TEGA

## Transforming Environmental Governance in the Anthropocene: An Action Research in the Field of Access and Benefit-Sharing

# Scientific Report #1

"*To rush into designing, making, and 'problem-solving' without pausing to make space for conscious choosing and intention-setting puts us at risk of simply replicating the dreams and desires of the dominant episteme.*" (Escobar et al 2024, p. 37)

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– March 2025 –

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## List of acronyms

ABS: Access and Benefit-Sharing

aTK: associated traditional knowledge

BABS: Bioprospecting, Access and Benefit Sharing Regulations

CBD : United Nations Convention on Biological Diversity

CoP: Community of Purpose

DSI: Digital Sequence Information

GBF : Kunming-Montreal Global Biodiversity Framework

ICC: International Chamber of Commerce

IPBES: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

IPLC: Indigenous Peoples and local communities

IRCC: Inter-Jurisdictional Regulatory Collaboration Committee

MAGA: Make America Great Again

NEMBA: National Environmental Management: Biodiversity Act

R&D: research & development

TEGA: Transforming Environmental Governance in the Anthropocene

## Introduction

More than three decades after the adoption of the Convention on Biological Diversity (CBD), international biodiversity governance has largely failed to achieve its objectives, including the three objectives defined in the Art. 1 of the CBD, the Aichi targets of the Strategic Plan for Biodiversity 2011-2020, and national biodiversity policy objectives.[1]

The Kunming-Montreal Global Biodiversity Framework (GBF), adopted by 196 governments in December 2022, reflects this situation. It recognises not only that "Biodiversity is fundamental to human well-being, a healthy planet, and economic prosperity for all people, including for living well in balance and in harmony with Mother Earth", that "We depend on it for food, medicine, energy, clean air and water, security from natural disasters as well as recreation and cultural inspiration" and that biodiversity fundamentally "supports all systems of life on Earth". The GBF also recognises that "despite ongoing efforts, biodiversity is deteriorating worldwide at rates unprecedented in human history". Against this backdrop, the GBF calls for "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." (CBD 2022, pp. 4-5).

As a component of international biodiversity governance, Access and Benefit-Sharing (ABS) is directly concerned by these material, social and political developments. In terms of objectives and implementation, there is a broad consensus among scientific observers and stakeholders that the ABS governance frameworks - laws, regulations and procedures - put in place to prevent biopiracy and to ensure "fair and equitable" benefit-sharing with resource and knowledge-holders are overall ineffective and partly dysfunctional.[2] These shortcomings and dysfunctions are causing significant frustration among ABS stakeholders, and while the sources of frustration vary, discontent with current ABS realities fuels a desire for transformative change in this particular field. As ABS raises many issues that are directly relevant for the transformative agenda outlined above, including postcolonial justice and sustainability in society's relationship with biodiversity, this desire for change makes ABS a potentially powerful entry point for putting words into practice and collectively achieving transformative change. But what exactly needs to be changed, how, and by whom?

Given the diversity of actors and institutional logics at play in the ABS field, this question raises difficult political and practical problems. Indeed, while rhetoric value statements and calls for transformative action, enchanting visions of 'living in harmony with Mother Earth', as well as abstract pathways and guidelines for 'sustainability transformation' easily find consensus, achieving transformative change in real-world contexts is another kettle of fish. While most ABS stakeholders yearn for change, entrenched assumptions, institutional inertia, short-termism, conflicting interests, power asymmetries, and other obstacles to transformative change are leading to a situation in which, to quote a senior South African ABS expert, ABS is "gridlocked" and "a hard nut to crack".

*TEGA's action research initiative is an attempt to crack this nut: to initiate a collective process of transformative change that, if successful, will have contributed to transforming ABS frameworks into a more satisfactory system, with better outcomes in terms of reciprocity, fairness and sustainable relations between society and biodiversity.*

[1] See for instance IPBES (2019) and SCBD (2020).

[2] See for instance Aubertin et al. (2021) and Lawson et al. (2023).

TEGA's action research started in July 2024 with a preparatory phase that culminated in the hosting of a first Plenary Workshop in November 2024 in Malmesbury (South Africa). This workshop, which gathered TEGA's scientific team and a group of about 25 ABS stakeholders, had three objectives:

i. To create a transdisciplinary Community of Purpose that will conduct the action research and that includes both TEGA's scientific team and interested ABS stakeholders.
ii. To create a common starting point for TEGA's transformative journey by beginning to interweave knowledge and introduce transformative perspectives.
iii. To gather information for the preparation of TEGA's second phase.

Following action research methods, moments of collaborative knowledge production and change-making are punctuated by targeted scientific feedback, which provides reflections on the collective change process and informs the steering of this process by the group of action researchers/searching actors (TEGA's Community of Purpose). This report is such a moment of scientific feedback. Written at the juncture between the preparatory phase of TEGA and the launch of its second phase, it is addressed primarily to current and future members of TEGA's Community of Purpose.

Building on the scientific expertise of TEGA's project team, relevant bodies of literature, interviews conducted with ABS stakeholders during the preparatory phase, and information harvested during the Plenary Workshop, the report formulates an analysis of ABS (1), develops perspectives on transformation (2), and outlines an action plan for the second phase of the action research (3).

We acknowledge with gratitude the knowledge and insights shared by the participants of TEGA's action research. Without their valuable contributions, this report would not have been possible. At the same time, we would like to emphasize that the present report is not a neutral synthesis of the views of TEGA's participants, but an original scientific analysis that only engages the authors of the report.

## 1. The origins, achievements, shortcomings and dysfunctions of ABS

ABS stakeholders, including members of TEGA's Community of Purpose, have extensive knowledge of ABS and related issues. However, as we could see in the collective mapping of ABS that was carried out during the workshop (see below), each participant experiences ABS from a different position and tends to look at ABS from a different angle.[3]

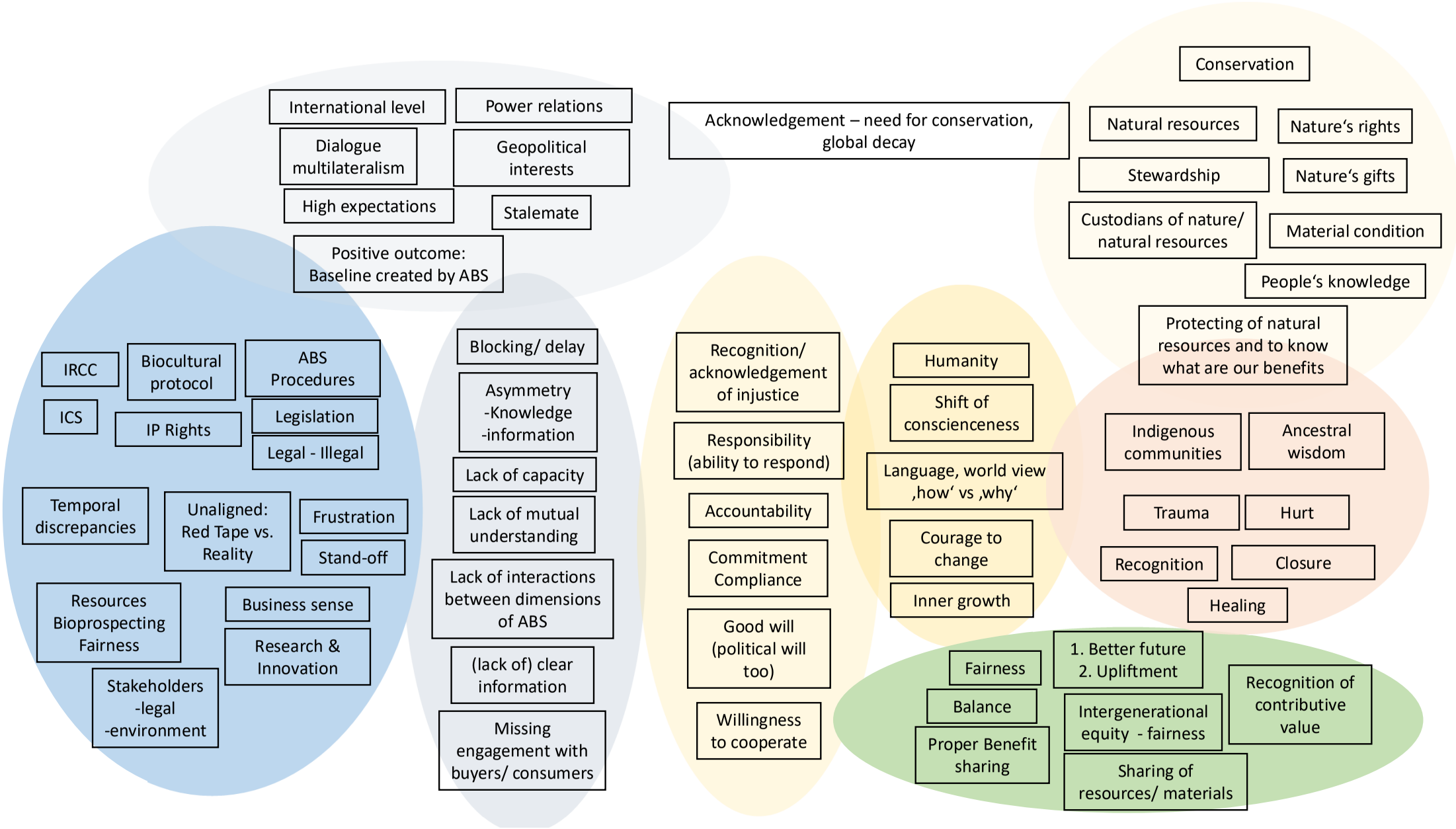
To establish a common ground for discussion and collective action that acknowledges and integrates this diversity of experiences and perspectives, the first part of this report follows the map that was created during the workshop to look back at the origins of ABS (1.1), examine the achievements, shortcomings and dysfunctions that ABS stakeholders see in current ABS realities (1.2), and revisit the 'knot of ABS' with a transformative lens (1.3).

### *1.1 A brief reminder of where ABS is coming from*

Since the first European colonial expeditions, the territorial conquest of colonial empires has been intertwined with the study of the lands and peoples being colonised, as well as the extraction of resources from the colonies to fuel the economic development of the metropoles. In this context, from the perspective of European settlers, explorers and scientists, the flora and fauna of overseas territories appeared as an almost infinite treasure trove of exotic species to be discovered, described, compared, classified and exploited. Specimens and seeds were imported to be kept in zoos and botanical gardens, and information gathered from 'locals' about these species was carefully recorded.

[3] For details on this mapping exercise, see the preliminary report on TEGA's first Plenary Workshop.

# A tentative map of the ABS assemblage



The names of those who claimed credit for these 'discoveries' were also recorded, as if the indigenous peoples' knowledge of the species and their properties did not count. Besides fuelling scientific knowledge, including the invention of entire disciplines, such as ethnobotany, these colonial practices also fuelled the entrepreneurial engine of modern capitalism, as knowledge of flora and fauna was searched for useful applications that could be turned into the profitable commercialisation of new commodities.

The political dismantling of colonial empires and the related creation of new sovereign states in the second half of the twentieth century did not immediately put an end to these (post)colonial practices of extraction and appropriation of biological materials (including genetic resources) and associated traditional knowledge (aTK). However, these practices became increasingly contested. In the late 1980s and early 1990s, the international negotiation of the CBD under the auspices of the United Nations Environment Programme provided a political opportunity for postcolonial states to challenge them.

While supporting the principle that biodiversity should be considered part of the territorial resources of sovereign states, global North countries wanted their industrial and scientific actors to retain access to biological resources located abroad. This was all the more important to them as developments in molecular and genetic biology, coupled with biotechnological innovation, suggested that a new wave of scientific discovery and related industrial opportunities was coming. In a context of growing concern about the loss of biodiversity, global North countries also wanted all states – especially those in the highly biodiverse regions of the global South – to commit to the conservation and sustainable use of biodiversity, in order to safeguard future opportunities for discovery and economic exploitation.

For the governments of the global South, these demands were problematic. Since their countries had limited scientific and industrial capacities, the public resources that the CBD would require them to invest in nature conservation and the regulation of biodiversity users would mainly benefit foreign actors – scientific researchers, bioprospectors, and companies importing biological ingredients to market commodities in the global North. In order to prevent the reproduction of such (post)colonial asymmetry and to ensure that their country also benefits from the use of its biological resources, governments from the South made their acceptance of the CBD conditional on the addition of a third objective – the „fair and equitable sharing of the benefits arising out of the utilization of genetic resources“ (CBD, Art. 1), coupled with the equitable sharing of benefits arising out of the utilization of traditional knowledge, i.e. „knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity.“ (CBD, Art. 8j).

### *1.2 Achievements, shortcomings and dysfunctions of ABS*

For the South African and Namibian ABS policy-makers who participated in TEGA's workshop, the gradual translation of this initial objective into concrete ABS governance frameworks is in itself a significant achievement that has required them to overcome many challenges.

At the international level, representatives of the biodiversity-rich 'provider' countries of the South have had to defend the initial deal outlined above against the reluctance of the industrialised 'user' countries of the North. Indeed, after signing the CBD, the governments of these user countries deliberately neglected ABS, while emphasising conservation and sustainable use.[4] In the late 1990s and early 2000s, ABS regained prominence in international negotiations under the pressure of alter-globalisation movements, whose critique of neoliberal and neo-colonial patterns of economic globalisation included campaigns denouncing practices of biopiracy by large corporations from

[4] See for instance Frein and Meyer 2008.

industrialised countries. With their geopolitical, commercial and scientific interests in mind, governments from user countries responded by pushing for a voluntary ABS framework, resulting in the 2002 *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization.* In the same year, however, a group of like-minded megadiverse countries succeeded in getting the Parties to the CBD to agree on the establishment of a legally binding ABS framework.[5]

While the resulting Nagoya Protocol of 2010 has its weaknesses, its very existence can thus be seen as a diplomatic achievement – to which the African Group contributed in no small measure. Without the Nagoya Protocol and its translation into national ABS laws and regulations, there would be no obligation for users of genetic resources and aTK to obtain prior informed consent from the resource and knowledge holders, nor would users be expected to negotiate a fair and equitable benefit-sharing agreement with resource providers. The Nagoya Protocol also strengthened the normative links between ABS and the objectives of conservation and sustainable use (e.g., Art 8 and Art. 9). In addition, several of its provisions strengthened the biocultural rights of Indigenous Peoples and local communities (e.g., Art. 5(2) and Art. 12). And its Art. 10 contributed to establishing the idea of a global multilateral mechanism for ABS – such a mechanism is currently being established to extend benefit-sharing to the use of digital sequence information (DSI).

As these legal provisions show, the Nagoya Protocol did more than simply unpack the third objective of the CBD. It also upgraded ABS to make it an instrument of sustainable development. According to this upgraded version, ABS would not only ensure that biodiversity-rich countries also benefit from the monetary wealth and the scientific knowledge gained by the utilization of their genetic resources and indigenous knowledge systems. Assuming that the monetary valorisation of biological resources and aTK creates an economic incentive for the conservation and sustainable use of these resources, benefit-sharing would also incentivize the initial resource and knowledge holders to protect their valuable biocultural diversity. Moreover, by directing benefits to Indigenous Peoples and local communities, ABS would combine poverty alleviation and distributive justice with support for communities whose traditional knowledge and value systems are considered to be key for ecological sustainability. Provisions that encourage the investment of shared benefits in conservation and sustainable use complete this harmonious vision, according to which ABS would align bioprospecting and biotrade with social welfare, postcolonial justice, and the conservation of nature for future generations.

The political work to institutionalise ABS has also led to achievements in national contexts, although the trajectories and outcomes vary from country to country. South Africa had already legislated on ABS before the adoption of the Nagoya Protocol, with the 6th chapter of the National Environmental Management: Biodiversity Act (NEMBA) of 2004 and the Bioprospecting, Access and Benefit Sharing (BABS) Regulations of 2008. These regulations are particularly ambitious, as they extend ABS to all biological resources and cover not only bioprospecting, but also biotrade. Following several rounds of updates, South Africa is currently working on new ABS regulations under the goal 3 of the 2023 White Paper on the Conservation and Sustainable Use of South Africa's Biodiversity and the Biodiversity Bill of 2024. In Namibia, ABS policy-making was put on hold during the making of the Nagoya Protocol, and an Interim Bioprospecting Committee was established to manage bioprospecting permits. The adoption of the 2017 Access to Biological and Genetic Resources and Associated Traditional Knowledge Act 2 and of subsequent ABS regulations in 2021 thus came later than in South Africa, but the regulatory scope of these provisions is no less ambitious.

[5] The group comprised Bolivia, Brazil, China, Colombia, Costa Rica, Ecuador, the Philippines, India, Indonesia, Kenya, Malaysia, Mexico, Peru, South Africa and Venezuela.

Establishing these national ABS laws and regulations has not been easy. For example, ABS policy-makers had to face a relative lack of support from other ministries and departments, in a context where the thematic complexity of ABS requires extensive inter-ministerial cooperation, but where the salience of ABS in domestic politics is too low to compensate silo-thinking, organisational dissynchronicities, budgetary competition, and bureaucratic turf wars. ABS policy-making has also faced resistance from scientific and commercial users of biological resources and aTK, who do not want ABS permit systems and related delays and costs to undermine their competitiveness and strain their relations with foreign partners. The involvement of Indigenous Peoples and local communities has also proven politically challenging in a context of contention about who is a knowledge holder with a right to receive shared benefits, and who is a legitimate representative of whom in political interactions with the state.

From the viewpoint of ABS policy-makers, having been able to translate ABS into law despite these international and domestic difficulties is a victory for the sovereignty and future development prospects of their country: national ABS frameworks are now existing to strengthen the ability of the state to safeguard the nation's biological and knowledge resources from unduly extraction and appropriation by foreign entities, and to advance the country's interests based on the vision of sustainable development enshrined in the Nagoya Protocol.

However, most of the other ABS stakeholders who participated in the TEGA workshop do not share this perspective, nor have their experiences of ABS been shaped by this pattern of advancing ABS in the face of adversity. As far as we can tell, all workshop participants agree that neo-colonial biopiracy is wrong and that prior informed consent and benefit sharing are right. Participants also subscribe to the values and goals of sustainable development that ABS is meant to serve. Nevertheless, many of them question the ability of existing ABS frameworks to translate these principles and goals into reality. In other words, while the higher purposes of ABS are considered to be noble, the institutionalisation of ABS is rather perceived as a source of problems.

As far as scientific users of biological/genetic resources and aTK are concerned, they may understand that governments see ABS primarily as a matter of post-colonial sovereignty and therefore want to set their own rules in this area. However, the resulting heterogeneity of the ABS regulatory landscape is a problem for these users, especially those working within transnational research projects. Indeed, these users have to invest considerable time and resources in analysing and interpreting a variety of national ABS rules and procedures that have changed over time, both in terms of legal provisions and in terms of their application by national regulators. Moreover, the delays involved in the obtention of ABS permits to move biological/genetic materials across borders hamper the efficiency of international research collaborations. In many cases, identifying the appropriate traditional resource and knowledge holders who can provide a prior informed consent and with whom one should establish a benefit-sharing agreement has proven challenging.[6] Overall, therefore, scientific users have tended to experience the institutionalisation of ABS not so much as a political victory for the public good, but rather as a troubling and costly increase in the complexity and uncertainty of the regulatory environment they must navigate.

To some extent, commercial users of biological/genetic resources and aTK who are located in 'user countries' that are Parties to the Nagoya Protocol are also affected by this regulatory diversity and uncertainty. Like scientific users, commercial users based in the European Union, for instance, have obligations of due diligence in cases when R&D (bioprospecting) is involved. Ensuring compliance is therefore a challenge for their legal departments, especially when commercial projects involve

[6] In South Africa, the status of the National KhoiSan Council (NKC) as representative of the country's traditional knowledge holders has reduced this difficulty, but this status is being challenged by Chiefs who do not feel represented.

ingredients from several countries. More importantly for commercial users based in user countries, the delays and difficulties that their commercial partners from provider countries encounter to get ABS permits can negatively affect the development of new products, increase overall production costs in value chains, and reduce the reliability of supply. These problems motivate commercial users to prefer voluntary ABS frameworks that would give them more flexibility. Or at least they want ABS regulations that impose limited costs and predictable delays.

When ABS makes the development or trade of products containing specific biological/genetic ingredients too costly, commercial users who import resources can sometimes switch to resources and partners from countries with no or less ambitious/cumbersome ABS rules. Or, if a resource is not available or has no functional equivalent in such countries, commercial users and their supplying partners sometimes circumvent ABS rules by routing resources through intermediary countries that have no or less stringent ABS regulations.

Because commercial users based in Namibia or in South Africa are suppliers of specific biological/genetic resources, they have no exit option, and they are the ones who must obtain the permits and compliance certificates to be able to export their products. In this position, they are more directly exposed to difficulties created by the institutionalisation of ABS. Some of these difficulties relate to procedures and their application. For instance, a Namibian commercial user complains that it took him several months to obtain an ABS permit that has a limited validity period, and since other permits also had to be obtained, which also caused delays, there was little time left before a new ABS permit application had to be submitted – with such cumulative effects threatening the viability of his R&D project. Other problems stem from uncertainty about the scope of the ABS regulations and how applications will be handled by the regulator. Such uncertainty not only increases the workload of ABS compliance, but can also create a perception of lack of transparency and even suspicion that not all companies are being treated equally.

Uncertainty is also created by the contractual conception of fairness and equity entailed in the Nagoya Protocol. For instance, one Namibian company invested significant money and work in negotiating appropriate benefit-sharing agreements with its community-based suppliers, and linked ABS to other measures aimed at improving social equity and sustainable resource use. However, competitors in the region did not choose to implement ABS in the same spirit or take sustainability measures as seriously. In a price-sensitive international market, the company that had invested in proper ABS was not rewarded for its efforts, but punished with a loss of competitiveness that its less virtuous competitors could exploit. With other companies in the Namibian bioeconomy ignoring or minimising ABS-related requirements that they see as unworkable, tensions are currently high between Namibian biotrade actors and the public regulator.

In South Africa, biotrade companies and business associations also complain about the costs and operational difficulties associated with the implementation of ABS. As several entrepreneurs and business association leaders told us, they perceive the current ABS regulations as a case of over-regulation that threatens the economic prospects of their business or sector. Small businesses in particular feel squeezed between the amount of paperwork required to export biological/genetic resources, the delays and implementation costs associated with obtaining prior informed consent and negotiating benefit-sharing agreements, and their inability to pass these costs on to their customers further up the value chain. Even in the famous Rooibos case, according to one of our interviewees, the costs of ABS – including implementation costs and the sharing of benefits – are largely taken out of the margins of South African companies and their suppliers (farmers and groups of wild harvesters),

instead of being shouldered by the importers of Rooibos from the global North and their end consumers, as one would have expected given the initial purpose of ABS.[7]

All in all, business actors from South Africa's bioeconomy advance the same argument as their Namibian counterparts: the implementation of current ABS frameworks would undermine bioeconomic development and thus the ability of companies to generate benefits that could be shared. The provisions entailed in the 2024 Biodiversity Bill increase their concern, as uncertainty and the amount of work required to obtain permits are likely to increase further.

As for ABS stakeholders from Indigenous Peoples and local communities, their experience with ABS has also been problematic. Situations vary depending on countries, Peoples and communities, individuals within the community, as well as the biological/genetic resource and the aTK concerned. Some members of Indigenous Peoples and communities are familiar with ABS regulations because of the role they have played as representatives of traditional leaders and communities in ABS policy-making. Among them, many complain that their views and positions have not been sufficiently taken into account, and that ABS is shaped by the views and preferences of dominant political and economic actors.[8] Other members of Indigenous Peoples and local communities have experienced ABS through their involvement in bioprospecting or biotrade activities. A recurring concern among them is that ABS has little effects on their marginalised position and the reproduction of postcolonial inequalities: they remain trapped in the position of resource and knowledge providers at the bottom of value chains, and the benefits they receive are meagre.

While the Nagoya Protocol expects Parties to conduct awareness campaigns to explain ABS to leaders and members of Indigenous Peoples and communities, the way in which ABS has been framed and institutionalised often appears to them to be overly complicated and disconnected from the real issues they face in terms of recognition of their knowledge and culture, and protection of the integrity of their access and relation to natural resources. Some community leaders therefore have an understanding of ABS that differs from what the Nagoya Protocol has institutionalised. For them, access is not so much about foreign users accessing indigenous genetic resources and aTK, but rather about their community's access to resources: access to fertile land that was taken from them during colonisation; access to plants that are important for their community's livelihood and cultural identity; and access to resources needed for bioeconomic entrepreneurship and upliftment (e.g., capital, training, equipment). Similarly, these leaders understand benefit-sharing not just as a matter of negotiated retribution for access to resources and knowledge, but also as a matter of dignity and reparation against the backdrop of (post)colonial dispossession, exploitation, cultural alienation, and other forms of hurtful violence that their communities have experienced and partly continue to endure.

### *1.3 ABS and transformation in the Anthropocene*

The ABS-related issues presented above do not provide a comprehensive picture, nor do they cover all element of the ABS map created during TEGA's workshop. But they suffice to show the intricate knot of problems that ABS has created, as well as the structural dimensions of this knot.

[7] On other ABS-related issues of inequity in the Rooibos case, see Wynberg *et al.* (2023).
[8] This sentiment was expressed in several interviews with community leaders in Namibia, and in one interview in South Africa, but more thorough empirical research would be required to be able to gauge the extent of this sentiment.

**National vs. transnational:**

The level of dissatisfaction that the institutionalisation of ABS has generated is a challenge for ABS policy-makers who have worked for decades to make ABS work in the best interest of their country. Statements made during the workshop reflect this burden: policy-makers would like to see "more acknowledgement of what has been achieved so far", as well as "more acceptance of ABS" and "more shared vision", that is, more consensus as opposed to the current level of fragmentation and dissent. However, for this to happen, a structural tension would need to be resolved between, on the one hand, *the assertion of national sovereignty* that has been at the core of ABS since its inception and which motivates a top-down political control over the access to resources and aTK, and, on the other hand, *the transnational dimension* of the socio-material realities that ABS tries to regulate – scientific research, bioprospecting, biotrade, the settlement patterns of Indigenous Peoples and the related distribution of traditional knowledge, not to mention the geographic distribution of non-human holders of biological/genetic resources (plants, animals, fungi and microorganisms).

Commercial users have responded to this tension by advocating voluntary forms of ABS (self)regulation. This would give them the operational flexibility to consider ABS only to the extent that it makes "business sense". Users justify this position in two ways: they point to the counterproductive effects of ABS on bioeconomic development, and they present their activities as socially responsible contributions to the public good, that is, to development in the form of the production of useful and reliable knowledge, innovation, income, as well as targeted contributions to social welfare and sustainability that are not captured by ABS frameworks. However, ABS frameworks based on voluntarism would contradict the principle of a sovereign control over natural resources and indigenous knowledge by the state, which is necessary for it to ensure compliance to prior informed consent and benefit-sharing. Moreover, while government actors and leaders of Indigenous Peoples and communities do not question the good will and inner ethical compass of individual entrepreneurs, history has given them reasons to doubt the efficacy of self-regulation. They also know that, without political regulation by the state, the extractive logics of a capitalist economy and the powerful constraints of market competition usually leave limited room to social justice and sustainability.

**Functional simplification vs. inherent complexity:**

If voluntarism is not an option, both scientific and commercial users advocate for a simplification of ABS frameworks to lower implementation costs and decrease uncertainty, in line with related provisions of the Nagoya Protocol. Simplification would also reduce the workload of public regulators, who have to decide on access and benefit-sharing agreements for a variety of highly complex bioprospecting and biotrade cases.

However, the socio-material realities that ABS is supposed to regulate are, as a matter of fact, often highly complex. As we know from systems theory, a regulating system dealing with a highly complex environment is bound to increase its own internal complexity in order to capture and process relevant variations in its environment. Otherwise, the system would be overwhelmed by the complexity of the environment it is supposed to regulate, and this would threaten the system with dysfunction and loss of relevance and legitimacy.[9] In the case of ABS, simplification would fail to grasp where and when benefits are being generated through access and utilization of biological/genetic resources and aTK; which criteria of fairness and equity are relevant in which social relations between the actors involved; whether benefits have actually been shared and whether they have been shared with the appropriate recipients; and so on. As a result, it is difficult to remove the complexity and indeterminacy of ABS frameworks through procedural simplification, because these characteristics of ABS frameworks are inherent to the complexity and indeterminacy of the realities that ABS is expected to regulate.

[9] See Luhmann (2002).

**Large-scale efficiency vs. biocultural diversity:**

Simplifying ABS to make it more amenable to the logics and scales of scientific and economic production might also be in tension with the growing recognition of Indigenous Peoples, communities, and knowledge in the science & politics of biodiversity governance.

Initially, when ABS was included in the CBD, postcolonial justice was approached mainly in terms of postcolonial relations between national states. Ten to fifteen years later, when the Nagoya Protocol was drafted, this approach was upgraded by requiring Parties to "take into consideration indigenous and local communities' customary laws, community protocols and procedures, as applicable, with respect to traditional knowledge associated with genetic resources" when implementing ABS, and to assist Indigenous Peoples and communities in establishing Community Protocols that define how potential users of their resources and knowledge should approach them (Art. 7).[10]

Since then, the recognition of Indigenous Peoples, communities and indigenous knowledge by the science & politics of biodiversity governance has further developed. For instance, the Target 19(f) of the GBF consists of

> „Enhancing the role of collective actions, including by indigenous peoples and local communities, Mother Earth centric actions, and non-market-based approaches including community based natural resource management and civil society cooperation and solidarity aimed at the conservation of biodiversity", whereby Mother Earth centric actions are defined as „Ecocentric and rights-based approach enabling the implementation of actions towards harmonic and complementary relationships between peoples and nature, promoting the continuity of all living beings and their communities and ensuring the non-commodification of environmental functions of Mother Earth." (CBD 2022, p. 12).

In the same vein, the 2023 White Paper on Conservation and Sustainable Use of South Africa's Biodiversity starts is problem statement with the words:

> „People and nature are part of a complex, composite, intricate and totally interdependent web of life. Although our quality of life and very survival depends on the health and wellbeing of this web of life, there are many ways in which people relate to and value nature. How we value nature is influenced by who and where we are; what we think and believe; our traditions and customs; what we treasure and respect; our principles, standards and personal values; and our hopes, fears and life goals. Sustainable use of biodiversity therefore implies the careful and equitable use of nature so that all current and future generations of people get the full benefit of what they value from nature." (DFFE 2023, p. 12)

Further, its problem statement remarks that action for biodiversity

> „remains untransformed, limiting the full exercising of rights and inclusive participation by traditional leaders and traditional health practitioners, previously disadvantaged individuals (POis) and indigenous people and local communities in access to, and sharing of, benefits", against the backdrop of „limited participation and access of traditional leaders and traditional health practitioners, POis and indigenous people and local communities to natural resources, and socio-economic opportunities." (DFFE 2023, p. 12).

While the creation of structures that standardise, simplify and streamline ABS could provide significant relief to scientific and commercial users of genetic resources and aTK, in some cases such simplification risks widening the gaps between ABS frameworks and the biocultural diversity and complexity of

[10] On the significance of these terms, see Girard et al. (2022).

indigenous worlds, which cannot be simultaneously recognised and subsumed under the functional requirements of biological research and capitalist markets.

**Bioeconomic development vs. ecological sustainability:**

This tension brought about by ABS is not only relevant in terms of postcolonial inclusion of Peoples, communities and cultures that have been marginalised and mistreated. It is also relevant in terms of the developmental pattern in which ABS is entangled, which it can either contribute to reproducing or to transforming. Here as well, the tension is best understood with the history of ABS in mind.

When ABS was included in the CBD in the late 1980s and early 1990s, the issue at hand was considered to be about the distribution of the 'goods' of modern development. The problem was not the open-ended extraction, appropriation and commodification of biological/genetic resources, but the more or less equitable sharing of the monetary and non-monetary benefits arising from these activities. Ten to fifteen years later, the Nagoya Protocol integrated concerns for the conservation and sustainable use of biodiversity more thoroughly into ABS, but on the basis of a sustainable development paradigm that claimed to be able to harmonise extraction, exploitation/valorisation, equity, social welfare, and ecological sustainability.

Since then, this paradigm of sustainable development has lost credibility and traction, and the very model of modern development on which ABS is based is increasingly being challenged. Indeed, this model of development has led humanity into a perilous situation that can be symbolically referred to as the Anthropocene.[11] By this, we mean a number of interrelated planetary disruptions caused by human activities and the cultural, institutional and technological factors that contribute to conditioning these activities: greenhouse gas emissions that induce climate change; land-use change induced by urbanisation, infrastructure development, industrial production, and unsustainable agriculture and forestry; the non-ecological restructuring of waterscapes, for instance for hydropower dams and large irrigation projects; unsustainable fishing; the release of life-altering toxic materials in the environment; the genetic reprogramming of non-human beings; and so on.

These disruptions are not only material, but also social, in that they are gradually transforming social relations, especially between those who benefit most from these earth-altering activities (e.g., capital owners; affluent consumers; those employed for keeping modern development going), and those who are the most exposed to their destructive effects (e.g., nature-dependent rural communities; populations most exposed to extreme weather events; people uprooted and displaced to make room for economic development; future generations; but also the millions of non-human species whose possibilities of life are being destroyed).

Moreover, with the destructive socio-material *side*-effects of unbridled modern development becoming *main* effects,[12] the planetary disruptions of the Anthropocene also unsettle the ideology of linear progress that is attached to this developmental model: with climate change and massive biodiversity loss increasingly undermining the habitability of the Earth, the idea that modern development means a continuous and open-ended improvement of human well-being seems increasingly shallow and untenable.

Notwithstanding its limited power, international biodiversity governance clearly has a role to play in addressing the daunting challenges of the Anthropocene. In recent years, experts and policy-makers

[11] After years of scientific and political debates, the International Commission on Stratigraphy decided in 2024 that the Anthropocene cannot be considered to be a new geological epoch as per the technical criteria of geology. However, the Anthropocene remains a meaningful category to describe the planetary disruptions brought about by modern development in the past centuries – and in particular since the mid-20th century (Lorimer, 2016).
[12] See Beck (2016).

have begun to recognise that playing this role may require acknowledging the limits of the dominant sustainable development paradigm and working to transform modern development at a more fundamental level. In this context, indigenous worldviews, value systems and ways of life that deviate from the epistemological, political and economic structures of modern development are recognised as key because their existence demonstrates that more ecological and reciprocal ways of knowing, being, and acting collectively are possible.[13] As the landmark 2022 IPBES report on the diverse values and valuation of nature emphasises:

> "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." (IPBES 2022, p. XVIII)

Against this backdrop, while the practical and immediate problems caused by the 'knot of ABS' outlined above require attention and collective problem-solving efforts, including at the technical level of ABS regulations and procedures, the knot of ABS is also a valuable gift. Because it ties together actors and institutions that are directly relevant to the structural problem of inequitable and unsustainable development in the Anthropocene, this knot offers an opportunity to question these structures and to transform how development is being conceived and practiced – politically, scientifically, economically, and in the wounded but also potentially healing entanglements of modernity and indigeneity.

## 2. Creating space for transformative change in ABS

In order to unravel the knot of shortcomings and dysfunctions that afflict current ABS realities, while at the same time building on past achievements and advancing socio-ecological transformation in this field, TEGA relies on a three-year action research that combines scientific knowledge and the knowledge and action power of ABS stakeholders in the co-creation of change.

After several months of preparatory research and engagement work, TEGA's first Plenary Workshop was a crucial moment in this endeavour. It established a space for collective experimentation in the field of ABS by bringing together interested participants in a Community of Purpose (2.1) and, building on the map of ABS presented above, it opened up new horizons for transformative change that will be explored and translated into action in TEGA's next phases (2.2).[14]

### *2.1 Building TEGA's Community of Purpose*

As suggested in the first part of the report and argued in more detail elsewhere,[15] the bundled problems of ABS that many stakeholders would like to solve are actually frictions and tensions both between some of the functional spheres of modern society (the political system of nation states, positive law, science, and the monetized economy), as well as between this functionally differentiated order of modern society and the communal systems of Indigenous Peoples and local communities.

[13] See de la Cadena and Blaser (2018) and Escobar (2020).

[14] Since the activities conducted during the workshop have already been described in a preliminary report, the following sections focus on essential results that prepare the ground for TEGA's next phase.

[15] See Krichewsky (2024: chapter 5).

To address these frictions and tensions, TEGA's strategy has been to invite ABS stakeholders from these various functional spheres and communities in a Community of Purpose (CoP) that transcends institutional boundaries and creates common ground for action. This CoP was conceived to be more than a group gathered for one more multi-stakeholder dialogue. While participants remained attached to their respective ABS-related social role and identity (e.g., civil servant, entrepreneur, researcher, community leader), they were included more holistically as members of a circle of equals. The use of the circle process method played an important role in this regard, as it strengthens the sense of belonging to a shared community of equals, assembled on a common ground that is symbolised by the circle's centrepiece.[16] Sitting in the circle in a seating order based on age (from oldest to youngest), everyone was able to see and be seen; to speak her/his own truth and concerns into the field and to listen to the truth and concerns of others; to be touched and enriched by the group, while enriching the group and touching others with her/his presence and contributions; and to be fully present, in resonance with the group dynamic that was unfolding.

The Khoi ceremony performed on the first morning of the workshop also contributed to building the CoP. A few participants may have been slightly irritated, as this ceremony brought a spiritual way of connecting to the land, to ancestors, to others, and to oneself in a workshop marked by the seal of science, on a topic often considered to be rather technical and fully secular. But, overall, this ceremony was appreciated both for what it genuinely performed and for its acknowledgement of indigenous realities that are arguably relevant to ABS, biodiversity governance, and socio-ecological transformation, but which are often muted, marginalised, or distorted by the dominance of scientific rationalism on contemporary minds.[17]

The collective mapping of the 'ABS assemblage' facilitated the formation of TEGA's CoP by allowing all participants to contribute their piece to a shared representation of ABS that became a common point of reference. Of course, most participants already had a fairly comprehensive mental representation of ABS. But the mapping was not about uncovering some unknown dimension of ABS. Rather, the mapping was an opportunity for each participant to express and mark what matters to herself or himself in ABS, while also acknowledging that this is only a small part of a much larger puzzle, and that the attention and concerns of other ABS stakeholders lie elsewhere.

Community building was further strengthened by a self-inquiry in groups of about 5 participants on the following question: *When I consider my own relation to ABS, what are sources of satisfaction, and what are sources of frustration and discontent?* During the self-inquiry, participants were invited to explore and express the thoughts and feelings that this question triggered in them, without being interrupted by others and without having to explain or justify anything to others. Beyond the specific insights that participants gained from this exercise about themselves, about other ABS stakeholders or about ABS in general, the self-inquiry strengthened the relational basis of the CoP. Several statements made by participants in the circle immediately after the self-inquiry illustrate this effect: listening to each other's experiences and issues had shown that many ABS-related problems were shared, even if different stakeholders relate to these shared problems from a different angle.

Whether the cohesion and resonance created among the participants during the workshop will last remains to be seen. In the final hours of the workshop, the divisive logics of functional differentiation that dominate social life in the 'outside world', but which had been deliberately relegated to the background during the workshop, came back to the fore: Isn't TEGA likely to remain an academic exercise with little practical relevance? How can civil servants justify their participation in TEGA to their hierarchy if at this stage TEGA has no pre-defined goals, blueprints and performance indicators that fit

[16] On the circle process method, see Baldwin and Linnea (2010).

[17] On the challenges and needs to bring scientific knowledge and indigenous knowledge together in environmental problem-solving, see for instance Barrett (2013), Löfmark and Lidskog (2017), as well as Escobar et al. (2024).

the mandates of their public administration? Will TEGA help entrepreneurs improve stakeholder management and remove ABS-related barriers to business development? What tangible benefits will TEGA bring to local communities, whose leaders and members do not necessarily have the luxury and interest in participating in projects that serve other people's agendas but not their own?

These questions signal the need for TEGA's action research to find the right balance between serving the needs and expectations of established institutions, even if it contributes to social reproduction, and carving out space for 'safe to fail' experimentation. This applies to TEGA's scientific team, which has to find a balance between doing research to produce peer-reviewed publications and using its knowledge and skills to solve problems that are not scientific problems. This also applies to other participants. CoP members can't ignore their political and bureaucratic responsibilities, the efficiency of biological research and bioprospecting, the financial bottom line of their company, or the well-being of their community. But a focus on these established motivational structures would be at the expense of TEGA's chance to turn the frustrating knot of ABS problems into an opportunity for transformative change that could end up being particularly rewarding for all actors involved. As several participants noted during the workshop, a project like TEGA requires an awareness of interdependencies, trust, patience, and a practice of give and take (of time, attention, information) that will help TEGA's "safe to fail experiment" overcome the entrenched frames of reference and patterns of action that prevail in current ABS realities.

### *2.2 Exploring the needs and potentials for transformative change in ABS*

If the ABS frameworks established under the Nagoya Protocol have failed to achieve ABS objectives in a satisfactory manner, what kind of transformative change is needed to make ABS work better? In the metaphor of the olive tree borrowed from Vanessa Machado de Oliveira,[18] this question approaches transformation at the level of problem-solving methodology (the crown of the olive tree): transformation is about fixing the institutional machinery of ABS to achieve the goals defined by those institutions.

This approach to transformation is perfectly fine and useful, and the TEGA working groups may be well advised to start at this level (see part 3). At some point, however, this problem-solving approach is likely to run into obstacles. Indeed, many of the problems faced by ABS stakeholders are not simply procedural deficiencies that can be fixed, but symptoms of deeper problems that lie at an epistemological level (the trunk of the olive tree). This level corresponds to the frames of reference and power relations that have been inscribed in ABS institutions: the questionable assumption that monetary valorisation of genetic resources supports conservation and sustainable use; narrow conceptions of indigenous knowledge that are out of tune with indigenous biocultural realities; reliance on market transactions to achieve fairness and equity; unresolved discrepancies between national conceptions of political sovereignty and transnational spaces of action; a focus on the sharing of benefits without addressing the sharing of associated destructive side-effects, and so on. At this deeper level, transformation involves not only finding solutions, but also transforming our understanding of the problems that matter.

While working at this epistemological level, participants might stumble upon relevant problems that are of a more fundamental nature, because these problems involve different conceptions of what constitutes ABS realities, at an ontological level (the roots of the tree). For instance, should biological/genetic resources be treated as isolated entities, or do they exist only through the web of social, technological, ecological and spiritual relations that bring them into being? What does „access" really mean, and what is at stake when access is granted or denied? What realities exist behind the

[18] Machado de Oliveira (2021).

technical acronym „IPLC"? What is fairness and equity in the reality of specific social relations? And what changes can actually be considered "transformative" in the context of TEGA's action research?

At this initial stage of the action research, the workshop did not aim to provide answers to these questions. Nor did it seek to pre-determine the level at which participants should focus their collaboration in the next steps of the action research. The main aim was to open up the space of possibilities for transformative change, from the methodological down to the ontological level.

Three activities were carried out for this purpose:[19]

- An embodied exploration of one's position towards modern development: humans as outside and above nature vs. humans as part of the more-than-human Earth; the future as a perpetuation of modernisation/development/progress vs. the future as a troubled and probably painful metamorphosis of an unsustainable modernity in crisis into something else; sustainable development goals as achievable vs. as unrealistic promises used to legitimise unsustainable but profitable patterns of development; ABS frameworks as a mechanism for equity and sustainability that must be implemented vs. ABS frameworks as a mechanism skewed towards dominant interests and superficial notions of sustainability.

- A collective exploration of the multiple ontologies of plants, informed by insights from biological research and critical plant studies.[20] By interweaving these insights with the participants' own views of plants, the session highlighted that plants are much more than biological/genetic materials with use value for humans. They are sentient, intelligent, active and life-sustaining beings *who* are entangled with human life and society in multiple ways. While current ABS frameworks operate with a flat, anthropocentric and instrumental ontology of plants, the session broadened the perspective to consider other ontologies of plants that may prove relevant in later stages of TEGA's action research – particularly with regard to the shift towards more reciprocal and convivial relationships between humans and plants in the bioeconomy.

- A sensing exercise to explore TEGA's significance for the participants, knowing that collective transformation can also imply, to some extent, a transformation of the self. Those who wanted to do this sensing exercise moved individually from one station to another: the present self, with one's ancestors in the back —> resources for transformative change —> obstacles to transformative change —> seeking permission —> the threshold, with the guardians of the threshold —> the future self, looking towards future generations. Most participants felt comfortable with this sensing exercise and gained useful insights. But some participants experienced reluctance and discomfort. As far as we can understand it, this reluctance and discomfort could have had various causes: unfamiliarity with such a method of systemic change; a reluctance to openly mix the social and the personal (although the two are actually permanently and inextricably linked); a conception of somatic means of knowing and sense-making (e.g., the emotional body, imagination, intuition) as being irrational, inappropriate in in a scientific workshop, and/or based on superstition.

These activities, as well as the circle conversations that took place around them, revealed that the social diversity that characterises TEGA's CoP (including TEGA' scientific team) results in a diversity of views, positions, and preferences.

[19] For a more detailed description of these activities, see the preliminary report.

[20] See for instance Baluška and Mancuso (2020), Demey *et al.* (2023), Nardini *et al.* (2024), Kirksey and Helmreich (2010), Meyers (2017), and Gagliano (2017).

At the time of the workshop, about a third of the participants showed a rather strong attachment to modern development, including its cosmology (its founding myths), its ontology (its dominant conceptions of reality), its epistemology (scientific universalism), and its methodology (problem-solving through modern institutions, including ABS frameworks). These participants tended to understand ABS in the terms prevailing in current ABS frameworks, and they expressed a preference for rapid problem-solving action, i.e., a methodological approach to transformation focused on the left-hand side of the ABS map (see part 1).

About another third felt right in the middle of the continuum between modernisation and post-development alternatives.

Closer to the other end of the spectrum, the third cluster of participants showed a more critical relationship to modern development and an interest in post-development alternatives. For them, the modern world, including its founding myths and ontological premises, does not exhaust the possibilities of seeing the world, being in the world, and organising social life. They recognised the enormous value and usefulness of scientific knowledge, but also its limitations and the violence of its claim to universal validity. For these participants, other systems of knowledge and ways of knowing were not a priori traditional beliefs belonging to the past, or superstitions, but alternative knowledge systems that can also be valuable and useful, though they have their own limitations and dangers. Similarly, these participants recognised and valued the problem-solving power of modern institutions, including the policies of nation-states and the commodities produced and traded by capitalist markets. However, they also considered that these institutions are sometimes part of the problem, and that transformative change for the common good should be allowed to question these institutions and explore alternative institutional arrangements.

These pluriversal positions came with a preference for deeper transformation, which was expressed by several participants during the workshop. For instance, while current ABS frameworks reproduce a modern conception of human-plant relations based on the unilateral extraction, utilization and commodification of biological/genetic resources for scientific and economic development, one workshop participant who runs a company producing plant-based commodities openly challenged this conception and pointed to a more convivial alternative:

> "*We know about people-private-partnerships, but PPP can also stand for people-plant-partnerships, which is about relating to and working with plants in a mutually beneficial way. It means asking not only 'What can we get out of the plants?', but also 'How can we establish a long-term collaboration with the plants?'*"

Other statements made during the workshop expressed a similar preference for convivial relations between humans and plants, such as this description of a participant's relation to Rooibos:

> "*Since we, in our communities, live with the plants, we know that there is a lot of stress to be relieved. Plants work for us. They are made for us, but we are also made for them. So, what can we do to heal this relationship? In our community, we were 12 siblings, and we were all breastfed. But because there was not always enough milk, Rooibos was often used as a substitute for our mother's milk. So, you see: it is impossible to separate the community and the Rooibos. And Rooibos is just one plant, but there is a kingdom of plants, and we need to care for one another.*"

Another participant went further and sketched a transformative approach to ABS that actually recognizes the plurality of worlds and possibilities beyond the 'one-world world'[21] of natural sciences and standard economic development:

[21] The expression is from Law (2015).

> "*We all have fire, air, water and earth in us. And plants do as well.* [...] *Plants are also related to their animal brothers, for instance those who eat fruits and disperse seeds. Humans have partly cut themselves away from these kinds of relationships – think of our sewage systems that carry away the seeds of the plants we eat. But it is not always like this. Sangomas come to plants and ask 'I need something from you: can you give it to me?', and the answer can be yes or no. The plant may say 'Sorry, but I need to keep this for the springbok who needs it more than you do.' Sangomas know that the healing from a plant does not just come from the plant's molecules, but also from the hand that picks its leave, its root, its fruit. And science is scared of this, because it cannot know this, it cannot capture this reality. Nor does the economy. The economy sees only demand and supply, and it creates scarcity as an illusion. In fact, there is abundance on this Earth. With IPBES' report on valuation, for the first time in such an international context, there was a recognition that other people and cultures value plants differently, based on different ontologies. Now we find references to Mother Earth in international agreements like the Global Biodiversity Framework, and indigenous knowledge holders know exactly what it is.* [...] *In 2024, in a context where science increasingly recognises the plurality of knowledge and realities, and the reality-making effects of knowledge, what does this imply for ABS?*"

Such an approach to transformative change in/through ABS does not exclude pragmatic problem-solving and the fixing of ABS procedures. But it goes beyond this intention. Taking also the right-hand side of the ABS map into account, this approach asks what a healthy ABS system could be: can ABS be transformed into a potent instrument for healing and restoring social relations, both among humans and with non-human beings, that have been damaged by colonisation and that continue to be damaged to some extent by the negative side-effects of modern development in the Anthropocene?

## 3. TEGA's next phase: a three-step action plan

Building on the results of this first Plenary Workshop, TEGA's action research can now move into its next phase of targeting desirable changes in the field of ABS, setting priorities, developing strategies for action and starting to change realities accordingly.

This collaborative work will be carried out in three thematic working groups. Members of TEGA's CoP can join one or several working groups depending on their interest and availability. ABS stakeholders who were invited to the first Plenary Workshop, but could not attend the event, as well as other ABS stakeholders, might also join the action research and integrate working groups.[22] In fact, TEGA's project team will actively engage other ABS stakeholders who were not sufficiently represented at the first workshop, including bioprospecting and biotrade companies from user countries in the global North, ABS policy-makers from the European Union, and representatives of Indigenous Peoples in international ABS policy-making.

To structure the work of the working groups until TEGA's second Plenary Workshop, which will be held at the end of November 2025, we propose a three-step action plan. Of course, this plan is a schematic orientation, and the lively process of doing transformative change collectively might not be as linear and sequential as the plan suggests.

**STEP 1: Selection of entry points for transformative change (March-April 2025):**

A first task for the working groups will be to negotiate and decide about the ABS-related problems they want to address in priority.

[22] To be able to ensure a balanced representation of ABS stakeholders in the CoP, and to keep the size of the group of participants manageable given the limited resources of the TEGA project, participation of additional interested stakeholders in the action research must be decided by TEGA's project team.

Because ABS-related issues form a complicated knot, this will require taking into account the interdependencies between different problems and desired changes. For instance, in the final session of the workshop, ABS policy-makers identified the "lack of acceptance of ABS" as a major problem. Making ABS more acceptable to other ABS stakeholders would require considering changes that alleviate the problems that make ABS policies unacceptable to these stakeholders, such as changes that simplify procedures and reduce delays and paperwork. Increasing acceptance of ABS may also require taking marginalised voices and preferences more thoroughly into account, even if these voices and preferences do not fit established ABS frameworks. In turn, making these changes politically feasible and justifiable might require that dissatisfied ABS stakeholders also consider changes, for instance in relation to benefit-sharing and sustainable use, so that regulators have less reasons to exert top-down control. And so on.

Once a relatively common understanding of interdependent problems has been reached, the group will be able to select one or two problems as entry points before moving on to the second step. As the results of the workshop suggest, it is advisable to choose entry points that are at the methodological level of the olive tree. Indeed, problems approached at this higher level tend to be less contentious and will be more motivating for participants who have emphasised their preference for quick action and relief. As the process unfolds, the epistemological and ontological dimensions of ABS-related problems, which have a stronger transformative potential, will almost automatically emerge and require attention. Starting at the methodological level will also give time for group dynamics to mature and for trust between participants to grow. As we experienced in the workshop, these conditions are necessary for the group to be able to address issues at the epistemological and ontological levels, as these levels involve sensitive and contentious issues of knowledge, power, (post)colonial trauma and identity.

As a point of departure, the TEGA team proposes the following three thematic working groups:

- Working Group #1: *Revising ABS policy frameworks in a metamorphosing world:* ABS policy frameworks have been crafted in the world of the 1990s and 2000s, which was dominated by a global project of sustainable development. In 2025, this project seems destabilised and exhausted, and the world has entered an unstable period of political and cultural restructuring against the backdrop of massive ecological disruptions. What kind of ABS policy frameworks are needed in this new context? By identifying entry points to address the shortcomings and dysfunctions of current ABS frameworks, the Working Group #1 will examine not only improvements, but possibly also transformations to adapt frameworks to emerging realities.

- Working Group #2: *Reciprocity, equity and sustainability in biotrade value chains*: ABS is expected to foster equity and support conservation and sustainable use in biotrade value chains. However, many factors impede such outcomes and ABS may even have counter-productive effects. With a focus on selected value chains, the Working Group #2 will examine the positive and negative effects of ABS on biotrade in terms of reciprocity, equity, and sustainability, and identify entry points to strengthen these values, either by improving ABS, or by developing alternatives. In doing so, the Working Group #2 might consider the inclusion of non-human actors, so that reciprocity, equity and sustainability are conceived not only in terms of human relationships (e.g., business-community), but also in terms of human-plant relations within convivial people-plant-partnerships.

- Working Group #3: *Science and indigenous knowledge in ABS:* The relationship between science and indigenous knowledge has been at the heart of ABS since its inception, and it remains a problematic dimension of ABS in many respects. Who defines the boundaries between indigenous knowledge and scientific knowledge in bioprospecting, and on which terms? How does 'holding indigenous knowledge' relate to 'owning' knowledge, and who can

be considered an indigenous knowledge holder/owner in ABS-relevant contexts? How is ownership and retribution for the use of indigenous knowledge being defined and contested? How is fairness and equity being achieved, or not, in benefit-sharing agreements involving aTK? The Working Group #3 will identify entry points to tackle concrete problems experienced by ABS stakeholders in relation to these issues. In doing so, the Working Group #3 might consider questioning interrelations between scientific onto-epistemologies and indigenous onto-epistemologies at a more fundamental level to foster the decolonisation of these interrelations and to find out whether the knowledge and wisdom of Indigenous Peoples and local communities can help us design a healthier ABS system in the pluriverse.

**STEP 2: Elaborating strategies and acting collectively (May-September 2025)**

Once the working groups have agreed on one or a few entry points, the next step will be to develop strategies to achieve desired changes.

While much knowledge is already available among participants, the three working groups may ask members of TEGA's scientific team to conduct empirical research and to contribute ideas from the literature. For example, analytical lenses from political sociology on collaborative governance might have practical relevance for the Working Group #1. Similarly, the Working Group #2 might be interested in economic models for regenerative development. And pluriversal perspectives on science and indigenous knowledge are likely to be useful for the Working Group #3.

These interplays between scientific research and transformative change-making will be based on open negotiations in a spirit of give-and-take. While scientific participants will consider the needs of the working groups and contribute actively to the collective process, they will not give away their academic freedom, but decide freely on the orientation of their research activities. Conversely, the other participants will retain the control over their political and administrative work, the organisation and management of their business, or their activities as leaders/members of Indigenous Peoples and local communities. Like in TEGA's initial workshop, collaborative change requires to accept to be influenced by others as much as one wants to reach and influence others with one's ideas and concerns. But everyone remains free to set boundaries and to decide whether or not to cross thresholds – symbolised in the sensing exercise by the string stretched across the room.

Once strategies have been formulated, participants will be able to move to concerted action and bring about change in the ABS field. TEGA's scientific team will observe this change process and provide analytical feedback to help decipher obstacles and identify opportunities.

**STEP 3: Prepare TEGA's second Plenary Workshop (October-November 2025)**

The second Plenary Workshop, to be held in Namibia end of November 2025, will be an opportunity for each of the working groups to share their results, to learn from the experiences of the other groups, and to reflect together on what has been achieved and where to go in the third phase of TEGA's transformative change journey (February 2026 - November 2026).

The third step will be to prepare this plenary workshop. To this end, each working group will review its progress, reflect on the resources for transformative change it has found and the obstacles it has encountered, and formulate tentative ideas and intentions for continuing or redirecting its work.

Throughout the second phase of TEGA, the project team will work to disseminate results through contributions to scientific conferences (e.g., the TC/ESG25 conference "Navigating Sustainability Transformations Towards Justice and Equity"), the publication of papers, and the production of content for the TEGA website and other channels of scientific communication.

## Conclusion

In a world undergoing what Ulrich Beck conceptualises as a metamorphosis, disruptive movements that had been contained by the relatively stable cultural frames of reference and institutional arrangements of the modern order are gaining momentum. These disruptive movements are informed by a diversity of worldviews, ideologies, projects and practices. Some of them have a reactionary impetus, such as the populist and authoritarian MAGA (Make America Great Again) movement currently wielding political power in the US under the leadership of President Donald Trump. Others see the destabilisation of the current order as an opportunity to take modernisation to a new level, such as geo-engineering, the redesign of organisms and ecosystems through synthetic biology, or the use of digital technologies to increase the effectiveness of political governance of human behaviour. Transformative change initiatives such as TEGA contribute to another kind of movement that both responds to and participates in the ongoing metamorphosis of modern world society. Unlike reactionary politics and techno-scientific solutionism, and unlike the widespread cognitive dissonance that tries its best to ignore ongoing disruptions, these transformative change initiatives work to imagine and co-create more convivial and sustainable relations beyond the dominant but destabilised paradigm of unsustainable modern development.

As argued in the first part of this report, ABS offers a promising context for such a transformative change initiative. Like other components of the environmental governance frameworks put in place in the early 1990s to achieve global sustainable development, ABS has institutionalised sound principles and ambitious goals, but its implementation is plagued by problematic shortcomings and dysfunctions. These shortcomings and dysfunctions are not separate problems that can be addressed one at a time. Rather, they form an intricate knot of interdependent problems that require collective problem-solving. Moreover, because many of these problems are rooted in fundamental structures that underpin modern development, such as vertical conceptions of state sovereignty, extractive capitalism, market competition, and a dualistic onto-epistemology that separates human beings from nature, addressing these problems requires a kind of transformative change that is capable of problematising these structures, rather than taking them for granted.

The second part of the report, which focuses on TEGA's first plenary workshop, shows how the interweaving of academic research and practical problem-solving in such an initiative requires moving away from standard practices of academic research and expertise, such as the usual rounds of presentations and discussions. To create a common ground for transformative collaboration, action research requires activities that transcend institutional logics and boundaries by relegating divisive social roles and identities to the background and engaging participants in a circle of equals; that emancipate from dominant epistemologies and narratives to acknowledge the diversity of worldviews, values and experiences in the 'pluriverse' of ABS; and that expand the scope of possibilities beyond problem-solving to include epistemological and ontological dimensions that are more challenging but also more transformative at both the social and personal levels.

The three-step action plan outlined in the last part of the report paves the way for the second phase of TEGA's action research. This second phase will be structured around three working groups in which participants will consider the revision of ABS frameworks in a metamorphosing world; the strengthening of reciprocity, equity and sustainability in selected biotrade value chains within ABS and beyond; and the transformation of asymmetrical interrelations between scientific knowledge and indigenous knowledge in ABS-relevant contexts. How this second phase will unfold and what fruits it will bear remains to be seen. The TEGA team will share information about this upcoming journey on the project website (www.tega-project.com) and present results next year in the TEGA Scientific Report #2.

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