. In the story, the first interview (in 2023) the person had recently suffered an accident thus acquired a disability. The person struggled, particularly not knowing how to access, exercise, and enjoy some of the activities from before, and particularly in nature. The second interview was with the same person (in 2050). The two interviews illustrated how the accident initially prevented the person (fictitious name Alex) from enjoying recreational activities in nature, but who later on found an organisation (a community of peers) that helped Alex to recover the practicing of such recreational activities in nature. The interviewee asked questions about Alex' relationship with nature before and after the accident, before and after finding the community of peers, and about the role of the "community of peers" in helping Alex to come back to enjoy activities in nature. Issues of accessibility, income and the importance of nature experiences to recover from the accident were covered.

In this story, the “transformative change”, or solution to the problem of people with disabilities not being able to continue with recreational activities in nature was based on a community of peers, composed of people with disabilities. This community emerged through co-participation, and was based on mentorship programs present all over Norway. In the storyline, the important fact that “turned the situation around” was PLANET4B (Case inclusive nature recreation in Oslo), whose research helped to build a policy recommendation to create such a community of peers. The policy recommendation was adopted initially by the Oslo municipality and then spread across Norway. In this case, the intrapersonal and community/interpersonal levels were targeted in the transformation.



**Figure 5.** Case representatives from NINA and OOF simulating an interview during the storytelling activity on October 27<sup>th</sup>, 2023, in Nijmegen, The Netherlands.

During the questions and comments from the audience, the case representatives were asked if, in 2050, the private sector or public sector would be responsible for managing the community of peers. The case leads observed that, in the story of change, the municipalities would be the providers of the service (mentoring model), not the private sector. Other questions related to what extent nature was special in this case. Case partners replied that nature can be empowering, inclusive, and help people tackle

loneliness, especially due to the community of peers who enjoy nature, and share experiences about how to circumvent barriers and challenges (information systems, public services, etc.). Moreover, the importance of nature as a place for restoration, relaxation, mental health care, social bonding and physical exercise has gained much attention over the last years. To the extent that such benefits contribute to a stronger prioritisation of biodiversity in planning and decision-making processes, it is crucial that the specific needs of vulnerable groups (e.g. woman, children and people with disabilities) are recognised and taken into account.

The theory of change that helped the policy recommendation to be implemented (i.e. the creation of a grassroots civil society organisation of peers composed of people with disabilities that enjoy recreational activities in nature) was *institutional ethnography*. Institutional ethnography postulates that the life conditions of specific groups are formed within the matrix of concrete relationships that over time have become institutionalised. In accordance with this, institutional ethnographers study specific “problematics” by taking the everyday experiences of the concerned stakeholders as point of entry into the field (e.g. access to nature for people with disabilities). Hence, the turning point in the story was that the voices of disabled people was finally heard. In the context of access to nature and outdoor recreation, the “big idea” was to start listening to those with the lived experiences instead of speaking on their behalf.

### *3.2 Place-based case – Opening nature to Black, Asian and ethnic minority communities in the United Kingdom (Dadima’s CIC/CU)*

This Opening nature to Black, Asian and ethnic minorities (England, United Kingdom) story was based on a narrative that started with a personal motivation for the building of a community of Black, Asian, and minority ethnic communities in the United Kingdom led by Dadima’s CIC. Initially, in 2023, global biodiversity loss, inequality and injustice were challenges faced by the community. Additionally, the following challenges were faced by the community at the systemic level: the powers of corporate greed, global warming / climate change, shareholders of big business, the need to feed and house over seven billion on planet Earth, individual greed, misinformation, poor education, a lack of understanding or wanting to learn, ignorance, and fear of change.

The Big Idea to help overcome these challenges emerged within Dadima’s CIC, through their working partnerships with local groups and organisations, including The Chiltern Open Air museum, The Aston Rowant Nature Reserve, Oxfordshire County Council, and the Watlington Climate Action Group / Watlington Environmental Group.

Thanks to these partnerships, Dadima’s CIC was able to share the findings of their own research (and the findings of the PLANET4B project) to encourage local stakeholders to positively impact local biodiversity/bio abundance by changing farming methods, encouraging the planting of more plants and trees, promoting reuse, recovery and re-cycling, changing their eating habits to impact sustainability,



keeping and maintaining green spaces, and enjoying the green spaces to improve health and wellbeing.

The next chapter of the story took place in 2050. By then, Dadima's CIC had scaled-out a community of ambassadors across the United Kingdom. Ambassadors are members of the community that share stories and help promote change towards better biodiversity and nature prioritisation. Thanks to these ambassadors, biodiversity in the United Kingdom was considerably improved by 2050, including:

- A local community that really cares about the environment
- Word spreading through ambassadors and via personal connections/networks
- The achievement of multiple small changes, on the basis that these have more traction than a single big change
- Local farmers changing the way they farm and looking how to enhance biodiversity



**Figure 6.** Image shown during DC/CU storytelling, illustrating one ambassador of change sharing a story in one of Dadima's CIC walks in Nature in the United Kingdom.

In the final moment of the storytelling exercise, the presenter played an audio with a poetry (narrated in the audio by himself) about biodiversity. This poetry illustrates the type of work that is being done within the community, and that by 2050 will be multiplied, and, as a result biodiversity and bio-abundance will grow, the community will adopt a more sustainable way of living, climate change will be no longer a threat, and eating habits will change towards healthier and sustainable food.

During the Q&A session, one comment discussed the strategy for outscaling the success of the case. Outscaling will target other cities and rural areas across the United Kingdom, copying and replicating the ambassadors' messages.

### *3.3 Place-based case – Urban Youth in Germany (CGE/MLU)*

The urban youth (Germany) case told a story about Artificial Intelligence (AI) replacing teachers in the classroom, and its potential connections with environmental education and experimental learning towards empowering youth and building a new society. In 2023, students experienced very bad teaching in Germany, where there was a substantial shortage of teachers in schools. To overcome the problem of the scarcity of teachers, community members and students started to develop co-creative activities to learn together, particularly through environmental education. By 2050, the learning community had spread all over the globe, where community members and students incorporated the practice of learning together.

Additionally, two strategies would be essential: place-based education via open curriculum and outdoor classrooms. These would provide opportunities for young people

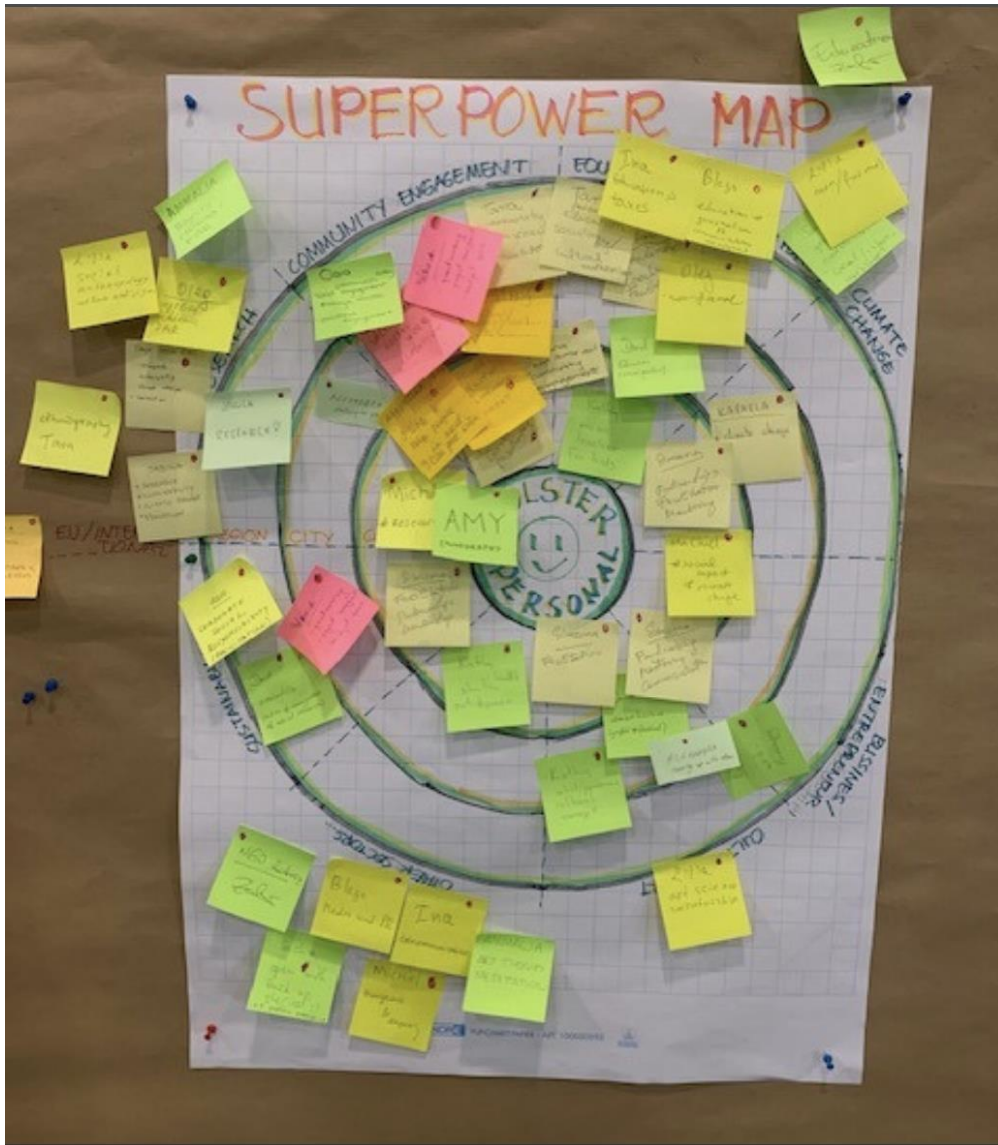
- to learn how best to approach communities and report to the policy level;
- to identify the superpower that is owned by each community;
- to become more environmentally conscious citizens;
- to have compassion and reconnect the spirit of young people with green environments and ecosystems.



**Figure 7.** Image presented during the storytelling of the case, showing one of the co-creative workshops of CGE in Germany.

Figure 7 and Figure 8 were presented during the storytelling exercise. Figure 7 illustrates one of the actual exercises of CGE in a co-creative workshop with students in Germany. Figure 8 provides an example of a superpower map, a tool to help identify the skillset and expertise in a community.





**Figure 8.** Image presented during the storytelling of the case, showing the Superpower map, one of the ways to help identify the skillset and expertise in the community.

The theory of change mobilised in this story was empowerment theory, which helps differentiate between empowering and empowered individuals.

During the Q&A session, it was asked if the case is using, as a reference, the EU GreenComp: the European sustainability competence framework.<sup>1</sup> The case leaders replied that the issue the story (and the case) tries to tackle is the lack of human resources for youth education and learning in Germany. The proposed solution deals with a place-based education that is easier to grasp for younger generations. Another question targeted how sustainability education can include biodiversity or make more room for biodiversity education. Case leaders replied that they organise activities with

<sup>1</sup> The GreenComp is a reference framework for sustainability competences. It provides a common ground to learners and guidance to educators, advancing a consensual definition of what sustainability as a competence entails.

young people in their surrounding environments and explore different meanings on the spot. In a sense, they do not try to define biodiversity, instead, they leave it open for students to define biodiversity in different ways, highlighting the importance of these interventions to provide a safe space for these young people to better realise what they feel about biodiversity, as well as other environmental topics. Following these real-world experiences, the case uses experimental workshops centred around how to practice better biodiversity understanding, prioritisation, and care.

### *3.4 Place-based case – Edible City and Inclusion in Graz, Austria (FuG/IFZ)*

In the edible city and inclusion (Graz, Austria) storytelling, a silent video was shown in the background, displaying photos taken during the activities involving urban gardens in Graz, as well as images from some of the previous workshops applied by the case.



**Figure 9.** Case leaders from IFZ and FuG during storytelling activity on October 27<sup>th</sup>, 2023, in Nijmegen, The Netherlands.

An accompanying oral story was given in a role-playing format, in which the Mayor was located at the centre, and was surrounded by key stakeholders of the municipality of Graz. Besides the Mayor, the story included: a gender representative of a small NGO on the topic of poverty, which had a gender-sensitive and inclusive approach to implement a green space in the city of Graz; a researcher on education; the head of the FuG, which coordinates the hub for social gardening; and the leader of a widely known private sector company. The role playing dynamic involved each of the players presenting their view and preferences for the strategy on Edible City Graz.

This pilot included aspects of intersectionality (for example, the inclusion of citizens with social markers of difference), specifically those that are residents of Graz. For example, migrant women contribute with the Edible biodiverse-gardens in Graz in small groups (sharing information and providing ecosystem plans from their home countries). By 2050, the project of the Edible City of Graz would reach migrant and single-parent mothers through school gardens. New forms of teaching would be adopted (teaching towards multilingual teaching – experiential learning and non-formal education), in a way that formal education would then become knowledge co-creation. In private companies, business leaders would encourage employees to pay more attention to nature.

In the session of Q&A, the case leaders were asked about the kinds of activities that were considered more fun, since this story of change was based on the actual work within the case study. Case leaders replied that systems mapping activities were engaging.

Upon being asked the question of: how to convince the Mayor of Graz to adopt the idea of an edible city, case leaders observed that policymakers usually want to be sure about the benefit they will receive. Additionally, according to the presenters colleagues asking “hard questions” during the CM also inspired the case leaders to look deeper into the process.

Other experiments which are currently under consideration and were envisioned for 2050 include non-conventional edible plants, building collective kitchens so that citizens can cook together, establishing more sustainable plants, and the implementation of food neighbourhoods. The role of education is also key. Instead of seeing environmental education as something static, the case aims to establish relations with women (e.g. migrant women) who have knowledge from practice. Also it was noted that:

- School gardens and single mothers paved the way for new kitchens;
- Multilingual and multidisciplinary education was central for the transformations;
- Knowledge co-creation was key in the management of urban gardens.

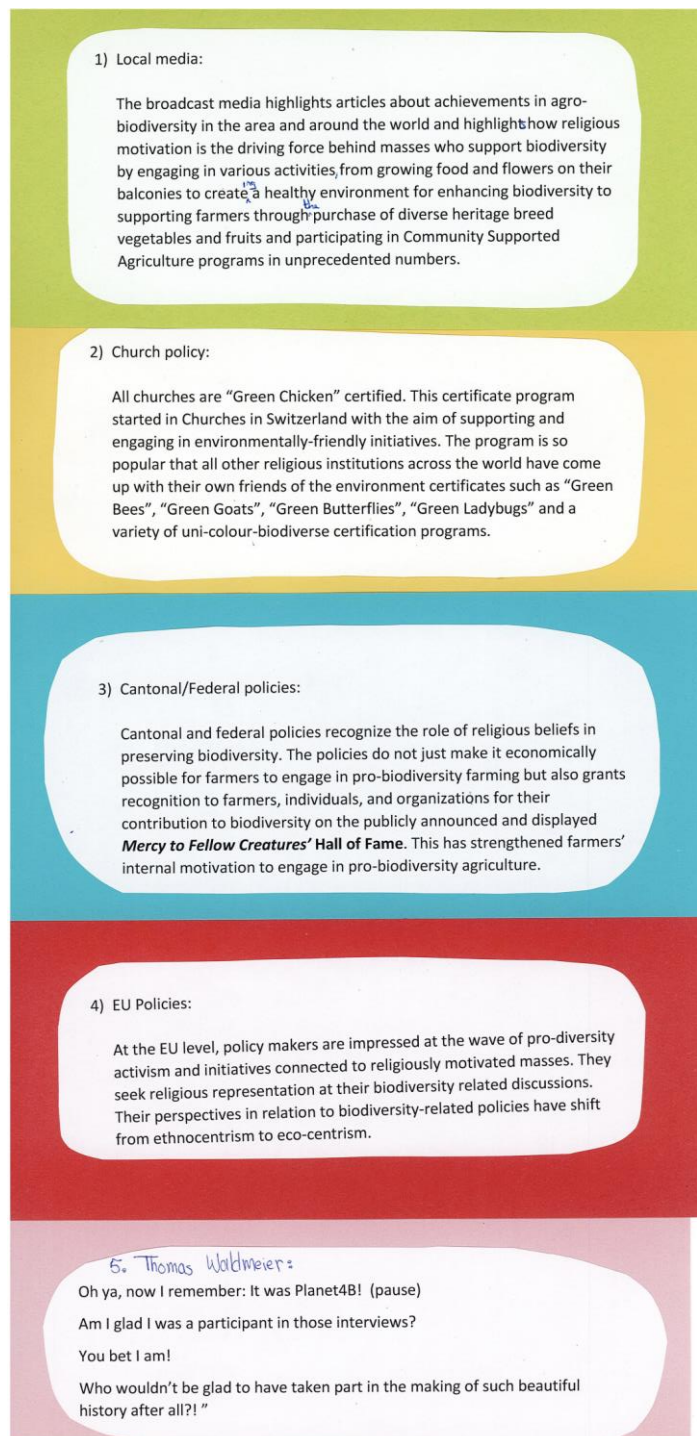
Thus, the proposal of the story, and the case, is based on more sustainable use of green spaces as places in which to learn about biodiversity, building urban gardens

collectively, via social gardening and better human-nature and human-human relations.

### *3.5 Place-based case – Swiss attitudes towards agro-biodiversity and religion (FiBL)*

The Swiss attitudes towards agro-biodiversity and religion story was a role play, involving a narrator (the case leader), and five members of the audience (the latter having been previously contacted by the case leader to play a role on a story that took place in 2050). Each person represented a sector in politics and society, including local media, EU policies, Cantonal/federal policies, Church policies and a farmer with religious beliefs who was part of the case study research in PLANET4B. The idea was to express, in an anecdotal manner, how such religious beliefs impacted or were connected to biodiversity governance. The intensive case study associated with this story engages with members from farming communities in areas with different religious beliefs in Switzerland. To do this, a geographic lens is helping to identify areas where the farmers are expected to come from Catholic or Protestant backgrounds, while also being of these faiths.





**Figure 10.** Cards used by the case study leader while telling the story of change.

The work being developed and presented through the role play story is based on two theories and one model (along with the identified psychological factors influencing sustainable agricultural practices). These are the Bronfenbrenner's Ecological Theory and Functional Theory of Values, as well as the individual-social-material model. The leverage point being triggered is "the power to transcend paradigms" as the religious beliefs correspond to the change in mindsets that would affect behaviour of farmers regarding their engagement in agro-biodiversity related practices. The theories and the



psychological factors show the effect that religious beliefs and values have on behaviour including sustainable agricultural behaviour.



**Figure 11.** Case leaders from FiBL and other PLANET4B partners during storytelling activity on October 27<sup>th</sup>, 2023, in Nijmegen, The Netherlands.

During the Q&A session, the case leader was asked whether the case proposed a re-interpretation of religious texts. The case leader noted that such a reinterpretation is happening today already in various spheres of society. Another question was regarding how religions are important and relevant in public life nowadays, and which kind of policy change is desirable bringing religious beliefs to work in favour of better biodiversity prioritisation. The case leader highlighted that it is important to cover, in the context of the case study, how spirituality as fundamentally being part of religion needs to be revived in relation to the concept of biodiversity. .

### *3.6 Sectoral case – “From ego-system to eco-system” in fashion in Italy (UNIFI)*

The ego-system to eco-stem fashion story (Italy) highlighted how labour exploitation in some countries (affecting in particular women, poor people, leading to unsafe labour conditions) are related to environmental and biodiversity policies in the fashion industry.

The presenter started by showing news about clothes repair with a headline reading “Repair is the new Cool.” Beginning with the scenario that in the future it will be difficult to find new clothes, the story teller proceeded to explain how the society arrived at this situation. In the 2020s the circularity was based on reductive interpretations of the same concepts, where biodiversity was seen as expendable. It was based on extractive industries (the story atmosphere, via slides, became very dark, full of conflicts and exogenous shocks), putting the fashion industry progressively in a crisis. However, in 2050, a new model and radical idea of circular economy based on efficiency, substitution, and sufficiency emerges.



**Figure 12.** Case representative from UNIFI and the audience during storytelling activity on October 27<sup>th</sup>, 2023, in Nijmegen, The Netherlands.

The theories that connect such a systemic transformation link experiences, niches, models, ideas, and discourses (including policy recommendations). One such theory is the schismogenic dynamics, or out-of-control process. Another is the positive feedback loop towards evolutionary cul-de-sac (at the edge of chaos). In addition, there was the emergence of previously unconsidered models-ideas as a possible way out of tensions and conflicts (strange attractors), promoting fast changes in practices, processes, models, and regulations, and eventually promoting a paradigm shift.

During the Q&A session, it was debated (as prompted by one of the visual slides) who are the elephants in the room. Overproduction and working conditions were considered the problems in the sector that EU policies do not tackle in depth. Overproduction is just mentioned by the EU policies, but not discussed in depth. Working conditions include labour exploitation, particularly in developing countries.

### *3.7 Sectoral case – Agro-biodiversity management in Hungary (ESSRG)*

The agro-biodiversity management in Hungary story starts in 2023. By then, EU funding agriculture and culture are treated separated from each other very much, which leaves little to no space for projects and initiatives working on the management or development of agrobiodiversity: 1) funding of agriculture mostly focuses on production, 2) funding of nature conservation mostly focuses in wild habitats, 3) funding of cultural events mostly focuses on human culture, 4) The strict separation of these fields adds to the declining interest in agrobiodiversity and to the permanent loss of our agricultural

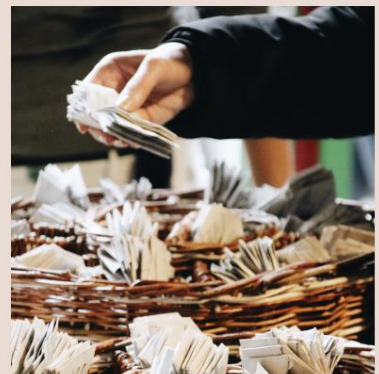
heritage. Then, the case's story proposes a solution to the problem: including Agricultural Heritage as a sub-category of European Heritage. This inclusion would create space for projects that focus on the maintenance of agrobiodiversity or building bridges between agriculture and everyday life. Europe is home to thousands of traditional varieties of cultivated species, but this diversity keeps declining year to year. The proposed solution could help to raise awareness about agrobiodiversity, promote its importance and empower projects that connect citizens and agriculture.

In 2050...the EU organises the European Agrobiodiversity Festival every year since 2030 to celebrate the diversity of agriculture in Europe. The Festival takes place in a different country every year, in a designated 'Capital of Agrobiodiversity'. There are various programs to promote agrobiodiversity, in order to raise awareness about the landraces, heirloom varieties and their history. There are different kinds of art projects aiming to connect agriculture to the everyday life of EU citizens.

In terms of policy recommendations for an annual Agrobiodiversity festival, how can we make it real? Can we start an agrobiodiversity festival after the PLANET4B project?

# 20. EUROPEAN AGROBIODIVERSITY FESTIVAL

27-30 September 2050  
Szeged, Hungary



**European Capital of Agrobiodiversity 2050: Szeged, HU**

**Landraces of 2050**

**Historical variety of 2050**

**Seed Stories between 2030-2050**

**Annual Gathering of Seedsavers**

**Photo exhibition of European agrobiodiversity**

TO LEARN MORE GO TO: [WWW.AGROBIODIVERSITY.EU](http://WWW.AGROBIODIVERSITY.EU)

**Figure 13.** Image of a folder illustrating the Agrobiodiversity festival in 2050, happening in Hungary.



The theories of change mobilised in the story were policy integration, feminist care theory, social practice framework (the more we know, the more we care).

Comments from the audience pointed to the importance of this intervention to highlight the value of food, which has an increasing cost in Europe (food is something to be respected). In a situation of inequality, people buy junk food (more accessible). How can we guarantee that people have access to healthy food? Case study leaders see a potential for synergy between agrobiodiversity conservation and food production. The issue of food sovereignty vs food security was also raised, based on a question on why to achieve a change with food sovereignty, not with food security (political movement and practice)? The case leaders also noted the relevance of the intergenerational knowledge potential of the case study.

### *3.8 Sectoral case – Environmental awareness in Education in Hungary (ESSRG)*

The environmental awareness in education (Hungary) story was a role play representing a teacher, a student and a parent, dealing with current problems of the Hungarian educational system and issues of climate anxiety, to which experiential learning proposed by bottom-up initiatives can provide a solution. In the coming years school gardening will come in focus since the educational system need to be amended and made more attractive, and teachers will also have to deal shifting interests of students (i.e. climate anxiety). School gardening and other creative-interactive educational approaches can be a good strategy to tackle the problem. In a classroom in 2023, a teacher discusses the issue of climate change, which generates growing climate anxiety in students. Schools start to use school gardens to deal with climate anxiety. At the same time, a community of practice develops an assessment tool to understand whether and how school gardens and other creative-interactive educational approaches can change behaviour, and foster transformation towards more biodiversity in nature. School gardens promote interactive experiential learning methods (towards better attitudes in changing behaviour). In 2050... school gardens have become institutionalised in Hungary. And a profound shift in the world has taken place, guiding humanity towards sustainable living.

During this storytelling, the case leader handed individual letters of the alphabet to the audience, while telling the story. At the end, all members of the audience who received a letter were invited to come to the stage, and asked to figure out what the hidden message through reorganising the order of the letters. The message was: love nature.



**Figure 14.** Case study representatives during the storytelling exercise on October 27<sup>th</sup>, 2023, Nijmegen, The Netherlands.

Questions and comments included: how can we change teaching education, or teaching methods, towards better biodiversity prioritisation? It was also noted that teachers lack qualifications to engage students with biodiversity. Others highlighted that without addressing the policy/governance level, we will not go far with our interventions if we only target the education sectors (only individuals changing the system will not help, we will need to change the political structures). The theories mobilised in the case are human-nature interactions (which explains change at the individual level), and path dependency (changes at the system level).

### *3.9 Sectoral case – Agriculture and migration in the EU (FiBL)*

The agriculture and migration in the EU story was told in a karaoke format, where case leaders elaborated a song, and sang it to the audience, encouraging the audience to join in especially with the chorus versus. Figure 15 shows case leaders singing their song; Figure 16 illustrates the reaction of the audience.



**Figure 15.** Case leaders singing for their storytelling in karaoke format on October 27<sup>th</sup>, 2023, Nijmegen, The Netherlands.

The case leaders highlight that we find ourselves in a contradictory situation in 2023: On one side, we are facing labour shortage in agriculture across the EU, which is unlikely to change anytime soon. At the same time, we are demanding more agroecological practices from farmers, which are considered to be more labour intensive. The song created rewrites the story until 2050: intra-European migration was not stopped, but people no longer migrate out of necessity. That means that working conditions in agriculture as well as living conditions in rural areas across the EU increase both the attractiveness of work in agriculture and rural life. This will have reduced labour shortage with benefits for (agro)biodiversity-conservation.





**Figure 16.** Reaction of the audience, singing together, to the story told in a karaoke format. October 27<sup>th</sup>, 2023, Nijmegen, The Netherlands.

In the Q&A session, people observed that agroecological practices would require more workers, and the problem of poor working conditions in agriculture could even increase. Others observed that, even if the EU adopts more social rights and policies targeting farm workers, many people would not have access to these instruments still, because the agriculture or farm workers usually do their activities informally and often migrate due to hardships in their home countries.

### *3.10 Sectoral case – Trade and GVCs soy/beef from Brazil to the EU/Netherlands (RU)*

At the start of the Brazil-Netherlands/EU soy/beef trade and global value chains (GVCs) storytelling, one of the case leaders asked the audience to close their eyes, and listen to the following story...

*“Hi! My name is Vitória – I am going to tell the changes that happened in our community and in many communities in the Brazilian Amazon after Planet 4B.*



*In 2025, Planet 4B delivered a thorough report to the European Union that generated a lot of public attention. My father, Vinicius Mendes, contributed in many roles but I am going to focus on their case study on international trade.*

*3 years after the Planet 4B second consortium meeting – Vinicius adopted me. I was 9 years old. Now, I am 33 years old*

*I am a quilombola descendent from Pará state. Vitória's activist parents were murdered by killers hired by land grabbers... but that is another story.*

*I grew up seeing my foster father as an engaged scholar-activist and public intellectual. His first professional experience in Planet4B as post-doctoral researcher was successful and the case study on soy and beef trade between Brazil and the Netherlands influenced EU, Dutch and Brazilian policies.*

*(...)*

The following steps of the story included how, in 2025, the recommendations of PLANET4B for policies in relation to the European Union Deforestation Regulation (EUDR) were based on an intersectional environmental justice approach. The transformation towards better biodiversity prioritisation would require actions of the Dutch government and at the EU level. The Netherlands decided to create a set of programmes and policies to scale down animal farming, foster plant-based diets, biodiversity restoration, creation of new protected areas but also establishing a programme for tourism in farms and around parks. More specifically, in relation to the Amazon and the Cerrado, the EU and the Dutch government created long term programmes to foster socio-biodiversity value-chains, locally based, with local community ownership. As a consequence, such local value chains help local citizens to empower themselves to generate income and well-being through forest restoration and boosting local economies based on native fruits, essential oils, nuts, fibers, eco-tourism and payments for ecosystem services. These programmes were created not only for local people to produce goods and services, but also to help market them locally, regionally, nationally and internationally.

The subsequent parts of the story take place in 2050... by then, soy and beef trade were scaled down as a result of changes in diets and farming practices in Europe, US and China. In addition, stringent regulations created incentives for shifts towards diversification (diversity of forest products instead of monocultures) and sustainable services – e.g. community-based ecotourism in restored forests, bird watchers in the Cerrado biome, boat rides along Amazon rivers to watch pink dolphins were implemented as sustainable activities in the two biomes. In this sense, discussions on *intersectionality*, as well as *degrowth*, *post-development*, and *well-being economies* theories will animate further discussions within this case study.

During the Q&A session, colleagues asked how to convince “capitalism” to reduce the soy and beef value chains globally? The approach for transformation is to “connect developmentalism and social environmentalism”. This included decolonial thinking and the perspective of degrowth.

### *3.11 Sectoral case – Sustainable investment behaviour Global-EU-Norway (NINA)*

In the sustainable investment behaviour storytelling presentation, one of the case’s leaders observed that people’s stories are always the stories of biases – our background defines who we are, what risks we are prone to, what our beliefs are. Our backgrounds define also how we make decisions under risk and uncertainty, and what we consider (or fail to consider) while making a decision.

In the story there were two characters, with two different stories:

- Knut – self-made man, who succeeded and is on his growth journey in business.
- Nina – raised in a family deeply involved in environmental activism and had acquired a comprehensive education in sustainable development and environmental studies. Her upbringing and academic background had instilled in her a profound understanding of the critical importance of ecological balance.

Both Nina and Knut work for the same company and are invited to share their approach to long-term company strategy proposal. Knut focuses on cutting costs, optimising, KPIs (Key performance indicators), earning money and growth but perhaps this is not aligned with sustainability or environmental protection. In contrast, Nina looks at the problem holistically, thinking of sustainable development, people around the company, all stakeholders’ needs and environmental impact.

Then a transformation takes place: nature-related disclosure in finance becomes mandatory, supported by reliable biodiversity impact metrics demanded by empathetic investors. The story is inspired by a potential transformation for nature-related financial disclosure by private companies, in order to have more “Ninas” than “Knuts”.

Questions and comments followed the presentation. At the policy levels: how the policy is designed has a lot of influence on individuals behaviour (regulations or directives). How can we measure environmental aspects in investments? Ideas for going forward included analysing profiles of investors; designing a portfolio for investors, while one might think about higher return without big risks; or constructing a portfolio to invest into funds that value nature and biodiversity.

## 4 Potential policy recommendations

Some potential policy recommendations emerged from the majority of the cases, as this section briefly discusses.

In the case Urban Youth (CGE/MLU), place-based education is a vibrant approach to education that takes students out into their communities, to learn, to do, and to grow as human beings. Students are given the opportunity to learn the subject matter in deep and lasting ways, understand the places in which they live, and participate in authentic community renewal projects that make a difference to themselves, to others, and to the world around them. By engaging the local, place-based education opens a wide range of possibility for purposeful engagement for all learners.

In the case of Fashion in Italy (UNIFI), the policy recommendation included an economy of flexibility-based model designed around three principles: Efficiency, Substitution, Sufficiency.

In the case of Agro-biodiversity in Hungary (ESSRG), a policy recommendation was for Agricultural Heritage as a sub-category of European Heritage. Doing so would create space for projects that focus on the maintenance of agrobiodiversity or building bridges between agriculture and everyday life. Europe is home to thousands of traditional varieties of cultivated species, but this diversity keeps declining year on year. Giving greater policy recognition to agricultural heritage could help to raise awareness about agrobiodiversity, promote its importance and empower projects that connect citizens and agriculture.

The case of Trade and GVCs (RU) included the importance of holding the agrobusiness sector, as well as the financial sectors and pension funds, accountable in relation to their local socio-environmental impacts. Also promoted through the case was Human Rights compliance mechanisms for corporations (due diligence) and the possibility to take corporations to European Court of Human Rights.

In the case of Sustainable Finance (NINA), a potential policy recommendation by 2050 is making biodiversity reporting obligatory, not voluntary. If biodiversity reporting and disclosures become obligatory then they will be grounded in actions aligned with Nature prioritisation. We expect that in 2050 we are in a situation where companies are in touch with environmental institutes that can get them better biodiversity metrics, link to biophysical data and investors can make data driven investment decisions.

These are potential policy recommendations that emerged from the stories of change, but do not necessarily represent the final policy recommendations of these five cases in PLANET4B. The remaining six cases did not make explicit mentions to policy recommendations in their storytelling presentations.

## 5 Theories of change and leverage points behind the stories

Table 1 summarised all the theories of change mobilised by the cases in their storytelling exercises, according to their own choice, based on consultations with the updated inventory of theories. Theories that inspired the transformative change in the 11 stories include: communities of practice, institutional ethnography, empowerment theory, Bronfenbrenner’s ecological theory, functional theory of values, individual-social-material model, paradigmatic shifts, policy integration, feminist care theory, social practice framework, human-nature interaction, institutional change theory, path dependency, window of opportunity, structural change, prospect theory, modern portfolio theory, and the theory of planned behaviour. The table also included all cited leverage points. Most of the leverage points addressed in the storytelling exercise, were deeper leverage points targeting design and intent.

**Table 1.** Categories of cases and respective theories of change and leverage points emergent from the storytelling exercise.

Category	Case	Theory(ies) of change	Leverage points
Intensive	Nature recreation in Oslo, Norway (OOF/NINA)	Institutional ethnography (aims to produce knowledge <i>for</i> people instead of <i>about</i> them)	DESIGN 6. The structure of information flows (access to info.) INTENT 2. The mindset or paradigm out of which the system arises
Intensive	Opening nature to Black, Asian and ethnic minority communities in the United Kingdom (DC/CU)	Communities of practice	DESIGN 6. The structure of information flows (access to info.) 4. The power to add, change, evolve, or self-organise system structure INTENT 1. The power to transcend paradigms
Intensive	Urban Youth in Germany (CGE/MLU)	Empowerment theory	DESIGN 6. The structure of information flows (access to info.) 5. The rules of the system (incentives and constraints) 4. The power to add, change, evolve, or self-organise system structure INTENT 3. The goals of the system 2. The mindset or paradigm out of which the system arises 1. The power to transcend paradigms
Intensive	Edible City and Inclusion in Graz, Austria (FuG/IFZ)	Communities of practice by Sheila Jasanoff	–
Intensive	Swiss attitudes towards agro-biodiversity and religion (FiBL)	Bronfenbrenner’s Ecological Theory Functional Theory of Values	INTENT 1. The power to transcend paradigms

		Individual-social-material model	
Extensive	“From ego-system to eco-system” in fashion in Italy (UNIFI)	<p>Schismogenic dynamics &gt; Out-of-control process</p> <p>Positive feedback loop towards evolutionary cul-de-sac (at the edge of chaos)</p> <p>Emergent previously unconsidered models-ideas as possible way out</p> <p>Tensions and conflicts (strange attractors)</p> <p>Fast changes in practices, processes, models, regulations</p> <p>Shifting paradigms</p>	All LPs mobilised (paradigmatic shift)
Extensive	Agro-biodiversity management in Hungary (ESSRG)	<p>Policy Integration</p> <p>Feminist Care Theory</p> <p>Social Practice Framework</p>	<p>PARAMETERS</p> <p>12. Parameters (such as subsidies, tax, standards)</p> <p>DESIGN</p> <p>6. The structure of information flow (not part of formal education, but through engagement with these festivals)</p> <p>4. The power to add, change, evolve, or self-organise system structure (structural change)</p>
Extensive	Environmental awareness in Education in Hungary (ESSRG)	<p>Human-Nature interaction (individual behaviour change)</p> <p>Institutional change theory (systemic change)</p> <p>Path dependency (systemic change)</p>	<p>PARAMETERS</p> <p>11. Size of buffers – low no. of teachers with natural science background</p> <p>FEEDBACK</p> <p>8. Negative feedback loops – deteriorating PISA results, less and less students choosing university/jobs in environmental science, braindrain</p> <p>7. Positive feedback loops – students engaged in school gardens have an increased interest and better results in tests, which also motivates their teachers</p> <p>DESIGN</p> <p>6. The structure of information – from frontal education to experiential learning which enhance the capabilities of the less privileged ones</p> <p>INTENT</p> <p>4. The power to add, change, evolve, self-organise – school gardens as bottom-up initiatives emerging in</p>

			<p>schools where the school master gives freedom to the teachers</p> <p>2. The mindset or paradigm out of which the system arises – changing the mindset (attitudes, deeply held values, cultural norms) of the future generation (who are being the decision makers in 2050)</p>
Extensive	Agriculture and migration in the EU (FiBL)	Policy integration	–
Extensive	Trade and GVCs soy/beef from Brazil to the EU/Netherlands (RU)	<p>Window of opportunity</p> <p>A window of opportunity, also called a margin of opportunity or critical window, is a period of time during which some action can be taken that will achieve a desired outcome. Once this period is over, or the "window is closed", the specified outcome is no longer possible</p> <p>Structural change</p> <p>The structural change theory focuses on the mechanism by which underdeveloped economies transform their domestic economic structures</p>	<p>DESIGN</p> <p>6. The structure of information flows (access to info.) (window of opportunity)</p> <p>4. The power to add, change, evolve, or self-organise system structure (structural change)</p>
Extensive	Sustainable investment behaviour Global-EU-Norway (NINA)	<p>Prospect theory</p> <p>Modern portfolio theory</p> <p>Theory of Planned Behaviour</p>	<p>PARAMETERS</p> <p>12. Parameters (such as subsidies, tax, standards)</p> <p>FEEDBACK</p> <p>8. The strength of negative feedback loops</p> <p>7. The gain around driving positive feedback loops</p> <p>DESIGN</p> <p>6. The structure of information flows (access to info.)</p> <p>INTENT</p> <p>3. The goals of the system</p> <p>2. The mindset or paradigm out of which the system arises</p> <p>1. The power to transcend paradigms</p>

## 6 Reflecting upon theories' commonalities and conflicts

Investigating theory commonalities and conflicts can be reinterpreted as an exercise for the consortium partners to understand better both the 11 cases, and the conceptual, theoretical, and epistemological approaches utilised by the 11 cases.

Based on the CM activities and different sessions, in particular the WS2, and considering further the comments, questions, interactions, the 11 stories told and the written input on theories of change and leverage points, summarised in section 3 of this report, we understand that:

- At this stage, the theories behind the case study research have more similarities than conflicts. They do not present a risk of cases developing outcomes that are not understandable or uninterpretable by the other cases;
- All cases have demonstrated an ability to interact with the theoretical and empirical transformations targeted by the other cases, which means that a great amount of synergy is already shared amongst cases;
- Furthermore, the exercise in WS2 allowed cases to revisit the updated theory inventory, which will be further used throughout the project as a source of theoretical reference for the case studies as they progress.
- Although no major conflict was identified amongst the theories being deployed or applied by the cases, some cases demonstrated a modest approach to theories at this stage. This is likely due to them still being in the midst of agreeing with their recently created learning communities / stakeholder boards, the aims (and/or parts of system to be tackled).

The diverse cases presented variations in their theoretical/epistemological focus. We observed differences in relation to perspectives that emphasise actions at the local, national, EU or global levels and in the level of analysis (local – global/sectoral). Furthermore, we observed that the emphasis of some cases is on constellations of actors – local actors/social movements – whereas in other cases, there is an emphasis on governments or corporations. Additionally, theoretical/epistemological differences were identified between systems approaches (leverage points), institutionalism (analyses of markets and/or government/policy institutions), and critical theories (intersectionality and power analysis).

## 7 Conclusion and outlook

WS2 gathered representatives from all consortium partners of PLANET4B in Nijmegen for a day of co-creative activities. These activities allowed cases to reflect upon the different theories of change mobilised in their research, and allowed for interactions among cases in PLANET4B. The majority of the case study partners were confident that their work will have, or is already having, impact leading to policy change (Figure 17).





**Figure 17.** Reaction of the CM participants during one of the last sessions of the CM – celebrating impact of the project as regards the achievement of some KPIs. October 27<sup>th</sup>, 2023, Nijmegen, The Netherlands.

This workshop helped cases reflect upon some theory commonalities and conflicts.

In parallel, a series of actions will guide our work in the next months in the context of Task 1.4, leading the way to our third and final workshop of theories in PLANET4B, planned for April 2024 (WS3). Firstly, in the broader context of the project, cases will continue the process of reflecting on commonalities and conflicts as the learning communities and stakeholder boards are continuously co-defining the goals and discussing the links between theory and action in each case study. Secondly, the identification of theory commonalities in relation to the leverage points framework will need further reflection from WP1 and Task 1.4 leaders, in a way that allows co-production of articles, scientific papers, or other KPIs in the period before WS3.



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## Statement on data availability

Data used to produce this report included notes taken by the authors during the workshop, power point presentations and other sources of media (audio and video) shared with the authors via the internal data repository of the project (SharePoint). None of these data sources is publicly available since they include personal data from participants.

## Statement on ethics

This report does include pictures from the workshop's participants, as well as their names, included in Annex 1. According to the General Data Protection Regulation (GDPR) of the European Union (EU), names and pictures of individuals are personal data. The necessary consent forms have been signed by all participants, requesting them to provide an authorisation for their names and pictures to be included in this report. The authors have no conflicts of interest to declare.

## Annexes

### *Annex 1 List of participants attending the second workshop (WS2) of Task 1.4, Work Package 1 (October 27<sup>th</sup>, 2023)*

#	Participants	Institution
1	Alexander Engen Aas-Hanssen	OOF
2	Amelia Arreguín Prado	PLANET4B Advisory Board member
3	David Barton	NINA
4	Marta Bonetti	UNIFI
5	Yennie Bredin	NINA
6	Maryna Bykova	CGE
7	Esther Chinweuba	UNEP-WCMC
8	Maria Csikai	GD
9	Kármén Czett	ESSRG
10	Helene Figari	NINA
11	Linda Fitzka	FuG
12	Alex Franklin	CU
13	Robert Home	FiBL
14	Sandra Karner	IFZ
15	Eszter Kelemen	ESSRG
16	Zsuzsanna Király	GD
17	Blanka Louckova	CG
18	Subash Ludhra	DC
19	Tanya McGregor	PLANET4B Advisory Board member
20	Vinícius Mendes	RU
21	Andreas Motschiunig	FuG
22	Pedro Navarro Gambin	UNIFI
23	Sara Pastina	CAC
24	Ammalia Podlaszewska	CGE
25	Jules Pye	CAC
26	Ghezal Sabir	FiBL
27	Zafar Saydaliev	CGE
28	Ilkhom Soliev	MLU
29	David Steinwender	IFZ
30	Lina Tennhardt	FiBL
31	Anita Thaler	IFZ

32	Simeon Vaño	CG
33	Daniele Vergamini	UNIPi
34	Matteo Villa	UNIPi
35	Torsten Wähler	MLU
36	Friedrich Wulf	PLANET4B Advisory Board member
37	Agnes Zolyomi	UNEP-WCMC