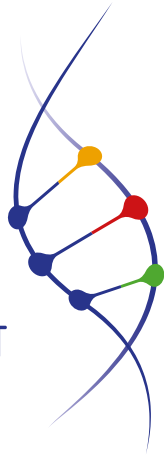
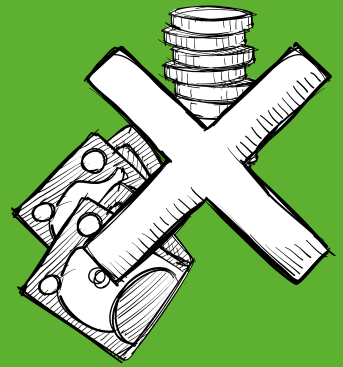


THE **ABS**  
CAPACITY  
DEVELOPMENT  
INITIATIVE



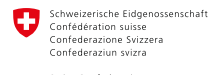
L'INITIATIVE DE  
RENFORCEMENT  
DES CAPACITES  
POUR L'**APA**



## Doing Transformation Beyond Sustainable Development: An Experimental Action Research Method

Dr. Damien Krichewsky,  
University of Bonn,  
for Deutsche Gesellschaft für  
Internationale Zusammenarbeit GmbH  
2024

Funded by



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra  
Swiss Confederation  
Federal Department of Economic Affairs,  
Education and Research EAER  
State Secretariat for Economic Affairs SECO

Implemented by

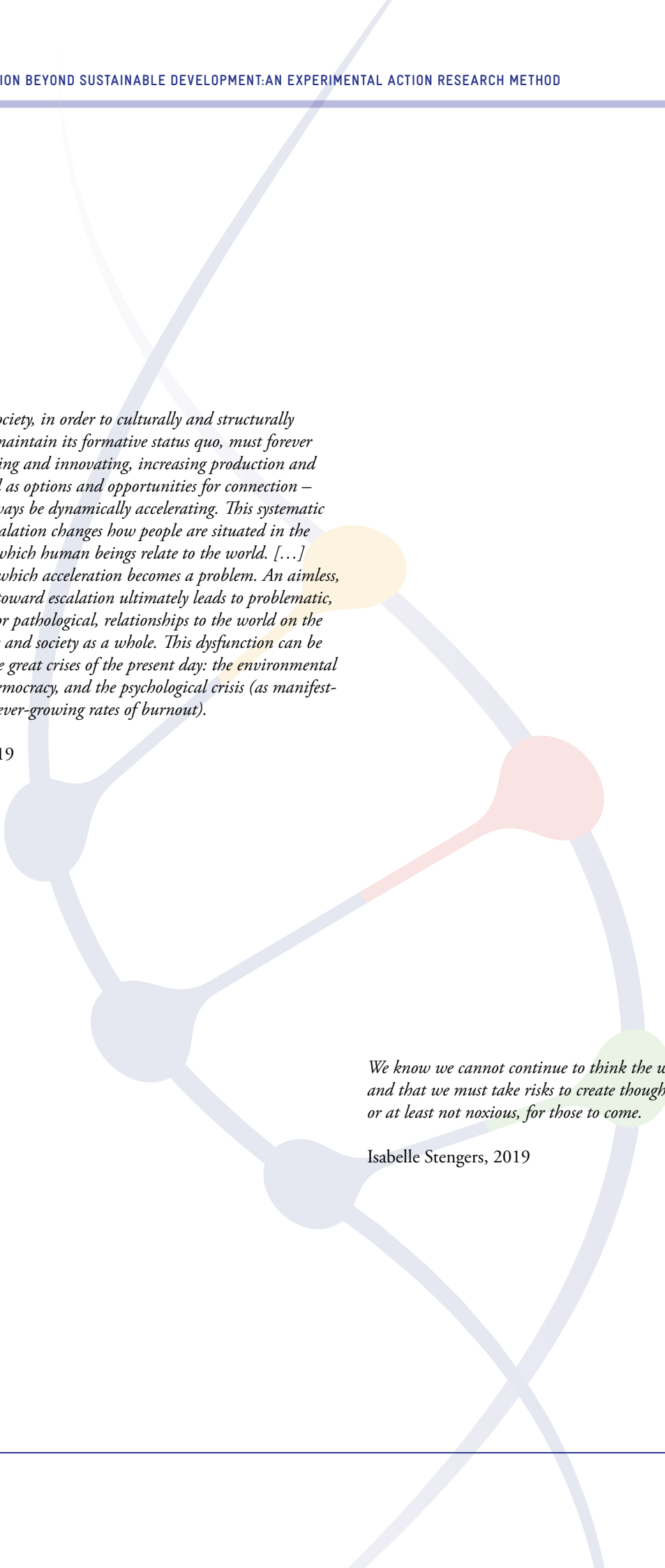




---

**Doing Transformation  
Beyond Sustainable Development:  
An Experimental Action Research Method**

---



*Modern capitalist society, in order to culturally and structurally reproduce itself, to maintain its formative status quo, must forever be expanding, growing and innovating, increasing production and consumption as well as options and opportunities for connection – in short: it must always be dynamically accelerating. This systematic tendency toward escalation changes how people are situated in the world, the ways in which human beings relate to the world. [...] This is the point at which acceleration becomes a problem. An aimless, endless compulsion toward escalation ultimately leads to problematic, even dysfunctional or pathological, relationships to the world on the part of both subjects and society as a whole. This dysfunction can be observed in the three great crises of the present day: the environmental crisis, the crisis of democracy, and the psychological crisis (as manifested, for example, in ever-growing rates of burnout).*

Hartmut Rosa, 2019

*We know we cannot continue to think the way we used to, and that we must take risks to create thoughts that are useful, or at least not noxious, for those to come.*

Isabelle Stengers, 2019

## Acknowledgement

As a sociologist concerned with problems of unsustainability and related socio-material mutations, I have reached a point in my work where investigating these problems feels insufficient. The limits and dysfunctions affecting many of the prevailing policies and projects for sustainable development have been well researched. Information on these limits is widespread, as is knowledge of the aggravation of climate change, of biodiversity loss, or of water scarcity, and of the human suffering attached to these phenomena. While more knowledge is useful, what seems to be urgently needed is to improve our collective ability to act accordingly, that is, to actually create and enact more effective responses to the troubling crises of modern development. Realizing this motivated me to seek opportunities to contribute more directly to actual transformative change, beyond scientific publications and teaching.

Dr. Thora Amend, to whom I conveyed this motivation, kindly introduced me to Andreas Gettkant, who was taking over the leadership of GIZ's projects in the field of Access & Benefit-Sharing (ABS) – a component of international biodiversity governance. Informed by decades of professional experience, Andreas Gettkant shared my concerns regarding the insufficient results of prevailing policies and projects for sustainable development. Interested in the ability of critical action research to create room for transformative change, he opened the door to a collaboration, thus offering the opportunity of intervention I was looking for. I am very grateful to Dr. Thora Amend and Andreas Gettkant for this opportunity, and for their commitment to making 'transformation' be more than a handy buzzword.

My gratitude also goes to the ABS team of GIZ. In particular, I would like to thank Tobias Dierks for his energetic support, his knowledge, his enthusiasm, and his trust. Without him, the study presented here and the collaborations developed around it so far would not have been possible. I am also thankful to the managers of GIZ's ABS projects (ABS Capacity Development Initiative; BioInnovation Africa; ABioSA) and to their teams in Germany,

Namibia, and South Africa, for the time, support, and valuable information they shared with me during interviews. Special thanks go to Inge Adelfang-Hodgson for inviting me to the 'story circle' of the pilot project on Community Engagement, and for the organization of a joint session at the African Biotrade Festival in Johannesburg in 2023. I am also grateful to the other GIZ members I met and interviewed for this study, including Daniel Kehrer and Klemens Riha, with whom I had fascinating exchanges, and including the members of GIZ's team in Namibia, who welcomed and supported me during field research.

While GIZ plays a central role in this study, many other actors connected to ABS have been key protagonists as well. Whether in ministries, in the private sector, among civil society organizations, or within communities, most people I interviewed shared more than factual answers to my many questions. They welcomed me in their world, and shared their achievements, their concerns and frustrations, as well as their hope in the possibility of better responses to problems of injustice and unsustainability. I am grateful for the treasures of knowledge conveyed in these lively encounters, and hope they will prove useful to actually join hands and create the responses many of us are longing for.

I would also like to thank VolkswagenFoundation for granting me and other project partners (University of Namibia, University of the Western Cape, Helmholtz-Centre for Environmental Research, GIZ) the means to put the ideas and methodology presented in this report into practice. We look forward to sharing the results of this forthcoming experimental action research project in the near future.

Last but not least, I would like to thank my colleagues at University of Bonn for the insightful discussions we had around this project. Thank you in particular to Prof. Dr. Rudolf Stichweh for granting me the intellectual space to develop such work in an academic field – sociological theory – where close collaboration with 'practitioners' is not a self-evident practice.

## Executive Summary

Knowledge is a crucial resource for any project that seeks to foster tangible transformation in our crises-ridden world.

- Knowledge is required to *grasp the complex interrelationships between project realities at GIZ and the planetary disruptions underpinning the transformation agenda*. For instance, how do climate change and biodiversity loss, which are social as much as material phenomena, actually relate to a rural development project, to a particular value chain being developed, or to a project supporting the implementation of an international policy framework? What needs to be transformed at project level to restructure these interrelationships in a positive way?
- Knowledge also allows us to *reflect critically on prevailing conceptions of problems and solutions*. For example, while the knowledge conveyed in glossy reports might present specific projects as valuable contributions to sustainable development, more critical knowledge might recast these projects as contributions to a development model that, on a closer look, appears to be less equitable and sustainable than what is being claimed.
- Besides, knowledge allows us to *expand the realm of the thinkable and the doable*. By transforming knowledge, it is possible to shift the boundaries of this realm, that is, to provide space for the creation of possibilities that exceed established habits of thought and practice.

The present report is a contribution to GIZ's knowledge resources on socio-ecological transformation. While the report recognizes and values the plurality of approaches existing under the current transformation agenda, it argues in favour of a specific approach to transformation: *a collaborative, experimental, and process-oriented approach that seeks to better tune our dynamic social conditions of existence to our dynamic material conditions of existence. This is opposed to the unrealistic modern attempt to emancipate from and control these ecological conditions from the outside in the name of development.*

Our argument and methodological propositions use Access & Benefit-Sharing as an empirical case. But their validity and practical relevance extend beyond this specific area of environmental governance and international cooperation. The approach to transformation we outline in the following pages can be put to practice in any action context where prevailing development frameworks fail to care for, restore and sustain the socio-material web of relations we collectively inhabit.

While semantics of transformation are being used widely in environmental governance and international cooperation, the meaning of this term is all but clear. After an introductory chapter, **chapter two** offers some clarification, which can help decision-makers reflect on their own position and take a stance.

- **Why transformation:** References to transformation gain salience in response to a major problem. Modern development promises an open-ended improvement of life chances for an increasing number of human beings. However, its destructive material side-effects (e.g., climate change, biodiversity loss) have reached such proportion that they undermine the very habitability of the Earth – jeopardizing human life chances for generations to come. This mutation disrupts our very conception of the world. While we thought we live in a world that advances towards ever-more production, income, mobility, longevity, knowledge, technological control, etc., we experience a world being increasingly destabilized by adverse material conditions and unsettling future perspectives. *The more the promises of sustainable development are contradicted by the effects of persistent unsustainability, the more the transformation agenda gains traction.*
- **Metamorphosis:** The mutation of destructive socio-ecological side-effects into destructive *main* effects, often associated with the concept of Anthropocene, leads us into a particular moment in human history: we find ourselves in-between a modern world that is increasingly destabilized and the emergence of new actual or potential realities that we can influence, but not control. *Going through such episode of metamorphosis is troubling.* First, prevailing categories, such as 'nature' (as opposed to 'human society'), 'globalization' (as opposed to 'local' and 'national'), or 'development' (as opposed to 'traditional ways of life'), lose their self-evidence. Secondly, prevailing institutions (e.g., environmental governance frameworks) get increasingly overwhelmed by problems they cannot solve, and must deploy increasing efforts to hide their dysfunctional character from the general public. Thirdly, prevailing normative frameworks (e.g., human rights, liberalism) lose traction. Sensing new opportunities, some actors (politicians and policy experts, activists, entrepreneurs, scholars, educators, artists, clerics...) explore new categories, such as the 'Anthropocene', 're-design of nature', or 'ecocide'. They experiment with new institutional designs, such as the attribution of legal personhood to non-human material entities. And they adopt new normative coordinates, such as climate justice, or sobriety. Other actors rather stick to the prevailing world, and try to push back ideas and practices they experience as disturbing.

In these dynamics, new lines of cultural and political conflict emerge, new alliances are crafted, and those engaged in these destructive-creative dynamics of metamorphosis are themselves being transformed.

- **A typology:** Five ideal-typical reactions to the troubles of metamorphosis can be distinguished in society, including among actors of environmental governance and international cooperation. One is to deny any mutation and cling to the prevailing world(view) – a world in which no climate change nor any ecosystem collapse disturbs endless economic growth and the sovereignty of states over stable populations and territories (*#1: denialism*). A second reaction, which is maybe the most widespread, consists in recognizing the ongoing massive socio-material disruptions described by science, but in continuing business-as-usual nonetheless, as if this would be the most rational thing to do (*#2: cognitive dissonance*). The third type of reaction is panic and grief in the face of a catastrophe that science acknowledges, but that society seems unable to counter (*#3: catastrophism*). The fourth reaction seeks hope and relief in positive visions of futures where modern sciences and technologies, upgraded policy frameworks, and financial investments in a greening of capitalism will have solved problematic side-effects and finally delivered the promises of sustainable development (*#4: sustainability transition*). The fifth reaction considers such edenic visions to be unrealistic and misleading, and, while tackling the deeper roots of society's unsustainability, it works pragmatically in real-world contexts at the production of better alternatives (*#5: deep socio-ecological transformation*).

Building on these analytical foundations, **chapter three** shows *how the growing momentum of the transformation agenda can be used to set up propitious real-life contexts in which deep transformative work can be practiced*. Using the empirical case of ABS, the report emphasizes the need to do so in a way that cuts across institutional boundaries and intensifies collaboration between science and practice.

- **Transformation in international cooperation (GIZ):** The transformation agenda has become a salient feature of international cooperation, including in the organization of GIZ. Whether at the corporate communication level or within particular projects, paying lip service to this agenda is becoming a standard practice: evoking contributions to 'transformation' or 'just transition', whatever these buzzwords concretely mean, increases the value of one's organization or project. Stopping at such lip service would amount to cognitive dissonance. How-

ever, parts of GIZ also connect to the transformation agenda in more substantive ways. Working groups meet, events are organized, transformative project components are experimented, and knowledge is shared to find out what the transformation agenda can mean concretely for GIZ's work, and how GIZ can make meaningful contributions to this agenda. Given the central role of modernization and sustainable development at GIZ, the latter tends to adhere more easily to sustainability transition, which is more familiar and less disruptive. Yet, there are also elements at GIZ that connect to deep socio-ecological transformation, as well as individuals who are interested in exploring the potentials of this more critical-constructive approach.

- **Transformation in environmental governance frameworks (ABS):** The transformation agenda has also gained salience in global environmental governance. In the area of biodiversity governance, for instance, there is a broad consensus on the failure of past approaches to curb biodiversity loss, and on the related existential necessity to actually transform society's relations to biodiversity. Such transformation is defined in rather radical terms, for instance, as a matter of redefining what 'development' and 'good quality of life' means, as overcoming mass production and the related over-extraction of resources, or, as valorisation of Indigenous knowledge and associated wisdom. For this transformation agenda not to remain on paper, concrete initiatives are needed. Two factors make ABS a propitious context for such initiatives. First, ABS encompasses international biodiversity governance, the economic exploitation of biodiversity, scientific research on biodiversity, and Indigenous resource and knowledge holders. Secondly, ABS is a particularly dysfunctional component of biodiversity governance, and many actors involved openly agree that it is in need of transformative change.
- **Transformation in scientific research (transdisciplinary research):** As the institution tasked with providing reliable knowledge, science is often believed to examine reality from the outside, in rather objective terms. Yet, science is always directly involved in what it observes, and the knowledge it produces co-constructs reality. This applies to specialized areas, but also to modern society as a whole. For instance, science played a decisive role in the divide of reality between the realm of 'nature' and the realm of 'human society'. This epistemological divide is a foundation in the social organization of our modern world, and one of the root causes of its ecological unsustainability. To address the socio-ecological disruptions caused by this unsustainable modern world, society increasingly expects scientific actors to collaborate with non-scientific actors to find potent

solutions. When such transdisciplinary collaboration takes the form of techno-scientific solutionism, it tends to pursue or even to radicalize old schemata under the guise of a grand transition to sustainability. However, science also becomes more reflexive of its role in shaping how individual human beings and social systems relate to the material conditions of their existence (*e.g.*, as distinct from ‘nature’ or as part of it). Building on this reflexion, transdisciplinary collaboration can be used to emancipate us from modern beliefs that are outdated, not to say dangerous, and to transform society’s relation to the Earth it belongs to, including to the grand web of life we call biodiversity.

While the analyses presented before and their practical implications are of a general order, chapters four and five zoom in on the more specific field of ABS and the role of GIZ therein. For readers interested in ABS, these two chapters allow them to grasp in more details *how the trends analysed above play out in this particular field*. For readers interested more generally in transformation beyond ‘sustainable development’, the two chapters present ABS as a case from which they can learn relevant lessons, either by identifying similarities with their own action contexts, or by noticing differences that need to be examined and taken into account.

**Chapter four** shows how ABS is part of a historical project of global sustainable development that GIZ has actively contributed to, including by supporting the development and implementation of ABS.

- **ABS in the post-Cold War international order:** ABS originates from the transition in the late 1980s and early 1990s of the Cold War order into a new political-economic order oriented towards one global – mostly neoliberal – development project. While industrialized countries wanted postcolonial countries of the global South to conserve their biodiversity, for environmental reasons and to preserve useful and profitable genetic resources, global South countries wanted to benefit from such conservation efforts. A deal was subsequently negotiated and integrated into the UN Convention on Biological Diversity of 1992. To access genetic resources and Indigenous knowledge on the use value of such resources, users would need to fulfil two conditions: obtain a prior informed consent from the resource and knowledge providers, and give them a ‘fair and equitable’ share of the benefits derived from the use of these resources and knowledge. Such mechanism would not only prevent biopiracy, and ensure that economic development in industrialized countries also benefits developing countries. It would also incentivize biodiversity-rich countries to conserve their resources, so as to extract more benefits out of them. *ABS is therefore typical of ‘sustainable development’, which promises to harmonize People, Planet & Profit at a global level.*

- **GIZ’s role in the making of ABS:** After a decade in which industrialized countries effectively hampered or watered down the concretization of this bargain, a group of ‘Like-Minded Megadiverse Countries’ achieved to put the adoption of a legally-binding framework for ABS on the agenda of international biodiversity governance. GIZ got involved and, through its ABS Capacity Development Initiative, extended substantial support to African countries in the negotiation of the Nagoya Protocol. Afterwards, GIZ also supported countries to translate the Nagoya Protocol in their legal and administrative structures. It promoted ABS among relevant private sector companies, and supported the inclusion of Indigenous Peoples and local communities, for instance, through the formulation of Bio-Cultural Protocols. *Yet, the implementation of the Nagoya Protocol was stumbling upon mind-boggling political, legal, bureaucratic, and economic complications. Years were passing by, but ABS remained mostly an abstraction, with little benefits actually flowing to resource and knowledge holders.* In 2018 and 2019 respectively, the two projects ABS-compliant Biotrade in Southern Africa (ABioSA) and BioInnovation Africa (BIA) were added to GIZ’s portfolio, with the aim to spur the adoption of ABS in relevant biotrade value chains. In 2022, when our study was commissioned, members of these GIZ projects reported persistent difficulties in moving ABS forward.

With an empirical focus on Namibia, the **fifth chapter** analyses the limits and dysfunctions of ABS in more details. It shows that these limits and dysfunctions are not just a problem of implementation that can be solved through technical assistance. Rather, *the persistent gap between the promising paper reality of ABS and actual ground realities can be traced back, to a significant extent, to the modern institutions on which ABS is being built.* Like, arguably, many other components of the global project of sustainable development, ABS fails to deliver an equitable and sustainable kind of modernization. Notwithstanding omnipresent commitments to justice, solidarity, reciprocity, and sustainability, the reason might be that modernization relies on structures that, on a closer look, do not orient human behaviours according to these values. The chapter substantiates this analysis empirically with reference to the politics of ABS, the economics of ABS, the science of ABS, and the Indigenous and traditional knowledge of ABS.

How to tackle this structural problem underpinning the insufficient results of the ABS regime and of comparable policies and projects for sustainable development? The **sixth chapter** addresses this question from a methodological point of view. It starts by highlighting *three methodological coordinates to avoid the pitfalls of superficial sustainability transformation talk, and create room for deeper transformative change:*



- Coordinate #1: Engage participants fully, including emotionally, in collective transformative action, as opposed to cognitive dissonance based on an abstract understanding of the catastrophic stakes at play and a latent emotional closure that hinders behavioural change.
- Coordinate #2: Create space for critical thinking and collaborative action in the present, as opposed to ambitious transformative visions and goals which, under the pretence of motivational optimism, postpone challenging transformative action in abstract futures.
- Coordinate #3: Conduct transformative change as an emergent and experimental process, whose pathway and results do not follow the logic of planning, implementation & control, as opposed to the use of linear change models and blueprints that restrain creativity and solidify dominant positions and interests.

Under the guidance of these methodological coordinates, chapter six presents an action research method to induce deep transformative change in dysfunctional environmental governance contexts and related project contexts of international cooperation. The main features of this method are illustrated by a concrete project in the field of ABS.

- These features include a close collaboration of scientific and non-scientific participants within a *transdisciplinary Community of Practice* that is organized internally in three concentric circles and

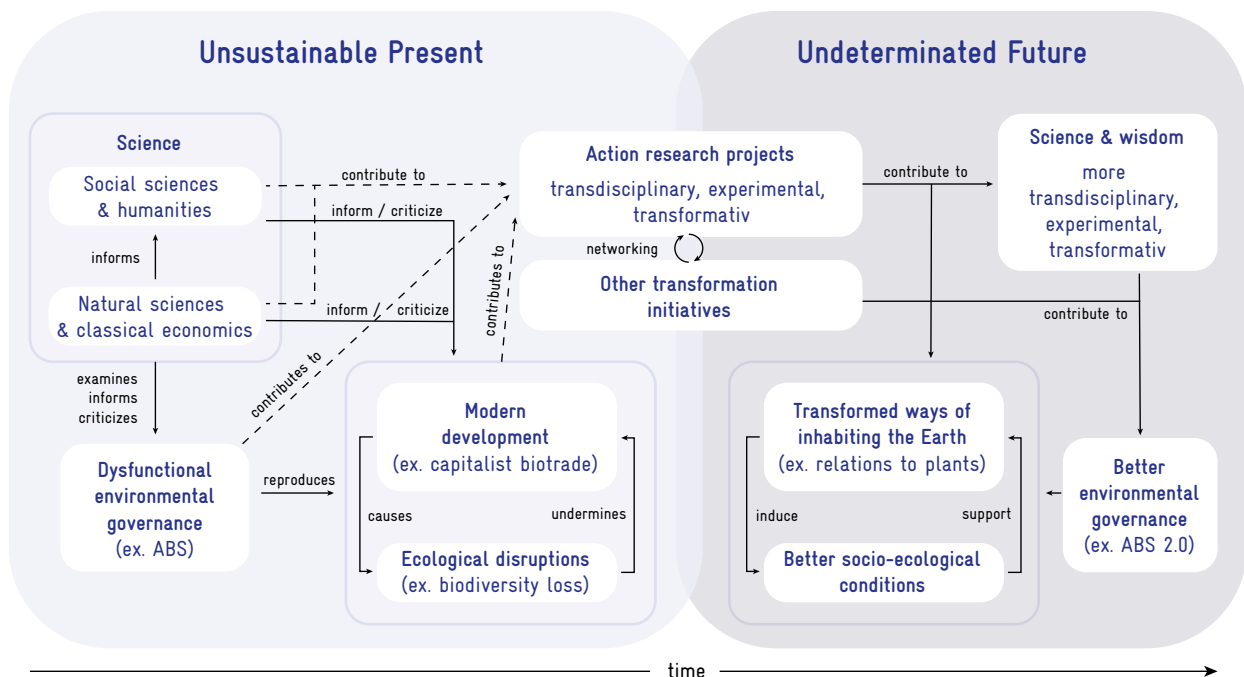
in thematic working groups. This collaboration brings together a diversity of knowledge and action capacity. In such setting, scientific participants intervene intentionally in real change processes, while also observing and analysing such processes systematically. Non-scientific participants do not only contribute practical knowledge and action power, but also intervene in scientific knowledge production.

- Action research is also characterized by a *spiralling change model* that comprises cycles of planning-action-evaluation: the first cycle establishes the scientific and operational foundations of the project; the second cycle builds the Community of Practice; the third cycle elaborates joint diagnostics that deepen the understanding of problems, and creates collective strategies for transformative change; the fourth cycle induces tangible transformation through experimental action; and the fifth cycle concludes the action research by taking corrective steps, by systematizing learning outcomes, and by disseminating results beyond the contexts within which the action research was conducted.

The chapter concludes with a reflection on the advantages and risks attached to this method for transformative change.

The following diagram shows how this approach to transformative change is situated within the wider context of a society facing the existential problems of its socio-material unsustainability (figure 1).

Figure 1: A Theory of Transformative Change



## Table of Contents

ACKNOWLEDGMENT .....	05
EXECUTIVE SUMMARY .....	06
LIST OF FIGURES AND TABLES.....	10
LIST OF ACRONYMS .....	11
CHAPTER I: INTRODUCTION .....	12
CHAPTER II: TRANSFORMATION IN A TROUBLED WORLD .....	16
CHAPTER III: DOING TRANSFORMATION IN REAL-LIFE CONTEXTS.....	24
CHAPTER IV: THE MAKING OF ACCESS & BENEFIT-SHARING .....	32
CHAPTER V: FROM "PAPER REALITY" TO THE DYSFUNCTIONAL "GROUND REALITIES" OF ABS.....	39
CHAPTER VI: DOING TRANSFORMATION THROUGH ACTION RESEARCH .....	53
CONCLUSION .....	62
BIBLIOGRAPHY.....	64

## List of Figures and Tables

FIGURE 1: A THEORY OF TRANSFORMATIVE CHANGE.....	09
FIGURE 2: ABS AS ASSEMBLAGE .....	14
TABLE 1: A TYPOLOGY OF RESPONSES TO THE TROUBLES OF METAMORPHOSIS.....	23
FIGURE 3: THE ABS REGIME IN ITS GLOBAL HISTORICAL CONTEXT .....	32

## List of Acronyms

ABioSA: ABS-compliant Biotrade in Southern Africa  
 ABS: Access & Benefit-Sharing  
 aTK: Associated Traditional Knowledge  
 BCP: Bio-Cultural Protocol  
 BIA: BioInnovation Africa  
 BMUV: Bundesministerium für Umwelt, Naturschutz, nukleare Sicherheit und Verbraucherschutz  
 BMZ: Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung  
 CBD: United Nations Convention on Biological Diversity  
 CBNRM: Community-Based Natural Resource Management  
 CRIA SA-DC: Centre for Research, Information, Action in Africa – Development & Consulting Namibia  
 CSIR: Council for Scientific and Industrial Research  
 CSR: Corporate Social Responsibility  
 DSI: Digital Sequence Information  
 GACP+: Good Agricultural and Collection Practices + ABS compliance  
 GBF: Kunming-Montréal Global Biodiversity Framework  
 GDP: Gross Domestic Product  
 GIZ: Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH  
 IBPC: Interim Bio-Propecting Committee  
 IIFB: International Indigenous Forum on Biodiversity  
 IPBES: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services  
 IPCC: Intergovernmental Panel on Climate Change  
 IPLCs: Indigenous Peoples and local communities  
 IRDNC: Integrated Rural Development and Nature Conservation  
 ITK: Indigenous and traditional knowledge  
 MAT: Mutually Agreed Terms  
 MEFT: Namibian Ministry for Environment, Forestry and Tourism  
 NANCi: Namibia Network of the Cosmetic Industry  
 NGO: Non-Governmental Organization  
 PIC: Prior Informed Consent  
 SDGs: Sustainable Development Goals  
 SECO: Swiss State Secretariat for Economic Affairs  
 UNFCCC: United Nations Framework Convention on Climate Change  
 WTO: World Trade Organization

# Chapter I: Introduction

## Purpose

As a component of the UN Convention on Biological Diversity (CBD) of 1992, Access and Benefit-Sharing (ABS) is a biodiversity governance mechanism meant to foster fair and equitable as well as ecologically sustainable transactions around genetic resources. To counter postcolonial practices of biopiracy, the ABS regime recognizes the sovereignty of states over the genetic resources located on their respective territory, and it asserts the rights of Indigenous Peoples and local communities (IPLCs) over their traditional knowledge of these resources.

Codified as a legally-binding regime in the Nagoya Protocol of 2010, ABS requires that organizations interested in the use of genetic resources and associated Traditional Knowledge (aTK) fulfil two conditions before they can access and use these resources. They must *i.* obtain a prior informed consent from the resource and knowledge holders (states; IPLCs), and *ii.* conclude a fair and equitable benefit-sharing agreement with these resource and knowledge holders, for them to receive monetary and/or non-monetary benefits arising from the use of their resource and knowledge. As users are mostly located in industrial countries of the global North, while genetic resources and aTK are rather located in countries of the global South, this ABS regime is expected to spur equitable development in the global South, while incentivizing beneficiaries to protect and conserve the resources out of which benefits flow.

As this succinct depiction already suggests, the ABS regime is marked by the optimistic *Zeitgeist* of the late 1980s and early 1990s: a historical moment where the end of the Cold War was opening the way for a global human development project based *inter alia* on liberal democracy, multilateral governance frameworks, a globalized market economy, up-beat techno-scientific innovation, and synergistic relations between ‘People’, ‘Planet’ and ‘Profit’. In fact, ABS is an integral part of this global development project, with advanced industrial nations supposed to spearhead sustainable human progress through scientific – including biological – research and the commercial exploitation of natural – including genetic – resources, and benefit-sharing supposed to help developing countries catch up.

About three decades later, the ABS regime seems unable to fulfil this role. Despite considerable efforts, its deployment is mired in intricate political dynamics, legal uncertainties, high transaction costs, and a predominance of commercial interests over concerns for eq-

uity and sustainability. This problematic state of the ABS regime reflects in many respects the evolution of the broader project of sustainable development. With rising authoritarianism and conflict-prone nationalism, growing socio-economic inequalities, and ecological disruptions that jeopardize livelihoods and damage the habitability of the Earth, objectives and processes geared towards sustainable human development are increasingly overridden by multiple crises, instability, and unsettling future perspectives. To some extent, these discrepancies between the global development project and actual socio-ecological realities challenge the credibility of this project and of related institutions – including environmental governance frameworks and developmental institutions. In this perspective, the deficiencies plaguing the ABS regime are symptomatic of a more general problem: the increasing exhaustion of the prevailing sustainable development project, which seems unable to curb the destructive side-effects of a rather unequal and unsustainable kind of modernization.

As both experts and the general public increasingly recognize this problem, the idea that transformative change is urgently needed is gaining traction. After making it to the title of the Sustainable Development Goals of the Agenda 2030, semantics of ‘socio-ecological transformation’ and ‘sustainability transition’ have spread in most areas of environmental governance and international development cooperation. For instance, building on the ground-breaking assessment report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES),<sup>1</sup> and being aware that the objectives of the international Strategic Plan for Biodiversity 2011-2020 had been missed, the 196 Parties of the CBD agreed in the Global Biodiversity Framework of 2022 to “catalyze, enable and galvanize urgent and transformative action by Governments, and subnational and local authorities, with the involvement of all of society, to halt and reverse biodiversity loss [...]”

Whether such institutionalization of the transformation agenda will induce a real, tangible shift towards more equitable and sustainable realities, or rather pursue the dysfunctional cycle of ambitious objectives and problematic outcomes, partly depends on our own choices and behaviours.

The core purpose of the present report is to shed light on the stakes at play in this indeterminate situation, and to strengthen our collective ability to act wisely at this critical juncture.

<sup>1</sup> IPBES (2019).

Specifically, with GIZ as main addressee, the report

- i. provides analytical perspectives that can help GIZ debunk risks of shallow ‘transformation talk’ and contribute more effectively to tangible transformative change; and
- ii. uses an action research project in the particular field of ABS to demonstrate the advantages and risks of this experimental and collaborative method for socio-ecological transformation.

We invite readers of this report who, in one way or another, are themselves involved in ABS, to be mindful of the purpose spelled out above when reading the following pages. Fostering actual transformative changes is always a risky enterprise. To be able to identify what needs to be transformed, and why, it requires critical thinking and empirical descriptions that can be inconvenient to some. Specifically, while constructive critic is a necessary condition for transformative change, it is likely to unsettle habits, to hurt established interests, and to shed light on asymmetrical power relations that contradict dominant values, like equity. Moreover, critical thinking is likely to challenge the narratives of institutions that are often tempted to embellish reality, not out of bad will, but because this is a rational thing to do to secure resources such as legitimacy and funding on the short run.

One might sense, or even know, that the present *status quo* offers no satisfying perspectives, and that change within prevailing cultural and institutional frameworks is insufficient, as the frameworks themselves are root causes of the problem. Yet, is it worth it to put immediate advantages at risk for unpredictable future outcomes? While transformative change might appear necessary on the longer run to foster collective well-being, it might appear overly risky, or even irrational, when considered on the basis of short-term individual cost/benefit calculations. As a result, while critical thinking is meant to open up opportunities for meaningful transformative changes, it can also provoke closure.

To prevent such closure, *we invite readers to pause now and reflect on how this dilemma might affect their further reading.*

For our part, we wish to emphasize that the analyses outlined in this report should not be misunderstood as being judgmental in any way. The more-than-human world we inhabit and share as individual human beings is the outcome of historical and contemporary processes that we do not control, and most of us try to do their best within the social and material conditions in which she/he has been

thrown.<sup>2</sup> Yet, wherever we stand, as scholars, project managers, entrepreneurs, community members, or public servants, to quote but a few possible social positions, we are directly concerned with the conditions of the world we inhabit, and we always have choices.

## Empirical scope

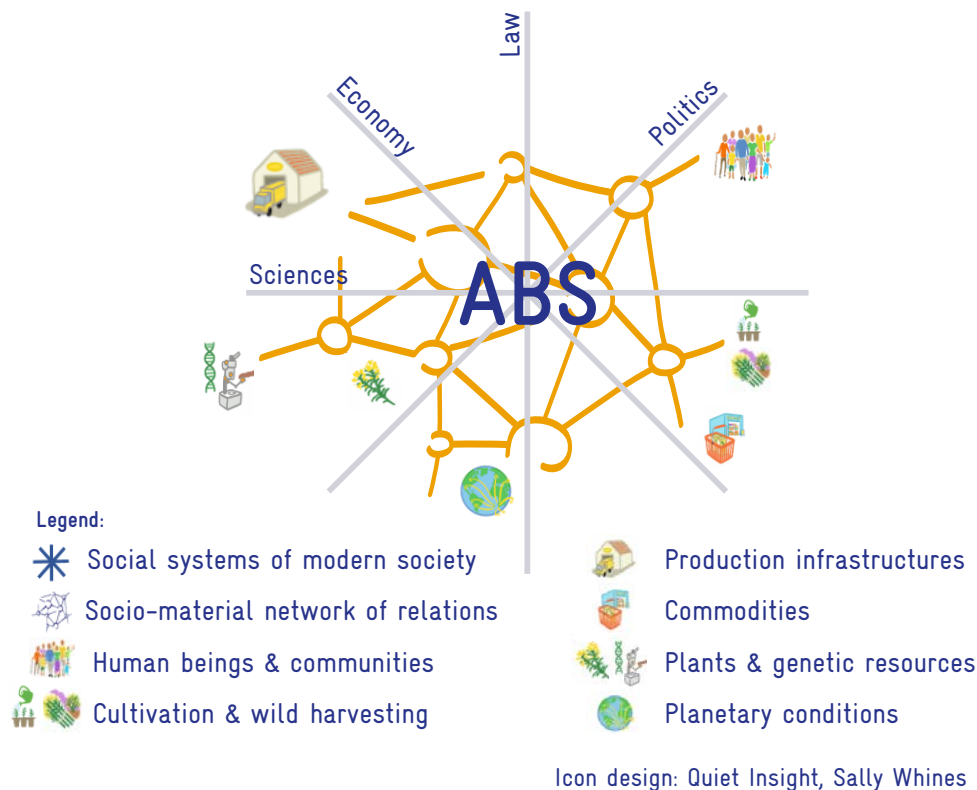
As a tool for transformative change, action research is based on transdisciplinary collaboration between scholars of various disciplines and non-scientific actors of a particular field, such as ABS. Such transdisciplinary collaboration involves not only the co-creation of transformative change options, but also the co-creation of diagnostics. Hence, the present report does not follow the usual sequence in which scientific experts produce a diagnostic and formulate recommendations that practitioners are expected to implement. Rather, the analysis of the ABS regime outlined in this report is a point of departure for a collective action research ‘journey’, during which the definition of problems and of desirable responses will be crafted in an iterative learning process. In other words, our exploratory study offers a map that readers can use to decide whether they want to embark on such a journey and venture further in the uncharted territories of transformative change.

To elaborate this map, the concept of ‘assemblage’ is useful. Coming from actor-network theory, it allows to identify an entity – here the ABS regime – on the basis of the many interrelated social and material components that exist in and act through this assemblage.<sup>3</sup> Concretely, the ABS regime assembles a variety of *human beings*, *organizations* (e.g., state bureaucracies, international organizations, GIZ, companies and business associations, laboratories and gene banks, NGOs), large *social systems* with which most of these organizations are associated (e.g., politics, the economy, science, law), *human communities* that are based on a variety of commonalities (e.g., ethnic groups, village communities, communities of practice), techno-scientific and industrial *infrastructures*, *non-human organisms* (plants, animals, fungi, microorganisms) and the eco-systems to which they belong, natural or synthetic *bio-chemical materials*, as well as planetary conditions such as climate change, which also intervene in this multidimensional assemblage (see figure 2).

<sup>2</sup> The formulation – being thrown into being-in-the-world – is borrowed from Martin Heidegger (1996 [1927]).

<sup>3</sup> See Latour (2005; 2013).

Figure 2: ABS as Assemblage



Once a map of the socio-material reality to be transformed has been sketched, it becomes possible to diagnose its constitutive relations and effects. How does the ABS assemblage function in reality? How does it seem to effectively change specific components and their interrelations, such as certain bioprospecting practices and their interrelations with biodiversity politics, community welfare, infrastructures, and plants? Are these changes in line with the functions the ABS regime is supposed to fulfil – to foster socially just and ecologically sustainable relations in bioprospecting and biotrade?

As the action research on ABS will be situated at the intersection between environmental governance and international development cooperation, with GIZ acting as a main non-scientific partner, our study used ABS-related projects of GIZ as an entry point to explore and map relevant parts of the ABS assemblage. These projects are

- *BioInnovation Africa* (BIA), which was started in 2019 to develop ABS-compliant value chains involving African and European businesses.

Of the 24 interviews conducted for this study, 11 interviews were conducted with members of the GIZ teams working in these projects, and two were conducted with other European ABS actors. Data collected through these interviews was complemented by documentary sources such as brochures, written project outputs (e.g. toolkits), internal project documents and evaluation reports, as well as website contents.

To grasp how ABS and GIZ's related projects actually work in African contexts, a ten-day qualitative field research was carried out in Namibia in March 2023. At this occasion, 11 interviews were carried out with a variety of actors involved in ABS, and the negotiation of an ABS agreement between an exporter of devil's claw and suppliers from the San community was documented through participant observation. Each national context being specific, findings based on the Namibian case cannot be generalized without minding national variations. Moreover, the short duration of the field visit in Namibia only allowed to gather a limited amount of data. Such

data is enough for an exploratory study, but it does not allow comprehensive descriptions. Available literature, as well as data collected in interviews that were not specific to Namibia, broaden the empirical scope of our analysis and allow, to some extent at least, to differentiate between variables that are specific to Namibia and variables that are likely to be more widespread.

As to the choice of conducting field research in Namibia, rather than in another African country, it was informed by the following considerations:

- i. Namibia's government has been particularly active in the field of ABS since the late 1990s. As opposed to countries in which ABS has less political salience, the Namibian case would hence be likely to provide rich empirical information on the geopolitics of ABS in the global South.
- ii. Namibia adopted a national ABS law in 2017, and related regulations came into force in November 2022. As the actors concerned by these regulations were in the process of implementing this new ABS framework when we planned the study, it seemed a propitious moment to document changes induced by the implementation of the ABS regime in a national context.
- iii. As the three ABS projects of GIZ are officially active in Namibia, the possibility to collect information on these three projects within a single case study was a further argument.<sup>4</sup>
- iv. Finally, postcolonial relations are an important dimension of ABS, as well as of environmental governance and international cooperation more generally. As Germany and Namibia share a common colonial history, studying GIZ's ABS projects in Namibia seemed a good research strategy to grasp this dimension.

## Outline

The central argument underpinning the agenda of socio-ecological transformation is clear: Considering the failure of past efforts to achieve sustainable development, and the aggravation of ecological disasters, safeguarding human well-being on Earth requires transformative change. However, the terms and practical implications of this argument generally remain vague and ambiguous. Is transformation a matter of the means employed to pursue sustainable development objectives? Or is the sustainable development paradigm itself part of the *status quo* that needs to be transformed? In a context where socio-ecological conditions are mutating at a planetary scale, is deliberate transformation about counteracting these mutations to stabilize our current social, political and economic order (keyword: resilience)? Or is transformation about overcoming this particular

order, which seems to be structurally unsustainable? Chapter II unpacks and clarifies these questions. In order to provide orientation in the ambiguous meaning contexts of the transformation agenda, the chapter distinguishes five typical responses to the current troubles of our metamorphosing world: denial, cognitive dissonance, catastrophism, sustainability transition, and deep socio-ecological transformation.

Building on this typology, chapter III examines the relevance of the transformation agenda for the three main components of the action research: GIZ, the ABS regime, and transdisciplinary research. The chapter shows how GIZ has increasingly acknowledged the strategic and operational relevance of the transformation agenda and, as part of this dynamic, has produced a number of resources (*e.g.*, guiding reports, tools, events) to help its employees integrate this agenda into their respective action contexts. Projects involved in global environmental governance have been particularly exposed to this trend. Yet, the integration of the transformation agenda at project level remains work-in-progress. This is also the case for GIZ's ABS projects. While transformation has shifted from the margins to the centre of international biodiversity governance, GIZ's ABS projects are yet to fully grasp the potential of this shift. With social sciences looking for ways to contribute effectively to socio-ecological transformation, conducting an action research to foster transformative change in ABS can serve these three dynamics at once: strengthening GIZ's organizational 'transform-abilities', allowing GIZ to make a potentially ground-breaking contribution to the transformation agenda in the field of biodiversity governance, and providing social sciences with a propitious 'real-life laboratory' to contribute new theoretical as well as methodological knowledge to transformation research.

Chapters IV and V assess the need for transformative change in the ABS regime in more details by examining the functions and dysfunctions of this particular governance mechanism. Chapter IV reconstructs the historical making of the ABS regime, including the prominent role of GIZ, and highlights the constitutive features of this regime. It shows how ABS was crafted as a component of a new global economic development paradigm, whose neoliberal premises are reflected in the institutional setup of ABS. While the general terms of this institutional setup were inscribed in international law by the Nagoya Protocol of 2010, the subsequent deployment of ABS has not worked out as expected. In 2022, when the present exploratory study was commissioned by GIZ, most – not to say all – actors concerned with ABS were clearly dissatisfied with this regime, whose premises and formal mechanisms seem at odds with ground realities. Using a systems-theoretical lens, chapter V analyses structural factors underpinning these discrepancies between the paper reality of ABS and ground realities. As we demonstrate empirically, ABS is expected to articulate biodiversity politics and law, the (bio)economy and knowledge of genetic resources in a way that produces socially equitable and ecologically sustainable *relations*

<sup>4</sup> In fact, while ABioSA covers the entire southern African region, its sub-projects are mostly located in South Africa, and it was not yet significantly active in Namibia at the time of our field work for this study.



## Chapter II: Transformation in a Troubled World

between the various human and non-human actors involved in this assemblage. However, modern politics, the modern economy, as well as modern epistemic frameworks are structurally inequitable and unsustainable. Inasmuch as ABS builds on these structures, it fails to deliver the kind of socio-material relations it is expected to bring about.

The dysfunctions plaguing the ABS regime are therefore not a problem of implementation, or of lack of awareness and ‘good will’. They are a structural problem that is symptomatic of a more widespread discrepancy between the global paradigm of sustainable development and actual socio-material realities. This structural problem is also what makes ABS particularly interesting for socio-ecological transformation. If political, economic and epistemic structures prevent ABS from delivering equity and sustainability, ABS can be used as a ‘real-life laboratory’ to challenge and possibly to contribute to transforming these structures. The international transformation agenda provides legitimacy to such an undertaking. And the frustration of actors concerned with ABS provides the motivation to seek ways out of the dysfunctional *status quo*. What is needed to seize this opportunity for transformation is an adequate method.

Chapter VI outlines such a method. Departing from approaches based on abstract visions and blueprints for sustainable futures, the action research method ‘stays with the trouble’ of the present contradictions and dysfunctions of ABS, and of the sustainable development paradigm it embodies. In order to tackle this trouble through deep transformative change, action research brings together a diverse array of scientific and non-scientific participants in a transdisciplinary Community of Practice. Within this particular setting, whose design favours the emergence of transformative ways of thinking and acting, participants can journey through a spiral of five cycles of planning-experimentation-evaluation. Potentials and risks associated to this experimental method are outlined at the end of chapter VI.

Over the past decade or so, ‘transformation’ has expanded rapidly as a new buzzword in the science & policy discourse of environmental governance and international cooperation – including at GIZ. However, what socio-ecological transformation actually means often remains unclear.

Instead of providing an abstract and technical definition, we propose to shed light on the *social and practical meanings* of transformation in the current global context. As we will show, the success of semantics of transformation is symptomatic of a troubled world society, whose institutions are grappling with a multidimensional crisis that, fundamentally, is a crisis of modernity. In this troubled context, semantics of transformation can have different meanings and effects. By mapping these meanings and their practical implications, this chapter will help readers reflect on their current position, and decide whether they want to reposition themselves *vis-à-vis* socio-ecological transformation, whether in action research contexts or beyond.

### Why ‘transformation’

As probably most of you reading this report, I am used to live in a reality characterized by modern life chances, such as basic civil, political and social rights, abundant supermarkets and shopping centres, comfortable housing connected to utility networks, inter-continental mobility, and access to the life-prolonging services of high-tech medical facilities. The availability of these life chances are defining features of *our* everyday experiences, of the institutional order in which we live, and of our symbolic universe that integrates pieces of knowledge in a more or less coherent conception of the world.<sup>5</sup> In other words, modern life chances are constitutive of how we expect reality to be (cognitive normality) and how we think reality should be (normative normality).

<sup>5</sup> As Peter Berger and Thomas Luckmann show in their classical work *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (1966), our conception of reality is not reducible to our subjective experiences. It comprises socially constructed knowledge that tells us what the world is made of and how it works. Each of us acquires this knowledge through socialization. This knowledge is ordered and legitimized by institutions, such as museums, school programs, scientific disciplines, laws, customs, or organizational procedures. Institutionalized knowledge itself is embedded in symbolic universes: artworks, school books, scientific publications, references to dos and don'ts, GIZ reports... flow into the incessant reproduction and modification of general conceptions of ‘the world’.



The unequal distribution of these life chances among the human population creates a problematic gap between the cognitive and the normative planes. While going to the supermarket once in a while to choose among a large supply of food seems perfectly normal to us, we know the hunger that affected about 821 million fellow human beings in 2021 is also real.<sup>6</sup> But we do not consider it to be normal in normative terms: hunger should be eradicated.

That our modern life chances are a privilege that has and will most likely continue to harm other human beings is even more troubling in normative terms. We know, for instance, that millions of people have been and continue to be forcefully dispossessed from land and access to natural resources, so as to make room for industrial forestry and agriculture, resource extraction and manufacturing, urban sprawl, or the construction of modern infrastructures. The discrepancy between those having a comparatively large ecological footprint, and those being particularly vulnerable to the woes of climate change and biodiversity loss, is a further case in point: not only the ‘goods’ of modern development are unequally distributed, but also the ‘bads’ – the harmful ‘side-effects’ of modern progress.<sup>7</sup> As these side-effects involve uncomfortable relations of injustice, it is tempting to downplay or repress their significance, for instance, by emphasizing the positive outcomes of modern development, by considering negative side-effects to be transitory costs of linear progress, or by giving credit to cosmetic ‘solutions’ that have little structural impacts.<sup>8</sup> Nonetheless, most of us will agree that this injustice shouldn’t be.

These discrepancies between cognitive and normative expectations, although they involve inequity or injustice, remain compatible with our dominant conceptions of reality. Narratives of human progress, a complex array of institutions put in place to improve the world (e.g., international agendas and agreements, public policies and laws, voluntary standards and codes of conduct), as well as the work of GIZ and countless other organizations, connote that modern life chances can remain the norm, and that further modernization efforts can progressively remove troubling deviations from this norm. This is what ‘development’ is all about: a linear and open-ended expansion of the benefits of modernity coupled with a progressive removal of its harmful side-effects. The ABS regime, which is in the

focus of this report, is an integral part of this conception of the world.

This conception of reality is troubled by scientific knowledge of the actual and potential socio-ecological side-effects of modernization.<sup>9</sup> In a few generations’ time, human activities have unleashed climatic changes whose non-anthropogenic equivalent goes back to several million years.<sup>10</sup> They have induced exponential biodiversity loss, arguably amounting to a sixth mass extinction of species, knowing that the previous mass extinction occurred about 65 million years ago and took about 2 million years to unfold.<sup>11</sup> The information is hard to swallow: the successful expansion of the modern world, to which most of us are strongly attached, has increasingly destabilized our material conditions of existence, and it undermines the very habitability of the Earth, jeopardizing human life chances for generations to come. Acknowledging this mutation of destructive side-effects into destructive main effects disrupts our very conception of the world, throwing us into a *terra incognita*.<sup>12</sup>

As environmental history shows, concerns over the ecological unsustainability of modern society go back to the beginnings of modernization in the late 18<sup>th</sup> century.<sup>13</sup> But, notwithstanding countless controversies and political struggles, until now, modern society has successfully prevented these concerns from obstructing its short-term reproduction and expansion.

At times, preserving the *status quo* has been carried out behind the scene, like in the cases of the oil industry and agribusiness companies, which have used insidious strategies to discredit and manipulate inconvenient scientific knowledge to protect short-term business interests.<sup>14</sup> On the frontstage, the *status quo* has been protected to a great extent by deploying the powerful narrative of sustainable development. With Corporate Social Responsibility, companies

9 Side-effects of modernization are ‘socio-ecological’ in the sense that their genesis and outcomes involve myriads of interactions between social variables (e.g., scientific knowledge production, policies, laws, monetary transactions, technological innovations) and material variables (e.g., genetic features of organisms, eco-systemic dynamics, the albedo effect of polar ice caps, the material repercussions of land-use changes and resource extraction, industrial catastrophes, etc.).

10 As a simple proxy to indicate the magnitude and brutality of current climatic changes, we refer here to knowledge that atmospheric CO<sub>2</sub> concentrations in 2019 were higher than at any time in at least 2 million years, and that the last time global surface temperature was sustained at or above 2.5°C higher than 1850–1900 was probably over 3 million years ago (IPCC, 2021).

11 Cowie et al. (2022).

12 Beck (2016).

13 Bonneuil and Fresco (2016).

14 Oreskes and Conway (2010); Bonneuil et al. (2021); Glenna and Bruce (2021).

6 [https://docs.wfp.org/api/documents/WFP-0000140990/download?\\_ga=2.91771162.1433009250.1682667718-480925484.1682667717](https://docs.wfp.org/api/documents/WFP-0000140990/download?_ga=2.91771162.1433009250.1682667718-480925484.1682667717)

7 Beck (1992).

8 Lessenich (2016); Brand and Wissen (2017).

have asserted that their profit-oriented economic activities can be ecologically sound and socially just, making industrial capitalism appear to be an engine of sustainable human well-being.<sup>15</sup> Similarly, national states and sub/supranational public bodies have devised a variety of policies and governance mechanisms for sustainable development, with which they push modernization forward while claiming they can master and even reverse its harmful side-effects.<sup>16</sup> The Convention on Biological Diversity of 1992, and the mix of incentives and regulatory constraints put in place within its ambit, are no exception: with them, states have claimed they can craft a world in which human populations can live modern lives ‘in harmony with nature’ (e.g., Strategic Plan for Biodiversity 2011–2020; Vision 2050 of the Kunming-Montreal Global Biodiversity Framework). Within the heterogeneous landscapes of science, especially in natural sciences and economics, research groups and institutions have also widely contributed to the social construction of the sustainable development paradigm, attracting substantial funding for research projects that promise innovative solutions to achieve sustainable development goals.

So, why ‘transformation’? Because, these promises of sustainable development have failed to a significant extent to materialize so far. Since the paradigm of sustainable development was established as a global frame of reference with the Brundtland Report *Our Common Future*<sup>17</sup> and the United Nations Conference on Environment and Development in Rio in 1992, valuable and important contributions have been made. Without them, contemporary planetary conditions would probably be even worse. Yet, as a closer look reveals, the main achievement of the sustainable development paradigm has been to uphold the legitimacy of our unsustainable modern social (economic, political, epistemic...) order for a little longer.<sup>18</sup> Meanwhile, according to reliable scientific knowledge on greenhouse gas emissions, biodiversity loss, biogeochemical circulation of azote and phosphor, land-use change, chemical pollution, depleting water resources, and the inequitable relations between beneficiaries and victims of the practices underpinning these material phenomena, the harmful side-effects of modern development have not receded. Behind the façade of sustainable development, they have rather gained in amplitude, intensity, and pace.<sup>19</sup>

The implication is clear: continuing on the same track, within the same paradigm, is likely to produce a world most of us do not want to live in. For those who want to invest purposeful efforts to preserve the habitability of the Earth and hence desirable life chances for current and future generations, the alternative is to try to create different possibilities: to overcome the reproduction of the *status*

*quo* and foster the emergence of different – hopefully more life-prone – realities.

## The lure, pitfalls and opportunities of the transformation agenda

Raising the topic of ‘socio-ecological transformation’ as opposed to the reproduction of a *status quo* can be misleading. Indeed, it could be misunderstood as a choice between conducting transformative change from A to B or maintaining stable conditions (A). Such a simple choice does not exist. Not only is the maintenance of a stable *status quo* illusory – the world is already mutating, whether we want it or not. But, what qualifies as transformative change, and what is it that is transforming or should be transformed, are not settled questions. To proceed without confusion, it is thus necessary to unpack and clarify the semantic tangle of socio-ecological transformation.

As pointed out above, while privileged social groups might still experience a relative stability of their current living conditions, overall, the conditions of existence of most human beings are neither static, nor stable. For instance, the multiplication of extreme weather events (droughts, floods, hurricanes...), the exhaustion of groundwater tables, or the loss of forests, destabilize human conditions of existence through death, forced migration, food insecurity, financial losses, and heightened risks of conflicts. Besides, ecological disruptions induce changes by being observed, commented, and interpreted in public discourse. Images of the loss of rainforest in the Amazonas, calculations indicating that about 70% of wildlife populations have disappeared in the past five decades, or assessments of the devastating effects of the floods that hit Pakistan in 2022, might for instance fuel political polarization and spur conditions of eco-anxiety.<sup>20</sup> To this, one should add the destabilizing effects of scientific and popular scenarios that anticipate a future amplification, intensification, and acceleration of ecological disruptions. While such scenarios are a matter of probabilities and imagination, they exist and act into the present by transforming our horizon: it is not the same to inhabit a world that advances towards the bright promises of modern development, and to contemplate a threatening future that comes towards us at an accelerating pace.

Considering these trends, the current *status quo* is already undergoing significant social and material transformations. More specifically, following Ulrich Beck, the contemporary world is in a state of ‘metamorphosis’.<sup>21</sup> Unlike social change *within* the frameworks of a given social and political order, such as variations in unemployment

15 Rajak (2011); Marchildon (2016); Krichewsky (2019).

16 Duit et al. (2016); Carter (2018).

17 World Commission on Environment and Development (1987).

18 Blühdorn (2020).

19 See for instance IPBES (2019); IPCC (2021; 2022); United Nations (2019); WHO (2016); UNCCD (2022); Schandl et al. (2018).

20 On the extent of the latter effect, see for instance the study of Hickman et al. (2021), which surveyed the population aged between 16 and 25 years in 10 countries. It found that almost two-third of the respondents were considering the future as being frightening, and that about 45% were suffering from eco-anxiety.

21 Beck (2016).

rates, the reform of school programmes, or the construction of a new highway, metamorphosis describes a transformation of the social and political order itself. As a specific kind of change, metamorphosis should not be confused with a revolution: it is neither guided by an ideological programme, nor is it instigated from a political centre, and it does not amount to a short and brutal episode of change. Metamorphosis is also not to be confused with future-oriented projects of sustainability transition: it does not obey problem-solving visions and plans. Rather, metamorphosis occurs through gradual, decentralized and non-linear processes of transformative change. In episodes of metamorphosis,

- i. dominant cultural premises, such as the belief in limitless modern progress, are unsettled by the assertion of new categories and worldviews (e.g., tipping points, ecocide, Mother Earth);
- ii. problem-solving institutions, such as international biodiversity governance frameworks, grapple with the dysfunctional character of their *modus operandi*; and
- iii. prevailing normative coordinates, such as state sovereignty, or GDP growth, become less self-evident and reliable, while new competing coordinates and values gain salience.

A society in a state of metamorphosis is thus torn in-between an old world that is still dominant but increasingly destabilized, and the emergence of a new world that is not yet there. Under such conditions, powerful mechanisms of social reproduction intermingle with the more or less scattered emergence of new realities – different modes of “being in the world, seeing the world and doing politics.”<sup>22</sup> Metamorphosis is hence as much about resistance to change as it is about transformation. Both have productive and destructive effects: resistance to change maintains productive but increasingly destabilized systems, and hampers the emergence of alternative possibilities, while transformation overcomes prevailing realities while producing new ones.

Concretely, modern political culture and institutions continue to require and incentivise political actors to behave in a way that maintains the power of modernizing states. Materialistic values and status symbols, coupled with market institutions and corporate governance structures, continue to reward behaviours oriented towards short-term monetary gains, and to sanction behaviours that deviate from the reproduction of the capitalist market economy. Similarly, notwithstanding the hip of transdisciplinary research, researchers operate in scientific institutions that continue to be dominated by the self-referential logics of disciplines.

Yet, like other social and political orders in the past, the prevailing modern order is not immune to transformative changes. When the destructive *side-effects* of modernization become destructive *main effects*, contradictions become increasingly unmanageable within

the established cultural and institutional frameworks. The functionality and legitimacy of these frameworks begin to crack, first in particularly sensitive or fragile places, then in parts that used to be considered more resilient. Confronted with new problems and sensing new opportunities, some actors (politicians and policy experts, activists, entrepreneurs, scholars, educators, artists, clerics...) get interested in the exploration of new ideas and practices which extend *beyond* the reproduction of cultural and institutional orthodoxies. Other actors rather stick to the prevailing order, or actively defend it, trying to contain and push back heterodox ideas and practices<sup>23</sup> that they perceive as deviant and dangerous. In the process, new lines of cultural and political conflict emerge, new alliances are crafted, and those engaged in these destructive-creative dynamics of metamorphosis are themselves being transformed. But, no single organization, institution, or movement is in a position to control these transformative processes of metamorphosis and their outcomes. As a specific kind of change, metamorphosis is mostly unintentional and beyond control. Moreover, and this is a crucial point, “it would be [...] misguided to equate the metamorphosis of the world with a change for the better.”<sup>24</sup>

Considered in this light, the tangle of socio-ecological transformation can be disentangled by distinguishing *five different kinds of response to the troubles of the episode of metamorphosis we currently experience*. The following paragraphs provide a cursory typology of these responses.<sup>25</sup> The purpose here is neither to provide sociological explanations, nor is it to praise or condemn any of these responses on whatever moral or political ground. The purpose is more practical: to highlight the pitfalls and potentials these various responses entail for action research directed towards transformative socio-ecological change.

*Denial:* One response to the troubles of metamorphosis consists in negating their existence. Particularly strong among right-wing populist movements, denial is often part of reactionary politics that assert the primacy of national sovereignty and industrial economic growth, while explicitly refusing to consider ongoing ecological disruptions as relevant parameters of policy making. As the typical cases of the former US Presidents Donald Trump and his Brazilian counterpart Jair Bolsonaro show, ecological concerns are, in fact, a key parameter of these politics of denialism. While denial does not

<sup>23</sup> Ideas and practices situated outside the doxa – the dominant conceptions and norms that most consider to be self-evident.

<sup>24</sup> *Ibid.*, p. 19.

<sup>25</sup> While not being identical to it, our typology is inspired by Bruno Latour’s diagnostic of the different ways in which ecology in the ‘new climatic regime’ is driving people mad – in the sense of “an alteration of the relation to the world” (Latour, 2017: 10ff.). Latour’s diagnostic comprises four afflictions: the quietists who preach moderation, downplay the gravity of the situation, and are “crazy by the dint of staying calm”; the geo-engineers who dream to solve the impasse of modernity by taking full control of Earth Systems (“Let’s be even more resolutely modern!”); those depressed and prostrated by the shock of the ecological catastrophe; and the “craziest of all” who believe it is not too late to save the world by rational means “while respecting the frameworks of existing institutions”, and who must endure bipolar cycles of hope and despair.

<sup>22</sup> *Ibid.*, p. 6.

address ecological concerns in a problem-solving manner, it addresses the fears and the longing for stability that these concerns trigger among parts of the population.<sup>26</sup> Paradoxically, while doing so, politics of denialism can indirectly spur transformative changes. For instance, relaxing environmental regulations bolsters the destructive side-effects of economic activities, thereby galvanizing related cultural and political conflicts that fuel processes of metamorphosis.<sup>27</sup>

*Cognitive dissonance:* Theorized by the social psychologist Leon Festinger, cognitive dissonance describes an uncomfortable condition where a significant piece of knowledge contradicts prevailing cognitive frames and behaviours that are nonetheless maintained.<sup>28</sup> As Bruno Latour argues, scientific knowledge of the ecological mutations of the Earth in the Anthropocene produces such a cognitive dissonance.<sup>29</sup> By showing that humans are entangled *in* material dynamics of an Earth they extensively contribute to shape, this knowledge contradicts the usual conception of Nature as an ‘environment’ that is external to humans and that mechanically obeys stable natural laws. Moreover, by highlighting the vulnerability of humans in the face of uncontrollable and destructive planetary changes, scientific knowledge contradicts the modern positioning of humans as being ‘above’ a nature they can control and exploit at will. How to handle scientific knowledge that is reliable, but that cannot be reconciled with our modern conception of reality, with its promises of autonomy (from nature) and control (of nature)? Unlike denialists, who try to erase an inconvenient truth, those caught in-between trust in science and the inability to fully take it into account find strategies to cope with cognitive dissonance. They acknowledge ecological disruptions. But they put this knowledge aside when it is inconvenient, redirect the responsibility to act on others, simulate behavioural change with superficial or symbolic measures, justify inaction by arguing that technologies will fix the problem more effectively and at a lower cost in the future, *etc.*

On the short run, these strategies of coping with the troubles of metamorphosis can seem rational. They are relatively cheap, simple, and conform to prevailing cultural and institutional norms. Yet, this rationality is fragile, as it side-lines contradictions and related problems rather than to face them. Doing *as if* business could be continued as usual is risky, as it makes behaviours become increasingly out of tune and out of touch with mutating socio-ecological conditions. The stronger the dissonance becomes, the more difficult it is to cope with it. As instances of confrontation with the intensifying mutations of the Earth multiply, cognitive dissonance becomes untenable. At this point, opportunities arise for transformative learning and change – “a slow, gradual fusion of cognitive, emotion-

al, and aesthetic virtues” that makes us “more sensitive and more reactive to the fragile envelopes that we inhabit.”<sup>30</sup>

*Catastrophism:* Unlike denial and cognitive dissonance, catastrophism fully acknowledges the mutation of the destructive socio-ecological side-effects of modernization into main effects. With semantics of emergency and collapse, it sounds the alarm concerning the gradual loss and damage of the world as we knew it. However, because of this focus on destructive side-effects, catastrophism tends to overlook the more generative dimensions of metamorphosis. In the words of Ulrich Beck, it is “incapable of distinguishing between decay and becoming something different.”<sup>31</sup> Yet, this does not mean catastrophism necessarily hinders constructive, transformative action. Unlike previous religious or secular narratives of apocalypse, environmental catastrophism generally announces a catastrophe in order to mobilize efforts to prevent it from occurring.<sup>32</sup> The discourse of protest movements such as Fridays for Future, Extinction Rebellion, or *Letzte Generation*, is a case in point: decision-makers and the larger public are asked to acknowledge the catastrophe, so as to be ready to take the radical measures required to counter it and save future life chances.<sup>33</sup>

While the actual effects of this strategy are hard to pin down, catastrophism is unlikely to be just counter-productive. It can strengthen the salience of environmental problems on the political agenda, broaden the scope of ecological narratives in public discourse beyond moderate positions, and lead institutions to pay lip service to a transformation agenda that, once institutionalized, can be used to push for more ambitious policies. Besides, while catastrophism points to a possible dead-end (collapse), it can open the way for transformative change by triggering a loss of faith in the *status quo* – an emancipatory moment of despair followed by the creative search for alternative frames of reference and coordinates of action.<sup>34</sup> As Anna Friberg argues, “[rather] than inducing passivity, the postapocalyptic discourse can be empowering and contains a utopian function. However, this kind of utopia is not a blueprint for a better society but provides instead a new place from where we can look at things in a new light; it frees us so that we can think and act in new ways. Giving up hope can thus be a way to gain new hope.”<sup>35</sup>

*Sustainability transition:* This umbrella term covers an expanding constellation of visions, pathways, resilience strategies, policies and initiatives that conceive of the current situation both as an existential threat and as an opportunity to create a better world: the troubles of metamorphosis are considered to be a chance to push modernization to another level. Notwithstanding their diversity, the

30 Latour (2017: 140).

31 Beck (2016: 16).

32 Keller (2013).

33 Sconfienza (2020); de Moor (2021).

34 Machado de Oliveira (2021), Wray (2022).

35 Friberg (2021: 60).

26 Lockwood (2018).

27 See for instance Ofstehage et al. (2022).

28 Festinger (1957).

29 Latour (2017).

various components of this constellation share a few common characteristics.

First, the sustainability transition discourse makes extensive use of scientific figures and models to highlight the insufficiencies of previous measures adopted to achieve sustainable development. However, the basic premises of the sustainable development paradigm are not questioned. Nor is its explicit aim, which is more conservative than transformative: to sustain the possibilities for modernity to thrive, for instance, by making modernity more *resilient* to planetary changes.<sup>36</sup> Transformation is thereby limited to a problem/solution schemata that remains within the framework of modernization.<sup>37</sup>

Secondly, and accordingly, the sustainability transition discourse remains faithful to the problem-solving capacities of prevailing institutions. Science is expected to provide policy-makers and entrepreneurs with solid evidence, reliable risk assessments, and the knowledge required to develop innovative models (e.g., circular economy) and technological options. State institutions are expected to design more effective ‘evidence-based’ policies and governance mechanisms that should be conducive to sustainable behaviours in the population, as well as to technological innovation for sustainability. Industrial companies from relevant sectors, such as energy, automobile, construction, or agribusiness, are considered essential contributors to the sustainability transition. They are the ones who can and must operate the transition from fossil fuels to renewable energies, from thermal to electric cars, from resource-hungry to green and energy-efficient cities, from resource-intensive production to a ‘nature-positive’ bioeconomy, from unsustainable cattle farming to cellular meat, *etc.*

Thirdly, sustainability transition addresses the troubles of metamorphosis with a reassertion of the modern faith in progress. This comes to the fore in policy frameworks such as the European Green Deal, which sets out to “transform the EU into a modern, resource-efficient and competitive economy, ensuring no net emissions of greenhouse gases by 2050, economic growth decoupled from resource use, [and] no person and no place left behind.”<sup>38</sup> The Kunming-Montreal Global Biodiversity Frameworks from 2022 is another example. Acknowledging that “[the] biosphere, upon which humanity as a whole depends, is being altered to an unparalleled degree across all spatial scales” and that biodiversity “is declining faster than at any time in human history”, it claims that “nature can be conserved, restored and used sustainably while other global societal goals are simultaneously met through urgent and concerted efforts fostering transformative change.” In its most radical versions, the narrative of progress underpinning sustainability

transition welcomes the ecological catastrophe as a civilizational opportunity for humans (mostly Earth Systems scientists, geo-engineers, investors, industrial actors, and bureaucrats) to seize control of Spaceship Earth. Informed by Earth Systems sciences, these proponents of a positive Anthropocene ambition to repair, re-design and optimize our damaged material environment, to achieve the emancipation of humans from the limits and uncertainties of their terrestrial conditions of existence.<sup>39</sup>

*Deep socio-ecological transformation.* Taking quite an opposite path, a variety of actors such as scholars, activists, farmers, or artists, respond to the troubles of metamorphosis by emphasizing the terrestrial condition of human existence. Like proponents of sustainability transition, those involved in deep socio-ecological transformation rely on scientific figures and models to criticize prevailing measures of sustainable development. Yet, they have a more nuanced understanding of these figures and models. They do not consider them as objective, comprehensive and definitive evidence. Instead, they consider scientific ‘facts’ as useful and rather reliable knowledge *constructs*, whose social conditions of construction (involving cultural assumptions, normative preferences, power relations, etc.) must be taken into account. Moreover, the critique of sustainable development coming from advocates of deep transformation is more radical and less conservative. In their view, the prevailing sustainable development paradigm is based on untenable premises. For instance, the claim that heightened monetary valuation of natural resources almost automatically harmonizes ‘people, planet and profit’ by creating an incentive for conservation and sustainable use is considered theoretically and empirically false.

Unlike sustainability transformation, deep transformation considers the problem-solving capacities of prevailing institutions with a critical – less faithful, more discriminating – gaze. Modern science, state institutions, and industrial companies are neither idealized nor villainized *en bloc*.

The treasures of scientific knowledge, as well as the rather independent institutions in which such knowledge can be produced, are considered essential resources to understand and tackle the troubles of metamorphosis. But proponents of deep transformation also problematize contributions of modern science to ecological unsustainability. For instance, techno-scientific imaginaries of limitless progress, or the epistemological division of reality in two separate realms, the realm of human society and culture (the *subjects* of social sciences) and the realm of ‘nature’ (the *objects* of natural sciences), are considered roots of unsustainability.<sup>40</sup>

Similarly, the power of states to regulate behaviours through policies oriented towards collective goals is considered a precious resource

36 Hamilton et al. (2015); Chandler et al. (2020); Ferguson and Wollersheim (2020).

37 Rockström (2015); Nordhaus et al. (2015).

38 [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_19\\_6691](https://ec.europa.eu/commission/presscorner/detail/en/ip_19_6691) (consulted on 12 May 2021).

39 Hamilton (2013); Eckersley (2017).

40 Jasanoff and Kim (2015); Latour (2017).



to navigate the troubles of metamorphosis. But, basic structures of state institutions are considered to be part of the problem of unsustainability. For instance, the ambition of sovereign states to rule *over* territories, as opposed to *in* territories, anchors the separation between human subjects and natural objects in the political realm. Or, the structural dependence of states on economic growth impedes the adoption of policies that would respect ecological limits: territories are treated as pools of material resources nations should exploit *ad infinitum* to fuel the national economy, which is a major factor of power for states who compete with one another on a geopolitical plane.

In comparison to other societal spheres, industrial capitalism is considered by proponents of deep transformation with more scepticism. Notwithstanding the entrepreneurial dynamics and technological ingenuity of capitalism, its ability to take ecological concerns into account is considered to be strongly limited by the primacy of cost/benefit calculations oriented towards the maximization of monetary gains. Under capitalist conditions, owners of financial capital are expected to invest in businesses that promise the highest returns on investment for the lowest risk of financial loss. Producers are expected to use pricing and marketing in a way that pushes potential customers to buy their products, so as to ensure commercial success under conditions of market competition. And participants from the demand side are expected to seek the highest possible incomes to be able to buy more commodities, invest more, and increase savings that banks use to invest in productive activities. The mass production and consumption that results from this economic order is hardly compatible with ecological sustainability. While industrial capitalism can take business-relevant aspects of ecological side-effects into account, other ecological damages are 'externalized', with capital owners being able to invest somewhere else when the income opportunities attached to a given place have been exhausted or ruined.

As the worldviews and institutions underpinning modern society are found to be root causes of socio-ecological unsustainability, deep transformation sets out to create alternative possibilities that might lead to a more desirable future. Such transformation requires collective action that brings more equitable and sustainable worldviews, institutional arrangements, and practices into existence. Perpetuating an old but marginal tradition, some people turn their back to standard modern life forms and join eco-villages, associations for community-supported agriculture, and other such alternative communities. But deep transformation is not circumscribed to these margins. It also involves people working in prevailing institutions and organizations, who use their position to foster transformative change from within. This is the case of scholars who argue for and practice a transformation of scientific epistemologies.<sup>41</sup> In

environmental politics, deep transformation is fostered, for instance, through the greater inclusion of Indigenous Peoples within biodiversity governance,<sup>42</sup> or, with the experimentation of new formats based on "more relational modes of knowing, being and acting" in international climate negotiations.<sup>43</sup> In the economy, various initiatives exist that experiment with de-growth, agro-ecology and ecologically intensive agriculture, and other alternative economic models.<sup>44</sup>

These different types of response to the troubles of metamorphosis are not neatly separated from one another in empirical reality, which is always more mixed up and ambiguous than abstract typologies. More importantly, the trajectories of individuals, communities, organizations and institutions can move across different types of responses. For instance, an organization can linger in the uncomfortable contradictions of cognitive dissonance, react to a shock by catastrophism or denial, before it opens up to the prospects of transformative change. Or, an organization can be lured by the promises of sustainability transition, adopt the agenda of socio-ecological transformation in this context, and discover the potentials of deep transformation later on. Whether for individuals, groups, communities, organizations, or institutions, metamorphosis is "a process of reformation and counter-reformation – non-linear and open-ended."<sup>45</sup>

Metamorphosis is also a political process, in the broad sense of the term. It confronts every one of us with the question of the kind of world we wish to contribute to. As there is a multiplicity of worlds that are considered possible and desirable, addressing this question necessarily requires to come to terms with latent or open conflicts between actors who have diverging views and preferences. This political dimension, which implies struggles for influence and power, is intrinsic to any process of socio-ecological transformation, within and beyond the political institutions of states.

41 Kimmerer (2013); Haraway (2016); Stengers (2018); Despret (2021); de la Cadena and Blaser (2018).

42 Löfmarck and Lidskog (2017); FPP et al. (2020).

43 Wamsler et al. (2020: 227)

44 Burkhart et al. (2016); Titttonell et al. (2020); Speth and Courrier (2021); Schwarz et al. (2022).

45 Beck (2016: 118).

Table 1: A Typology of Responses to the Troubles of Metamorphosis

	Denialism	Dissonance	Catastrophism	Transition	Transformation
<i>Current planetary conditions are...</i>	... considered normal.	... an irritating source of concerns.	... ravaged by two-and-a-half centuries of environmental destruction.	... dangerously unstable and in need of upgraded techno-scientific interventions.	... extensively damaged and in need of care and restoration.
<i>The dualist worldview separating 'humans' and 'nature'...</i>	... is a self-evident truth.	... is valid, but troubled.	... is turning upside-down: 'nature' strikes back, dominating and destroying human life chances.	... must be cleansed from romantic ideas of wilderness, so nature is finally recognized as a manipulable object, and humans can finally become fully autonomous thanks to the deployment of advanced technologies.	... is considered misleading, and should be abandoned for alternative conceptions, in which humans are part of a 'more-than-human' Earth that can be neither objectively apprehended, nor controlled, but which can be experienced, explored, and taken into account.
<i>Scientific knowledge of ecological disruptions...</i>	... is a fable used by elites to control people's lives.	... is undeniable but difficult to handle.	... is terrifying but true, and should be listened to.	... is providing 'evidence' that we need fast-paced environmental modernization.	... is an essential resource when used wisely, in combination with Indigenous knowledge.
<i>The prevailing sustainable development paradigm and related governance frameworks...</i>	... are a burden to be dismantled.	... are good work-in-progress.	... are fully insufficient and should be complemented with more constraining measures.	... should be upgraded and optimized for effective problem-solving.	... are ill-conceived and partly counter-productive, should be revised in depth based on new premises.
<i>The economy...</i>	... should keep running and growing based on business-as-usual.	... should be managed with further efforts to achieve sustainable development goals.	... should be incriminated and regulated whenever it jeopardizes future life chances (e.g., oil and coal industries; palm oil plantations).	... should embrace a new industrial revolution based on nano-technologies, biotechnologies, bio-informatics, the 'blue economy', etc.	... should be re-imagined and re-organized around convivial modes of production and consumption, which build on ecological interdependencies and foster inter-species cooperation.
<i>The future entails...</i>	... a familiar world of sovereign nation states and economic growth, established once and for all.	... a familiar world that will need increasing efforts to be maintained in stable conditions.	... a likely socio-ecological collapse of modern civilization, which must be avoided at all costs (but how?).	... either a catastrophe that will throw us back into dreadful conditions (irrational pathway), or a modernization boost that will allow humans to finally control their conditions of existence (rational pathway).	... a climate-altered world that will probably be radically different, more or less propitious or adverse to human life, and whose features we can try to influence by enacting transformative changes in the present.

## Chapter III: Doing Transformation in Real-Life Contexts

The troubles of metamorphosis outlined above, and the different types of responses with which concerned actors and institutions try to address these troubles, are widespread, not to say global. However, what is ‘global’ is not floating above ‘local’ realities. Only descriptions of ‘global realities’ (e.g. through texts, maps, diagrams, or statistics) can be ‘global’ in terms of their informational scope. But even these descriptions are produced and used by particular actors in particular places.

This also applies to responses that fall within the ‘global’ agenda of socio-ecological transformation: these responses always involve particular actors, who act in particular places, moments, and meaning contexts. In this chapter, we will show how socio-ecological transformation is currently gaining salience in three interrelated contexts, which are the contexts in which the present study is nested: at GIZ, in the ABS regime, and in social scientific research. As we will argue, the intersection of these three contexts is currently a propitious place to bring actors together to address the troubles of metamorphosis by *doing* deep transformative work through action research.

### Transformation at GIZ

The metamorphosis of the modern world outlined in chapter II confronts GIZ with a sensitive problem. Highlighting this problem, and examining how GIZ has responded to it so far, will allow us to show how action research could help GIZ strengthen its ‘response-ability’ in the particular situation international cooperation is going through.

Since the creation of the German Development Services in 1963 and the *Gesellschaft für Technische Zusammenarbeit* in 1975, German international development cooperation has gone through many changes, adapting its political mission, its knowledge base, its organizational structures, and its project-level operations to shifting contexts. In particular, the shift of the 1980s and 1990s from a state-centred and infrastructure-intensive conception of economic development to more neoliberal political-economic doctrines ushered a new era. Transnational markets and value chains, as well as public-private partnerships, became standard components of supply-side economic development strategies donors promoted across the globe, whether under the Washington Consensus or under the milder Post-Washington-Consensus.<sup>46</sup> Based on a liberal conception of development

as individual capabilities, the Human Development Index was established as a new metric to evaluate, rank and influence countries.<sup>47</sup> In parallel, as environmental parameters were rapidly gaining salience, international cooperation agencies became major proponents of sustainable development and key architects of environmental policies in the global South.<sup>48</sup>

Notwithstanding their depth and effects, the aforementioned shifts remained within the conception of a world geared towards open-ended modern progress. The very *raison d’être* of international development cooperation remained to help developing and emerging countries catch up and become like advanced industrial nations, which in this act of solidarity asserted their position as models to be followed – as the future to be desired. Several decades later, the situation is changing. Planetary ecological disruptions, increasing socio-economic inequalities, persistent relations of postcolonial domination and resource extraction, rising authoritarianism, as well as war-prone geopolitical conditions, challenge the very credibility of the global development project. Is the development model promoted at a global scale as equitable, democratic, and sustainable as the Sustainable Development Goals (SDGs) pretend? Is the discrepancy between global development objectives and the actual evolutions of socio-material reality reducible to a problem of implementation? Or does the present situation challenge the very terms of the prevailing paradigm of ‘sustainable development’?

These questions are of direct strategic and practical relevance to GIZ. In the past few years, GIZ has started to address them under the umbrella of the ‘socio-ecological transformation’ agenda.

To start with, semantics of transformation are gaining salience in the self-description of GIZ. For instance, the presentation of GIZ’s *Integrated Company Report of 2021* on GIZ’s website starts with a prominent quote from Joachim Flasbarth, Chair of the GIZ Supervisory Board and State Secretary at the Federal Ministry of Economic Cooperation and Development (BMZ – *Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung*): “The just transition is the single most important challenge of this century.”<sup>49</sup> Con-

<sup>47</sup> Sen (1999).

<sup>48</sup> Wade (1997); Goldman (2005); Hicks et al. (2008); Hironaka (2014).

<sup>49</sup> <https://reporting.giz.de/2021/> (last consulted on 24 May 2023). In the report itself, the complete passage reads “Equally, the single most important challenge of the 21st century – the environmental and social transition to a climate-neutral and sustainable way of life and way of doing business (also known as the ‘just transition’) – will only be possible if it is coupled with the pledge to forge ahead with development for billions of people.” GIZ (2021: 3).

<sup>46</sup> Stiglitz (2002).



sidering that “[the] world is becoming ever more complex, and future prospects look increasingly unsettled”, with “[the] climate crisis, fragile contexts, rising poverty”, GIZ explicitly anchors its “strategic direction” in core values that include “human rights, the rule of law, gender equality and the commitment to a socio-ecological economic system”, to “help create a future worth living”.<sup>50</sup> Semantics of socio-ecological transformation have also gained currency in more operational contexts, as a GIZ employee explained to us. Taking the example of a meeting organized between Germany and Namibia to discuss future prospects of bilateral cooperation, he recalled how participants from GIZ would promote their projects as being particularly transformative, in a context of competition for attention and funding between different donors, projects, and areas of work (e.g., climate vs. biodiversity).

Some employees at GIZ perceive this type of use of transformation negatively. Using transformation as a buzzword would create a façade that is often inconsistent with actual practices. It would favour the idea that transformation is about “ticking boxes”, as one GIZ employee put it, as opposed to fostering tangible transformative change. However, socio-ecological transformation at GIZ is more than just PR and ticking boxes. Reacting to the emergence of socio-ecological transformation as an international agenda, GIZ initiated an internal discussion in 2018 to find out what this agenda could mean in strategic and operational terms:

“UNFCCC and the IPCC were putting transformation on the climate agenda, using formula such as ‘We need a paradigm shift’, ‘We must decarbonize our economy, and this requires a massive transformation’, and so on. The Agenda 2030 had already introduced transformation in the discussion. [...] But what does transformation exactly mean? For us, this question was the trigger: What does transformation mean to GIZ? How should GIZ position itself?” (a GIZ employee, 15 August 2022)\*<sup>51</sup>

What started with a concept note on this question rapidly gained momentum. In 2019, GIZ decided to focus its annual symposium on Just Transition. Soon after, it published a guiding report on *Transforming our work: getting ready for transformational projects*, followed by another report on *Transformative project design* that was commissioned by the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV

– Bundesministerium für Umwelt, Naturschutz, nukleare Sicherheit und Verbraucherschutz).<sup>52</sup> In 2021, a series of Dialogues on *How to Unleash Transformation in Economic Development Cooperation* continued the discussion with participants from other institutions. And, in September 2023, another edition of its symposium was organized as a Future Forum on *Building capacities for transforma(c)tion NOW – Agriculture & food, resources & circularity, energy & mobility*.

In an organization counting almost 25,000 employees working in about 120 countries, the weight of this dynamic should not be overestimated. Moreover, as we could observe at the Future Forum of 2023, most GIZ employees who were present equated ‘transformation’ or ‘transition’ with ‘change for sustainable development’, without distinguishing between change within prevailing frameworks and actual *transformative* change. However, the dynamic itself is clear: an expanding network of GIZ employees, mostly with close ties to the upper echelons of the hierarchy and significant connections in other organizations and institutions, are building up skills and pushing the institutionalization of the socio-ecological transformation agenda forward.

The tenor underlying this dynamic is ambitious:

“the 2030 Agenda and the climate change agenda call for no less than ‘transforming our world’. Transformational change leads to something fundamentally different from the previous. You may think of the caterpillar who grows in size (more of the same) and may change its colour and number of legs (reform) but finally transforms into a butterfly. In this context transformation refers to large scale goals like carbon neutral societies and economies for the common good. Within GIZ, facilitating change for sustainable development is our profession. For a number of development goals, we have the necessary knowledge and well-developed tools from years of experience. However, if we aim at stimulating transformational change on societal levels, we need to think and act outside established structures.”<sup>53</sup>

What kind of transformation will GIZ undergo in its ways of thinking and acting? Which kind of transformative changes will it contribute to in a world troubled by the destructive-creative processes of metamorphosis? At the present moment, these questions are purposefully kept open. The GIZ guidelines recognize socio-ecolog-

<sup>50</sup> GIZ (2021: i and 8).

<sup>51</sup> Interview excerpts marked with a \* have been translated into English by the author.

<sup>52</sup> GIZ (2020b; 2020a).

<sup>53</sup> GIZ (2020b: 6).

ical transformation to be a field of creative experimentation and learning, in which different approaches to transformation and different visions of desirable futures are elaborated. In view of this dynamic diversity, the guidelines recommend a reflexive, pluralistic, and adaptive approach that allows the emergence of *new* approaches and visions, as opposed to defining one approach and vision as the right one and excluding the others.<sup>54</sup>

Within this open field, modernist conceptions of ‘sustainability transition’ seem to hold a dominant position at GIZ for now. The warnings of Earth Systems Science about tipping points and planetary boundaries in the Anthropocene are put forward to justify an urgent and necessary transformation.<sup>55</sup> Transformation itself is associated primarily to ‘transitions’ such as a transition to ‘clean’ and ‘renewable’ energy sources, pollution-free modes of circular production (e.g., cradle to cradle), ‘smart’ and ‘sustainable’ cities, and the like. These transitions put technological problem-solving centre-stage, while treating cultural, socio-economic and political relations as important but dependent variables. To be able to support socio-technical transitions to a better modernity, GIZ is called to transform its methods: from rigid procedures to organizational agility and responsiveness, from predetermined sets of objectives to result-open experimentation, from a focus on quantitative performance indicators to a sensitivity for the quality of change processes.

This upbeat narrative of transition fits an organization dedicated to the implementation of sustainable development objectives. It resonates with a belief in progress that is nurtured by intellectual sources such as Mariana Mazzucato’s book *Mission Economy*, which one GIZ employee described as playing quite a significant role in current discussions in GIZ’s upper management circles. However, GIZ also gives some room to approaches that are more critical, and closer to deep socio-ecological transformation. Like a GIZ employee explained:

“There are technical justifications for why projects should not be prescriptive from the onset, like complexity. But, maybe more importantly, there are justifications that point to local ownership, that take it seriously and argue that we should stop having a colonial approach. Such discussions take place. For instance, in the end of 2021, a conference took place on structural change and exit from fossil fuels. A participant from India said he found the way projects are being conducted in this area to be not very democratic. I hear such statements more and more. Another example is an even on de-growth. Ashish Kothari was there, and he openly said ‘If we in India take over your development model, then we are all lost!’” (a GIZ employee, 15 August 2022)\*

54 “We will need to construct, deconstruct and reconstruct our understanding of transformation over and over again with diverse actors. For us, it will be more important to assist others in finding their own definition and pathway than imposing our own.” GIZ (2020b: 14).

55 GIZ (2020b: 11).

A pilot project currently conducted within ABioSA on the engagement of rural communities in the development of biotrade value chains provides another example. In this pilot project, transformation is understood as an emancipation from the usual coordinates of socio-economic development, such as the domination of scientific expertise over local traditional knowledge, or an extractive relation to ‘natural resources’:

“Transformation... I think it is important to ask what does it mean to me, as a person, what does it mean to us, as an organization or collective, and what does it mean in the greater societal context. Transformation also involves wisdom. Symbolic systems, ancestral culture and wisdom, indigenous worldviews, lineages with land. Not asking just what value do we recognize in the plant. But also how the plant does recognize us, the people? Can we translate this in a value chain?” (a GIZ employee, 11 August 2022)

As other parts of the interview indicated, this conception of transformation also departs from a focus on technologies. Change is considered transformative with regard to its emancipatory and empowering effects in socio-material contexts marked by gender inequalities, post-colonial domination, and economic injustice. Technological development is not excluded from these socio-material relations, but it is treated as one dimension among others, as opposed to being considered the primary lever of transformative change.

To be able to foster emancipatory and empowering transformative change, the pilot project also considers GIZ to be in need of renewed methods. But, in some respects, the methods deemed necessary are different from those envisioned in the sustainability transition discourse. For instance, rather than trying to keep up with fast-paced modernization, the project seeks to slow down processes of learning and change, so as to allow participants to build trust and to collectively explore the many layers involved in the engagement of a community in biotrade – including issues of collective identity and representation, gender relations, and (post)colonial traumata affecting relations of community members to ‘external’ political and economic actors.

These two distinct conceptions of socio-ecological transformation – sustainability transition and deep transformation – must not only come to terms with one another within GIZ. They must also assert themselves in an organization where, as elsewhere, cognitive dissonance regarding the troubles of metamorphosis and their implications for GIZ projects is widespread. As the following example shows, this assertion of the transformation agenda vis-à-vis business-as-usual is pursued pro-actively:

“Many colleagues still have this neoliberal economic thinking. They understand green economy as growth, as a source of profitable innovations, and they believe that monetary gains trickle down. The organization of events on de-growth is also directed against such col-

leagues. Some of them accept it. But other turn the argument around and say ‘He [Ashish Kothari] is just a local activist and an idealist’, or ‘He is naive’. When paradigms are being questioned, it triggers such reactions.” (a GIZ employee, 15 August 2022)\*

A practical lesson for initiatives and projects directed towards transformative change is that they need to be mindful of the various visions, preferences and approaches currently at play at GIZ and in its relevant contexts of intervention. As we will explicate in the last part of the report, action research methods are particularly suitable to foster transformative change in such contentious environments. They provide a relatively safe space, in which competing conceptions of problems and of desirable transformative changes can interact and learn from one another, not based on a confrontation of abstract visions, preferences and approaches, but in relation to concrete stakes, such as transformation in the field of Access & Benefit-Sharing under the Nagoya Protocol of 2010.

## ABS: a propitious ‘real-life laboratory’ for transformative learning and change

It is not by chance that several members of the team of GIZ’s projects on Access & Benefit-Sharing (ABS Capacity Development Initiative; AbioSA; BIA) show a marked interest for the topic of socio-ecological transformation. Indeed, GIZ projects dealing with environmental issues are particularly exposed to the troubles of metamorphosis outlined above, including with regard to the limits and dysfunctions of environmental governance. In the field of biodiversity, there is a broad consensus that the CBD adopted in 1992 in Rio has not achieved its three goals – the conservation of biodiversity, its sustainable use, and the ‘fair and equitable’ sharing of benefits arising from access and use of genetic resources and aTK. As the three ABS projects of GIZ are meant to support the implementation of this third objective of the CBD, they are directly affected by the question of whether the failures of the convention call for transformative change.

This is all the more so since 2019, when the publication the *Global Assessment Report on Biodiversity and Ecosystem Services* of IPBES bolstered the transformation agenda in the science & policy circles concerned with biodiversity governance.<sup>56</sup> In its executive summary, the report clearly presents the contemporary moment as a critical juncture. One path, described as the continuation of current trajectories of biodiversity loss, is expected to jeopardize the achievement of the SDGs, of climate policy objectives, as well as of other international goals in the coming decades. The other path, which implies “transformative changes across economic, social, political and technological factors”, would allow to achieve “[societal] goals, including those related to food, water, energy, health and the achievement

of human well-being for all, mitigating and adapting to climate change and conserving and sustainably using nature.”<sup>57</sup>

In the report’s fifth chapter, a comprehensive framework is presented to chart ‘pathways’ towards such a sustainable future. These include quite radical components, such as the mainstreaming of agroecology; change in consumption, lifestyles, and in underlying materialistic values; innovation and the re-design of value chains for a conservation-oriented use of biodiversity; protecting nature conservation measures from adverse industrial interest groups (e.g., agribusiness, mining, infrastructures); enhanced participation of local stakeholders, including IPLCs in the management of landscapes, waterscapes, and resource use; fair and equitable sharing of the benefits arising from the use of nature; as well as education, knowledge production and the maintenance of knowledge based on different knowledge systems, including sciences, as well as indigenous and local knowledge.

This landmark report, with its emphasis on transformative change, has been widely acknowledged, also at GIZ. So have subsequent science & policy discussions on transformation in biodiversity governance. For instance, the *Methodological assessment report on the diverse values and valuation of nature* comprises a dedicated chapter on the role of diverse values and valuation of nature in transformative change for sustainability. The key message reads as follows:

“Putting sustainability at the heart of decision-making can be supported by redefining ‘development’ and ‘good quality of life’, and recognizing the multiple ways in which people relate to each other and to nature. Societal goals will need to align more strongly with broad values like justice, stewardship, unity and responsibility, both towards other people and towards nature. This shift in the framing of decision-making can be supported by ensuring that a more balanced range of values are considered in political and economic decisions by: (i) reducing the dominance of those broad values that mostly relate to individualism and materialism, whilst mobilizing broad values that are consistent with living in harmony with nature; and (ii) reducing the dominance of specific values to remove the dominance of market-based instrumental values, whilst mobilizing relational, intrinsic and nonmarket instrumental values.

Balancing and mobilizing values can be facilitated by participatory processes for envisioning alternative futures that are inclusive of diverse worldviews, knowledge systems and values. Various pathways can contribute to achieving just and sustainable futures, including, but not limited to, the ‘green economy’, ‘degrowth’, ‘Earth stewardship’, ‘nature protection’ and other pathways arising from diverse worldviews and knowledge systems (e.g., living well and other philosophies of good living). All of these sustainability pathways are associated with certain sustainability-aligned values and

<sup>56</sup> IPBES (2019).

<sup>57</sup> Ibid., p. 16.

seek a more diverse valuation of nature as a foundation for reconciling social, economic and ecological dimensions. These and many other pathways from other worldviews and knowledge systems (e.g., living well in harmony with Mother Earth, among others) reflect different perspectives on how best to bring about values-based transformative change. However, all are founded on the need to rebalance the range of values shaping individual and collective decisions.”<sup>58</sup>

The stark rise of the transformation discourse in biodiversity governance also comes to the fore in the *Global Biodiversity Outlook* – a report published at regular intervals by the Secretariat of the CBD to provide policy makers with a scientific assessment of planetary conditions and trends regarding biodiversity. In the fourth edition, which was released in 2014, transition is never employed in the sense of a transition to sustainability, and ‘transformation’ or ‘transformative change’ is mentioned six times within 156 pages.<sup>59</sup> Six years later, the fifth edition comprises 257 mentions of ‘transition’ in the sense of a transition to sustainable futures, and ‘transformation’ or ‘transformative change’ appears 30 times within 211 pages.<sup>60</sup>

Beyond this clear semantic trend, the complementary publication of *Local Biodiversity Outlooks* for these two editions is, as such, a significant transformation (FPP et al., 2016; FPP et al., 2020).<sup>61</sup> These complements have been introduced on the initiative of the International Indigenous Forum on Biodiversity (IIFB) to give a legitimate voice to indigenous conceptions and practices of biodiversity governance that colonialism and postcolonial relations of domination have marginalized, discarded, and sometimes violently silenced.<sup>62</sup> The status of the *Local Biodiversity Outlooks* as ‘complements’ reflects a subordination that still prevails in these political and epistemic relations. Yet, the discourse they carry strengthens the agenda of a deep socio-ecological transformation to which IP-LCs can contribute in significant ways: through relational worldviews that conceive of humans as an integral part of a lively and spirited world; through the diversity and richness of bio-cultural knowledge and ways of life; through values and norms that, unlike materialism and individualism, favour a careful and sustainable use of natural resources; and through their motivation to fight and transform an unjust social order that continues to imperil their livelihood and culture.

The fact that a leading GIZ employee from the ABS projects handed us a copy of the second *Local Biodiversity Outlooks*, suggesting it could be relevant to the exploratory study, is an anecdotal but tell-

ing evidence of how such discourse circulates and acts within parts of GIZ. The commissioning of a study on transformative approaches to biodiversity management in international cooperation, which the Helmholtz-Centre for Environmental Research carried out for GIZ under the title *Transformative change for a sustainable management of global commons – biodiversity, forests and the ocean. Recommendations for international cooperation based on a review of global assessment reports and project experience*, is another example illustrating the active engagement of biodiversity-related parts of GIZ with the swelling agenda of socio-ecological transformation.<sup>63</sup>

The *Kunming-Montréal Global Biodiversity Framework* (GBF) adopted in 2022 at the 15<sup>th</sup> UN Biodiversity Conference in Montréal shows how these discursive shifts are translated in institutional change. The link between science and policy is explicit. The framework “seeks to respond to the Global Assessment Report of Biodiversity and Ecosystem Services issued by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the fifth edition of the Global Biodiversity Outlook, and many other scientific documents that provide ample evidence that, despite ongoing efforts, biodiversity is deteriorating worldwide at rates unprecedented in human history.” In its response, the GBF anchors the agenda of socio-ecological transformation in a governance structure that is meant to orient biodiversity politics in the coming decades. The official purpose of the framework is clear: “to catalyse, enable and galvanize urgent and transformative action by Governments, and subnational and local authorities, with the involvement of all of society, to halt and reverse biodiversity loss, to achieve the outcomes it sets out in its Vision, Mission, Goals and Targets, and thereby contribute to the three objectives of the Convention on Biological Diversity and to those of its Protocols.”

Since ABS is part and parcel of the governance architecture put in place under the CBD, it is almost automatically exposed to the growing momentum of the socio-ecological transformation agenda. With transformative change being established as a new guiding star for biodiversity governance, ABS professionals, who have to keep up with relevant science & policy trends, must necessarily ask the question of what this means for the ABS regime. Moreover, many professionals working in the field of biodiversity governance express a personal wish to contribute meaningfully to the protection of nature through their work. Knowing the limits of prevailing biodiversity governance frameworks from the inside, so to say, some of them are keen in exploring ways to contribute more effectively to the transformation agenda.

A further factor in the relevance of the transformation agenda for ABS is the particularly strong discrepancy between the ambitions of this governance mechanism and its limited effects. The ABS assemblage connects material biodiversity, international biodiversity

58 IPBES (2022: XVIII).

59 SCBD (2014).

60 Meant to serve as a proxy indicator, this lexical analysis was carried out on Max-QDA. It covers the main text, including titles and tables, but excludes the table of contents and bibliographical references.

61 SCBD (2020).

62 de la Cadena (2010); Shah (2010); Muller et al. (2019).

63 Wittmer et al. (2021).



politics and governance, intellectual property rights, IPLCs and traditional knowledge, non-commercial scientific research, commercial research & development (in particular bioprospecting), transnational value chains (biotrade), technological changes (in particular the digitization of genetic sequence information)... and ambitions to organize this hyper-complex tangle of relations along criteria of fairness, equity, and sustainability.

However, more than three decades after the adoption of the CBD, the institutionalization and implementation of the ABS regime has proven to be tedious. Most actors involved are rather frustrated with the results. For users of genetic resources, ABS means mostly complicated access permit procedures and cumbersome benefit-sharing agreements. States from the global South are disappointed by the little tangible benefits ABS has generated so far. And IPLCs often consider ABS to be a further broken promise of recognition, participation, and rights. Regarding environmentally-minded actors, they tend to criticize the insufficient role of ecological sustainability in an ABS regime that puts the monetary valuation of nature forward. Given such frustration with the *status quo* of the ABS regime, actors are particularly interested in the idea that transformative change could change things for the better.

Against this backdrop, two questions preoccupy interested GIZ employees: How can the agenda of socio-ecological transformation be seized concretely to move ABS forward in a desirable way? And which practical lessons can GIZ derive from such an experiment to better foster socio-ecological transformation in its projects concerned with environmental governance and beyond? Transdisciplinary and experimental methods for transformative change offer relevant elements of answer to these questions.

## A transdisciplinary and experimental approach to transformative learning and change

By affecting society as a whole, metamorphosis also challenges and partly disrupts science, which is both a modern institution and a structured corpus of knowledge. Some reactions of the scientific system to these challenges can be harnessed in action research projects directed towards transformative change.

First of all, it is important to realize that scientific knowledge does not describe a given factual world objectively, from a neutral position.<sup>64</sup> Of course, scientific descriptions of reality are partly conditioned by given features of what is being described, such as genetic properties of organisms, or political institutions. But scientific descriptions are also extensively conditioned by contingent features of

science itself, such as theories and methods, technical instruments of observation, professional networks, or funding programmes. Interplays between scientific research and other societal spheres – e.g., politics, law, the economy, mass media, education, religion, art – also affect the knowledge produced by science. Moreover, the factual descriptions produced and disseminated by science have performative effects on reality. For instance, taxonomies and databases produced by biology have far-reaching effects on the way humans consider and interact with non-human species.<sup>65</sup> Economic theories contribute to shaping the organization of markets.<sup>66</sup> And scientific rankings based on ‘objective’ indicators create hierarchies that act on politics and governance.<sup>67</sup> In short, science and its contingent descriptions of reality *co-construct* social and material reality.

Recognizing this contingent and performative character of scientific knowledge is not only necessary to use scientific ‘evidence’ wisely, as opposed to a blind faith in scientific truth claims. It is also relevant to transformative learning and change. Indeed, while scientific knowledge provides useful knowledge for transformation, it also frames and hence limits what is considered to be real and possible. For instance, mechanical conceptions of animals and plants encourage humans to treat them as objects, and preclude more convivial conceptions and modes of interaction.<sup>68</sup> More generally, if transformative change means creating possibilities that exceed prevailing frameworks, it must therefore be able to question and possibly to overcome dominant epistemological frameworks.

One such epistemological framework plays a fundamental role in contemporary problems of unsustainability: the scientific division of reality in two separate realms, the realm of nature and the realm of human society and culture. This framework is so deeply engrained in our modern world that most of us consider it to be an obvious, immutable and unquestionable truth. Yet, since the divide between nature and humans is arguably a root of climate change, biodiversity loss, and other planetary threats on human life chances, it is all the more important to highlight its contingency, so as to make it transformable.<sup>69</sup>

Following Philippe Descola (2013a), the gradual extraction of humans from nature started in Greek antiquity and was completed by modern science. A first step in this long process was Aristoteles’ claim that beings have essential (‘natural’) features: human nature was hence intrinsic, that is, independent from the web of relations that produces human beings in the first place. The Christian theology of the Genesis made another step by positioning humans as outside and above the rest of God’s Creation. Art, especially the development of landscape painting in the 17<sup>th</sup> century, also played

<sup>65</sup> Bowker (2000).

<sup>66</sup> MacKenzie et al. (2007).

<sup>67</sup> Merry et al. (2015).

<sup>68</sup> Abram (1997); Kimmerer (2013); Despret (2021); Adloff (2022).

<sup>69</sup> See in particular Latour (2017).

<sup>64</sup> See for instance Luhmann (1991); Latour (1993); Jasanoff and Kim (2015).

a role by inventing a new perspective on space: the human observer looks at an exterior space which is infinite, continuous and homogeneous. Philosophers of the Enlightenment, who laid the foundations of modern science, were pivotal. René Descartes, in particular, radicalized the dualism by describing humans as superior thinking subjects who own and master a natural world made out of objects that operate mechanically, according to natural laws.

Natural sciences, such as physics, or biology, built on these premises and co-constructed nature as a material environment whose laws can be objectively known and exploited for human progress. In parallel, social sciences and humanities co-constructed human societies and culture as a distinct reality: populations of humans whose ways of thinking, acting, and organizing were ‘social facts’ having social causes.<sup>70</sup>

In this world, which was now more or less neatly divided in two separate realms, the differentiation between sociology and anthropology in the context of 19<sup>th</sup> and 20<sup>th</sup> century colonialism introduced yet another divide, this time within the realm of human societies and culture. On the one side, modern national societies that were conceived as segments of one world society, and on the other side, an exotic collection of ‘traditional’ or ‘indigenous’ communities that shared the same natural world, but which had different social structures and cultural traits. In the name of modernization, these communities were – and sometimes still are – expected to abandon their ‘outdated’ structures and culture, and to fully integrate modern civilization.

Science’s dualist conception of reality informs modern society as a whole. However, it does not mean that modern society has one single perspective on ‘nature’ and ‘society’. Other constitutive social systems of modern society, such as politics, law, the economy, mass media, education, healthcare, religion, or art, all refer to ‘nature’ in their own, particular terms (Luhmann, 1989). For politics, nature means primarily territories endowed with material resources that must be managed to build up state power in more or less adverse geopolitical contexts. It also means a policy field in which environmental problems must be tackled through collectively-binding decisions, with an eye on competition for the control of state power. For law, nature is primarily a matter of property and use rights, of compliance/non-compliance with environmental regulations, and in some rare cases, of personal rights attributed to non-human entities (e.g., animals, rivers, lakes). In the economy, nature appears in the form of monetary prices attached to natural resources, to compliance costs induced by environmental standards and regulations, to business opportunities in ‘green’ markets, as well as to environmental characteristics of commodities. Mass media are mostly sen-

sitive to the news value of ‘nature’, such as prominent scientific discoveries, environmental catastrophes (e.g., oil spills), or popular topics like the condemnation of whaling. Religion and art also relate to nature in their own – theological and aesthetic – terms.

In short, while modern society constructs nature as one separate realm, it relates to and addresses this realm in a plurality of ways that match the respective logics of its constitutive social systems. In less technical terms: what ‘nature’ means for policy-makers negotiating a biodiversity governance framework is distinct from what ‘nature’ means for companies doing biotrade, though both meanings fit within the dualist conception of reality established by modern science.

For conceptions and practices of socio-ecological transformation that seek a ‘sustainability transition’ through further modernization, the reflections outlined above might seem irrelevant. Indeed, sustainability transition operates within the epistemological framework that sets humans and nature apart. To some extent, it even radicalizes this divide by assuming that rational human subjects can govern, manage, and re-engineer the mechanical ‘Earth Systems’ called nature. However, this epistemological framework itself being a plausible root cause of ecological unsustainability, the ability of such approach to achieve ecological sustainability is questionable. To address this question with an open mind, it is crucial to reflect on how scientific paradigms co-construct and structure our world, including the present world(s) of ABS and of its various stakeholders. Moreover, in a planetary context where the mutation of ecological side-effects into main effects increasingly troubles and metamorphoses the divide between humans and nature, transformative learning and change can participate in and benefit from the emergence of alternative conceptions of reality.

Critical social theory provides valuable resources for this purpose – resources that are of immediate practical relevance for transformative action research. For instance, Bruno Latour’s theory of Gaia can help us overcome the nature/human divide by conceiving of reality, including the realities underpinning the ABS regime, as a material network of human and non-human beings who exist and behave *within and through* this highly dynamic more-than-human web of relations.<sup>71</sup> The provocative work of Donna Haraway, who invites us to ‘stay with the trouble’ of an increasingly dysfunctional present, and to address this trouble by practicing ‘tentacular thinking’, can also inspire and nurture transformative change processes.<sup>72</sup> So does the work of Anna L. Tsing, who describes how the fabric of scalable realities under assumptions of stability and growth – think of standards for biotrade value chains – hinder transformative change in a world that is highly heterogeneous, precarious, and open to produc-

<sup>70</sup> The social physics of Auguste Comte, the statistical science of Adolphe Quetelet, and the rules of the sociological method formulated by Emile Durkheim, are key contributions to the epistemological extraction of human society from the rest of the Earth.

<sup>71</sup> Latour (2017; 2018a); Latour and Schultz (2022).

<sup>72</sup> Haraway (2016).

tive but unscalable encounters.<sup>73</sup> Current scientific discussions on the pluriverse, which debunk postcolonial universalism and show that worlds are possible beyond the narrow world of modernization, are a further relevant stream of research for organizations such as GIZ, which recognize the need to think and act outside established structures.<sup>74</sup>

As a GIZ employee remarked with a pinch of irony in an informal exchange, *in theory*, these ideas are indeed relevant to practice directed towards transformative change. But how to make these ideas relevant for practice *in practice*? This requires dedicated methods of transdisciplinary research (collaborative research involving scholars and practitioners), financial resources needed to carry out real-life experiments, as well as the curiosity and interest of participants. In this regard, the upcoming action research project for transformative change in ABS contexts is inscribed in a broader movement of science politics which expects scientific institutions to help society overcome ‘grand challenges’, such as ecological unsustainability, by doing transdisciplinary problem-solving research.<sup>75</sup>

Before we provide more specific insights into the potential of transdisciplinary research methods for transformative change, the next two chapters will examine how the ABS regime and related GIZ projects are affected by the troubles of metamorphosis, and whether they face structural problems that cannot be solved adequately within the prevailing frameworks.

<sup>73</sup> Tsing (2015).

<sup>74</sup> de la Cadena and Blaser (2018); Kothari et al. (2019); Escobar (2020).

<sup>75</sup> Groß et al. (2015); Lüdtke (2018); SONA (2021); Bogusz (2022).

## Chapter IV: The Making of Access & Benefit-Sharing

To understand the functions, the limits, and the dysfunctions of the contemporary ABS regime, it is necessary to situate ABS in its historical context: a post-Cold War international order that, as we have argued, is currently being metamorphosed through its destructive socio-ecological side/main-effects. Considering ABS from this angle will allow us to show that the problems plaguing the ABS regime are not reducible to issues of implementation. Rather, they are symptomatic of an environmental governance architecture that, to a significant extent, has failed to fulfil its objectives of sustainable development.

### A component of the post-Cold War international order

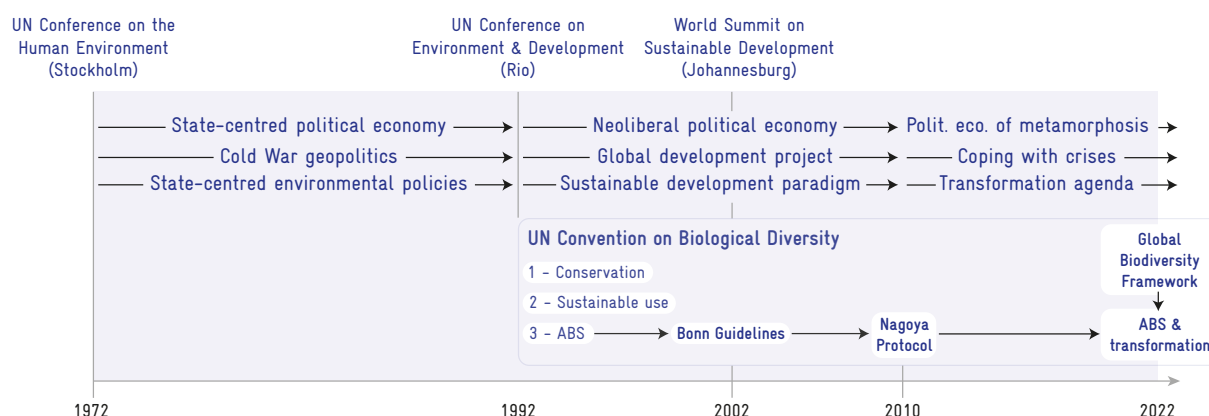
The ABS regime of the Nagoya Protocol originates from a moment where the end of the Cold War was opening the way for a new international order dominated by three interrelated strands: a *neoliberal* international political economy, a *global* development project, and an environmental governance architecture based primarily on the paradigm of *sustainable development* (see Figure 3).<sup>76</sup>

As is well known, from the end of World War 2 up to the 1980s, the international political economy was divided in three groups of countries: a block of advanced industrial capitalist countries,

a block of communist countries, and a group of non-aligned postcolonial countries. Notwithstanding substantial ideological and structural differences between and within these three groups, overall, this historical period was marked by the prevalence of national state institutions. Whether in terms of industrial development, scientific research, social welfare, or environmental problem-solving, to quote but a few major policy fields, states ambitioned to steer modernization processes from above within national and international frames of reference and coordinates of action.

In the 1980s and early 1990s, this international order started to crumble, and a new global political economic order emerged. Beside the conversion of almost all communist countries to market capitalism, most countries of the world shifted from protectionism and interventionism to a global development project based on a neoliberal ideology and a related prevalence of market institutions. Markets, including to some extent labour and financial markets, were gradually deregulated, and public sector enterprises fully or partially privatized. Most protectionist trade barriers were gradually dismantled, and states started to compete in new terms for the attraction and retention of capital on their respective territory. In this context, national industrial champions rapidly morphed into multinational companies, and industrial production was increasingly reorganized within transnational value chains and production networks that restructured the international division of labour.

Figure 3: The ABS Regime in its Global Historical Context



<sup>76</sup> The following historical sketch builds on the work of Frein and Meyer (2008); Wynberg and Laird (2009); Oberthür and Rosendal (2014); Aubertin et al. (2021); as well as Lawson et al. (2023).



As postcolonial countries of the global South were being pushed into this global political economic order through Structural Adjustment Programmes, concerns emerged among them regarding how to improve their socio-economic development chances under these new conditions. Specifically, how to avoid being stuck in imbalanced trade relations that would maintain their economies in low added-value export sectors (e.g., resource extraction, mass production of cheap intermediary and consumer goods), while affluent and geopolitically dominant countries of the global North would concentrate the high added-value segments of global capitalism (e.g., Research & Development, technology-intensive production processes, financial services)?

In the late 1980s, this concern gained salience in relation to evolutions in bioprospecting and the industrial exploitation of biological – including genetic – resources and aTK.<sup>77</sup> Informed by scientific advances in molecular biology and genetics, empowered by related bio-technological developments, and incentivized by new legal possibilities to patent bio-innovations,<sup>78</sup> a few large life-science companies and related smaller businesses were entering a period of fast growth. Beside agriculture, which is a specific case,<sup>79</sup> sectors like the pharmaceutical industry, cosmetics, flavour & fragrance, food & beverages, as well as new bio-tech branches, seemed about to turn biodiversity into ‘green gold’.

The research institutions and commercial actors propelling this upward trend were mostly based in advanced industrial countries of the global North. But the biological resources they needed were, for a large part, located in postcolonial countries of the global South. So was the local knowledge that bio-prospectors could use to identify plants, mushrooms and microorganisms with industrial potentials.<sup>80</sup> Building on practices established in colonial times, scientific

and commercial users would carry out bioprospecting in these countries, and import biological resources from these countries, without much concerns for the original resource and knowledge holders. A clear case of extractivism and trade imbalance postcolonial countries wanted to avoid.

To change things, new international rules were required. The negotiation of the Convention on Biological Diversity, which started in 1989 under the aegis of the United Nations Environment Programme, gave an opportunity for representatives of global South countries to push this agenda forward. In these negotiations, global North countries were eager to get biodiversity-rich countries of the global South to adopt effective measures to protect biodiversity – the new ‘green gold’. Highlighting *their* right to industrial development, governments of the global South leveraged this demand: they would not collaborate and invest in conservation and sustainable use for free, to serve the political, scientific and industrial agenda of former colonizers who had been exploiting resources worldwide without sharing much of the benefits. As a condition for their collaboration within the framework of the CBD, developing countries asked global North countries to agree to share a fair and equitable part of the monetary and non-monetary benefits arising from the use of genetic resources and aTK with the original resource and knowledge holders. This would directly contribute to the post-Cold War project of *global* development by helping developing countries to catch up.

As a result of ensuing negotiations, a third objective was inscribed in Art. 1 of the CBD, namely “the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.” Further, contracting parties of the CBD committed in the Art. 8(j) to “preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.” In the Art. 15, which asserts the sovereign right of states over biological resources in their territory, the responsibility to translate and operationalize ABS in legal and administrative measures was attributed to states. In line with this emphasis on national sovereignty, Art.

<sup>77</sup> Art. 2 of the CBD defines biological resources as “genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity”, genetic resources being “any material of plant, animal, microbial or other origin containing functional units of heredity” and being of actual or potential use or value for humanity. The distinction between biological resources and genetic resources is, however, somewhat unclear (e.g. Oberthür and Rosendal, 2014: especially chapter 2; Aubertin et al., 2021).

<sup>78</sup> It is not by chance that the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) was negotiated exactly at that time.

<sup>79</sup> Access, use and benefit-sharing of biological resources in the agricultural sector is regulated by a specific regime under the International Treaty on Plant Genetic Resources for Food and Agriculture. There are historic and contemporary interplays between this regime and ABS under the Nagoya Protocol. But these interplays are not particularly relevant to this study, which keeps agriculture outside its ambit.

<sup>80</sup> In principle, animals are also concerned. But in practice, they barely play a role in this context.

15 stipulates that benefit-sharing “shall be upon mutually agreed terms.”

While the CBD entered into force in December 1993, the translation of its ABS components into an operational governance framework proved lengthy and difficult. Governments from the North had little interest in pushing the ABS agenda forward, and the international policy discussions of the 1990s on biodiversity focused rather on the two other objectives of the CBD, in particular conservation. ABS came back on the agenda only at the 4<sup>th</sup> Conference of Parties (COP) of the CBD in 1998. In line with the preferences of scientific and industrial lobbies, governments from countries such as Germany, or Switzerland, as well as the European Commission, argued that ABS had become irrelevant and would impede both scientific research and industrial innovation. In a context where soft law – voluntary guidelines and standards – was successfully promoted across the board as a business-friendly alternative to legally binding social and environmental regulations, such positions prevented, for some time at least, the instauration of a legally binding ABS framework.<sup>81</sup> They also prevented the definition of ABS compliance as a condition for the patenting of genetic resources. Nonetheless, governments from the global South, such as India, Brazil, or South Africa, kept militating for the implementation of the ‘grant bargain’ inscribed in the third objective of the CBD.

With German diplomacy in the lead, an intermediary compromise was crafted in 2002 with the *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization*. In line with the preferences of resource users, these guidelines still made ABS a matter of voluntary compliance. But, matching the preference of resource providers, the guidelines extended the scope of ABS beyond genetic information, to also cover related biochemical substances.

This compromise was, however, short-lived. At the World Summit on Sustainable Development taking place the same year in Johannesburg, a newly constituted group of Like-Minded Megadiverse Countries<sup>82</sup> obtained that parties of the CBD get mandated to work towards an international ABS regime that would potentially be legally binding. As it captured the subsequent international attention, this mandate overshadowed the Bonn Guidelines. Ultimately, with negotiators and experts meeting 20 times in about 6 years,<sup>83</sup> a legally binding international ABS agreement was prepared and subsequently adopted at the COP 10 of the CBD in 2010: the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization.

The Nagoya Protocol, which came into force in 2014, established a legal ABS regime that is based on the following key provisions:

- i. **Scope:** The scope of ABS is defined as covering the access and utilization of genetic resources (including naturally occurring derivative biochemical compounds), as well as associated traditional knowledge (Art. 3). Utilization is defined with a focus on bio-prospecting, that is, “research and development on the genetic and/or biochemical composition of genetic resources, including through the application of biotechnology” (Art. 2).
- i. **Prior Informed Consent:** To legally access and utilize genetic resources, users must obtain a Prior Informed Consent (PIC) from the competent authorities of the country from where the resource is taken (Art. 6). If traditional knowledge is attached to this specific resource, or if Indigenous Peoples and local communities (IPLCs) have rights over these resources as per the laws of the country, users must also obtain a PIC from the relevant IPLCs. In both cases, the PIC can specify which intended use of the resource is allowed. For instance, if a company demands access and use rights of genetic materials from a plant that a community considers sacred, this community can define which utilization it consents to, and the company cannot deviate from these conditions without asking for permission.
- i. **Mutually Agreed Terms:** To legally access and utilize genetic resources and aTK, users must also contract a “fair and equitable” benefit-sharing agreement with the providing state authorities or the IPLCs, based on mutually agreed terms (MAT) (Art. 5).
- i. **User-friendly and IPLC-friendly national ABS frameworks:** Signatory countries of the Nagoya Protocol commit to ensure legal certainty, clarity and transparency regarding their national ABS-related policies and regulations (Art. 6). States also commit to devise national ABS frameworks that “in accordance with domestic law take into consideration indigenous and local communities’ customary laws, community protocols and procedures, as applicable, with respect to traditional knowledge associated with genetic resources” (Art. 12). With regard to implementation, states must take appropriate measures to ensure that users of aTK have obtained a PIC from relevant IPLCs and concluded a benefit-sharing agreement with them (Art. 8). States also commit to facilitating implementation by raising awareness of ABS among potential users of aTK and among IPLCs, and to help IPLCs make use of ABS, for instance, through bio-cultural protocols (Art. 12).<sup>84</sup>

<sup>84</sup> Bio-cultural protocols (BCPs) are an instrument with which communities can take stock of their natural resources and associated traditional knowledge and customs, and define the conditions under which their knowledge should be handled in the community and possibly shared with third parties. For instance, BCPs can identify knowledge holders in communities, and define which authority is entitled to represent the community in negotiations with third parties, such as negotiations of PICs and MATs. As they connect to bio-cultural rights, BCP have potential far-reaching implications in terms of the rights of IPLCs over lands and the management of resources and knowledge attached to these lands. For more details, see for instance Girard et al. (2022a).

<sup>81</sup> See for instance Fuchs (2007); Utting and Clapp (2008); Vogel (2008); Reed et al. (2012).

<sup>82</sup> The group comprised Bolivia, Brazil, China, Colombia, Costa Rica, Ecuador, the

Philippines, India, Indonesia, Kenya, Malaysia, Mexico, Peru, South Africa and Venezuela

<sup>83</sup> Wallbott et al. (2014: 33).

- i. **Sustainable development:** The objectives of the Nagoya Protocol emphasize the complementarity between conservation, sustainable use and ABS (Art. 1). While this complementarity is assumed as a given, the Nagoya Protocol also strengthens it with specific provisions. States are required to design national ABS frameworks that “promote and encourage research which contributes to the conservation and sustainable use of biological diversity” (Art. 8). Moreover, they shall “encourage users and providers to direct benefits arising from the utilization of genetic resources towards the conservation of biological diversity and the sustainable use of its components” (Art. 9).

These provisions are typical of the sustainable development paradigm on which the prevailing environmental governance architecture is based – a paradigm that promises to harmonize the three Ps of capitalism (Profit), social welfare (People) and ecology (Planet). Specifically, according to the basic assumption underpinning the Nagoya Protocol, the more actors will benefit financially and otherwise from the monetary valorisation of genetic resources (benefit-sharing for the People), the more actors will have a material interest in facilitating bioprospecting and industrial exploitation (access for Profit) while avoiding a depletion of this valuable ‘green gold’ (conservation and sustainable use for the Planet). Moreover, while the Nagoya Protocol subordinates the rights of IPLCs to the authority of states,<sup>85</sup> it strengthens these rights: IPLCs are entitled to allow or forbid the utilization of their traditional knowledge, and to directly negotiate benefit-sharing agreements with resource and knowledge users, including on the basis of customary laws and bio-cultural protocols.

But how does the ABS regime work in practice? Does it effectively contribute to harmonize socio-ecological relations within the global development project of the post-Cold War era? A decade after the Nagoya Protocol came into force, in a context where the efficacy of the biodiversity governance architecture put in place under the CBD of 1992 is being increasingly questioned, and where calls for transformative change gain momentum, the socio-ecological realities of ABS deserve empirical examination. As outlined in the introduction, our empirical study follows a qualitative method. Taking the ABS projects of GIZ – the ABS Capacity Development Initiative, ABio-SA, and BIA – as an entry point in the field of ABS, it combines interviews conducted with German and international actors and a case study conducted in Namibia.

## GIZ’s role in the construction of the ABS regime: technical assistant or architect?

As a provider of technical assistance to developing and emerging countries, including with regard to the implementation of development-related international agreements, GIZ<sup>86</sup> started a sectoral programme right after the adoption of the CBD to help aid-recipient countries implement its provisions. However, as already noted, conservation was dominating the biodiversity policy agenda, and governments from the global North were not particularly keen in turning the ABS bargain into reality. In this context, GIZ’s sectoral programme for the CBD comprised only peripheral activities on ABS. This changed after the Sustainable Development Summit of Johannesburg, which set the negotiations of a legally-binding ABS agreement in motion. Sensing an opportunity, GIZ employees in charge of the few ABS components of the sectoral programme pushed the ABS topic on the agenda of the German Federal Ministry for Economic Cooperation and Development (BMZ), arguing that Germany could play a constructive role in this policy process. Interested in building on its diplomatic role in the elaboration of the Bonn Guidelines, the ministry was not hard to convince.

In this propitious context, GIZ and the international cooperation wing of Netherland’s Ministry of Foreign Affairs co-organized a workshop in Addis Ababa in 2005, where they invited experts and representatives from aid-recipient countries to discuss the needs and prospects of technical assistance for ABS. With ABS being a technically challenging policy field, and many governments from global South countries knowing they would face unequal conditions of negotiation,<sup>87</sup> the workshop’s outcomes confirmed that capacity development on ABS would be largely welcome.

In response, the ABS Capacity Development Initiative was launched in 2006, with an initial co-funding of Germany and the Netherlands. GeoMedia GmbH, which is a German consultancy firm specialized in communication and project development in the field of environment and international cooperation, was included by GIZ in the development of this new project. Rapidly, the management team of the ABS Initiative successfully garnered additional funding from other sources: the *Institut de la Francophonie* in 2008, official development aid from Norway and Denmark in 2009, from the European Union in 2011, and from France in 2014. Besides, the team of the ABS Initiative established close relations with the Secretariat of the CBD (SCBD), which appreciated such a project that would move a relatively neglected and politically thorny component of the CBD forward. As the ABS Initiative entered its op-

<sup>86</sup> At that time, GIZ was still known as *Gesellschaft für Technische Zusammenarbeit* (GTZ).

<sup>87</sup> As an international ABS expert explains, “You have to consider how negotiations work. Sponsorship is available to send 2-3 country representatives to negotiations. They are often biologists, plant breeders, technical experts. And on the other side, you have the European team of professional negotiators. It is like us playing a soccer game against Bayern Munich!” (interview conducted on 23 July 2022).

<sup>85</sup> Beside the paternalistic role of states, who must inform IPLCs on their rights and watch over their ABS-related interests, the customary laws, community protocols and procedures related to aTK are to be taken into account “in accordance with domestic law” (Art. 6, Art. 7 & Art. 12).

erational phase, it mobilized a number of experts for workshops and trainings to provide legal, economic, political and environmental advice to policy makers and bureaucrats in charge of ABS in partner countries. As a result, a growing circle of international experts formed around the ABS Initiative, which within a few years had become a nodal point of reference in this international policy field.

In fact, the ABS Initiative had become more than just a provider of technical assistance. Animated by the entrepreneurial spirit of its management team, the ABS Initiative had become a proactive driver of ABS:

“The concept of ABS is not self-evident. What exactly are genetic resources? What is R&D? What should be integrated within the ABS regime and how? Which administrations are in charge, also on a regional level and at country-level? Before the Nagoya Protocol, all this was unclear. There was the CBD and its third objective. But no one knew how it should function. Many levels were involved, and many stakeholders as well. African interests, geneticists, ministries, parliaments... And at that time, there was no national competent authority. The local level, with IPLCs who bring a different kind of knowledge and different interests into ABS. The leaders of the ABS Initiative quickly realized that the way one communicates on ABS is crucial: how to make ABS understandable, so as to involve many different stakeholders. It was quite a performance to keep ABS on the international agenda. To say: ‘Look, ABS is very important, very very important’. X [a member of the ABS Initiative] was very good at it, and he has strongly pushed ABS forward, including among countries of the African Union and among business actors. This was a lobbying work. [...] The objective was clearly to make ABS as important as the objectives 1 and 2 of the CBD, and to conduct the implementation of ABS in an exemplary way.” (a GIZ employee, 30 March 2022)\*

Between 2006 and 2010, the ABS Initiative mainly focused on supporting African partner countries in the preparation and conduct of the international negotiations that would lead to the Nagoya Protocol.<sup>88</sup> Through trainings, thematic workshops, as well as more informal exchanges, the ABS Initiative would both spur and support the national ABS policy process of participating countries.

Notwithstanding the ties of GIZ with the German government, as well as the dependence of the ABS Initiative from funds provided by governments of the global North, the project team of the ABS

Initiative could focus on its mandate to help and hence to serve partner countries:

“An important result of the ABS Initiative was that the African Group behaved as a cohesive group in the negotiations and had strong arguments. This triggered some scepticism among the European Union, because we were supporting the other side in the negotiations. Some people called us ‘the Taliban of the African Group’ [laughter]. But European parties have also recognized the advantage of negotiating with partners who knew what they were talking about. It works better than discussions based on emotionally loaded prejudice.” (a GIZ employee, 23 June 2022)\*

This, however, does not preclude more or less unconscious but active influence. As Pierre Bourdieu eloquently points out, the language of unemotional facticity and technical rationality is not neutral in situations involving asymmetrical power relations and diverging interests.<sup>89</sup> By evacuating vivid expressions of dissent and expecting consensus, the technical discourse tends to preserve the functioning of the dominant order against the disturbance of critics and anger voiced by dominated actors. While the ABS Initiative was pragmatically trying to pacify and fluidify the negotiations, such stabilizing effect might have occurred:

“In the beginning, the debate was very much about patents. It was certainly a good starter to bring some movement into ABS. It was appropriate and important that NGOs exerted pressure on the topic of biopiracy and patenting of life. This strengthened the political salience of ABS. But, to move forward, it was important at some point to step out of the confrontation. To disconnect ABS and the question of patents. Patents fall under the purview of the WTO and related problems are addressed there. ABS is something different. So biopiracy fell into the background, and this allowed to bring the negotiations to a more factual level. [...]

The EU had strong positions to protect its industry, and the US had indirectly similar positions, though they are not part of the CBD. In this context, we supported the African Group while trying to bring the dialogue to a factual, rational level. It was very loaded, very emotional, with fronts that had much to do with the personal opinions and prejudices of the one or the other representative. When one enters a discussion with the mind-set that ‘The North is bad and exploitative’, or that ‘Northern countries try to fool countries of the South’, it is hard to reach anything.” (a GIZ employee, 23 June 2022)\*

<sup>88</sup> The identity of African countries partnering with the ABS Initiative has changed over time. In 2015, the list counted Algeria, Benin, Cameroon, the Democratic Republic of Congo, Kenya, Madagascar, Morocco, Namibia, South Africa, and Uganda. Currently, the ABS Initiative works mostly with Benin, Cameroon, Kenya, Namibia, Senegal, and South Africa. Co-funding of the European Union in 2011 led to the expansion of activities to the Caribbean and Pacific region, where the ABS Initiative has mostly worked with public authorities to support the design of national ABS institutions. This strand of activities has been interrupted since then, with the ABS Initiative intervening only on the African continent.

<sup>89</sup> “This politically unmarked political language is characterized by a rhetoric of impartiality, marked by the effects of symmetry, balance, the golden mean, and sustained by an ethos of propriety and decency, exemplified by the avoidance of the most violent polemical forms, by discretion, an avowed respect for adversaries, in short, everything which expresses the negation of political struggle as struggle. This strategy of (ethical) neutrality is naturally accomplished in the rhetoric of scientificity.” (Bourdieu, 1991: 132). On post-political trends in environmental governance, see also Kenis and Lievens (2014).



As the discussions preparing the negotiation of the Nagoya Protocol progressed, the ABS Initiative extended its work of promoting and facilitating the institutionalization of ABS beyond public authorities. Starting with a Business Dialogue Forum held in South Africa in 2009, which it co-organized with the Union for Ethical Biotrade (UEBT),<sup>90</sup> PhytoTrade Africa,<sup>91</sup> and the International Chamber of Commerce, the ABS Initiative held annual Business Dialogues that brought together companies from relevant sectors, experts, and policy makers. These Business Dialogues were a useful platform to make companies more cognizant of ABS, and to jointly reflect on their ABS-related concerns. Another purpose was to facilitate mutual understanding on ABS between business actors and policy makers. Indeed, as an ABS expert involved in the organization of these dialogues highlights, *“For some industrialists, the way ABS works in African countries is a mystery, and for some Focal Points [administrative units in charge of ABS] and resource providers, the way Western companies work is also a mystery.”*<sup>92</sup>

In parallel, the ABS Initiative strengthened the inclusion of IPLCs in the policy process. To do so, in 2007, GIZ supported the creation of Natural Justice, an African NGO specialized in advocacy work and the legal counselling of IPLCs on their environmental and bio-cultural rights. Once Natural Justice had been founded, the ABS Initiative supported its involvement in the policy discussions preparing the Nagoya Protocol, thereby contributing to position IPLC perspectives and the tool of bio-cultural protocols in the agreement.<sup>93</sup>

## Implementing ABS: mission impossible?

After the Nagoya Protocol came into force in 2014, the ABS Initiative entered into a new project phase entitled ‘Implementation Programme’, which was set to last from 2015 to 2020. With the main goal of supporting the implementation of the new ABS regime to make it fully operational by 2020, the ABS Initiative built on the three pillars it had already established: the provision of technical assistance to partner countries for ABS-related institution building, the support of ABS-compliant bioprospecting and biotrade, and the support of IPLCs through collaborations with related NGOs.

At first, the priority was to accompany partner countries in the upgrade of pre-existing national ABS institutions and/or the formulation of new ones under the Nagoya Protocol. For instance, studies were commissioned to examine which institutional frameworks could best fit the legal and administrative structures of partner countries. Should a country’s national ABS law and regulations apply only to bioprospecting, or should they also cover biotrade? Should they explicitly refer to customary rights of IPLCs, and if yes, to which ones, and under which terms? Which administrative models for ABS were available, and what might be their respective advantages and disadvantages in a particular national context, for instance with regard to inter-ministerial coordination, or to transaction costs induced by ABS permit systems? Should a country’s ABS policy entail provisions to facilitate regional cooperation with neighbouring states, so as to better manage benefit-sharing claims involving transboundary biological resources and aTK? More generally, how to increase a country’s chances to collect benefits through ABS without undermining its competitiveness in international markets?

While the ABS Initiative was busy helping partner countries sort out such questions, it also continued working on its two other pillars. Business Dialogues, workshops, and the participation in events such as UEBT’s annual conference Beauty of Sourcing with Respect were maintained. The ABS Initiative also continued a close cooperation with the French flavour and fragrance producer V. Mane Fils, the competent authorities of Cameroon, and the Kingdom of Maghambumbu, to implement ABS in R&D and subsequent biotrade of the plant *echinops giganteus*. But, apart from this particular case, companies potentially affected by the Nagoya Protocol were mostly in a ‘wait and see’ mode, and GIZ had difficulties to find companies willing to invest in ABS compliance before the national regulatory frameworks had been put in place.

Regarding the work with IPLCs, the ABS Initiative organized various workshops to raise awareness and facilitate dialogue on ABS between governments and communities, or between IPLCs of various countries (so-called community-to-community ABS exchanges). It also continued to support the work of Natural Justice, for instance, to help interested communities (the Endorois community in Kenya; the Khwe community in Namibia; several communities in Madagascar) to establish BCPs. These experiences, which also involved local NGOs, were not always successful:

*“Such communities are mostly living at the margins. They are located in remote places, and it is difficult to come together. It is difficult for anyone to organize without the financial means to travel and connect people, to organize the communities and bring them together. This is one of the major issues. It makes it very difficult. At some point we agreed with MEFT [Ministry of Environment, Forestry and Tourism] and the Bwabwata National Park to launch a biocultural protocol with the Khwe community. But there were*

<sup>90</sup> UEBT is a non-profit organization born in 2007 out of the United Nations Conference on Trade and Development (UNCTAD), which helps its corporate members address concerns around social justice and sustainability in the sourcing of biological resources.

<sup>91</sup> PhytoTrade Africa is a trade association anchored in Southern African countries (Botswana, Malawi, Namibia, South Africa, Zambia, Zimbabwe), tied to a company registered in UK. It promotes the development of biotrade, with the associated goals to support the socio-economic development of rural communities by generating income sources, and to promote sustainable biotrade in line with the objectives of the CBD.

<sup>92</sup> Interview conducted on 29 July 2022.

<sup>93</sup> See Girard et al. (2022a: 16).

only two meetings, and after that, nothing happened.” (a traditional leader, 11 March 2023)

Based on these experiences, the ABS Initiative and Natural Justice produced a toolkit for the facilitation of BCPs. The ABS Initiative also supported Natural Justice’s legal counselling work for the San community in South Africa, who were involved in a long-standing struggle to claim knowledge ownership and obtain benefit-sharing in the Rooibos tea sector.<sup>94</sup>

Notwithstanding this work, the implementation of the Nagoya Protocol advanced only slowly. In 2018, 25 years after the adoption of the CBD and its 3<sup>rd</sup> objective, eight years after the adoption of the legally binding Nagoya Protocol, four years after it came into force, and two years before the end of the ABS Initiative’s ‘Implementation Programme’ phase, troubling discrepancies remained between the idea of ABS and its socio-ecological realities. No functional international ABS system was rebalancing trade relations, generating significant benefits for low-income countries and IPLCs, spurring knowledge and technology transfer from North to South, and contributing to the conservation and sustainable use of biodiversity. Instead, ABS rather meant unwieldy policy-making processes, sceptical scientific and commercial users who worried ABS could turn into an impracticable bureaucratic monster, and frustrated IPLCs, who were encouraged by outsiders to invest time and resources in ABS for their own good, but who saw little benefits flowing back to them. Overall, the troubles and dysfunctionalities characterizing ABS before the Nagoya Protocol, which have been well documented in the literature, seemed to persist.<sup>95</sup>

The German BMZ, which had invested several million euro in the ABS Initiative and was sometimes solicited by it for additional funding, started asking uncomfortable questions:

“To keep a project running for 16 years and secure continuous funding from BMZ is quite a performance. But, since about four years, BMZ increasingly asks: ‘Where is the implementation of ABS?’ Well, the ABS Initiative has achieved a lot, pushed ABS a lot, enriched it with new topics, and brought stakeholders together. But... what are the outcomes?” (a GIZ employee, 30 March 2022)\*

Beside such uncomfortable external pressure, members of the ABS Initiative project team had invested a substantial amount of work and reputational capital since 2006 to promote ABS across the board, and their intrinsic motivation to make ABS work was all the higher.

To counter growing doubts in the practicability and future prospects of ABS, the ABS Initiative decided to recalibrate its strategy. While the provision of technical assistance for policy making was to be continued, the development of ABS-compliant value chains gained priority. By supporting commercial ventures that implement the provisions of the Nagoya Protocol, so the new ‘proof of the principle’ rationale, the ABS Initiative would demonstrate that ABS can actually work in beneficial ways – a demonstration that would simultaneously justify the ABS Initiative’s own past, present, and future work.

Under this ‘proof of the principle’ strategy, ABioSA was launched in 2018 with funding from the Swiss State Secretariat for Economic Affairs (SECO) to develop ABS compliant biotrade in Southern Africa – South Africa, Namibia, Botswana, Zimbabwe, Zambia and Eswatini. Around the same time, BMZ agreed to fund an additional project to develop ABS-compliant transnational value chains involving European companies and African suppliers: BIA was launched in 2019 with an initial 4-year phase, and a focus on Cameroon, Madagascar, Namibia, and South Africa.

While the rationality underpinning this strategic reorientation is understandable, it remains focused on the implementation of ABS under the terms of the Nagoya Protocol, within the broader governance architecture of the CBD. Unfortunately, five years later, as the ‘Implementation Programme’ of the ABS Initiative and the first phase of BIA and ABioSA have ended, discrepancies between the ABS regime on paper and the socio-ecological realities of ABS persist.

<sup>94</sup> See Wynberg (2017).

<sup>95</sup> See, for instance, the chapter of Wynberg and Laird (2009) which describes how “both providers and users of genetic resources find themselves caught up in an environment characterized by misunderstanding, mistrust and regulatory confusion” (p. 70), and where “the objectives that law and policy on access and benefit sharing are intended to serve – equitable benefit sharing, biodiversity conservation, the promotion of domestic biodiversity research and technology transfer – are rarely achieved by these measures” (p. 77). In a statement that comprised ABS, but which is more general in scope, Frein and Meyer (2008) also argued “The biggest problem of the convention is [...] its poor implementation. Huge mountains of paper that document a sea of expert discussions, government negotiations, and decisions, contrast with the reality of the miserable progress in achieving the objectives of the convention, which are the conservation of biological diversity, its sustainable use, and equitable benefit-sharing.” (p. 176, our translation).

## Chapter V: From “Paper Reality” to the Dysfunctional “Ground Realities” of ABS

Findings of our exploratory study suggest that these persisting discrepancies are of systemic nature. The ABS regime is supposed to articulate biodiversity politics, the bio-economy, and scientific research on genetic resources and aTK in a way that generates socio-economically fair and ecologically sustainable outcomes. However, because the defining structures and operative logics of these function systems – politics, the economy, and science – are not oriented towards social equity and ecological sustainability, they seem to hamper the *materialization* of such articulation.<sup>96</sup> In other words, while ABS is a governance mechanism devised by modern social systems to curb problematic socio-material outcomes of their own operations (e.g., inequity, ecological unsustainability), the limited results of this governance mechanism can be attributed to its reliance on the very social systems it is supposed to regulate.

The following pages examine this hypothesis empirically. Doing so does not only enrich diagnostics of ABS, with findings that can inform practical decision-making in this particular field. The systems-theoretical analysis of ABS also exemplifies how such analysis can help grasp the structural contradictions afflicting the global project of ‘sustainable development’ more generally. If transformative change is to address these contradictions effectively, the systemic roots of these contradictions can be considered relevant targets for transformative change initiatives.

### The politics of ABS

Like any other social system, political systems must operate in a way that maintains propitious conditions for their further reproduction. Concretely, collectively-binding decisions crafted by state institutions must reproduce and if possible increase the states’ power to craft and enforce further policies, in contexts where state power constantly faces latent or open challenges. Typically, this implies a preference for popular decisions over unpopular ones, for decisions likely to foster useful (though not necessarily cooperative or peaceful) relations with other states, or for decisions likely to increase state revenues. Moreover, political systems must organize and legitimize the distribution of positions within the state, in contexts where many individuals, social groups and political parties wish to hold such positions in order to serve their country, to influence

political decision-making according to their own preferences and interests, and often also to extract benefits from state resources (e.g., public employment, social status). As a consequence, within the systemic constraints of the reproduction of state power, political decisions are primarily oriented by strategies enacted by individuals and groups to maintain and possibly to improve their position within the state. Power is hence a lead value in politics, with the political success of individuals and groups being measured in this term – through electoral results, diplomatic or military achievements, or the ceremonial inauguration of large-scale infrastructures, to quote but a few common political metrics.<sup>97</sup>

Under these systemic conditions, ABS has been a valuable political currency for governments from the global South in moments where international agreements – the CBD of 1992, the Nagoya Protocol of 2010, and to some extent the Global Biodiversity Framework of 2022 – were being negotiated. By framing ABS as a potential deal-breaker, these governments could assert their sovereignty vis-à-vis other states, and bargain the actual or potential transfer of politically useful resources, including financial transfers, but also technology and enhanced scientific cooperation. Against the backdrop of colonial history, with all the violence, dispossession, and exploitative relations associated to it, ABS was also useful for governments of postcolonial states to rhetorically showcase how they defend the interest of the nation and protect vulnerable communities against the exploitative practices of foreign powers. These two political rationalities are reflected, for instance, in the behaviour of government representatives from the African Group of states during the negotiations of the Nagoya Protocol: the African Group emphasized the moral necessity to redress the historical wrongs of colonialism, and it militated for stretching the scope of ABS as much as possible, so as to increase the potential benefits African states might receive out of this governance framework in the future.<sup>98</sup>

However, this salience of ABS in international politics is largely disconnected from domestic ABS politics. In Namibia, for instance, the country’s representatives played a leading role within the African Group during the negotiations of the Nagoya Protocol. But ABS had little salience in domestic politics. The party of South West Africa People’s Organisation (SWAPO), which has dominated Namibian state institutions since independence, was facing almost no electoral competition at that time, and ABS was playing no signif-

<sup>96</sup> Our empirical analysis focuses on politics, the economy and science, but a similar kind of argument could probably be made with reference to the legal system, which is also active in the ABS assemblage.

<sup>97</sup> For a theoretical elaboration on these points, see for instance Luhmann (2002; 2010).

<sup>98</sup> See Wallbott (2014).

icant role in SWAPO's relation to the general Namibian citizenry. Most Namibian politicians were not against ABS *per se*, inasmuch as ABS would possibly generate state revenues and benefit rural communities connected to bioprospecting and biotrade. But the political significance of such benefits seemed quite limited and uncertain within the timeframes relevant to their political strategizing.

Namibian communities that hold ABS-relevant traditional knowledge of plants could have had an interest in pushing ABS on the national political agenda. All the more given the responsibility of Traditional Authorities in the local management of natural resources, especially within the context of Namibia's Community-Based Natural Resource Management (CBNRM). However, according to several interviewees, most traditional leaders have limited knowledge of ABS, and those who do generally have not been proactive on ABS. Only one traditional leader, who served as Secretary General of the Nama Traditional Leaders Association, has been actively involved in international and national Namibian ABS politics. Yet, within domestic ABS politics, where he acted as intermediary between the state and other Namibian Traditional Authorities, this traditional leader was not in a position of power:

*"After the Nagoya Protocol, we started focussing on the national ABS law. Our idea was that it should reflect the essence of what the CBD and the Nagoya Protocol require in terms of protection of traditional knowledge, and that it ensures that benefits flow back to communities if any user takes an interest in traditional knowledge. Our initial idea was to develop bio-cultural protocols for all the community knowledge holders. But we did not get the necessary backing from our government. [...]"*

*Within the government or, more broadly, the institutions of the state, did you find support to advance your concerns and interests?*

*No, we did not. Apart from the possibility to be part of the Interim Bioprospecting Committee, where I could represent IPLCs, there has been no support. And if we cannot raise issues, if we have no voice, there is no help from within the state. [...]"*

*Now that you have left SWAPO and are involved in a party from the opposition, is it more difficult for you to get your positions taken into account by the government, due to party politics?*

*Let me reverse the question: which support did I get when I was part of SWAPO? None. In some instances, they could not refuse me as a SWAPO member. With UNEP and GIZ being involved and supporting me, and with international laws, I could impose myself, and they could not prevent that." (a traditional leader, 11 March 2023)*

Apart from communities, no other specific domestic constituency had an interest in pushing ABS forward in Namibian politics. For

instance, when MEFT discussed the making of an ABS law with Namibian and foreign business actors during Business Dialogues organized by GIZ, *"their first reaction was panic and anxiety."*<sup>99</sup> Concerned with the perspective of additional costs, of new legal uncertainties, and of a rigid regulatory framework, business actors rather tried to weaken ABS. For instance, they suggested that benefit-sharing already occurs on a voluntary basis through community development projects carried out in the name of Corporate Social Responsibility (CSR).<sup>100</sup>

In a situation where ABS is neither driven by the general citizenry, nor by social groups having a direct interest in ABS and sufficient political clout to push ABS forward in domestic politics, and where Namibian politicians have little use of ABS to secure their position against political competitors, the fate of ABS in Namibian politics remained tied to a small group of actors:

- i. the main representative of Namibia in ABS-related negotiations, who is an international expert on ABS and other environmental treaties, and who has collaborated on several occasions with GIZ's ABS Initiative;
- ii. two bureaucrats in charge of ABS in Namibia's MEFT, who have also worked in close collaboration with GIZ's ABS Initiative and benefitted from its technical and financial assistance;
- iii. the traditional leader of the Nama community mentioned above, who became the main interlocutor on ABS issues pertaining to IPLCs and aTK in Namibia, and who also got support from GIZ;
- iv. a few NGOs, such as Centre for Research, Information, Action in Africa – Development & Consulting Namibia (CRIAA SA-DC), or Integrated Rural Development and Nature Conservation (IRDNC), which both promote and partly practice biotrade to develop new sources of income for local communities, and who also have had close ties to GIZ's ABS projects;
- v. and, of course, GIZ itself, which has been active either through the project team of its ABS projects in Germany, or through its Namibian bureau in Windhoek – the latter having regular interactions with MEFT, to the extent that it has an office within the building of MEFT, on the same floor as the offices of the bureaucrats in charge of ABS.

This small group of actors was relatively autonomous in the international process that led to the Nagoya Protocol, with the Namibian government having no interest in obstructing its work. But, in the subsequent phase, when the protocol needed to be translated in a national ABS law, this group of ABS proponents became more constrained. Indeed, achieving this task required the active contri-

<sup>99</sup> Interview with a bureaucrat from MEFT, conducted on 10 March 2023.

<sup>100</sup> This is a common practice: voluntary standards, codes of conduct and projects deployed by companies in the name of CSR are one of the main tools they use to fend off business-unfriendly regulatory constraints (Fuchs, 2007; Kinderman, 2012; Reed et al., 2012; Krichewsky, 2019).



bution of other state institutions and related policy makers. Relevant administrative branches of the state had already been involved in ABS through the Interim Bio-Prospecting Committee (IBPC) – a temporary body set up in 2008 to process bioprospecting and biotrade permit applications, as well as to discuss ABS-related policy issues.<sup>101</sup> To some extent, this facilitated the clarification of technical questions between ministries in the ABS law-making process. Yet, in a context where the deceleration of the Namibian economy was decreasing state revenues and hence increasing competition of state actors over scarce budgetary resources, the little political traction of ABS made the Ministry of Finance and Members of Parliament reluctant to allocate means for the administration of ABS.

This question of public expenditures required for the administration of a national ABS system became a dominant issue around the law-making process that resulted in the adoption of the *Access to Biological and Genetic Resources and Associated Traditional Knowledge Act 2* of 2017 and the related regulations of 2021. The Ministry of Finance decided to proceed gradually, that is, to allocate limited means in the beginning, and to decide later on if ABS would justify the allocation of additional means.

As a result, the ABS Office that took over from the IBPC, and is in charge of implementing the provisions of Namibia's ABS law and regulations, tends to be overwhelmed with tasks:

“The main challenge is staffing, getting the ABS Office up and running. For now, it is understaffed, with two main staffs and two support staffs. Also, there are lots of demands coming in for information. And this is overwhelming the ABS Office. The ABS Office lacks experience on how value chains work, and how to monitor and make sure that benefits actually flow back to resource holders. When an ABS agreement is concluded, benefits are fixed at an XYZ rate, but we can only assess much later on if this rate is fair, depending on which benefits will arise. To find this out, we need a lot of monitoring. But the ABS Office is a lean office, will little staff and not all the required skill sets.” (a bureaucrat from MEFT, 10 March 2023)

This lack of resources leads the ABS Office to spend a significant amount of time and energy to defend the case of ABS and ask for adequate human and budgetary resources within state institutions. But, as ABS is not a political priority for other politicians and bureaucrats, this internal work produces limited results:

“[X] is very active, trying to get the ABS Office staffed and running. But if [X] complains too much, [he/she] could lose [his/her] position. It's a balancing act.” (interview with a Namibian politician, 11 March 2023)

This political and administrative bottleneck, combined with the expectation that the ABS Office should simultaneously favour the sharing of substantial benefits to local communities (to make ABS politically more interesting) and accommodate the needs and interests of business actors (to prevent ABS from undermining the national bio-economy) has contributed to a dysfunctional transition from national ABS policy making to policy implementation. For instance, most economic actors we interviewed in March 2023 complained that the ABS system in place is unclear, and that they are not receiving satisfactory responses to the queries addressed to the ABS Office:

“The government told me last year: ‘You have to be ABS compliant if you want to export Marula oil.’ So I replied: ‘Okay, give me the regulations so I know what I should do’. And they told me: ‘To get compliant, you have to sign an ABS agreement with each of your suppliers.’ Each individual supplier. Can you imagine? I told them it is an impossible task. I have over 400 suppliers, of which 99% are illiterate. They don't understand ABS. They can hardly read and write. [...] I went many times to the ABS Office. And I could see that they have put this framework, but they do not know how to proceed systematically, step 1, step 2...” (a manager from a biotrade company, 8 March 2023)

“I asked several questions to the ABS Office. But only one at a time, to avoid overburdening them and to avoid confusion. Like ‘What are the ABS obligations for traditional knowledge in biotrade value chains that have been existing for a long time?’ I also told them that, to develop biotrade in the economic and social interest of Namibia, we have to send samples to potential clients abroad. And they told me: ‘This is also a biological resource being exported for commercial purpose, so you need an ABS agreement for this’. For a sample, can you imagine? I replied that this is nearly impossible, but I got no response so far. I am still waiting.” (the director of a biotrade company, 2 March 2023)

The representative of IPLCs we interviewed also expressed dissatisfaction:

“Another issue is that awareness-raising has not been done properly. With a big outreach, people and communities would become aware of ABS and this would help them raise their interests. But such kind of awareness campaign has not been done. In the political context, ABS has also a poverty alleviation component to it. And I feel this has not been highlighted enough in the ABS discussions. People do not know how to hook into ABS to raise benefits that can reduce poverty. All these issues have led us in a stage where ABS has be-

101 The IBPC comprised representatives from MEFT, Ministry of Agriculture, Water and Land Reform, Ministry of Fisheries and Marine Resources, Ministry of Justice, Ministry of Industrialisation, Trade and SME Development, Ministry of Safety and Security, and safety & security (for the forensic aspect), the National Commission on Science, Research and Technologies, and the National Botanic Research Institute. The representative of Namibia in ABS-related international negotiations, the traditional leader from the Nama Community, and the manager of GIZ's Namibian project for Biodiversity Management and Climate Change, were also included in the Committee.

come stagnant. There is more talk and paper than any real thing.” (a traditional leader, 11 March 2023)

To sum up, as the Namibian case indicate, systemic features of ABS politics generate a contradictory movement. The more ABS was international and abstract, the more political capital the Namibian government could get out of it, and the better the small network of policy-making actors operating around GIZ’s ABS Initiative could push ABS forward. Conversely, the more ABS moved towards national institution-building and implementation, the more political support from outside this network was needed, but the less political support could be actually obtained. This discrepancy contributes to explaining why, in spite of GIZ’s efforts, ABS has not taken off, but rather sunk in complications.

## The economy of ABS

While modern political systems are structurally conditioned to operate in a way that reproduces and if possible expands state power, the capitalist market economy orients behaviours towards the maximization of monetary gains. Building on private property law, the modern economy allocates ownership of goods and services through payments. Moneyed participants are exposed to available goods and services, and they can decide whether they want to pay or not to acquire the one or the other good or service. These decisions are conditioned by prices, which are themselves defined by payments within the economic system. The economy hence operates as a self-referential system of payments. This system reproduces itself from one operation to another: the one who paid must participate in subsequent transactions in order to replenish his/her payment capacities (*e.g.*, paid labour, trade, loan, investment), while the one who got paid has new money to spend in further transactions.

But money is not only a means of transaction. As purchasing power, it is also a good in itself: a capacity to address actual and potential needs in an existence that is fundamentally uncertain. The more money or assets convertible to money an individual or a collective owns, the better this individual or collective feels equipped to face the vagaries of life. Monetary gain is hence a lead value induced by the economic system, with the economic success of participants being evaluated in terms of their monetary wealth. Guided by this lead value, entrepreneurs create and exploit businesses by acquiring things, knowledge, labour, and money, which they combine in the production and trade of commodities that can be sold for a profit. These businesses offer opportunities for owners of natural resources to get money by selling these resources, for capital owners to make money through financial investments, for workers to generate income by renting their labour force, and for states to gather revenues through taxes. For this system to work, however, moneyed human and legal persons must be convinced of the use value of the commodities being offered. The result is a highly dynamic and compet-

itive system of mass production and mass consumption that needs growth to maintain the conditions of its own reproduction.

The bio-economics underpinning ABS are structured by this economic system. Genetic materials of plants, and to a lesser extent of mushrooms and microorganisms, are considered to be idle resources holding potentials for monetary gains. Inasmuch as scientific and traditional knowledge of the use value of these organisms can help identify and exploit these economic potentials, it has monetary value as well. The innovative spirit and skills of capitalist entrepreneurs, financial capital, labour, technical means of production, as well as effective marketing, are further ingredients required to turn these idle genetic resources into tradable commodities. Doing so requires many costly steps, such as the legal clarification of ownership claims, scientific research, commercial research & development, the organization of value chains, and marketing work. To spur investments in these initial activities, which are economically risky, public actors such as Namibia’s government, or Western governments acting through organizations such as GIZ, use tax money to provide financial, technical and institutional support, in the hope that this will result in commercially successful products – a contribution to keeping the economic system running in the name of ‘development’.

To be functional, ABS has to fit within these economic conditions. It requires a lively bio-economy that generates incomes. And it requires possibilities to change the distribution of these incomes in a way that is deemed ‘fair and equitable’. This, in turn, depends on three conditions. The legal owners of genetic materials and of aTK must be identified clearly, so that users of genetic materials and of aTK can transfer benefits to owners (‘resource-holders’) for the right to use these resources, as opposed to the practice of biopiracy. Market conditions must allow for such additional costs to be covered by the revenues generated in the value chain. And effective mechanisms must ensure that the amount and distribution of the benefits shared under ABS, but also of the direct and indirect costs associated to ABS, can be considered fair and equitable.

Notwithstanding significant differences among genetic resources and value chains, overall, many obstacles hamper the realization of these necessary conditions for ABS to function economically.

A first common obstacle is the identification of resource holders. Genetic materials are considered by default to be owned and managed by the state. But communities can also have claims over such natural resources based on positive law, and sometimes also on customary law. In Namibia, for instance, the article 66(1) of the Constitution recognizes the validity of customary law as long as it does not contradict statutory law. Customary law often entails use rights of natural resources, as well as associated duties and prohibitions, with Traditional Authorities being responsible under the Traditional Authorities Act to oversee the implementation of these

customary rules.<sup>102</sup> However, not all Traditional Authorities of communities are recognized by the Namibian state. Hence, discrepancies can exist between the representatives of IPLCs whom state authorities designate as being the legitimate interlocutors for ABS-related negotiations, and representatives or knowledge-holders that communities consider legitimate. Namibia's system of Community-Based Natural Resource Management adds a further layer of complication. Under this system, put in place in the mid-1990s to foster nature conservation, local communities can establish so-called 'Conservancies'. Conservancies are decision-making bodies having a number of prerogatives for the conservation, management, and economic valorisation of the flora and fauna within a given territory. Beside eco-tourism, or the sale of hunting permits, some of these Conservancies generate revenue through biotrade. In this context, it is not always clear whether the lead interlocutor for ABS should be the Conservancy or the Traditional Authority in a given area.

More generally, the very concept of 'community' underpinning the category 'IPLC' is unspecific, making it difficult to identify legitimate resource and knowledge holders. Speaking on the basis of experiences involving not only Namibia, but other African countries as well, a member of Natural Justice explains:

"I work with about eight communities. Some of my colleagues work with many more. Some communities are rather homogeneous: they are well organized, their customs, traditions and knowledge are clear, the structures have been kept intact. [...] Other communities have been influenced strongly by modernity. Members do not follow the customs anymore, there is a mix between different communities, and it is unclear who belongs to it... This is the situation in Madagascar also. Some communities define themselves in relation to a territory. Other communities define themselves on the basis of traditional culture. You even have communities who define themselves differently depending on which subject is being discussed, because each subject concerns different communities of people. For one resource in one place, one community is relevant, but if you want to talk about another resource, in the same area, the community changes. [...] And this can be fluid. A community can start defining itself in a certain way, and then, a different voice comes, other elements become relevant, and the identity changes accordingly." (a member of Natural Justice, 08 August 2022)

When not only genetic materials are at stake, but also aTK, things get even more uncertain, as knowledge can be widely distributed within and beyond communities having porous boundaries. Under such circumstances, identifying the legitimate holder of genetic materials and aTK is problematic. Not only can it trigger conflicting ownership claims that must be sorted out, and hence high transaction costs that can burden bio-economics. It can and often does

also entrench inequities, as resourceful actors are easier to identify and better positioned to capture benefits, while weaker communities or community members are likely to be overlooked, or excluded.<sup>103</sup> The famous case of Hoodia in Southern Africa, which was influential in science & policy discussions on ABS in the region, provides a good example. While the South African San Council signed an ABS-agreement with South Africa's Council for Scientific and Industrial Research (CSIR) in 2003, according to which a share of the incomes received by CSIR through the commercial exploitation of Hoodia would be transferred to a San-Hoodia Trust, other communities having traditional knowledge of Hoodia – the Damara/ Nama and the Topnaar – were not included in the benefit-sharing agreement.

A further difficulty is the calculation of the benefits to be shared under the ABS framework. In the case of bioprospecting, prior informed consent and benefit-sharing agreements must be negotiated between users and providers of genetic materials and aTK before bioprospecting is carried out. At that point in time, it is still unknown whether benefits will arise out of this bioprospecting activity, how much these benefits will be, when they will be generated, and which market conditions will prevail at that distant point in time. While it depends on a case to case basis, overall, only a tiny share of bioprospecting activities leads to the production of commodities that are commercially successful. Moreover, many years can pass between bioprospecting and the gain of commercial benefits. Another source of uncertainty concerns the value of the traditional knowledge that has contributed to the development of a commodity. If, as a means to prevent postcolonial biopiracy, ABS must ensure a 'fair and equitable' retribution of traditional knowledge holders for their contribution to the development of a profitable business, on which ground should this contribution be evaluated? According to the Nagoya Protocol, users and providers must negotiate until they find an answer that is agreeable to both parties. However, the basis of such negotiation is often unclear, especially when the genetic resource to which traditional knowledge is attached makes up only a small portion of the final product being sold. As a member of GIZ's BIA project team explains:

"Each value chain is different. For instance, in the case of Rooibos, the end product consists almost 100% from the biological resource. On the contrary, a specific plant might be only 1% of a perfume. Given such differences, one must negotiate differently in each case. In biotechnological sectors, bioprospectors come just once, take the plant, synthesize the useful components, and money is being paid only once, whereas in cosmetics, the resource must often be supplied on a regular basis." (a GIZ employee, 10 August 2022)

<sup>102</sup> See Hinz (2022).

<sup>103</sup> See for instance Ndwandwe (2023) and Wynberg (2023).

As a result, while ABS is supposed to rebalance postcolonial trade relations to achieve social justice, it often produces more frustration than sentiments of justice. According to several members of GIZ's ABS project teams, such frustration is widespread. Typically, when traditional leaders or other community members learn about benefit-sharing from the bioprospecting activities of large multinational companies, such as Nestlé, DSM-Firmenich, or The Body Shop, they tend to hope for substantial benefits, and to behave accordingly in ABS-related negotiations. On the other side, managers of companies doing bioprospecting are bound to serve the financial interest of their employer, and they have little motives to agree to distribute monetary benefits to communities in the name of 'benefit-sharing' before any tangible benefit has been generated.

The situation is different in established biotrade value chains, where the resources and aTK have been commercially exploited for a long time. The case of *Harpagophytum*, also known as devil's claw, is an instructive case. To understand how ABS plays out in this case, some background information on the sector is needed.<sup>104</sup>

While the Khoi and San people of Southern Africa have used root tubers of devil's claw for centuries to cure various diseases (e.g., digestive disorder, fever, pain), European scientists first identified the plant in 1870. Traditional knowledge of its medicinal virtues was reported by colonialists in the early 20<sup>th</sup> century, and some of its medical properties were confirmed by scientific research in the 1950s. The commercial exploitation of devil's claw, based on the export of dried tuber slices to Europe and its subsequent processing into medical products started in the 1960s. From the 1980s onwards, European companies registered a number of patents, mainly on extraction methods and dosage.

Today, four Namibian companies control the bulk of export of Southern African devil's claw to the international market – Harpago Ltd., EcoSo Dynamics, Gamagu, and Procumbens Exporters Namibia. The international market is dominated by two European buyers, the German company Martin Bauer (controlling about 75% of the market) and the French Naturex, which is now part of the Swiss company Givaudan. Notwithstanding competitive relations between them, three of the four Namibian exporters are organized since 2014 within Namibian Devil's Claw Exporters' Association, and two of them are also members of the business association Namibia Network of the Cosmetic Industry (NANCI).

Upstream in the value chain, Namibian exporters buy dried slices of devil's claw tubers from two sources. One is about 100 to 200 middlemen traders, who collect devil's claw from a few thousand unorganized harvesters in Namibia and in neighbouring countries,

and who sell bags of devil's claw at agreed times and places to the procurers of exporting companies. The other source consists of organized groups of harvesters and of Conservancies that organize the harvesting and sale of devil's claw within their territory. Once exporters have bought the raw material, it is brought into their respective processing units, where it undergoes a number of quality controls, before it is transported by trucks and shipped to Europe.

Notwithstanding ups and downs, the market for devil's claw has been expanding to the extent that Namibian exporters are concerned about securing enough supplies. This would, in theory, create advantageous conditions for resource-holders. However, the distribution of the added value within the value chain is highly unequal.<sup>105</sup> According to figures provided by Jessica-Jane Lavelle, while the average retail value of devil's claw is about US\$300 per kilogram, Namibian exporters capture only about 0.7% of trade value (about US\$1.47 million), and middlemen and harvesters get respectively about 0.45% (\$945,000). For harvesters, who are significantly more numerous than middlemen, this means an average income of about US\$150 to US\$500 per year.<sup>106</sup> But, here as well, discrepancies are significant. According to our data, while organized groups of harvesters and members of Conservancies can get about US\$1.60 to US\$2.95 per kilogramme of devil's claw, depending on quality and standard (e.g., conventional or organic), and depending on the negotiation power of the harvesting group or Conservancy, unorganized harvesters who sell their harvest to middlemen can get as less as 30 cents per kilo. With this, they must cover numerous costs:

“Depending on the places, harvesters leave their home and go for several weeks or months, rather months, to collect devil's claw. They generally live in tents, sometime in very remote places. An issue for them is to have enough food, and sometimes also enough water. Traders come from time to time to bring them mill flour and sugar, but at double the market price. So harvesters get paid for their harvest, but a lot of the money goes into these costs.” (an employee from EcoSo Dynamics, 7 March 2023)

Regarding ecological sustainability, overharvesting of devil's claw has been a long-standing concern. In 1977, due to overharvesting, public authorities added devil's claw on a list of protected species,

<sup>105</sup> This feature is not specific to the Devil's Claw sector. According to Chinsembu and Chinsembu (2020), in most cases of biotrade of Indigenous plant products in Namibia, “plant harvesters still earn less than 2-3% of the real retail value of the price of the final products whose raw plant materials they supply. There are huge disparities between the earnings of foreign exporters and Namibian communities/ harvesters of the Indigenous plant products.” (p. 13).

<sup>106</sup> These figures come from Lavelle (2023). An interviewee from the Namibian devil's claw sector questioned their plausibility: the retail price of US\$300 per kilogram would be overestimated, and the figures derived from this estimate would hence be incorrect. According to this source, around 5% to 10% of the retail price flows back to Namibia's segment of the value chain. Clarifying these contested figures is beyond the scope of our study. The point, which is uncontested, is that the added value derived from the sale of devil's claw is distributed in highly unequal terms within the value chain.

<sup>104</sup> Empirical information on this value chain is drawn mostly from Wynberg (2004), Cole and van Schalkwyk (2014), Lavelle (2023), as well as four interviews and participant observation we conducted in Namibia as part of this exploratory study.



and a quota & permit system was put in place. However, this system was barely implemented, and quotas were abandoned in the mid-1980s. In 1999, as increasing export volumes renewed concerns about the overharvesting of devil's claw, Namibia's MEFT adopted a new policy to regulate the sector. A new harvesting and export permit system was put in place, volumes of exported devil's claw became monitored, and a legal harvesting season extending from March to October was defined. In the same period, with the support of various international NGOs, CRIAA SA-DC launched a pilot project with the exporter Gamagu and organized groups of harvesters from the Omaheke region to demonstrate the feasibility of sustainable harvesting and benefit-sharing in this sector.

In the subsequent period, building on the model developed by this pilot project, some exporters started including the provision of training for sustainable harvesting of devil's claw in their relations with Conservancies, and to monitor the resource by doing post-harvesting surveys to count the population of devil's claw in some of the harvesting areas. Results of such surveys can then be taken into account for the next harvesting season, when quotas are defined within the annual purchasing agreements concluded between an exporter and the Conservancy. To discourage overharvesting, incentives and sanctions can be included in the purchasing agreement, with a bonus being paid to reward the respect of quotas, and part of the management fee paid by the exporter to the Conservancy being withdrawn to punish deviance from quotas.

According to an updated policy on devil's claw, the National Policy on the Utilisation of Devil's Claw (*Harpagophytum*) Products from 2010, resource monitoring and sustainable harvesting should be generalized, as a condition for the delivery of a harvesting permit. However, such practices only concern a limited share of devil's claw production – probably not more than 20%.<sup>107</sup> Indeed, unorganized harvesters and middlemen are excluded from such practices, which require long-term collaboration between exporters and suppliers. Such collaboration is needed, for instance, to run a traceability system that relates each bag of devil's claw to a harvester and a harvesting area. Without traceability, if quotas have been exceeded, it is impossible for the exporter to locate the origin of the problem, and to work with the concerned harvesters to resolve it.

Besides, the exporter EcoSo Dynamics worked with Conservancies and European clients to produce certified organic devil's claw, as well as certified organic fair-trade devil's claw based on the Fair for Life system.<sup>108</sup> However, the volumes concerned are constrained by

the demand-side of the market. Training for sustainable harvesting, resource monitoring, certification fees, and fair-trade, involve costs. Even if an exporter like EcoSo Dynamics values such practices and is ready to invest in them, costs must be, at least to some extent, transferable to European buyers, who themselves face market constraints that reach up to final consumers. Only a minority of consumers of natural medicine containing devil's claw prove ready to pay more for certified organic and fair-trade products. Hence, while investing in these products can be a successful commercial strategy to occupy a small but profitable market segment, it also involves a commercial risk: investing more than what the market can absorb would induce financial losses and let other exporters reap market opportunities with cheaper products.

To foster sustainable harvesting and benefit-sharing in the sector, without having to meet the virtuous but costly standards of certified organic and fair-trade products, GIZ's BIA project supported a multi-stakeholder initiative that established a voluntary standard for Good Agricultural and Collection Practices (GACP). Givaudan (ex-Naturex), NANCi, the exporters' association, and MEFT participated in this initiative. In the process, a benefit-sharing component was added, with the GACP+ standard standing for sustainably harvested & ABS-compliant devil's claw. As one exporter explained, this standard is expected to strengthen the long-term business prospects of devil's claw trade:

*“We have pushed for the GACP standards because under the conventional regime, there is no possibility to promote sustainable harvesting. The driving force in conventional devil's claw is quick money making. And during some of our inspection tours, we noticed that large tracks of land where devil's claw used to grow were empty. And yet, the entire industry was turning a blind eye on the problem. European companies just wanted paper work, that all boxes are ticked, and they were not much concerned with quality. They wanted large quantities of cheap devil's claw to supply the market. Quality was very bad, and it was hidden by loads of paper work.” (the Managing Director of EcoSo Dynamics, 6 March 2023)*

But, as it is voluntary, GACP+ only concerns a limited part of the production. While three exporters try to gradually increase the share of GACP+ devil's claw in their production, the fourth main exporter and smaller players continue to focus on common devil's claw. Moreover, in the absence of an external certification system, the implementation of GACP+ in terms of actual sustainable harvesting is uncertain. Providing a thorough training to harvesters, doing post-harvesting surveys, actually taking the results of the surveys into account when defining quotas, sorting out cases where harvesters have not followed sustainable practices or have overharvested an area, and enforcing corrective measures, are costly and

<sup>107</sup> We have no knowledge of the share of devil's claw being harvested in a sustainable way, but it will not be above 20%, including organic (5-10% of production) and organic fair-trade (about 1% of production) products. Indeed, 80% of the production comes from unorganized harvesting, where no training for sustainable harvesting nor monitoring is taking place. Moreover, the provision of trainings and selected post-harvest surveys do not ensure actual sustainable harvesting for the totality of organized production.

<sup>108</sup> This organic devil's claw is certified according to the French Ecocert standard. Fair for Life is a Swiss fair-trade label that tags products commercialized within its ambit,

and that redistributes to the original suppliers – here the Conservancies involved – a percentage of the price for each final product being sold.

time-consuming measures. Moreover, since constraints also involve extra work and costs for Conservancies and their harvesters, expecting too much can backfire:

*“In practice, if we expect too much from harvesters and Conservancies, if we hence punish too often by retaining the bonus, there is a risk for us that our competitors take our place by telling the conservancy ‘With us, it will be easier, we just buy what you have to sell’.” (the Managing Director of EcoSo Dynamics, 6 March 2023)*

As for the “+” of GACP+, the fair & equitable character of benefit-sharing agreements concluded between exporters and Conservancies is also unregulated. Unlike the Fair for Life system, where a fixed share of the sales is redistributed to the Conservancies, the benefits shared under benefit-sharing agreements are up to the contractual parties.

At the time when the present study was conducted, the negotiation of benefit-sharing agreements under the ABS law of 2017 and the GACP+ standard was only beginning. We were allowed to assist to one such negotiation. While the observations made at this occasion are not necessarily representative, they provide insights into what ABS can mean concretely under relatively propitious conditions. Indeed, while being mindful of his own commercial interests and constraints, the exporter involved in this particular benefit-sharing agreement was open to act in a constructive manner, to nurture a long-term partnership that should be beneficial to all parties. On the other side of the bargaining table, the Conservancy involved belongs to a San community, with the Sans being historically and currently the most disadvantaged Indigenous People of Namibia. However, this particular Conservancy is also known to be particularly well organized and managed, and its members are considered relatively better off than most other San communities.<sup>109</sup> Moreover, an NGO that has supported the Conservancy for decades provided an expert to prepare the board members of the Conservancy for the negotiation and to facilitate the negotiation.

Under these conditions, ABS did not induce significant changes in the relation between the two parties. Concretely, after having supplied devil’s claw on an exclusivity basis to the exporter for more than 15 years, the Conservancy signed a Prior Informed Consent that confirmed its consent to continue doing so in the next three years. As for the benefit-sharing agreement, which also has a validity of three years, the exporter proposed to take over 50% of the organic certification costs and 100% of the Fair for Life certification costs, and to continue providing training for sustainable harvesting. The facilitator asked the board members of the Conservancy if anyone had questions, remarks, or anything else she or he would like to discuss. As no one expressed any wish for change, these terms were agreed upon.

The ABS agreement was followed by the negotiation of the purchasing agreement, which would define the purchasing price per kilogramme of devil’s claw, bonuses, and the management fee paid by the exporter to the Conservancy for the upcoming season. Interestingly, when representatives of the Conservancy asked for a price increase, the exporter offered to pay even more than what the Conservancy had just demanded – an offer that triggered applause among the Conservancy’s board members. Later on, the exporter explained this had been a spontaneous decision meant to nurture the good commercial relations with the Conservancy, and to pass on part of the unexpected benefits earned thanks to favourable exchange rates between the Namibian dollar and the euro. As part of the same meeting, next to the ABS agreement and the purchasing agreement, the Conservancy also received the funds collected through Fair for Life sales – about N\$13.000 (€650), double the amount of the previous year.

In informal exchanges and an interview conducted shortly after the meeting, all parties involved expressed satisfaction. Regarding the exporter, he had not faced unexpected demands from the Conservancy which, if he had refused them, would have damaged the quality of the relation. On the contrary, the meeting had given him an opportunity to nurture the relation by demonstrating generosity. Yet, this behaviour oriented towards mutually beneficial ties on the long run, as opposed to the short-term maximization of monetary gain, also implied a commercial risk:

*“The issue is that if the government does not implement ABS properly, while some of us try to understand ABS and do things properly, in the spirit of the law, others might just focus on cheap export and keep costs down by making little efforts on ABS. It is a substantial risk. If we get too expensive, we will be kicked out of the market. So there is a kind of paralysis: How far can we go? How much can we ask our customers to contribute without losing our market position? We work with about 20 conservancies and more than 20 harvester groups. So implementing ABS properly means incurring considerable costs. If our customers support ABS, this can work out. But if the other players in the market do not follow on ABS, these huge costs will be a handicap.” (the Managing Director of EcoSo Dynamics, 6 March 2023)*

<sup>109</sup> For background information, see for instance Dieckmann et al. (2014).



As for the Conservancy, its Chairman also expressed satisfaction:

“The meeting was good. We had good outcomes. For ABS, it is quite new to us. We learned about it on Monday only [a day before the meeting]. The explanations of where ABS is coming from were very useful. But these were the basics. It is the beginning, and we will get more information, learn more about ABS, as things progress. So for now it is good.

*Would it have been useful for you to learn about ABS more in advance?*

Yes, if we had learned about ABS like two weeks before, we could have had the time to learn more about it. But it is okay. We need ABS so that [X: the exporter] can apply for the permits. And we have been working with [X] for a long time now. It has been a long journey already. We trust we will learn more on ABS as we will go through it. And [Y: the facilitator] is there, between [X] and us, so it works well.” (the Chairman of the Conservancy, 07 March 2023)

Since this one case of ABS agreement is not representative, one should not generalize from it. Whether in devil's claw trade, or in other biotrade sectors, such as marula, different configurations of relations between resource users and resource providers will most probably lead to different ABS agreements. As our limited data suggests, the following pattern is likely to prevail:

- i. When social – including commercial – relations between resource user and resource provider are already oriented towards long-term cooperation, like in the case outlined above, ABS is likely to have limited impact. As Jessica-Jane Lavelle (2023) suggests, inducing more equity and strengthening sustainability would require to address more structural social inequalities that would strengthen the autonomy, voice, and bargaining power of harvesters, and support solidarity between the different actors involved in the value chain.
- ii. When commercial resource users are more focused on short-term profit-maximization, and organized resource holders are more dissatisfied, there would in theory be more leeway for ABS to induce change. However, this would require resource holders to be in a position to impose such changes in the negotiations: to know about ABS and how to use it, and to have a social and commercial relation with the resource user that is not too asymmetrical. In the absence of an effective public awareness campaign on ABS, or of effective support by the state or by NGOs, Conservancies and harvester groups are unlikely to have such knowledge and such bargaining position. Concretely, it means that, to comply to ABS, the resource users will be the ones who tell resource providers what ‘Prior Informed Consent’ and ‘Mutually Agreed Terms’ is all about. This conflict of interest, which is likely to bias the framing of ABS in favour of the commercial interests of users, is likely to weaken the effects of ABS in terms of equity.

iii. When resource holders are not organized in a well-functioning community, but collecting and selling resources to commercial users as individuals, ABS is unlikely to work at all. Indeed, explaining ABS and negotiating benefit-sharing agreements on a case-to-case basis would involve transaction costs that a company can hardly cover. Moreover, resource providers would have little capacity to impose equitable terms of benefit-sharing when dealing with companies that follow a commercial rationality under competitive pressure. The case of a company from the marula oil sector illustrates this point:

“I have over 400 suppliers, of which 99% are illiterate. They don't understand ABS. They can hardly read and write. The majority of them are old women. [...] There is good money to make in this business, but costs are going up. And the international market is very cost-sensitive. It is hard to get to a client and ask to raise the price. It is a dog-eat-dog business, survival of the fittest. [...] There are so many different communities and regions from where we get marula. Most of them are in remote areas. And this makes it impossible for us to carry the message of ABS to each of them. But anyway, communities are concerned about what they will eat in the evening. They don't care about sustainable harvesting, traditional knowledge, and so on. Communities do not know about ABS, about the Nagoya Protocol. Here, on the ground, where we work, ABS doesn't make sense for anyone. [...] ABS is just something I have to do to be able to export my product. Because without ABS agreements, I will not get the permit to export my oil.” (a manufacturer and exporter of marula oil, 8 March 2023)

To conclude, the economics of ABS must be considered in the light of the original purpose of ABS, which is to rebalance postcolonial trade relations for more fairness and equity, while creating incentives for the conservation and sustainable use of genetic resources. As our empirical analysis shows, while ABS can deliver some contributions in this regard, it is limited by its reliance on the very economic structures and rationalities underlying problems of inequity and unsustainability.

Regarding equity, the mismatch between national ABS legislations and a transnational economic system precludes ABS from addressing postcolonial inequities between nations in an effective manner. For instance, the responsibility to share benefits in value chains that incorporate Namibian natural resources ends up, to a great extent, on the shoulders of Namibian companies, which have limited capacity to pass on the costs of ABS to their European clients. The redistributive effect of ABS is hence, to a significant extent, occurring within Namibian trade relations, rather than between Namibian providers and foreign users of genetic resources. Within Namibia, whose economic system is the second most unequal in the world in terms of Gini coefficient (preceded by South Africa), companies that must implement ABS tend to focus on those resource holders who are already resourceful and well organized, when compared to

weaker resource holders, because this reduces transaction costs and allows to pursue commercial strategies oriented towards the long run. Outside these privileged commercial relations, the logic of competition inherent to capitalist markets pushes companies to implement ABS in a way that minimizes costs. And within privileged commercial relations, while companies can integrate ABS in long-term partnerships with resource providers, the economic system limits possibilities of redistribution by turning relative generosity into a commercial risk. Only non-economic structures that support collaboration between the economic players involved, such as the initiative around the GACP+ standard, can, to some extent, compensate this negative effect of competition. Overall, as ABS relies on mutually agreed terms within bilateral market transactions, the actual terms of ABS agreements are likely to reflect asymmetries characterizing these relations, rather than to rebalance the relations that are the most asymmetrical and hence the most inequitable.

As for sustainability, under the current structures, ABS favours an economic rationality over an ecological one. According to the premises underpinning ABS, the monetary valorisation of a genetic resource,<sup>110</sup> coupled with a widespread redistribution of benefits, will incentivize beneficiaries to use the resource in a sustainable way. However, in practice, the opportunity to gain monetary incomes through the valorisation of a resource does not automatically create such incentive. On the contrary, it is likely to create an incentive to collect as much resource as the market can absorb, so as to increase monetary gains. In other words, the use of the resource obeys the short-term dynamics of the market economy, rather than ecological criteria defining how much resource can be extracted, and how it must be extracted, to avoid disrupting the complex web of ecological relations that sustains the reproduction of the resource on the long run. As the case of devil's claw illustrates, this predominance of market-driven extractivism can put the resource at risk. Because biological resources are not just divisible units, but lively organisms entangled in ecological interdependencies, putting one resource at risk has not only immediate economic significance. It contributes to weakening the ecological web of interrelated beings to which the 'resource' belongs.

This does not mean that a sustainable use of natural resources is impossible. But, to achieve such sustainable use, other cultural and institutional settings might be required, which do not rely as much on capitalist market structures as ABS does.

## The science of ABS

Together with the politics and economics of ABS, the epistemic – knowledge-related – dimension of ABS is an important factor in the functions and dysfunctions of the ABS regime.

On a systemic plane, the epistemic dimension of ABS is structured by the modern system of science. While science itself has a much older history, modern science emerged in the 18<sup>th</sup> and 19<sup>th</sup> century as a particular system of communication. The core function of the scientific system is to produce knowledge that can be considered true as long as not proven otherwise. While political systems operate through the production and use of power in collectively-binding decisions, and the economy through the production and use of money through payments, science operates through the production and use of truth-claims in scientific communication. This production of scientific truth-claims is organized by a vast array of internal structures, such as scientific disciplines, theories and methods, professional qualifications, peer review procedures, and specialized publication venues (e.g., academic journals, book series). Obviously, this scientific system has extensive interdependencies with other societal spheres, such as politics, the economy, law, or religion. However, its internal structures limit external interferences in its operations: cases where scientific findings are dictated by powerful political actors, purchased by wealthy actors, decided upon by a court of law, or prohibited on religious grounds, are considered problematic deviations from institutionalized norms of scientific credibility and academic freedom. Based on these norms, the scientific system is expected to define in its own terms what is to be considered true or false. As a consequence of this self-referential logic, any knowledge that has not been produced within the internal structures of science, for instance through methodical data collection, is considered unreliable from a scientific point of view.

For the ABS regime, this scientific system is primarily something to be regulated. Under the Nagoya Protocol, any research activity that involves access and use of genetic resources must obtain a prior informed consent from the states ruling over the territories where these resources have been retrieved, and establish a benefit-sharing agreement with these states. Besides, while scientific research can freely access and use knowledge that is in the public domain, it must obtain a prior and informed consent from holders of aTK, and establish a benefit-sharing agreement with these knowledge holders.

This regulation of scientific access to genetic resources and aTK has been criticized as being dysfunctional on several grounds.<sup>111</sup> First, researchers face an ABS regime that is built on vague categories, and whose scope is therefore unclear. For instance, the Nagoya Protocol does not specify whether it only applies to material genetic resource-

<sup>110</sup> Instead of "valorisation", which is the term used in the Nagoya Protocol, others speak of the capitalist exploitation of resources – a formulation that has a different ideological connotation, because it leads the attention to different aspects of reality, but which refers to the same practices.

<sup>111</sup> See for instance Neumann et al. (2018), Aubertin et al. (2021), and Lawson et al. (2023).

es accessed *in situ* (e.g., in an African country) after the protocol came into force, or also to material genetic resources that were retrieved and stored in an *ex situ* collection (e.g., a European seed bank, a botanical garden) *before* the Nagoya Protocol came into force, but which are accessed and utilized *after* 2014. It is also unclear whether the Nagoya Protocol applies to access and utilization of digital sequences of genetic information (DSI) that were once retrieved from a biological organism, but which are now stored on servers, and which have possibly been modified through bioinformatics. The identification of the scientific user who is responsible to obtain a PIC and to conclude a MAT is another source of uncertainty, especially for cases where multiple samples of genetic resources are pooled together by international groups of researchers. In some cases, the distinction between non-commercial scientific use and commercial bioprospecting can also be difficult to pin down. Overall, as countries have addressed such issues differently in their respective ABS laws, regulations and permit systems, the ABS regime confronts researchers with a regulatory jungle that induces significant legal uncertainties, delays, and compliance costs.

As a result, scientific actors tend to consider ABS as a counterproductive regime. Not only would ABS do little to extend benefits of scientific research to resource and knowledge holders. It would also reduce actual benefits by creating bureaucratic and financial hurdles that hamper scientific research, including research projects that involve and benefit to scientific actors from the global South. Moreover, given the crucial role of scientific research on biodiversity for the conservation and sustainable use of nature, for instance through taxonomy, or ecological monitoring, creating ABS-related obstacles to such research would contradict the first two objectives of the CBD. In fact, it would contradict the terms of the Nagoya Protocol itself, including the commitment of its Parties to “create conditions to promote and encourage research which contributes to the conservation and sustainable use of biological diversity, particularly in developing countries.” (Art. 8).

With initiatives such as the German Nagoya Protocol Hub, which was created by a consortium of German scientific institutions,<sup>112</sup> scientific actors have developed knowledge resources to cope with the regulatory hurdles of ABS. In parallel, scientists have used academic publications as a tool to voice their concerns and put dysfunctions of the ABS regime on the international policy agenda.<sup>113</sup> Besides, position papers such as the White Paper *Finding Compromise on ABS & DSI in the CBD: Requirements & Policy Ideas from a Scientific Perspective* have been used to advocate science-friendly ABS policies. In this particular example, the authors argue vehemently against the inclusion of DSI within the scope of the Nagoya

Protocol, and militate for the preservation of an open-access system that “enables scientific reproducibility and enforces scientific integrity” and “enables global non-monetary benefit sharing, including scientific capacity building in developing countries precisely because everything is open, free, and reusable.”<sup>114</sup>

In national contexts, the voicing of concerns and related recommendations by scientific actors can be illustrated with a paper published in 2020 by Wana W. Chisembu and Kazhila C. Chisembu.<sup>115</sup> This paper, which critically discusses Namibia’s ABS Act of 2017, explicitly aims to contribute to a discourse that “impacts and enriches stakeholder buy-in, public awareness, and enforcement, as well as future amendments” of this piece of legislation. Regarding effects on the research activities of University of Namibia and Namibia University of Science and Technology, the authors contend that “most of the two universities’ research, which is dependent on prompt and unfettered access to ethnobiological resources, will now be stymied by this ABS law. [...] By overly restricting access to ethnobiological and genetic resources and associated TK, Namibia’s ABS law complicates the role of universities in conducting research on ethnobiological resources and TK. It stunts universities’ essential contribution to the Indigenous knowledge economy. The new law also imperils human capital development in fields such as ethnobiology, ethnomedicines, pharmacognosy, and taxonomy.”<sup>116</sup> The paper develops these concerns on several pages that read as a virulent critic of the regulatory framework put in place by the government under the Nagoya Protocol. Among other issues,

- i. “[through] its overt emphasis on monetary benefits, the current Namibian ABS law makes it difficult for low-budget researchers to undertake negotiations with communities, as the ‘right holders’ will now explicitly demand up-front payments, including the sharing of research funds. Since most right holders are illiterate, receipting for ethnobiological resources and associated TK will become problematic; this will create challenges in the accountability and audit of research funds.”
- ii. “Unlike the South African ABS law, which provides for collection and research permits to be issued by provincial authorities, the Namibian law places too much emphasis on centralized regulation through government control of academic research permits instead of devolving powers, permit procedures, and benefit-sharing to local authorities and ethical clearance committees in universities.”
- iii. “There are four necessary steps required to ethically and successfully conclude a consent process, namely, legitimization to consent, full disclosure, adequate comprehension, and voluntary agreement. Such inflexible steps and bureaucratic lags in ABS negotiations will generate excessive delays, which will, in turn,

112 The Leibniz Institute-German Collection for Microorganisms and Cell Cultures (DSMZ), the Consortium of German Natural Science Collections (DNFS), the German Life Sciences Association (VBIO), and the Leibniz Research Network Biodiversity (LFN BioDiv).

113 See for instance Neumann et al. (2018), Aubertin et al. (2021), or Lawson et al. (2023).

114 WiLDSI (2020: iii).

115 Chisembu and Chisembu (2020).

116 Ibid., p. 21.

jeopardize university research productivity. Tedious access procedures with numerous levels of bureaucracy will slacken decision-making processes, amplify university research costs, and blur accountability and transparency. These practices will put a brake on non-commercial research outputs in the universities. Unlike industrial bioprospecting, academic research does not have the financial or organizational flexibility for long-lasting negotiations as postgraduate and donor-funded research projects need to fulfil set goals within a short period of two to three years. Currently, approval for collection permits takes more than one year. Under this new ABS law, the waiting time to get a research permit will now be much longer because researchers will first be required to get PIC in addition to signing a BSA. Stringent ABS conditions will, from now onwards, increasingly deter scientists from conducting research in the fields of ethnobiology and ethnomedicines. Over time, the consequences for universities as hotbeds of research and innovation will be too ghastly to contemplate.”

## The Indigenous and traditional knowledge of ABS

While the issues raised above concern primarily scientific actors, another set of epistemic issues concerns holders of Indigenous and traditional knowledge (ITK), including knowledge associated to genetic resources (aTK). As suggested above, modern social systems are self-referential: they operate within closed meaning contexts, and they can only relate to external reality in their own terms. This also applies to the way these social systems consider and handle ITK.

For politics, ITK is an object of policy making situated within broader political problems and solutions, and it needs to be defined in terms that are politically meaningful. For instance, to sort out issues pertaining to contested intellectual property rights, the World Intellectual Property Organization defines ITK as “knowledge, know-how, skills, innovations or practices; that are passed between generations; in a traditional context; and that form part of the traditional lifestyle of indigenous and local communities who act as their guardian or custodian.”<sup>117</sup> As Namibia’s ABS Act of 2017 is concerned with a different – though related – political issue, it defines ITK with a different focus, as “the accumulated individual or collective knowledge, practices, innovations or technologies associated with biological and genetic resources which is created or developed over generations by local communities, vital for conservation, sustainable utilisation of biological and genetic resources and of socioeconomic value.” (Art. 1).

In economic contexts, ITK appears in the form of pieces of information that are relevant in terms of their commercial use value, to

produce commodities that can be sold for a profit. Such information is either accessible and usable for free (public domain), or it is accessible and usable on conditions such as prior informed consent and/or against a monetary payment. In this respect, the ABS regime is expected to strengthen the intellectual property rights of IPLCs over their knowledge, and to ensure that external users of this knowledge retribute IPLCs through fair and equitable benefit-sharing.

As for science, it considers ITK as an external kind of knowledge, whose definition and properties must be established conceptually and empirically. For instance, since its formation as a scientific discipline, anthropology has been concerned with the interrelations between ITK (culture) and material conditions of life of IPLCs (nature).<sup>118</sup> Is ITK primarily formed by cultural adaptation of human communities to their specific material conditions of life (nature>culture)? Or, is ITK defining how communities perceive, make sense of, behave in and act upon their material environment (culture>nature)? More recently, in the wake of the so-called ontological turn, extensive discussions in anthropology have revolved around possibilities to overcome this dichotomy.<sup>119</sup> If the distinction between nature and culture is a product of the modern scientific conception of reality, doesn’t the use of this distinction to apprehend ITK necessarily distort it? If ITK operates on the basis of different conceptions of reality, can anthropology emancipate from the nature/culture divide to grasp ITK in a more truthful way, without negating indigenous realities by treating them as *beliefs* whose true structures and function can only be known by modern science?

The idea that such an ontological turn can contribute to ‘decolonize’ scientific research and postcolonial epistemic relations is present in these discussions. It is well known that scientific disciplines and their epistemology have played a major role in colonial history, for instance, by treating Indigenous Peoples and communities as exotic research objects, by negating the validity claims of their knowledge, or by supplying useful knowledge to colonial powers to help them colonize indigenous communities. By recognizing the multiplicity of knowledge systems and related realities, or ‘worlds’, ontological pluralism is expected to help overcome the problematic legacies of colonialism, with scientific disciplines becoming more open, inclusive and respectful of IPLCs and ITK.<sup>120</sup>

This postcolonial scientific agenda often comes together with an ecological agenda. For scholars who consider the epistemological dualism between nature and culture as a root cause of ecological unsustainability, non-dualist Indigenous knowledge systems seem to be a factor explaining why biodiversity is higher in territories

<sup>118</sup> For a synthesis of these discussions, see Descola (2013b).

<sup>119</sup> See for instance Holbraad and Pedersen (2017), de la Cadena and Blaser (2018), and Schnegg (2023). While sociology tends to lag behind, these discussions start to gain salience in this particular discipline. See for instance Walter et al. (2023).

<sup>120</sup> See for instance Escobar (2020).

<sup>117</sup> WIPO (2020: 13).



controlled by IPLCs. Moreover, inasmuch as ITK is based on a non-dual – more relational – conception of reality, it is often treated as a useful anchor to emancipate our imagination from the modern ontological dualism. In this perspective, tackling ecological problems such as biodiversity loss more effectively requires to dismantle the domination of ITK by modern scientific epistemologies, and to value and use ITK to create more sustainable and *bio-culturally diverse* realities. In other words, by inspiring the development of more diverse, just, and sustainable conceptions of reality, ITK is expected to help create more diverse, just, and sustainable institutions and practices. In particular, strengthening the role of IPLCs and ‘genuine’ ITK in environmental science & policy discourse is expected to help decolonize, transform and improve environmental governance approaches and institutions.<sup>121</sup>

These science & policy discussions are present in the ABS regime around the question of how IPLCs and ITK are included in this biodiversity governance mechanism.<sup>122</sup> For instance, in the meetings of the Working Group that prepared the Nagoya Protocol, participants highlighted that ABS could be seen as a mechanism that facilitates the commodification of ITK in capitalist market relations, without acknowledging the close ties between ITK, knowledge holders, and the land – ties that are not necessarily amenable to ownership and commodification. Moreover, ITK is often based on a strong association between knowledge and knowledge-holder, with some knowledge not being supposed to be appropriated and shared outside specific community members. With ABS, a risk was identified that outsiders obtain a PIC and a MAT from willing community members, so that such transaction would appear to be legitimate *in the terms of the ABS regime*, even if this transaction would be illegitimate *in the terms of the community* if the community member was not authorized to give access to this knowledge.

To ensure that IPLCs can themselves define what their knowledge consists of, and under which conditions external actors should engage with them to ask for prior informed consent and negotiate benefit-sharing agreements, BCPs were promoted in the Working Group as an adequate instrument by actors such as Natural Justice, or the representative of Namibia and the African Group, with the support of GIZ. In essence, BCPs are outcomes of community-internal processes through which communities take stock of their ITK, and formalize procedures defining which knowledge can be shared by whom, to whom, and under which conditions. In its Art. 12, the Nagoya Protocol stipulates that “Parties shall in accordance with domestic law take into consideration indigenous and local communities’ customary laws, community protocols and procedures, as applicable, with respect to traditional knowledge associated with

genetic resources.” Subsequently, some countries integrated BCPs in their respective ABS laws and regulations. This is, for instance, the case of Madagascar, of Benin, or of Namibia, whose ABS regulations of 2021 stipulate that “[to] obtain prior informed consent from right holders, the person contemplated in subregulation (1) must (a) comply with community protocols or customary practices, where such protocols or practices exist” (Art. 5§3).

Here as well, the principles of the ABS regime on paper and the ground realities of the ABS regime diverge. With regard to GIZ, after the Nagoya Protocol was adopted, it supported Natural Justice to facilitate the elaboration of BCPs by communities in partner countries. Some lessons of early experiences informed the elaboration of a toolkit that was published in 2012 under the title *Biocultural Community Protocols: A Toolkit for Community Facilitators*.<sup>123</sup> More recently, Natural Justice produced toolkits for the elaboration of BCPs in three biotrade sectors in South Africa within the framework of GIZ’s ABioSA project. Natural Justice and other NGOs also facilitated a few BCP processes, such as in the context of the benefit-sharing agreement between V. Mane Fils and the Kingdom of Magha-Bamumbu in Cameroon around the plant *echinops giganteus*, or in Benin, where the Degbe Aguininnou community of Bonou produced a BCP to revive and strengthen its customs in relation to the sacred and biodiversity-rich forests Gbêvozoun and Gnahouizon. Interviews conducted with GIZ employees and a member of Natural Justice, as well as a review of BCPs presented in a joint report from Natural Justice and GIZ, highlight both positive outcomes and shortcomings, which vary from case to case.<sup>124</sup>

Overall, what stands out is a tension between the complexity inherent to BCPs, whose function is to protect and strengthen biocultural diversity, and the interests of users and operators of ABS to standardize and streamline ABS processes, so they do not become even more impracticable. The following interview excerpts grasp this dilemma particularly well:

“Once ABS is started as a discussion, for instance through a BCP process, one engages with the challenges and opportunities of communities, of their relationships with their land, with their language and culture. At this point, it makes little sense to keep a narrow focus on ABS. [...] So ABS is an entry point. Through the development of a BCP, we bring other issues on the table, issues of ways of life, of relations to territories, and the various challenges that come with it.

[...] Quickly, it becomes more complicated when negotiations around a contract are started. How to behave appropriately when collecting the plant, respecting the customs? Communities can also ask that the name of the plant is kept by the user, because names

<sup>121</sup> See for instance McGregor (2004), Kimmerer (2013), Figueroa-Helland et al. (2018), Löfmarck and Lidskog (2017), Nelson and Shilling (2018), Muller et al. (2019), and Bold (2019).

<sup>122</sup> Girard et al. (2022b).

<sup>123</sup> Shrumm and Jonas (2012).

<sup>124</sup> Lassen et al. (2018).

have a particular significance. Or, that the sacred character of the place where the plant is collected be taken into account. The problem is that taking all these various aspects into account involves costs for users. The users have an economic motive and they want to keep things simple. This raises important issues in terms of how the process leading to a PIC and a MAT will happen. There can be many requests from communities, and it depends a lot on the willingness of other parties, like the users, to understand these requests. This requires to understand traditional knowledge.

Now, everyone, like the state, and others, try to develop common laws, common procedures, common categories, to streamline the processes, to make things easier. But Natural Justice says: 'No, there is a multiplicity of contexts at the local level, specific contexts that should not be ignored.' For instance, some communities say: 'You cannot separate the resource and the knowledge of it, it comes together, there is no knowledge without resource, and no resource without knowledge of it.' While ABS often separates the two.

[...] If we take the time to work with communities, to develop and use tools to strengthen their values, their traditional knowledge... ABS can have a good impact. But, if we do not do this, if ABS is rushed through without the communities, it becomes a purely economic tool, a way of turning the solidarity of communities into individualism, into a business mind-set. We have to support changes in communities that serve the protection of their integrity and the integrity of their territories." (a member of Natural Justice, 8 August 2022)

This dilemma potentially affects all players in the ABS regime. For IPLCs, letting BCP processes and outcomes become too complex and not sufficiently amenable to the functional constraints of users might harm opportunities to enter into advantageous benefit-sharing agreements. But keeping BCPs too narrow and subservient to functional constraints of users can undermine the integrity of a process that concerns the very identity and customs of a community.

For users, going by the terms of BCPs can increase complexity and associated costs. However, not going by the terms of BCPs involves legal and reputational risks:

"I can tell you about one case, where the initial agreement was that the project should strengthen the community, its ability to organize, so the community is prepared and ready when it enters into negotiations with users. That the involved members of the community

understand the framework, what will be negotiated, how it works... this is very important. But the project was also about developing value chains, and users wanted to accelerate the process. So they did not take the BCP into account, they negotiated with the wrong persons from the community, they defined their own terms of negotiations. And in the end, it was a mess." (a member of Natural Justice, 8 August 2022)

Political authorities are also caught in the dilemma, as the Nagoya Protocol expects them both to facilitate access to genetic resources and aTK, and to ensure that BCPs and other customary elements are respected. GIZ and NGOs such as Natural Justice, who both promoted BCPs, are also in a difficult position:

"Working with GIZ gives us the flexibility to work properly with communities. For instance, to develop a plan for the development of the community and its territory. But GIZ is not always GIZ. And of course, a balance has to be found between the project requirements of GIZ and the needs and processes at the level of communities. It depends from one project to another. The ABS Initiative is flexible. But other GIZ projects are not so flexible." (a member of Natural Justice, 8 August 2022)

"There are issues because of the timeframes of IPLCs, who develop their BCP, and the timeframes of users. Users have research project timelines, objectives, budgets, and they want to move forward quickly. It can lead to difficulties when communities say 'We need more time' or 'We first want to have these five meetings'. We have discussed with Natural Justice how to deal with that. Are there alternatives to BCPs? Are there pragmatic solutions, such as start by focusing a BCP on essential points, without harming the participatory and inclusive character of the process? [...] Natural Justice has tried to elaborate quicker procedures. They informally speak of it as microwave BCPs. This has led to mixed results. One has to find out where the proper line is to avoid harming the quality of the process and its results." (a GIZ employee, 31.05.2022)\*



## Chapter VI: Doing Transformation through Action Research

### Three methodological coordinates to foster deep transformative change in dysfunctional governance contexts

As our empirical analysis of the ABS regime has shown, ABS is a component of international biodiversity governance that is particularly dysfunctional. This is a problem, of course. But it is also a chance, as contexts that are dysfunctional offer propitious conditions to build up capacities for transformative change that, once available, can be mobilized to do transformative change in other action contexts where change within prevailing frameworks is insufficient.<sup>125</sup>

Such action contexts are numerous: the kind of discrepancies and contradictions between paper realities and ground realities that plague ABS are a widespread feature of policies and projects for sustainable development. Indeed, as the destructive side-effects of unsustainable modernization increasingly destabilize and metamorphose the world, governance institutions that are anchored in the ‘old’ paradigm of linear development simultaneously work and fail.<sup>126</sup> They work in the functional sense of performing operations that produce the conditions for further operations to occur. For instance, building on past operations – e.g., working group meetings, expert workshops, policy decisions, legal changes, benefit-sharing agreements – the ABS regime continues to operate and expand, with each new step creating needs for further steps to be made. Simultaneously, governance institutions such as ABS fail, because their operations reproduce premises, categories and *modi operandi* that are increasingly at odds with the realities they are supposed to govern. At an aggregate level, this trend produces widening discrepancies between the dominant paradigm of sustainable development and actual socio-material realities, which are characterized by increasing inequalities and precarity, conflict-prone nationalism and authoritarianism, as well as planetary ecological risks, losses and damages.

The international agenda for socio-ecological transformation is a response to this dysfunctional functioning of environmental governance for sustainable development. The adoption of this agenda at the highest levels of environmental governance and international cooperation is a powerful signal. Institutions tasked with the

implementation of sustainable development goals acknowledge that something is wrong with the *status quo*. Nevertheless, if institutions use semantics of transformation superficially, without putting words into practice, this agenda can also end up legitimizing business-as-usual for a little longer.<sup>127</sup> Avoiding this requires methods that support deep transformative change. Before we elaborate on such a method, the following paragraphs identify more general methodological coordinates that can help avoid pitfalls associated with the transformation agenda.

The first pitfall consists in believing that the problem is a lack of awareness, and that strong calls for transformative action induce transformative change. The words pronounced by the Secretary-General of the United Nations António Guterres at the occasion of the World Meteorological Day in Mai 2023 is a good example of such kind of call for action:

“On this World Meteorological Day, humanity faces a difficult truth: climate change is making our planet uninhabitable. Every year of insufficient action to keep global warming below 1.5°C drives us closer to the brink, increasing systemic risks and reducing our resilience against climate catastrophe. As countries hurtle past the 1.5°C limit, climate change is intensifying heatwaves, droughts, flooding, wildfires and famines, while threatening to submerge low-lying countries and cities and drive more species to extinction. [...] 2023 must be a year of transformation, not tinkering. It’s time to end the relentless — and senseless — war on nature, and deliver the sustainable future that our climate needs and our children and grandchildren deserve.”

Such kind of statement is necessary to highlight the irrationality of doing business-as-usual. However, more often than not, the repetition of such messages triggers a strange mix of panic and boredom.<sup>128</sup> By confronting us individually and collectively with our material vulnerability and our contributions to a catastrophe that defies the imagination, the message can – and often does – trigger feelings such as anxiety, anger, shame, helplessness, sadness, and grief.<sup>129</sup> If no appropriate setting is available to welcome and work with such feelings in a constructive manner, they are generally re-

<sup>125</sup> On the role of dysfunctional contexts as niches and catalysers for transformative change, see Herrfahrdt-Pähle et al. (2020).

<sup>126</sup> Beck (2016).

<sup>127</sup> See Beck’s analysis of politics of invisibility, with which institutions that are overburdened by problems they cannot solve try to maintain their legitimacy.

See also the critical analysis of Ingolfur Blühdorn (2020) on the swelling semantics of socio-ecological transformation and sustainability transition.

<sup>128</sup> For an inspiring analysis of this effect, see Latour and Schultz (2022).

<sup>129</sup> See for instance Hoggett (2019), Machado de Oliveira (2021), and Wray (2022).

pressed, and the troubling call for action gets repressed with them. What remains is an abstract information that ends up being uninteresting, as it is repeated time and again without having affective and/or practical effects. Under such conditions, calls for transformative action fail to move actors out of cognitive dissonance: the abstract knowledge and latent feeling that business-as-usual is wrong, coupled with knee-jerk strategies to justify the continuation of business-as-usual.

**Methodological coordinate #1: Contributing meaningfully to the agenda of socio-ecological transformation requires methods that go beyond the abstraction of language and statistics, to allow a more comprehensive, rich, palpable, and lively engagement of participants with situations that require transformative change. By giving space to emotions involved in these situations, such methods can resolve repressed or latent emotional obstacles, strengthen the quality of engagement of participants, and set transformative energies free.**

The second pitfall of the transformation agenda is almost the opposite: the formulation of overly ambitious and optimistic visions and goals, which suggest that current problem-solving institutions can actually move society from an unsustainable present into a sustainable future. The Global Biodiversity Framework of 2022 is a good example. As stated in its section A (§3):

“The Kunming-Montreal Global Biodiversity Framework, building on the Strategic Plan for Biodiversity 2011–2020, its achievements, gaps, and lessons learned, and the experience and achievements of other relevant multilateral environmental agreements, sets out an ambitious plan to implement broad-based action to bring about a transformation in our societies’ relationship with biodiversity by 2030, in line with the 2030 Agenda for Sustainable Development and its Sustainable Development Goals, and ensure that, by 2050, the shared vision of living in harmony with nature is fulfilled.”

Another example is the European Green Deal, which was crafted in 2019 in the wake of a European electoral campaign in which climate change had been a particularly salient issue.

“Climate change and environmental degradation are an existential threat to Europe and the world. To overcome these challenges, the European Green Deal will transform the EU into a modern, resource-efficient and competitive economy, ensuring:

- no net emissions of greenhouse gases by 2050
- economic growth decoupled from resource use
- no person and no place left behind”

Inasmuch as the purpose of these policy visions and goals is only to provide broad normative orientation and encourage action, their unrealistic character is not necessarily a problem: isn’t it better to have optimistic visions and ambitious objectives that fuel hope and

mobilize people to achieve progress, rather than to demotivate people with pessimistic visions and cautious objectives?

However, overly ambitious policy or project visions and goals might actually serve a different purpose, namely the legitimization of present environmental governance actors and institutions. This legitimization does not deny past insufficiencies. For instance, the 196 governments who crafted the Global Biodiversity Framework acknowledge that biodiversity, which is “fundamental to human well-being”, is “deteriorating worldwide at rates unprecedented in human history”, and this “despite ongoing efforts”. But, by describing themselves as powerful agents of transformative change, who can build on past governance frameworks to achieve a harmonization of relations between society and nature, these governments affirm that they are a potent solution. They define transformation as a problem-solving task lying ahead, and they describe themselves as being apt to fulfil this task through adequate plans and policies.

After the Agenda 21 adopted three decades ago in Rio, the Millennium Development Goals, the Aichi targets 2011–2020, and the Agenda 2030, the Vision 2050 ‘Living in Harmony with Nature’, as well as objectives of carbon neutrality by 2050, might end up being ineffective. Without potent forces and methods to foster actual structural change, their bold objectives are likely to reproduce environmental politics-as-usual, *i.e.*, the making of problem-solving promises governments cannot fulfil:

“As the force whose task it is to put things in order, politics works mainly through removing the limits to the appeal to it. It regenerates hopes and disappointments and continues to thrive because the themes in which this occurs can be changed quickly. The inclusion of ecological problems within politics may reinforce this see-saw effect because through them it becomes quite clear how much politics would have to accomplish and how little it can.”<sup>130</sup>

Once the insufficiencies of prevailing environmental governance frameworks have been acknowledged, *doing* actual transformative change might therefore require examining and tackling the structural roots of these shortcomings. In other words, existing governance institutions and actors cannot deliver transformative change without questioning and transforming their own structures in the first place. Instead of visions and blueprints that might or might not be realized in an uncertain future, this perspective allows to redefine transformation as a task that must be carried out in the present thickness of environmental governance assemblages. In the words of Donna Haraway:

“In urgent times, many of us are tempted to address trouble in terms of making an imagined future safe, of stopping something from happening that looms in the future, of clearing away the present

<sup>130</sup> Luhmann (1989).

and the past in order to make futures for coming generations. Staying with the trouble does not require such a relationship to times called the future. In fact, staying with the trouble requires learning to be truly present, not as a vanishing pivot between awful or edenic pasts and apocalyptic or salvific futures, but as mortal critters entwined in myriad unfinished configurations of places, times, matters, meanings.”<sup>131</sup>

As a side note, this reflection does not only concern large-scale policy frameworks for sustainable development. It also concerns international cooperation. For instance, at GIZ’s Future Forum *Building capacities for transforma(c)tion NOW*, discussions on values such as ‘just transition’, or ‘sustainability’, had a prominent position. Positive visions of a sustainable future were put forward to inspire and motivate action. And, as one of the organizers of the event noted, ‘transformation’ was generally equated with any kind of project and change process that is oriented towards sustainable development goals. This left little room for critical perspectives and discussions on the structures and *modi operandi* of GIZ, and on how to transform them to allow GIZ to deliver outcomes that are truly transformative.

**Methodological coordinate #2: Contributing meaningfully to the agenda of socio-ecological transformation requires methods that can help environmental governance actors and institutions to critically assess, question and possibly transform their premises, categories, narratives, institutional arrangements, normative horizons and practices. This can occur, for instance, through multi-stakeholder processes that cut across institutional boundaries, that bring together a diversity of viewpoints and interests, that purposefully integrate critical voices, and that provide a safe space where alliances can be crafted and conflicts sorted out to elaborate actionable strategies for transformative change.**

A third pitfall in the science & policy discourse on transformation is the role of planning and control. In assessment reports of IPCC and IPBES, for instance, transformation is mostly conceived of in terms of transition pathways. Scientific experts delineate dimensions and sequences for a transition from unsustainable conditions A to sustainable conditions B. Of course, transformative change requires foresight, and specific initiatives need planning and evaluation. However, sequential expert plans, coupled with sets of monitoring indicators and control mechanisms, can be counterproductive in some respects.

Unlike process-oriented imaginaries of exploration, co-construction and emergence, imaginaries of socio-technical engineering, planning and control can restrain transformation options.<sup>132</sup> Indeed, these latter imaginaries usually come from a set of dominant actors

who manage to impose their preferred conception of a desirable future at the expense of alternatives, and who solidify their preference in plans directed towards their realization. To the extent that planning and control entrenches conceptions and power relations that prevail at a certain point in time, they can bridle the emergence of different perspectives, ideas and actionable opportunities.

Another problem is that no sequential plan or blueprint can be complex enough to anticipate and model future evolutions. Abstract pathways designed by experts can be used as one ingredient in decision-making. And the collaborative design of pathways can be used as a tool to work on the multiplicity of perspectives and preferences, or to stir up the imagination of participants. But, notwithstanding claims of ‘evidence-based’ policy making, expert knowledge is never translated into action in a linear way.<sup>133</sup> This is particularly true when transformative change is involved, as such kind of change is, by definition, particularly disruptive and unpredictable. As a consequence, trying to conduct transformative change processes according to abstract pathways and blueprints, rather than according to socio-material reality as it unfolds, can lead processes to lose touch with reality, and hence to become less creative and effective.

More fundamentally, approaches based on planning and control can reproduce the modernist belief in the position of humans outside and above nature, and in the capacity of humans and their social systems to master their environment in order to achieve unlimited progress. Such approaches are particularly present in techno-scientific discourses on the Anthropocene. For instance, scientific depictions of planetary boundaries are used by certain actors to suggest that experts can identify precisely and objectively where these boundaries are, and inform evidence-based governance institutions to ensure that society operates within these boundaries. Or, the realization that humans are a defining factor of planetary changes is translated by some actors into projects of geo-engineering, which assume that humans can know, control and re-engineer Earth Systems. These approaches and related projects of transformation tend to underestimate uncertainty, contingency, value conflicts, and the jolty dynamics of political contention.<sup>134</sup> As Sheila Jasanoff argues, since they reproduce unrealistic beliefs that are roots of unsustainability, they are unlikely to produce adequate responses to the ecological destabilization of modern society in the Anthropocene.<sup>135</sup>

**Methodological coordinate #3: Contributing meaningfully to the agenda of socio-ecological transformation requires methods for the experimental co-creation of transformative change, as opposed to vain attempts to plan and implement transformative**

<sup>131</sup> Haraway (2016: 2)

<sup>132</sup> See Beck et al. (2021), as well as Adloff and Neckel (2021).

<sup>133</sup> See for instance Demeritt (2001) and Sarewitz (2004).

<sup>134</sup> See Eckersley (2017).

<sup>135</sup> Jasanoff (2021).

change based on expert blueprints. Instead of trying to solve targeted problems once and for all, we need methods that allow participants to learn from one another and to deepen their understanding of complex problematic situations. While gaining deeper collective intelligence, participants can individually and collectively adjust and possibly transform their conceptions, their preferences, and their behaviour. Diagnostics, ideas of solutions, strategies and plans, as well as rationalities, interests and norms that guide behaviours emerge and are being transformed during the process in creative and unexpected ways. Such approach fosters humility, curiosity, uncertainty and trust, which are more favourable to the emergence of actual transformative change than claims of authoritative expertise, attempts to plan and control the behaviour of others, and risk avoidance.

## Doing transformation through action research: methodological outline

The concept of action research is generally attributed to Kurt Lewin, who is a founding figure of social psychology, group dynamics and organizational development. While acting as Director of the Centre for Group Dynamics at Massachusetts Institute of Technology in the mid-20<sup>th</sup> century, Kurt Lewin defined action research as “research on the conditions and effects of various forms of social action, and research leading to social action”, and opposed it to “research that produces nothing but books.”<sup>136</sup> This seminal definition is a little outdated. We know that research rarely produces nothing but books, and that books can influence social change in many ways. In essence, action research is a type of research that deliberately attempts to transform problematic conditions of reality through collaboration between scientists and practitioners, and that simultaneously produces scientific knowledge on such transformation.<sup>137</sup>

Lewin’s seminal paper also models action research as a *spiral of cycles*. The first cycle starts with the idea to tackle a certain problem through an action research. It continues with the design of an overall action research plan – a process that can already modify the initial understanding of the problem at hand. As the overall plan includes a next step, this first cycle of the action research is pursued by the execution of this step, and the observation of its outcomes. A second cycle starts with evaluation and learning based on these observations, and possible adjustments in the overall plan. A further step is then executed, and outcomes are observed. Each one of the subsequent cycles repeats this sequence of i.) *evaluation, learning & planning*, ii.) *action*, and iii.) *fact-finding about outcomes*, until the action research is ended.

The following paragraphs build on this general model, as well as on more recent transdisciplinary methods developed around the concept of ‘real-life laboratory’.<sup>138</sup> The overall action research plan presented here is oriented towards the following purpose: induce deep transformative change in the ABS regime, or in any other problematic environmental governance context, and produce scientific knowledge on such transformative change process.

## Cycle 1: Establishing scientific foundations

The point of departure of the action research outlined here already belongs to the past. It occurred when members of GIZ’s ABS projects and the author of the present report exchanged about the gaps between what the ABS regime is supposed to deliver and its actual outcomes. During this exchange, the idea came up to tackle this problem through a dedicated action research that would connect to the swelling agenda of socio-ecological transformation. A general concept was agreed upon, which also entailed plans for a next step: the production of an exploratory study that would provide analytical and methodological coordinates, establish a preliminary diagnostic, and identify relevant actors, action contexts and knowledge resources.

During the implementation of this first step, an opportunity was spotted to apply for third-party funding for the action research, and the plan of the first step was adjusted accordingly. In parallel to the exploratory study, time and resources were invested in the identification of academic partners, the conception and writing of a project proposal, and the production of various elements required for the application (e.g., budgets, a science communication strategy, a video presenting the project). Other opportunities were seized as events unfolded, such as the organization of a joint session with the Pilot Project on Community Engagement of ABioSA at the African Biotrade Festival 2023, or contributions to two sessions at GIZ’s Future Forum *Building Capacities for Transforma(c)tion NOW*.

The ‘fact-finding’ moment of this initial cycle of the action research is the discussion of the present report with GIZ and other potential participants in the action research. These discussions will allow to refine the plans for the next cycle, and to consider adjustments in the overall plan of the action research.

<sup>136</sup> Lewin (1946: 35).

<sup>137</sup> See Barbier (1996).

<sup>138</sup> For details on the ‘real-life laboratory’ approach to transformative change, see for instance Groß et al. (2015), as well as Defila and Di Giulio (2018).



## Cycle 2: Building a Community of Practice

The planned next step is to build an inclusive and transdisciplinary Community of Practice. This Community of Practice will provide what Petra Künkel and her co-authors call a lively ‘collaboration ecosystem’:

“These issue-based, human interaction systems are comprised of multiple, usually cross-institutional actors aiming to change the status quo towards a better future for all. They are part of the larger stakeholder system around a certain issue, region, or theme. [...] They emerge from a core group of people – the initial container – who partners to initiate change. This group builds a supportive wider group – the broader container – including high-level sponsorship. The wider group helps to engage more key stakeholders until the collaboration ecosystem is eventually functional and can go about delivering change. Among the key factors for success for multi-stakeholder collaborations is the careful attention to high-quality process architectures that build enlivening collaboration eco-systems. When people have a sense of aliveness, the willingness to engage with each other and the commitment to drive change together, multi-stakeholder collaborations deliver impact.”<sup>139</sup>

Concretely, the Community of Practice will be organized in three concentric circles:

- At the center, a *steering committee* will comprise a team of scientists with expertise in social and anthropological theory, in empirical research, and possibly in other relevant disciplines (e.g. bio-economics, biology, ecology); one or several interlocutors from GIZ will act as main non-scientific partner; and one or several consultants with expertise in the facilitation of multi-stakeholder processes for deep transformative change, as conceptualized for instance by Otto Scharmer in the theory U.<sup>140</sup> The steering committee will be in charge of organizing and conducting the action research, as well as in delivering tangible outputs such as scientific publications, reports, and science communication material (e.g., side-events at international conferences; contributions to blogs and podcasts). While social scientists will contribute their expertise in the conceptualization, observation and analysis of social dynamics pertaining to the action research, natural scientists will ‘represent’ (describe and speak in the name of) non-human actors, such as plants and ecosystems. This latter dimension of the setting is crucial, as representing non-human entities in the process allows, at least to some extent, to overcome the dualist conception of human subjects acting outside and above a nature composed of passive objects.<sup>141</sup>

- Around this core, a *circle of stakeholders* will comprise key stakeholders from the ABS regime. This circle will include other members of GIZ; international policy makers (e.g., the Secretariat of the UN Convention on Biological Diversity; international ABS experts and negotiators); national public servants (e.g., ABS Focal Points from environmental ministries), representatives of IPLCs; scientific and commercial users of genetic resources, including actors from transnational biotrade value chains; and relevant NGOs. While not being part of the steering committee, members of the stakeholder circle will have a voice in collective decisions, either with a consultative status or as co-decision-makers, depending on the matter to be decided upon.
- At the periphery, a *circle of experts* will comprise experts who will be invited in a targeted manner to provide additional inputs to the action research, for instance through presentations at workshops, through the participation in discussions among working groups, or through contributions to joint publications.

The action of building the Community of Practice will be completed through a first plenary workshop. The workshop will fulfil several functions:

- It will allow the members of the Community of Practice to come together as a group, and to get to know each other. With the support of adequate facilitation tools, participants will inquire individually and collectively about their respective position, and explore their deeper motivations, expectations and apprehensions regarding the action research, including its purpose to induce transformative change.
- The first workshop will also be an occasion for the Community to establish a joint diagnostic of the ABS regime. This diagnostic will build on the findings of the present exploratory study, on inputs from other scientific participants, as well as on the knowledge of all the non-scientific members of the Community of Practice.
- Because action research deliberately seeks to induce change, it necessarily impacts existing relations and interests. To ensure reflexive and ethical action, the Community of Practice will discuss and agree upon a set of guiding principles. These guiding principles will serve later on as a reference point, with the possibility for any member of the Community of Practice to question plans and actions on this basis. The steering committee will have the responsibility to ensure that these guiding principles are followed throughout the action research.
- Participants will discuss the planning of the next cycle, and propose adjustments in the overall planning of the action research.

Regarding the planning of the next cycle, participants will form transdisciplinary working groups, which will meet at regular intervals in-between plenary workshops. For now, three working groups are envisaged, but the number can vary, depending on available resources and what is being decided by the Community of Practice.

<sup>139</sup> Künkel et al. (2021: 51-53).

<sup>140</sup> Scharmer (2009).

<sup>141</sup> The idea of a representation of non-human entities by scientists is borrowed from Bruno Latour (2018b; 2017).

Each working group would focus on specific dimensions of the ABS regime. While the thematic and regional focus of each working group is to be defined by the Community of Practice, a possible option could be to have one group focusing on the international politics of the ABS regime, a second group focusing on the implementation of ABS in a given national context (e.g., Namibia), and a third group focusing on the role of IPLCs in one or two transnational biotrade value chains.

To complete the ‘fact-finding’ moment of the second cycle, scientific participants of the steering committee will meet after the first plenary workshop to put their observations of the action research process together and conduct a first round of analysis. Findings will flow into the production of research outputs. Besides, the scientific team will put relevant findings together in a short memo to be circulated to all members of the Community of Practice.

### Cycle 3: Exploring, deepening, imagining

The third cycle of the action research will start with the initial meetings of the transdisciplinary working groups. Building on the results of the first plenary workshop, each group will define its priorities and goals, and organize its practical *modus operandi*, keeping the guiding principles in mind.

The action research will be continued through working group meetings. In each group, scientists and practitioners will further examine dysfunctions of ABS in their thematic/ geographic area, and deepen their understandings of underlying conditions. Research assignments will be jointly defined, and subsequently carried out by the scientific team, so as to provide the action research process with relevant empirical and analytical inputs. Based on their knowledge, working groups will also co-create ideas for actionable transformative change options and strategies.

Depending on needs and resources, professional facilitation will support the working groups, for instance, by proposing dedicated tools to strengthen creative moments within the multi-stakeholder process, or by moderating group dynamics and help manage conflicts.

In parallel, based on the systematic documentation of the processes unfolding within the working groups, the scientific team will conduct research activities such as data analysis, presentations at scientific workshops and conferences, and the writing of first papers.

The steering committee will coordinate the overall process, and organize the second plenary workshop.

### Cycle 4: Initiating transformative change

The fourth cycle of the action research will start with another plenary workshop. In this workshop, the working groups and the scientific team will present intermediary results. Participants will also reflect on the learning process that occurred since the diagnostics formulated in the first plenary workshop, and review transformation change options that have been conceived so far. In the plenum and in focus groups, participants will examine how proposed transformative change options are likely to impact interrelations between the various human and non-human actors entangled through the ABS regime. Bringing the three working groups together is essential in this regard, as it will allow participants to better grasp how changes in one area of ABS might impact other areas. Possible obstacles for the implementation of transformative change options will be identified, and strategies will be devised to experiment with transformative changes that are considered desirable – beneficial in terms of equity, reciprocity, and ecological sustainability.

The second workshop will be followed by concrete individual and collective action being carried out by participants in their respective action contexts to initiate transformative changes. Meetings in working groups will facilitate coordination and co-learning.

Members of the scientific team will observe the change processes and document first outcomes. Other research activities will be continued in parallel, such as data analysis, presentations at scientific events, and the writing of publications.

### Cycle 5: Concluding the action research

The fifth and last cycle of the action research will close the two inter-related streams of the action research process: the practical one and the scientific one.

With regard to the practical stream, the scientific team will provide feedback in the working groups on the transformative changes initiated so far and their observable outcomes. Based on this feedback, as well as on the observations of the practitioners themselves, working groups will envisage corrective measures. They will also reflect on how the end of the action research is likely to impact the processes initiated under its aegis, and which steps could be taken to support the continuation of positive changes and avoid or minimize negative side-effects.

With regard to the scientific stream, the scientific team will complete the dissemination of the findings of the action research through publications and other forms of science communication (e.g., interventions in podcasts).



A closing plenary workshop will be organized to reflect on the results of the action research, to solidify learning effects, and to share experiences with actors from outside the Community of Practice who are interested and/or active in the field of socio-ecological transformation.

## The advantages and risks of action research as method for transformative change

Setting up such an experimental ‘real-life laboratory’ in the dysfunctional ABS regime has both advantages and risks.

**One advantage of such method is its ability to weave together theory, empirical knowledge, and the knowledge and action power of practitioners.**

There is extensive theoretical and empirical knowledge on contemporary socio-ecological troubles, as well as on the dysfunctions of environmental governance mechanisms such as ABS. Moreover, social sciences entail a vast array of theories, ideas and propositions that can be relevant to tackle such dysfunctions in a transformative way. Some of these knowledge resources have been cited and used in this report, like the systems-theory of Niklas Luhmann, the action-network theory of Bruno Latour and his analysis of ongoing socio-material mutations in the Anthropocene, or Ulrich Beck’s concept of metamorphosis. There are many others, such as ideas on how to rethink and reorganize interrelations between human society and biodiversity on more convivial, reciprocal and sustainable terms.<sup>142</sup>

However, this knowledge does not easily flow into actual transformative change. Social theorists tend to remain stuck in abstract crisis diagnostics and in conceptual perspective shifts, which both do not easily connect with the heterogeneous knowledge and lived realities of non-scientific actors. Some of these non-scientific actors are more or less informed by social scientific knowledge. Yet, their everyday action contexts remain dominated by prevailing epistemic and institutional (including organizational) frameworks that are taken for granted. Without the purposeful set up of transdisciplinary experimentation, in which scientists and non-scientific actors can co-operate to transform problematic frameworks under real-life conditions, potential contributions of social theory to transformative change tend to remain inoperative.<sup>143</sup>

To give a concrete example, GIZ projects that support the development of ABS-compliant value chains in African partner countries are well aware of the transformative goals of the Global Biodiversity Framework, which turns IPBES’ call for a “fundamental, system-wide reorganization across technological, economic and social

factors, including paradigms, goals and values”<sup>144</sup> into a political objective. Some actors involved in GIZ’s projects might also know about current scientific discussions on the need for humans to develop more equitable, reciprocal and sustainable relations with plants and places. However, by and large, GIZ projects tend to take standard conceptions of value chains for granted, and to reproduce the socio-economic paradigms, goals and values attached to them (e.g., unidirectional resource extractivism; monetary gains as predominant metric and guiding value). Without dedicated methods and resources to experiment with alternative conceptions and organizations of value chains, GIZ projects are unlikely to contribute to a transformation of these value chains into different economic structures that are more in tune with values of equity, reciprocity and ecological sustainability – three core values ABS is supposed to serve.

Using the action research method outlined above would provide a chance to change this. Unlike linear models of knowledge transfer, in which scientific expertise is supposed to guide evidence-based practices, action research allows scientists and practitioners to co-produce knowledge and devise actionable transformative change options under real-life conditions. The ability of practitioners to co-decide with the scientific team which research activities will be undertaken, illustrates the extent of such collaboration. This collaboration allows critical perspectives to flow into diagnostics and the design of transformative change options. This can help strengthen the voice of dominated actors, debunk shallow and counterproductive claims of transformation or transition to sustainability, deepen diagnostics by taking root causes of inequity and unsustainability into account, and bolster innovative thinking by inducing perspective shifts. Moreover, thanks to the participation of scientists from natural sciences, the properties, behaviours, needs and interests of non-human entities, such as plants and ecosystems, can be taken into account – a key condition to foster more reciprocal and sustainable relations between human society and biodiversity in the more-than-human assemblages of bioprospecting and biotrade.

**Another advantage of the action research is its ability to cut across institutional boundaries and to create space for participating actors to emancipate, at least to some extent, from the rationalities, meaning contexts and institutional frameworks in which they are entangled.**

Many of the actors who would be invited to join the Community of Practice already know each other and have interacted with one another on various occasions. But, as previous chapters demonstrated, so far, these relations and interactions have not produced adequate responses to the dysfunctionalities of the ABS regime. On the contrary, the dysfunctions of ABS have rather created a fair amount of frustration, sometimes even of resentment, among the

<sup>142</sup> See for instance Kimmerer (2013), Büscher and Fletcher (2020), or Adloff (2022).

<sup>143</sup> For a theoretical elaboration of this point, see Bogusz (2022).

<sup>144</sup> IPBES (2019: XVIII).

actors involved. A major reason for this is the inability of ABS to reconcile the rationalities, meaning contexts and institutional constraints of the different social systems in which these actors are anchored and from which they depend.

By joining a Community of Practice, actors enter a circle of equals that cuts across these social systems. Of course, social positions and related inequalities cannot be fully erased. However, the Community of Practice can reduce the effects of such inequalities by valuing and legitimizing the voice of each participant. Professional facilitation and targeted interventions from social scientists, who are trained to spot relations of domination, would help the Community of Practice to acknowledge, reflect and address such inequalities, whenever relations of domination seem to prevent a participant from voicing her/his points as a free and equal member of the group. This dimension of the setting is likely to foster transformative change by creating propitious conditions for a diversity of viewpoints, experiences, preferences and constraints to be voiced and collectively taken into account. Based on systematic observation and analysis, social scientists will provide feedback to fellow members of the Community of Practice on the social dynamics unfolding in the process. Their observations and analyses will also nourish research outputs, such as contributions to theories and methods of transformative change in environmental governance.

Moreover, membership in a Community of Practice can give participants a common social role and include them in a collective dynamic oriented towards a common goal. The participants' other institutional roles and identities would not be erased, as participants would continue to be a GIZ employee, an international bureaucrat, an ABS Focal Point, an entrepreneur or corporate manager, a representative of an Indigenous People, a scientist, or the member of an NGO. Similarly, the joint goal of co-constructing transformative change would not cancel the variety of particular objectives and interests motivating participants as they interact within and outside the Community of Practice. However, sharing membership in the Community of Practice is likely to create a common ground, allow participants to temporarily and partially free themselves from institutional identities and constraints, and provoke a certain degree of adherence to a common objective that would favour co-operation.

The Community of Practice can make it easier for participants to listen to one another, to decentre themselves to better understand other positions, and to work together to creatively sort out problems and imagine transformative change options. Such collective dynamic does not preclude dissent, or even open conflicts. But, thanks to dedicated facilitation, dissent and conflicts would be addressed in a constructive manner, as normal and productive components of any transformative change process.

Participating social scientists will enrich the exchanges taking place in this field, for instance, by shedding light on events and relations

from a different perspective, by asking participants to make their assumptions explicit and hence debatable, by clarifying categories and helping participants sort out the various meanings attached to concepts, or, by contrasting opinions and beliefs with more factual, empirical knowledge. Simultaneously, the observation and analysis of the exchanges taking place within the Community of Practice will nourish the action research process and increase reflexivity.

Regarding the risks involved in the action research, they stem from the high degree of uncertainty built into this process-oriented method for transformative learning and change. For system maintenance, uncertainty means a problem that should be reduced and/or kept under control with dedicated measures. For transformative change, however, uncertainty is a necessary starting point, an innovation root from which new perspectives can grow, new knowledge can be gained, and ultimately new possibilities for action are created. Whether changes in the existing frameworks of the ABS regime can contribute to more equitable, reciprocal and sustainable relations, when the frameworks themselves are based on premises and structures that are partly unjust and not particularly sustainable, is an open question. At the same time, it is unclear what will emerge beyond the known, and how 'the new' will contribute to more socio-ecological equity, reciprocity and sustainability. This double uncertainty motivates the search for scientific and practical answers through an experimental action research that holds transformative potentials. However, embracing uncertainty as a resource for transformative change also implies risks.

**One risk concerns the results of the action research. While projects are usually expected to formulate clear hypotheses and outline probable results, in the case of an action research oriented towards transformative change, the formulation of such hypotheses and preliminary results would be somewhat artificial and counterproductive. Indeed, diagnoses, hypotheses, and results are to be co-created by the participants in the course of the action research.**

Starting the action research with an exploratory study minimized this risk by providing a solid scientific point of departure for the action research 'journey' into the *terra incognita* of socio-ecological transformation. In addition to literature reviews and extensive discussions with our main interlocutor at GIZ, field research highlighted problems that cannot be solved adequately within the given frameworks of the ABS regime. Interviews also revealed the receptivity of many ABS-related actors to the topic of transformation and their interest in this particular action research project.

**Another risk involved comes from the multiplicity of perspectives brought into the action research. How to ensure coherence and avoid eclecticism without undermining the pluralism of perspectives and bodies of knowledge?**

Scientific disciplines entail bodies of knowledge that are not easily inter-connectable, and related disciplines often compete for epistemic authority. Disciplines are also internally differentiated. For example, sociology is organized into relatively closed theoretical or methodological schools that allow only limited combinations. Those who argue in terms of systems theory, for instance, can use Bourdieu or Latour only to a limited extent, because terms such as 'function system', 'field' and 'mode of existence' have different implications regarding how social reality is conceptualized in the first place. Adding non-scientific knowledge, which has been elaborated by and for practice, with limited concerns for scientific accuracy, adds to the epistemic complexity of the action research design. On the other hand, different scientific disciplines and schools, as well as practical knowledge, illuminate particular facets of socio-material phenomena. Hence, transdisciplinarity allows to better take into account the versatility and complexity of the socio-material reality in which transformation processes unfold.<sup>145</sup>

To avoid eclecticism while simultaneously valuing diverse bodies of knowledge, action research must avoid restrictive disciplinary boundaries and theoretical orthodoxy, in favor of a pluralistic approach to knowledge. Discrepancies that cannot be resolved can be treated as open sites for further investigation, or as expression of the plurality of perspectives and 'worlds' interacting in the action research process.

**As indicated in the introduction, deep transformation in environmental governance and international cooperation is a risky undertaking inasmuch as it can destabilize established beliefs, hurt interests, and challenge asymmetrical power relations. How to avoid these beliefs, interests and power relations to block transformative change?**

Transformative change experiments within real-life laboratories have a micro-political dimension (power dynamics among participating actors) that is unavoidable and, in fact, necessary. But keeping with a dysfunctional *status quo* is also a choice that has collective repercussions in terms of which beliefs, interests and power relations prevail. What matters is how the micro-political dynamics animating transformative change are taken into account. For instance, building the Community of Practice necessarily involves issues of inclusion and exclusion. Or, conflicts that emerge during the action research can be addressed in different ways – more or less democratically, more or less transparently, more or less constructively. Professional facilitation of multi-stakeholder change processes, as well as the ability of scientific participants to enhance the reflexivity of the process and put conflicts into broader perspectives, can help the action research deal with micro-political contention in a productive way.

<sup>145</sup> See for instance Rosa and Reckwitz (2021), as well as Lidskog et al. (2022).

## Conclusion

At first sight, the present report originates from particular circumstances (cf. acknowledgment): the encounter between a social scientist who was eager to engage more directly into actual transformative change, and GIZ employees who were frustrated by the poor results of the ABS policies and projects they work for – with the intermediation of an environmental expert who was glad to connect people who shared her interest in the transformation agenda.

By zooming out, it becomes clear that the occurrence of this particular encounter is part of much broader trends (cf. chapter 3). A growing number of environmental scientists who witness the limited effects of their publications and calls for action seek new ways to help society handle the existential challenges of unsustainability. Moreover, given the insufficiency of classical modes of scientific expertise to address these existential challenges, science policies and funding programmes increasingly expect scientists to engage into transdisciplinary collaboration geared towards innovative problem-solving. In parallel, a growing number of professionals in environmental governance and international cooperation lose faith in prevailing policies and projects for sustainable development, and seek new ways to contribute meaningfully to social justice and ecological sustainability. These professionals find validation and support in the rapid institutionalization of a transformation agenda that officially expects organizations such as GIZ to gear up for and deliver transformative change.

These trends put us at a critical juncture, where several social and political forces interact and compete with one another (cf. chapter 2). Troubled by the ongoing socio-ecological mutations of the Anthropocene, some human beings seek refuge in populist movements that minimize or deny the existence of these mutations to keep their worldview intact. Other human beings do not give up their confidence in the scientific depictions of these mutations, but, rather than facing the trouble, they avoid practical implications and stick to business-as-usual. Conversely, a number of human beings find society's immobilism unbearable and engage in forms of activism

that sometimes trigger more or less violent repression. Another movement considers the mutations of the Anthropocene to be a challenge that can push modern society to another level of perfection, if only social institutions prove smart and bold enough to invest massively in new technological solutions. A further movement gathers people who question the credibility of such modernist responses, and who venture outside mainstream developmentalism to tackle the deeper roots of unsustainability.

The purpose of the present report is to *help readers grasp these world-making dynamics and act within them, as they unfold in their respective action context*. This requires, as a precondition, to reflect on one's position, knowing that there is no neutral one. Denying the significance of climate change and biodiversity loss, or treating these disruptions as abstract environmental parameters that can be managed through business-as-usual, is as much a world-making act as activism, as investing in sustainability transition, or as participating in collaborative processes of deep transformation. The question is: which kind of world do we want to contribute to, and how can we do so in our respective concrete situations?

Leaving denialism and cognitive dissonance aside, the report focuses on responses directed towards intentional transformation. Departing from mainstream approaches to transformation, which tend to conflate 'transformation' and 'sustainable development', and which are often less transformative than what is being claimed, the report advocates a more critical approach and method, which can be more disruptive, but which also gives more room to outcomes that are actually transformative.

This strategy is justified by the exhaustion of the sustainable development paradigm. As we argued in chapter 2, and as the case of the ABS regime contributes to show (cf. chapters 4 and 5), the global project of sustainable development that was put in place at the end of the Cold War in the early 1990s suffers from persistent gaps between its laudable objectives and principles, and its actual outcomes. Institutions and actors whose mandate is to achieve sustain-

able development within this global project tend to see such gaps as problems of implementation. However, if ‘ground realities’ fail to conform to the ‘paper reality’ of sustainable development, this might be due to the fact that the global project of sustainable development tends to rely on political, economic, legal and epistemic structures that are neither particularly equitable nor sustainable in ecological terms.

Such statement is oversimplifying a more heterogeneous and nuanced reality. There are many examples of policies and projects that contributed substantially to sustainable development goals. Prevailing political, economic, legal and epistemic structures also contribute significantly to equitable and ecologically sound outcomes. Yet, as our exploratory study of ABS exemplifies, and as contributions from the scientific literature show, the analysis condensed in the statement above also applies to a great number of significant cases. *Hence, if the purpose is to devise transformative responses to widespread inequalities, persistent socio-ecological injustice, and a rapid deterioration of the habitability of the Earth we belong to, we need approaches and methods that are able to tackle the structural roots of these problems.* Obviously, these structural roots are not foreign to the way political power is organized and exercised in contemporary society, to the institutions of the capitalist market economy, to behaviours authorized or criminalized by positive law, or to scientific bodies of knowledge involved in the co-construction of reality.

Action research is a suitable method to devise such transformative responses – to *practice* transformative change beyond the exhausted paradigm of sustainable development (cf. chapter 6). For instance, action research allows to bring together a diversity of scientific and non-scientific knowledge, including knowledge that is able to criticize dominant institutions, actors, and interests. At the same time, action research avoids the often unproductive kind of critic that is voiced from distant positions: critical statements are made in dialogue with actors and institutions, including dominant ones, in a collective dynamic that is oriented towards the elaboration of actionable transformative change in real-life situations. The abilities

of action research to cut across geographical divides and institutional boundaries, as well as to mitigate anthropocentrism by having scientists represent relevant non-human interests in debates and decision-making, are further methodological advantages. Action research also stands out for its experimental, process-oriented and result-open character, which is more conducive to actual transformative change than methods based on abstract visions, blueprints, planning and control.

Action research also involves risks, including for the participants. Yet, denialism, cognitive dissonance, and approaches relying on techno-scientific and industrial solutionism, involve risks as well. In contexts where prevailing approaches and structures for sustainable development often fail to deliver expected outcomes, or even dysfunction in the sense of reinforcing counter-productive outcomes, the risks attached to action research seem relatively limited. One such risk is that established habits, interests and power relations could be deranged. But this is arguably a necessary condition for transformative change to occur. Moreover, action research does not impose a revolutionary programme on anyone. It merely creates an open room where concerned actors – including both powerful and disadvantaged ones – can participate, negotiate, and possibly transform their ways of thinking and acting. Another risk is this open character of action research: one can neither predict nor control its outcomes. But is this really a risk? Attempts to predict, plan, and control future outcomes fail more often than not, as the future is inherently uncertain. One can only try to influence the course of events, and action research is one possible instrument to do so.



## References

- Abram D. (1997) *The Spell of the Sensuous: Perception and Language in a More-than-Human World*, New-York: Vintage Books.
- Adloff F. (2022) *Politics of the Gift: Towards a Convivial Society*, Bristol: Bristol University Press.
- Adloff F and Neckel S. (2021) Futures of sustainability: Trajectories and conflicts. *Social Science Information* 60: 159–167.
- Aubertin C, et al. (2021) *Nature in Common: Beyond the Nagoya Protocol*, Marseille: Éditions de l'IRD.
- Barbier R. (1996) *La Recherche Action*, Paris: Economica.
- Beck S, et al. (2021) The governance of sociotechnical transformations to sustainability. *Current Opinion in Environmental Sustainability* 49: 143–152.
- Beck U. (1992) *Risk Society: Towards a New Modernity*, London, UK: Sage Publication.
- Beck U. (2016) *The Metamorphosis of the World: How Climate Change Is Transforming Our Concept of the World*, Cambridge: Polity Press.
- Berger PL and Luckmann T. (1966) *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*, Garden City, NY: Anchor Books.
- Blühdorn I (ed) (2020) *Nachhaltige Nicht-Nachhaltigkeit: Warum die ökologische Transformation der Gesellschaft nicht stattfindet*, Bielefeld: Transcript.
- Bogusz T. (2022) *Experimentalism and Sociology: From Crisis to Experience*, Cham: Springer Nature.
- Bold R (ed) (2019) *Indigenous Perceptions of the End of the World: Creating a Cosmopolitics of Change*, Cham: Palgrave Macmillan.
- Bonneuil C, et al. (2021) Early warnings and emerging accountability: Total's responses to global warming, 1971–2021. *Global Environmental Change* 71.
- Bonneuil C and Fressoz J-B. (2016) *The Shock of the Anthropocene: The Earth, History and Us*, London & New-York: Verso.
- Bourdieu P. (1991) *Language and Symbolic Power*, Cambridge: Polity Press.
- Bowker GC. (2000) Biodiversity Datadiversity. *Social Studies of Science* 30: 643–683.
- Brand U and Wissen M. (2017) *Imperiale Lebeweisen: Zur Ausbeutung von Mensch und Natur im globalen Kapitalismus*, München: oekom.
- Burkhart C, et al. (eds). (2016) *Degrowth in Bewegung(en): 32 alternative Wege zur sozial-ökologischen Transformation*, München: oekom.

- Büscher B and Fletcher R. (2020) *The Conservation Revolution: Radical Ideas for Saving Nature Beyond the Anthropocene*, London: Verso.
- Carter N. (2018) *The Politics of the Environment: Ideas, Activism, Policy*, Cambridge: Cambridge University Press.
- Chandler D, et al. (eds). (2020) *Resilience in the Anthropocene: Governance and Politics at the End of the World*, Abingdon: Routledge.
- Chinsembu WW and Chinsembu KC. (2020) 'Poisoned Chalice': Law on Access to Biological and Genetic Resources and Associated Traditional Knowledge in Namibia. *Resources* 9: 1–34.
- Cole D and van Schalkwyk R. (2014) *Indigenous Plant Products in Namibia*, Windhoek: Venture Publications.
- Cowie RH, et al. (2022) The Sixth Mass Extinction: fact, fiction or speculation? *Biological Reviews* 97: 640–663.
- de la Cadena M. (2010) Indigenous Cosmopolitics in the Andes: Conceptual Reflections Beyond 'Politics'. *Cultural Anthropology* 25: 334–370.
- de la Cadena M and Blaser M (eds). (2018) *A World of Many Worlds*, Durham, NC: Duke University Press.
- de Moor J. (2021) Postapocalyptic narratives in climate activism: their place and impact in five European cities. *Environmental Politics* 31: 927–948.
- Defila R and Di Giulio A (eds). (2018) *Transdisziplinär und transformativ forschen: Eine Methodensammlung*, Wiesbaden: Springer VS.
- Demeritt D. (2001) The Construction of Global Warming and the Politics of Science. *Annals of the Association of American Geographers* 91: 307–337.
- Descola P. (2013a) *Beyond Nature and Culture*, Chicago, IL: Chicago University Press.
- Descola P. (2013b) *The Ecology of Others*, Chicago: Prickly Paradigm Press.
- Despret V. (2021) *Living as a Bird*, Cambridge: Polity Press.
- Dieckmann U, et al. (2014) *Scraping the Pot: San in Namibia Two Decades After Independence*, Windhoek: Legal Assistance Centre, Desert Research Foundation of Namibia.
- Duit A, et al. (2016) Greening Leviathan: the rise of the environmental state? *Environmental Politics* 25: 1–23.
- Eckersley R. (2017) Geopolitical Democracy in the Anthropocene. *Political Studies* 65: 983–999.
- Escobar A. (2020) *Pluriverse Politics: The Real and the Possible*, Durham: Duke University Press.

- Ferguson P and Wollersheim L. (2020) The World Bank's resilience discourse: Reactive environmental norm diffusion and the crisis of global climate governance. In: Jakupc V, et al. (eds) *Rethinking Multilateralism in Foreign Aid: Beyond the Neoliberal Hegemony*. Abingdon: Routledge.
- Festinger L. (1957) *A Theory of Cognitive Dissonance*, Standford, CA: Stanford University Press.
- Figueroa-Helland L, et al. (2018) Decolonizing Food Systems: Food Sovereignty, Indigenous Revitalization, and Agroecology as Counter-Hegemonic Movements. *Perspectives on Global Development and Technology* 17: 173.
- FPP, et al. (2016) *Local Biodiversity Outlooks 1*, Moreton-in-Marsh: Forest Peoples Programme.
- FPP, et al. (2020) *Local Biodiversity Outlooks 2*, Moreton-in-Marsh: Forest Peoples Programme.
- Frein M and Meyer H. (2008) *Die Biopiraten: Milliardenengeschäfte der Pharmaindustrie mit dem Bauplan Natur*, Berlin: Econ.
- Friberg A. (2021) On the need for (con) temporary utopias: Temporal reflections on the climate rhetoric of environmental youth movements. *Time & Society* 31: 48–68.
- Fuchs D. (2007) *Business Power in Global Governance*, Boulder, CO.: Lynne Rienner Publishers.
- Girard F, et al. (eds). (2022a) *Biocultural Rights, Indigenous Peoples and Local Communities. Protecting Culture and the Environment*, Abingdon: Routledge.
- Girard F, et al. (2022b) Community Protocols and Biocultural Rights: Unravelling the Biocultural Nexus in ABS. In: Girard F, et al. (eds) *Biocultural Rights, Indigenous Peoples and Local Communities. Protecting Culture and the Environment*. Abingdon: Routledge, 1–52.
- GIZ. (2020a) *Transformative project design*, Eschborn: Gesellschaft für Internationale Zusammenarbeit.
- GIZ. (2020b) *Transforming our work: getting ready for transformational projects*, Eschborn: Gesellschaft für Internationale Zusammenarbeit.
- GIZ. (2021) *Values+Vision: Integrated Company Report 2021*, Eschborn: Gesellschaft für Internationale Zusammenarbeit.
- Glenna L and Bruce A. (2021) Suborning science for profit: Monsanto, glyphosate, and private science research misconduct. *Research Policy* 50: 104290.
- Goldman M. (2005) *Imperial Nature : The World Bank and Struggles for Social Justice in the Age of Globalization*, New Haven; London: Yale University Press.
- Groß M, et al. (eds). (2015) *Realexperimente: Ökologische Gestaltungsprozesse in der Wissensgesellschaft*, Bielefeld: transcript.
- Hamilton C. (2013) *Earthmasters: The Dawn of the Age of Climate Engineering*, New Haven, CT: Yale University Press.
- Hamilton C, et al. (eds). (2015) *The Anthropocene and the global environmental crisis: Rethinking modernity in a new epoch*, Abingdon: Routledge.
- Haraway D. (2016) *Staying with the Trouble: Making kin in the Chthulucene*, Durham, NC: Duke University Press.
- Heidegger M. (1996 [1927]) *Being and Time: A Translation of Sein und Zeit*, New-York: State University of New-York Press.

- Herrfahrdt-Pähle E, et al. (2020) Sustainability transformations: socio-political shocks as opportunities for governance transitions. *Global Environmental Change* 63: 102097.
- Hickman C, et al. (2021) Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. *The Lancet Planetary Health* 5: 863–873.
- Hicks RL, et al. (2008) *Greening Aid? Understanding The Environmental Impact Of Development Assistance*, Oxford: Oxford University Press.
- Hinz MO. (2022) Customary Law and the Environment. In: Ruppel OC and Ruppel-Schlichting K (eds) *Environmental Law and Policy in Namibia: Towards Making Africa the Tree of Life*. 4th ed. Baden-Baden: Nomos, 609–641.
- Hironaka A. (2014) *Greening the Globe: World Society and Environmental Change*, New-York, USA: Cambridge University Press.
- Hoggett P. (2019) *Climate Psychology: On Indifference to Disaster*, Cham: Palgrave Macmillan.
- Holbraad M and Pedersen MA. (2017) *The Ontological Turn: An Anthropological Exposition*, Cambridge: Cambridge University Press.
- IPBES. (2019) *Global Assessment Report on Biodiversity and Ecosystem Services*, Bonn: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.
- IPBES. (2022) *The methodological assessment report on the diverse values and valuation of nature*, Bonn: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.
- IPCC. (2021) *AR6 Climate Change 2021: The Physical Science Basis*, Geneva: Intergovernmental Panel on Climate Change.
- IPCC. (2022) *AR6 Climate Change 2022: Impacts, Adaptation and Vulnerability*, Geneva: Intergovernmental Panel on Climate Change.
- Jasanoff S. (2021) Humility in the Anthropocene. *Globalizations* 18: 839–853.
- Jasanoff S and Kim S-H. (2015) *Dreamscapes of Modernity. Sociotechnical Imaginaries and the Fabrication of Power*, Chicago, IL: Chicago University Press.
- Keller R. (2013) Das Ende der Welt (wie wir sie kannten): zur apokalyptischen Dimension des Klimadiskurses. In: Bluhm L, et al. (eds) *Untergangsszenarien: apokalyptische Denkbilder in Literatur, Kunst und Wissenschaft*. Berlin: Akademie Verlag.
- Kenis A and Lievens M. (2014) Searching for ‘the political’ in environmental politics. *Environmental Politics* 23: 531–548.
- Kimmerer RW. (2013) *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*, Minneapolis, MN: Milkweed Editions.
- Kinderman D. (2012) ‘Free us up so we can be responsible!’ The Co-Evolution of Corporate Social Responsibility and Neo-Liberalism in the UK, 1977–2010. *Socio-Economic Review* 10: 29–57.
- Kothari A, et al. (eds). (2019) *Pluriverse: A Post-Development Dictionary*, New-Delhi: Tulika Books.
- Krichewsky D. (2019) *Corporate Social Responsibility and Economic Responsiveness in India*, Cambridge: Cambridge University Press.

- Künkel P, et al. (2021) *Leading Transformative Change Collectively: A Practitioner Guide to Realizing the SDGs*, Abingdon: Routledge.
- Lassen B, et al. (2018) *Community Protocols in Africa: Lessons Learned for ABS Implementation*, Cape Town: Natural Justice.
- Latour B. (1993) *We Have Never Been Modern*, Cambridge, MA: Harvard University Press.
- Latour B. (2005) *Reassembling the social: an introduction to actor-network-theory*, Oxford, UK: Oxford University Press.
- Latour B. (2013) *Inquiry into Modes of Existence: An Anthropology of the Moderns*, Cambridge, MA: Harvard University Press.
- Latour B. (2017) *Facing Gaia: Eight Lectures on the New Climatic Regime*, Cambridge: Polity Press.
- Latour B. (2018a) *Down to Earth: Politics in the New Climatic Regime*, Cambridge: Polity Press.
- Latour B. (2018b) Esquisse d'un Parlement des choses. *Écologie & politique* 56: 47–64.
- Latour B and Schultz N. (2022) *On the Emergence of an Ecological Class: A Memo*, Cambridge: Polity.
- Lavelle J-J. (2023) Towards Pro-poor or Pro-profit? The governance framework for harvesting and trade of devil's claw (*Harpagophytum* spp.) in the Zambezi Region, Namibia. In: Bollig M, et al. (eds) *Conservation, Markets, and the Environment in Southern and Eastern Africa: Commodifying the 'Wild'*. Woodbridge: James Currey, 137–165.
- Lawson C, et al. (2023) *Access and Benefit Sharing of Genetic Resources, Information and Traditional Knowledge*, Abingdon: Routledge.
- Lessenich S. (2016) *Neben uns die Sintflut: Die Externalisierungsgesellschaft und Ihr Preis*, Berlin: Hanser.
- Lewin K. (1946) Action Research and Minority Problems. *Journal of Social Issues* 2: 34–46.
- Lidskog R, et al. (2022) Environmental expertise for social transformation: roles and responsibilities for social science. *Environmental Sociology* 8: 255–266.
- Lockwood M. (2018) Right-wing populism and the climate change agenda: exploring the linkages. *Environmental Politics* 27: 712–732.
- Löfmarck E and Lidskog R. (2017) Bumping against the boundary: IPBES and the knowledge divide. *Environmental Science & Policy* 69: 22–28.
- Lüdtke N. (2018) Transdisziplinarität als neuer Typus projektförmig organisierter Forschung? Formen der (Selbst-)Verantwortung und wissenspolitische Paradoxien. In: Laux H and Henkel A (eds) *Die Erde, der Mensch und das Soziale: Zur Transformation gesellschaftlicher Naturverhältnisse im Anthropozän*. Bielefeld: transcript, 249–272.
- Luhmann N. (1989) *Ecological Communication*, Chicago, IL: University of Chicago Press.
- Luhmann N. (1991) *Die Wissenschaft der Gesellschaft*, Frankfurt am Main: Suhrkamp.
- Luhmann N. (2002) *Die Politik der Gesellschaft*, Frankfurt am Main, Germany: Suhrkamp.
- Luhmann N. (2010) *Politische Soziologie*, Bielefeld: Suhrkamp.



- Machado de Oliveira V. (2021) *Hospicing Modernity: Facing Humanity's Wrongs and the Implications for Social Activism*, Berkeley, CA: North Atlantic Books.
- MacKenzie D, et al. (eds). (2007) *Do Economists Make Markets? On the Performativity of Economics*, Princeton, NJ: Princeton University Press.
- Marchildon A. (2016) Corporate responsibility or corporate power? CSR and the shaping of the definitions and solutions to our public problems. *Journal of Political Power* 9: 45–64.
- McGregor D. (2004) Coming Full Circle: Indigenous Knowledge, Environment, and Our Future. *American Indian Quarterly* 28: 385–410.
- Merry SE, et al. (eds). (2015) *The Quiet Power of Indicators: Measuring Governance, Corruption, and Rule of Law*, Cambridge: Cambridge University Press.
- Muller S, et al. (2019) Indigenous sovereignties: relational ontologies and environmental management. *Geographical Research* 57: 399–410.
- Ndwandwe S. (2023) Marginalisation and Exclusion in Honeybush Commercialisation in South Africa. In: Bollig M, et al. (eds) *Conservation, Markets, and the Environment in Southern and Eastern Africa: Commodifying the 'Wild'*. Woodbridge: James Currey, 166–194.
- Nelson MK and Shilling D (eds). (2018) *Traditional Ecological Knowledge: Learning from Indigenous Practices for Environmental Sustainability*, Cambridge: Cambridge University Press.
- Neumann D, et al. (2018) Global biodiversity research tied up by juridical interpretations of access and benefit sharing. *Organisms Diversity & Evolution* 18: 1–12.
- Nordhaus T, et al. (2015) Ecomodernism and the Anthropocene: Humanity as a Force for Good. *Breakthrough Journal* 5.
- Oberthür S and Rosendal GK (eds). (2014) *Global Governance of Genetic Resources: Access and benefit sharing after the Nagoya Protocol*, Abingdon: Routledge.
- Ofstehage A, et al. (2022) Contemporary Populism and the Environment. *Annual Review of Environment and Resources* 47: 671–696.
- Oreskes N and Conway EM. (2010) *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*, New-York: Bloomsbury Press.
- Rajak D. (2011) *In Good Company : An Anatomy of Corporate Social Responsibility*, Stanford, CA: Stanford University Press.
- Reed D, et al. (2012) *Business Regulation and Non-State Actors: Whose Standards? Whose Development?*, Abingdon: Routledge.
- Rockström J. (2015) Bounding the Planetary Future: Why We Need a Great Transition. *Great Transition Initiative*.
- Rosa H. (2019) *Resonance: A Sociology of Our Relationship to the World*, Cambridge: Polity Press.
- Rosa H and Reckwitz A. (2021) *Spätmoderne in der Krise: Was leistet die Gesellschaftstheorie?*, Berlin: Suhrkamp.
- Sarewitz D. (2004) How science makes environmental controversies worse. *Environmental Science & Policy* 7: 385–403.
- SCBD. (2014) *Global Biodiversity Outlook 4*, Montréal: Secretariat of the Convention on Biological Diversity.

- SCBD. (2020) *Global Biodiversity Outlook 5*, Montréal: Secretariat of the Convention on Biological Diversity.
- Schandl H, et al. (2018) Global Material Flows and Resource Productivity: Forty Years of Evidence. *Journal of Industrial Ecology* 22: 827–838.
- Scharmer CO. (2009) *Theory U: Leading from the Future as It Emerges*, San Francisco, CA: Berrett-Koehler Publishers.
- Schnegg M. (2023) Eleven Namibian rains: A phenomenological analysis of experience in time. *Anthropological Theory* 23: 33–55.
- Schwarz G, et al. (2022) Exploring Sustainability Implications of Transitions to Agroecology: a Transdisciplinary Perspective. *EuroChoices* 21: 37–47.
- Sconfienza UM. (2020) The Normative Orders of the Anthropocene. In: Kettemann M (ed) *Navigating Normative Orders. Interdisciplinary Perspectives*. Frankfurt a/M: Campus, 165–182.
- Sen A. (1999) *Development as Freedom*, New York: Knopf.
- Shah A. (2010) *In the Shadows of the State: Indigenous Politics, Environmentalism and Insurgency in Jharkhand, India*, Durham, N.C.: Duke University Press.
- Shrumm H and Jonas H. (2012) *Biocultural Community Protocols: A Toolkit for Community Facilitators*, Cape Town: Natural Justice.
- SONA (ed) (2021) *Soziologie der Nachhaltigkeit*, Bielefeld: Transcript.
- Speth JG and Courrier K (eds). (2021) *The New Systems Reader: Alternatives to a Failed Economy*, New-York: Routledge.
- Stengers I. (2018) *Another Science is Possible: A Manifesto for Slow Science*, Cambridge: Polity Press.
- Stengers I. (2019) *Résister au désastre*, Marseille: Wildproject.
- Stiglitz JE. (2002) *Globalization and Its Discontents*, New-York: Norton.
- Tittonell P, et al. (2020) Agroecology in Large Scale Farming—A Research Agenda. *Frontiers in Sustainable Food Systems* 4: online.
- Tsing AL. (2015) *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*, Princeton: Princeton University Press.
- UNCCD. (2022) *Global Land Outlook: Land Restoration for Recovery and Resilience*, Bonn: United Nations Convention to Combat Desertification.
- United Nations. (2019) *Leaving No One Behind: The United Nations World Water Development Report 2019*, Paris: UNESCO.
- Utting P and Clapp J. (2008) *Corporate Accountability and Sustainable Development*, New-Delhi, India: Oxford University Press.
- Vogel D. (2008) Private Global Business Regulation. *Annual Review of Political Science* 11: 261–282.
- Wade R. (1997) Greening the Bank: The Struggle over the Environment, 1970-1995. In: Kapur D, et al. (eds) *The World Bank: It's First Half Century*. Washington D.C.: Brookings Institution Press, 611–734.

- Wallbott L. (2014) Goals, strategies and success of the African Group in the negotiations of the Nagoya Protocol. In: Oberthür S and Rosendal GK (eds) *Global Governance of Genetic Resources: Access and benefit sharing after the Nagoya Protocol*. Abingdon: Routledge, 114–131.
- Wallbott L, et al. (2014) The negotiations of the Nagoya Protocol: Issues, coalitions and process. In: Oberthür S and Rosendal GK (eds) *Global Governance of Genetic Resources: Access and benefit sharing after the Nagoya Protocol*. Abingdon: Routledge, 33–59.
- Walter M, et al. (eds). (2023) *The Oxford Handbook of Indigenous Sociology*, Oxford: Oxford University Press.
- Wamsler C, et al. (2020) Enabling new mindsets and transformative skills for negotiating and activating climate action: Lessons from UNFCCC conferences of the parties. *Environmental Science & Policy* 112: 227–235.
- WHO. (2016) *Ambient air pollution: A global assessment of exposure and burden disease*, Geneva: Switzerland.
- WiLDSI. (2020) *Finding Compromise on ABS & DSI in the CBD: Requirements and Policy Ideas from a Scientific Perspective*.
- WIPO. (2020) *Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions*, Geneva: World Intellectual Property Organization.
- Wittmer H, et al. (2021) *Transformative change for a sustainable management of global commons – biodiversity, forests and the ocean. Recommendations for international cooperation based on a review of global assessment reports and project experience*, Leipzig: Helmholtz Centre for Environmental Research.
- World Commission on Environment and Development. (1987) *Our Common Future*, Oxford: Oxford University Press.
- Wray B. (2022) *Generation Dread: Finding Purpose in an Age of Climate Anxiety*, Toronto: Alfred A. Knopf.
- Wynberg R. (2004) Achieving a fair and sustainable trade in Devil's Claw (*Harpagophytum* spp.). In: Sunderland T and Ndoye O (eds) *Forest Products, Livelihoods and Conservation: Case Studies of Non-Timber Forest Product Systems*. Bogor: Center for International Forestry Research, 53–72.
- Wynberg R. (2017) Making sense of access and benefit sharing in the rooibos industry: Towards a holistic, just and sustainable framing. *South African Journal of Botany* 110: 39–51.
- Wynberg R. (2023) Benefit Sharing and Biodiversity Commodification in Southern Africa: A failed approach for social justice, equity, and conservation? In: Bollig M, et al. (eds) *Conservation, Markets, and the Environment in Southern and Eastern Africa: Commodifying the 'Wild'*. Woodbridge: James Currey, 79–106.
- Wynberg R and Laird S. (2009) Bioprospecting, Access and Benefit Sharing: Revisiting the 'Grand Bargain'. In: Wynberg R, et al. (eds) *Indigenous Peoples, Consent and Benefit Sharing: Lessons from the San-Hoodia Case*. Dordrecht: Springer, 69–88.

**Published by:**  
ABS Capacity Development Initiative

Deutsche Gesellschaft für  
International Zusammenarbeit (GIZ) GmbH  
Bonn & Eschborn  
Dag-Hammarskjöld-Weg 1–5  
65760 Eschborn  
Germany  
T +49 6196 793285  
F +49 6196 79803285  
E [abs-initiative@giz.de](mailto:abs-initiative@giz.de)  
I [www.abs-biotrade.info](http://www.abs-biotrade.info)  
[www.giz.de](http://www.giz.de)

**Author:**  
Dr Damien Krichewsky

**Editor:**  
Tobias Dierks (GIZ)

**Photo:** Adobe Stock (© Andrey Popov)  
**Design:** MediaCompany, Agentur für Kommunikation

Bonn, Germany, as of June 2024