

---

# Access and Benefit Sharing of Genetic Resources, Information and Traditional Knowledge

---

Edited by Charles Lawson, Michelle  
Rourke and Fran Humphries

# Access and Benefit Sharing and Biodiversity Conservation

## The Unrealised Connection

*Rachel Wynberg and Sarah Laird*

---

### Introduction

The commercial use of biodiversity was viewed for decades as a way to fund and create incentives for conservation.<sup>1</sup> In fact, the links between conservation, sustainable use and economic development, which evolved in the 1980s, formed the foundation for the 1992 *Convention on Biological Diversity* (CBD),<sup>2</sup> and its three objectives of conservation, sustainable use and fair and equitable benefit sharing.<sup>3</sup> The CBD focused on the use of genetic resources, rather than all commercial uses of biodiversity, and ‘bioprospecting’ was intended to create incentives for governments to conserve the ‘green gold’ held in their forests and biodiversity. Funds generated by these activities and channelled to support biodiversity conservation and sustainable use would enable biodiversity conservation to pay its way.<sup>4</sup> The policy framework that governed these transactions came to be known as access and benefit sharing (ABS). By embedding benefits for biodiversity conservation within ABS agreements, it was theorised that populations of commercialised species, or the habitats and ecosystems from which they derived, could receive financial support to ensure their conservation; much-needed biodiversity research could be done on taxonomy, sustainable harvesting or other pressing concerns; and sustainable use could be assured.

However, the past three decades have seen few notable conservation gains. In fact, as the recent Intergovernmental Science–Policy Platform on Biodiversity and Ecosystem Services global biodiversity assessment report describes, the world has witnessed catastrophic biodiversity loss in the decades since the CBD entered into force. More than a million species are threatened with extinction, including 40 per cent of amphibian and 30 per cent of marine species, and terrestrial species abundance has fallen 20 per cent since 1990.<sup>5</sup> Biodiversity is declining more quickly than at any time in human history, and current extinction rates are 100 to 1,000 times higher than the baseline rate.<sup>6</sup> Moreover, and somewhat ironically, unwieldy ABS laws have negatively impacted biodiversity research and science – the bedrock of conservation management and planning.<sup>7</sup> ABS is clearly not a cause of the extraordinary loss of biodiversity in recent decades, but it has also not provided strong enough incentives for its conservation.

In a parallel development over the 30 years since adoption of the CBD, the world has also witnessed dramatic technological changes, with increasing use of biotechnology, synthetic biology and associated applications, all of which rely heavily on the use of genetic sequence data and information. This exponential use of so-called digital sequence information (DSI) has coincided with the biodiversity emergency, raising questions about its role both as a tool to support biodiversity conservation through deepened knowledge and new applications, as well as a potential funding mechanism for biodiversity conservation.<sup>8</sup>

In the 1990s, after the CBD entered into force, ABS policy discussions and agreements prominently featured conservation.<sup>9</sup> Benefits and mechanisms to support biodiversity conservation included improved knowledge about biodiversity, capacity building, support for protected areas and other conservation payments. But over the decades, the role of conservation in ABS grew smaller, and attention turned to the equity objectives of the CBD.<sup>10</sup> Conservation and sustainable use remained on the margins of negotiations for the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity* (Nagoya Protocol),<sup>11</sup> and while the text includes references to conservation, the obligations are weak.

The alarming loss of biodiversity in recent decades has brought attention back to the critical need for conservation and sustainable use, and to address it more effectively within ABS. Remarkably, however, after years of ABS policy making, the relationship between ABS, conservation and sustainable use remains poorly understood, a gap this chapter addresses. Based on document analysis and interviews, and as part of a wider research initiative to explore the integration of conservation and sustainable use in benefit sharing,<sup>12</sup> we draw on the experiences of researchers, non-governmental organisations (NGOs), industry and governments working with ABS, genetic resource use and biotrade, primarily in Cameroon, Madagascar, Namibia and South Africa, but also globally. We explore the evolution of conservation in ABS governance, review related national laws and their implementation and examine the challenges of implementing conservation commitments through ABS. We conclude with suggestions for strengthening conservation in ABS policy and practice.

### **BOX 1. UNDERSTANDING CONSERVATION AND SUSTAINABLE USE**

Conservation is defined by the International Union for Conservation of Nature (IUCN) as 'a positive endeavour including: maintenance of ecological process and life-support systems; preservation of genetic diversity; sustainable utilization of species and ecosystems; restoration and

enhancement of the natural environment'.<sup>13</sup> The CBD breaks conservation down into two components: *Ex situ* conservation, meaning the conservation of components of biological diversity outside their natural habitats, and *in situ* conservation, meaning the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings. Connected to these components of conservation within the CBD is sustainable use, defined as the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.<sup>14</sup> These definitions stem from multilateral agreements and international organisations, but it is important to note that concepts of conservation also grow from indigenous histories and stewardship of biodiversity, which view people and nature as interconnected.

The practice of conservation is extremely varied, and the subject of an enormous literature, but in relation to ABS can be conceptualised in terms of the direct and indirect conservation benefits arising from biotrade and biodiscovery. Direct benefits might include land purchases for conservation and local stewardship, agroforestry and reforestation schemes and restoration efforts or sustainable harvesting approaches and targeted interventions for threatened species, ecosystems and biomes to reduce biodiversity loss. Indirect benefits which ABS partnerships can contribute include the informational needs that are the foundation of conservation efforts, including taxonomy and parataxonomy, inventories and species-level research; building capacity within universities, botanic gardens and other research and conservation institutions in high-biodiversity countries; sharing research results; building capacity and long-term collaborations between researchers in high-biodiversity countries and others; and facilitating technology transfer. Strengthened land tenure security and resource rights are another key benefit that can arise from ABS, with positive impacts for conservation and sustainable use.

## **The evolution of conservation in ABS governance**

### ***The development of market-based instruments for conservation***

The field of conservation has transformed significantly over the last 100 years. Beginning in the late 1800s, a preservationist approach prevailed, especially among conservationists in Europe and particularly North America, characterised by a view that people were separate from nature and that pristine wilderness areas should be set aside from human use.<sup>15</sup> This model of 'fortress

conservation<sup>16</sup> came under attack in the 1970s and 1980s, with growing realisation about the links between poverty, development and the environment and the need to bring them together. This was accompanied by rising concerns about the displacement of Indigenous Peoples and local communities through the creation of protected areas, and the subsequent deprivation of traditional livelihoods and land.<sup>17</sup> In part, such shifts resulted from the increasingly evident environmental costs of economic growth in high- and middle-income countries, as well as growing awareness that the world's biodiversity, and intact natural environments, are often found in inverse proportion to technological and industrial wealth.<sup>18</sup>

Triggered by broader imperatives to resolve tensions between economic growth and environmental sustainability, a new model of 'sustainable development' emerged in the 1980s and 1990s, first articulated in the World Conservation Strategy,<sup>19</sup> and subsequently entrenched in the so-called Brundtland report of the World Commission on Environment and Development.<sup>20</sup> In 1992, *Agenda 21: Action Plan for the Next Century* and the *Rio Declaration on Environment and Development* evolved this thinking at the United Nations Conference on Environment and Development (the 'Earth Summit'),<sup>21</sup> at which the CBD was adopted. The 2015 *Sustainable Development Goals*, which seek to balance economic development and conservation, while addressing poverty and inequality, consolidated and broadened many of these ideas.<sup>22</sup>

In the 1990s, the drive to merge conservation and development concerns led to a market-driven framework for biodiversity use, conservation and social justice, in the hope that by valorising biodiversity, markets and economic incentives would lead to its conservation, while at the same time lifting people out of poverty.<sup>23</sup> Such approaches had been mooted as early as the 1940s, with recognition that conservation could provide revenue-earning opportunities,<sup>24</sup> but in the 1990s coincided with a new era within business and research of privatising knowledge and biodiversity. The rights of companies to claim ownership over innovations related to biodiversity expanded, supported by global intellectual property rights systems for agriculture, food and healthcare, introduced through the *Trade Related Aspects of Intellectual Property Rights Agreement* of the World Trade Organization.<sup>25</sup> Biodiversity protected by intellectual property tools was increasingly regarded as the new 'green gold'.

ABS grew up with and manifested these new neoliberal efforts to commodify nature in order to save it. These 'solutions' used the market, partnerships with companies and economic arguments about the value of nature, to justify biodiversity conservation. State-driven approaches to conservation were replaced by these new frontiers of capitalist expansion,<sup>26</sup> which employed a 'win-win' discourse of achieving conservation benefits, supporting rural livelihoods, developing new medicines and other products and realising profits for industry.<sup>27</sup> These approaches appealed to governments and the private sector as they didn't cost the government anything, nor did they require large, extractive – and politically powerful – industries such as timber, mining and

industrial agriculture to change their destructive practices, and thus did not challenge existing economic paradigms and the status quo.<sup>28</sup>

### **Expanding recognition of the rights of Indigenous Peoples and local communities**

In overlapping and parallel processes, the 1980s and 1990s witnessed expanding recognition of the links between cultural diversity and biological diversity,<sup>29</sup> an explosion in rights consciousness and a growing movement to assert the cultural and environmental rights of Indigenous Peoples and local communities (IPLCs).<sup>30</sup> IPLCs are the stewards of 80 per cent of global biodiversity, managing 28 per cent of global lands, including more than 40 per cent of protected areas,<sup>31</sup> and during this time their role in conservation was increasingly recognised in biodiversity agreements and strategies.<sup>32</sup>

A range of international policy instruments was developed to integrate IPLC stewardship into conservation and to respect the rights of IPLCs to consult, consent, control and benefit from the use of their land, seas, resources and knowledge, including the 1989 *Convention Concerning Indigenous and Tribal Peoples in Independent Countries (No. 169)*,<sup>33</sup> *Agenda 21: Action Plan for the Next Century*<sup>34</sup> and the *Rio Declaration on Environment and Development*<sup>35</sup> and the United Nations *Declaration on the Rights of Indigenous Peoples*, adopted in 2007.<sup>36</sup> Article 8(j) of the CBD committed Parties to:

respect, 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.

Indigenous peoples' groups, sometimes in partnership with researchers and others, drafted declarations and other documents at this time, demanding equitable conservation and research practices.<sup>37</sup> Similarly, the 2004 *Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity* contained recommendations for sustainable use, suggested consideration of customary law and traditions when drafting new legislation and regulations and emphasised the need to respect the rights and stewardship of local communities (Principle 2).<sup>38</sup>

### **Conservation in the CBD and Nagoya Protocol**

In the early years of the CBD, conservation had a central role in ABS policy processes, laws and agreements. Most biodiscovery research partnerships in the 1990s and 2000s, for example, contained provisions addressing

conservation. An agreement between pharmaceutical giant Merck and the National Biodiversity Institute (INBio) in Costa Rica, for example, generated funds for protected areas, parataxonomy and biodiversity research.<sup>39</sup> Collections by the United States National Cancer Institute led to biodiversity-related capacity building, training, technology transfer and research collaborations.<sup>40</sup> Shaman Pharmaceuticals worked in Andean Pact countries, generating funds for community-based conservation and undertaking collaborative biodiversity research. Astra Zeneca's work with Griffith University in Australia led to research in biologically diverse marine and terrestrial environments, technology transfer, capacity building and the strengthening of taxonomy and biodiversity inventories.<sup>41</sup> And a range of projects was implemented through the International Cooperative Biodiversity Groups (ICBG) Programme, a United States government-funded effort to promote the equitable sharing of biodiversity benefits in the context of integrated research and development toward drug discovery, biodiversity conservation and economic development.<sup>42</sup>

In subsequent decades, the central role of conservation declined as many involved in ABS policy moved to focus on the equity issues addressed within ABS, including benefit sharing with IPLCs, the use of traditional knowledge and equity in science.<sup>43</sup> The absence of blockbuster products to strengthen the 'economic incentives' argument for ABS shifted policy attention in some countries to biotrade – a very different commercial use than pharmaceutical or high technology sectors, but one with a predictable and consistent, albeit financially smaller, engagement with biodiversity. As negotiations for the Nagoya Protocol unfolded in the late 2000s, it was clear that equity and fairness were at its core, with conservation remaining peripheral. A lead negotiator for the Nagoya Protocol commented: 'It was about benefit sharing for access; about striking a deal in return for public good. So you don't see conservation embedded in Nagoya',<sup>44</sup> while the World Wide Fund for Nature observed that 'the conservation silence in ABS discussions could at a minimum result in a failure of the new regime [Nagoya Protocol] to properly integrate conservation concerns. At worst, the resulting regime could ultimately result in perverse incentives'.<sup>45</sup> As Chambers notes, a requirement for benefits to be put back into biodiversity may have been 'politically too strong an infringement' over sovereign rights.<sup>46</sup>

As expected, the obligations of the Nagoya Protocol are weak, despite some reference to conservation:

- Article 8 requires conditions to be created to promote conservation research, especially in developing countries, and simplified measures on access for non-commercial research.
- Article 9 'encourages' users and providers to direct benefits towards conservation and sustainable use.
- Article 10 enables the possibility of a global multilateral benefit sharing mechanism for conservation and sustainable use.
- Article 22 supports capacity development on conservation research.

Additional possibilities for conservation are also included in the Annex to the Nagoya Protocol, with mention of '[s]pecial fees to be paid to trust funds supporting conservation and sustainable use of biodiversity'<sup>47</sup> and '[a]ccess to scientific information relevant to conservation and sustainable use of biological diversity, including biological inventories and taxonomic studies'.<sup>48</sup> Despite these provisions, there is wide recognition that conservation is something of a step-child in the Nagoya Protocol.

### **The integration of conservation in national ABS laws**

Although conservation received short shrift in the Nagoya Protocol, at national and regional levels, countries have often embedded conservation explicitly in their ABS laws and policies. For example, the European Union's *Regulation 511/2014* encourages the European Commission and Member States to direct benefits from the utilisation of genetic resources towards the conservation of biodiversity and the sustainable use of its components,<sup>49</sup> while Vietnam's *Decree 59/2017/ND-CP* provides that 50–70 per cent of monetary benefits arising from the use of genetic resources shall be remitted to the State budget for use in conservation and sustainable use.<sup>50</sup> In Brazil, the link between benefit sharing and conservation historically has not been clear, relying to a large extent on the willingness of the user to integrate conservation measures, rather than obliging them to do so. However, Law No. 13/123, passed in 2015, changed this landscape and provides the legal architecture to channel benefits to conservation.<sup>51</sup> The decree sets out conservation priorities and lists a number of project options for applicants to select, including support to high-biodiversity areas, promoting sustainable use and supporting Indigenous Peoples in protected areas.

In Namibia, the object of the *Access to Biological and Genetic Resources and Associated Traditional Knowledge Act 2017* (Namibia) is to provide for the conservation, evaluation and sustainable use of biological and genetic resources and associated traditional knowledge; and to promote and encourage the building of national and grassroots scientific and technological capacity relevant to the conservation and sustainable use of biological or genetic resources and associated traditional knowledge.<sup>52</sup> Strong links are made in the law between communities and their associated traditional knowledge, with ABS viewed as an approach to promote biodiversity conservation by protecting the rights and knowledge of communities. Resonating with the Nagoya Protocol, the Act specifies that monetary benefits from ABS can contribute directly to conservation through fees paid to trust funds supporting the conservation and sustainable use of biodiversity, while non-monetary benefits in the form of access to scientific knowledge and training to enhance conservation and sustainable utilisation of biological diversity are also listed.<sup>53</sup>

In July 2021, Cameroon adopted an ABS Law (No 2021/014) as a step towards fulfilling its obligations to the Nagoya Protocol, with implementing decrees to follow.<sup>54</sup> The Law includes general references to conservation and



sustainable use of genetic resources, including Article 3 which mentions the conservation of genetic resources, and Article 29 the contribution benefit sharing from the use of genetic resources and associated traditional knowledge can make to sustainable use, biodiversity conservation, technology transfer and livelihoods of affected communities. However, it does not include specific details on the practical links between ABS and conservation, something the implementing decrees may take up.<sup>55</sup>

In Madagascar, an ABS Decree seeks to conserve biodiversity and promote sustainable use, and avoid exploitation of Malagasy biological resources, to provide legal certainty to companies and researchers, and a clear permitting process.<sup>56</sup> This Decree is linked with environmental laws, including the updated *Malagasy Environmental Charter* of 2015, which sought to increase the efficiency and effectiveness of the structures of environmental management, set up sustainable environment financing mechanisms and focus government actions on economic development, sustainable management and good environmental governance. However, practical, concrete linkages between ABS and conservation remain embryonic.<sup>57</sup>

South Africa's National Environmental Management: Biodiversity Act (10 of 2004) and its 2008 Bioprospecting, Access and Benefit Sharing regulations provide that monetary benefits arising from the use of genetic and biological resources may be used to support conservation, biodiversity research and sustainable use.<sup>58</sup> Benefit sharing agreements and material transfer agreements are required to specify the type and quantity of resources, the area or source from which they are to be collected or obtained and their conservation status. When considering applications, issuing authorities are expected to take into account the potential impacts of bioprospecting or biotrade on biodiversity. The regulations also state that all permit holders are liable for the costs of mitigating or remedying the impact of discovery phase bioprospecting on the environment. A range of benefits are stipulated for inclusion in benefit sharing agreements, but these are voluntary and there is little indication of conservation having been substantively included in the more than 100 agreements concluded to date.<sup>59</sup>

## **The policy challenges of implementing conservation commitments through ABS**

Despite supportive international and national frameworks, there is scant evidence that conservation has been implemented as an integral part of ABS in recent years. Interim national reports published in the CBD's ABS Clearing House in 2018 indicate that a third of countries believed it was premature to indicate how implementation of the Nagoya Protocol had contributed to conservation and sustainable use of biodiversity in their country.<sup>60</sup> Fifty-five Parties responded that they encourage users and providers to direct benefits arising from the utilisation of genetic resources towards the conservation of biological

diversity and sustainable use of its components while 14 Parties reported that they do not. For those reporting in the affirmative, details of specific actions are sparse, with interviews confirming that progress towards this goal is poor, although there are obvious exceptions.<sup>61</sup> Nonetheless, there does seem to be growing awareness of the value of conservation and the sustainable use of biodiversity as part of ABS approaches. We explore below some of the reasons for the low uptake of conservation in ABS arrangements to date.

### ***Lack of coordination and integration***

The lack of coordination and integration between conservation-related laws and institutions is a central reason for insufficient attention to conservation in ABS arrangements. ABS is a very small part of the legal and regulatory framework impacting biodiversity conservation, sustainable use and equitable benefit sharing, and includes both the statutory and customary laws and institutions that prescribe access and use to biodiversity.<sup>62</sup> Statutory laws and policies include those focused on natural resources, agriculture, protected areas, biodiversity conservation, forests, traditional knowledge protection, land reform, land tenure and resource rights, science and technology, intellectual property, phytosanitation, and finance and taxation, among others. There may also be policies and laws focused on individual species and ecosystems. The intersection of these laws with ABS is not always obvious, and overlapping mandates and poor coordination between different Ministries may mean that conservation is ‘everywhere but nowhere’.<sup>63</sup> These constraints are exacerbated by the range of actors involved in administering, implementing and supporting such laws, including different government departments, at national/federal and provincial/state level and traditional authorities, and non-state actors such as NGOs, communities, political groupings, researchers and the private sector. National CBD and ABS focal points have resolved issues of institutional responsibilities to some extent, but have not addressed the multi-sectoral nature of ABS, and the need for active collaboration with a wide range of government entities, including those actively working on conservation. As one European researcher noted:

If you ask what ABS negotiations are about, few would say conservation. Most would say these are about reducing the extraction mentality of the North. Conservation NGOs and government experts are not even in the room for most ABS policy discussions.<sup>64</sup>

### ***Administrative challenges and the marginal role of ABS in domestic priorities***

Poor coordination is further hampered by administrative constraints, including a lack of capacity and budgets, a tendency towards overly bureaucratic systems

and a persistent lack of legal certainty in many countries, despite Nagoya Protocol implementation. Although some countries have been proactive and have invested resources and staff in ABS, with interesting approaches emerging from Brazil and elsewhere, other governments have struggled to put ABS systems in place and to link ABS to conservation. The ABS work of many countries is largely donor-driven, with governments reluctant to allocate scarce domestic resources to this new regulatory framework, but willing to develop ABS measures with donor support.

The cumbersome nature of many ABS laws has added to this load. Remarked a South African government employee:

When BABS [South Africa's Bioprospecting, Access and Benefit Sharing Regulations] was implemented it was so difficult to comply and for a long time no permits were processed as they were all incomplete. There was so much bureaucracy and form-filling it was easy to take one's eye off the ball and forget about equity and sustainability. It often devolves to a bureaucratic process rather than a set of principles.<sup>65</sup>

### ***Traditional knowledge, economic development and conservation: Mutually supportive or in conflict?***

The relationship between IPLC stewardship and conservation has been similarly overlooked, despite increased international recognition of the relationship between biological and cultural diversity, and of the fact that a large share of the world's remaining forests and biodiversity are on lands stewarded by IPLCs. A common reason these relationships are overlooked within ABS is that economic development and restorative justice are seen to 'trump' conservation within ABS policy discussions, especially in low-income economies where basic needs are pressing. Moreover, a focus on equity and regulatory compliance has sometimes turned attention away from conservation and sustainable use, alongside pressures to demonstrate economic benefit.

In some countries, the relationship between conservation and equity/restorative justice is often perceived as antagonistic rather than mutually supportive or reinforcing, or is negotiated without embedding stewardship and conservation benefits in agreements. 'Benefits are conceived ... as a monetary thing without looking at the resource. When conservation is looked at it is typically retrospective and impact centred', remarked an official responsible for issuing permits in South Africa.<sup>66</sup> This has been aggravated by regulatory approaches in some countries, which set up separate processes for accessing resources and traditional knowledge, and therefore distinct negotiating platforms and benefit sharing agreements.

A further layer of complexity occurs where traditional knowledge holders are not the same as resource custodians and, through land and resource dispossession resulting from colonial policies and other interventions, have

been dislocated from resources over which their ancestors held knowledge. The case of rooibos tea illustrates well these convolutions, where the massacre of Indigenous San and Khoi in rooibos-growing landscapes in the northern reaches of South Africa centuries ago means that today only a small group of so-called 'Coloured' communities, comprising mixed-race descendants of European settlers, former slaves and Khoi and San, live in these areas.<sup>67</sup> A government-facilitated benefit sharing agreement between the rooibos industry and representatives of San and Khoi organisations is centred on the traditional knowledge upon which the industry is based, but includes no contribution towards the conservation of this unique biodiverse region, makes no mention of the significant conservation threats stemming from rooibos cultivation and pays scant attention to the communities who continue to be custodians of the resource.<sup>68</sup>

There are also questions about the role played by communities in conservation arrangements. As Bram Büscher and Robert Fletcher remark, local people need to be key decision-makers in conservation planning and management and not merely 'the central targets of interventions aimed at [their] behavioural change'.<sup>69</sup> Moreover, because of the checkered history of conservation, and ongoing restrictions that prohibit the use of biodiversity in many protected areas, conservation may be viewed negatively by communities who rely on these resources for their livelihoods. A lack of awareness and information about the potential to use benefit sharing agreements as a tool to strengthen community-based conservation further impedes their uptake in ABS negotiations. As one NGO working with communities explained:

It's the way in which ABS is introduced to communities. The first thing is the money. Conservation is the last thing put on the table. Communities live with ... [conservation] each day and may not be conscious about including it in the contract process. Whose responsibility is it to bring in these dimensions?<sup>70</sup>

### ***The lack of legal recognition of land and resource rights***

A related consideration, and one that complicates the engagement of IPLCs in ABS and conservation, is that globally, IPLCs have recognised rights to only half their land and territories, which means that communities cannot negotiate and control the use of their resources, including genetic resources.<sup>71</sup> The lack of legal recognition of land and resource rights is not only an injustice to IPLCs, but also makes conservation initiatives, including ABS, less likely to succeed. In Cameroon, for example, with the vast majority of IPLC land rights unrecognised under the 1974 *Land Tenure Ordinance No. 74.1*, lands managed by communities for generations are commonly allocated to timber, oil palm and other industrial interests, resulting in conflict and few benefits for IPLCs.<sup>72</sup> National ABS measures in Cameroon, as in most countries, allocate control

over prior informed consent and mutually agreed terms negotiations to the national government.<sup>73</sup>

In theory, ABS agreements and approaches could support customary practices and laws relating to conservation and sustainable use, alongside strengthened land tenure and resource rights. When intact, customary laws and practices dominate the day-to-day harvest, cultivation, use and trade of genetic and biological resources and can therefore play an important role in ensuring the conservation and sustainable use of biodiversity.<sup>74</sup> In practice, however, ABS has given short shrift to customary law and practice. Some approaches have developed to fill this gap, usually with the support of intermediaries like community-based organisations or NGOs, and include the use of biocultural protocols, community research agreements and codes of ethics. However, conservation and sustainable use are often marginal features of these approaches.

### ***Poor understanding of the science and technology, markets and business sectors ABS seeks to regulate***

A final aspect that undermines the uptake of conservation in ABS arrangements concerns the complex and wide range of activities falling within ABS. This scope has expanded over time from natural product pharmaceuticals, through to the traditional knowledge of Indigenous peoples, biotrade and most recently DSI. Aside from the challenges of Environment Ministries having to regulate and understand industries that fall outside of their mandate and expertise,<sup>75</sup> governments, industry and the range of actors involved in this wide spectrum of activities interpret and understand ABS very differently and this has created confusion. The significant differences between those undertaking biodiscovery and biotrade, including the ways in which they access and use genetic and biological resources and associated traditional knowledge, share benefits, partner with IPLCs and employ advanced science and technology, mean that their relationship to conservation is highly variable. Biotrade activities, for example, may be more strongly linked to the sustainable use of individual species, have short-term partnerships and involve smaller companies, whereas companies involved in biodiscovery are more likely to be a step removed from the resources used, involve long-term research collaborations and have larger profit margins.<sup>76</sup> Managing this range of activities, and determining appropriate contributions towards conservation, require a depth of knowledge and capacity which few policy-makers have.

For their part, unlike when the CBD first entered into force, companies do not appear to see conservation as part of ABS. As one industry representative put it:

It is very rare indeed that any company sees the ABS framework as linked to conservation. If they see it as connected to any policy objective, which are few, they would see it as economic development for poorer countries.

Users on the whole don't see any connection between ABS and conservation. I never hear the word conservation used in this context at all.<sup>77</sup>

### **Moving forward to strengthen conservation in ABS governance**

Despite the challenges described, ABS is one of many opportunities to leverage benefits for conservation. These benefits could be enabled by improving the effectiveness and coordination of conservation governance, recognising connections between IPLC stewards and conservation, strengthening rights and, where relevant, by recognising and supporting the important and often complementary role of customary law in governing biological and genetic resources. Attaining these objectives will require efforts beyond the remit of ABS, especially in countries where the rights of IPLCs are threatened, where the political will is absent or where capacity and budgets are low.

Where laws and approaches already exist it will be prudent to use these, such as the range of approaches already developed to institutionalise benefit sharing for biodiversity conservation. Some of these have been tailored for ABS implementation, while others exist for the broader purpose of environmental protection but could be adapted and used as ABS mechanisms. For example, legal instruments such as benefit sharing agreements, research collaboration agreements and contracts are useful tools for setting out the kinds of activities and benefits that can be expected. These tools are used mainly for biodiscovery partnerships, although they may also be used to regulate biotrade in countries that include this activity within their ABS frameworks. They may also be guided by Codes such as the *Global Code of Conduct for Research in Resource-Poor Settings*,<sup>78</sup> the *San Code of Ethics*<sup>79</sup> and research codes developed by professional organisations like the International Society of Ethnobiology.<sup>80</sup> Other approaches such as certification standards adopted by FairWild, the Union for Ethical Biotrade and Rainforest Alliance are already used for certain biotrade species, and important guidelines could emerge from these experiences to strengthen conservation actions for non-certified species. Similarly, many industry associations already build conservation into best practices and guidelines.

As the biodiversity crisis deepens, increasing attention is being given to conservation financing,<sup>81</sup> with an estimated conservation finance gap of up to one trillion USD annually.<sup>82</sup> Reaching clarity on the different funding mechanisms and institutions that may be used to channel benefits to conservation will be an important area of work in forthcoming years. These may range from national trust funds through to conservation agencies, NGOs, community trust funds, private foundations and global biodiversity funds, each with distinct advantages and disadvantages (Table 5.1). Conservation trust funds have a long history of use, and their uptake in ABS and biodiscovery partnerships in the 1990s and 2000s has yielded important lessons

Table 5.1 The advantages and disadvantages of different funding models for embedding conservation in ABS

<i>Mechanism</i>	<i>Advantages</i>	<i>Disadvantages</i>
National trust fund	Often legally prescribed; clear rules for management.	Accountability and transparency may be challenging; concern that funding will be used for purposes other than conservation; links back to geographical area and resource are not necessarily explicit; enabling representation of all parties is challenging.
Public research institutions	Likely to be good accountability and transparency; funding can be clearly linked to specific research activities that support biodiversity conservation.	Runs the risk that funding follows individual research interests rather than being aligned strategically to conservation priorities.
Conservation agency	Focused mandate; established legal structure; strong conservation knowledge.	May not have adequate reach in different places; may not be adequately representative; may not have capacity to administer; may have high levels of bureaucracy.
Community trust fund	Community-led and governed; addresses community priorities; localised impacts.	Resources often occur more widely; conservation may receive short shrift in the face of other pressing priorities; governance structures may exclude supportive non-community voices.
NGO	Typically flexible and agile; more likely to have community-based experience; likely to have strong conservation mandate; typically good capacity and knowledge.	May be too localised – or too big to be effective at a local level; funding and status are often insecure.
Industry initiative/ private fund	Fund disbursement likely to be efficient; easy and quick to use; good knowledge of the resource and markets.	May lack credibility and trust if not independent; priorities may not be democratically determined; governance may not be inclusive.
Global fund	Multilateral approach suits resources and knowledge that straddle national governance and representation are complex; likely borders; legal option exists through Article 10 of the Nagoya Protocol; attractive option for channelling benefits arising from the use of DSI.	Governance and representation are complex; likely to have high overhead costs which could outweigh benefits; detached from local realities; likely that primarily those with existing capacity and knowledge will benefit; equitable distribution and transparency can be challenging.

on financial structure, sources of funding, governing structure, criteria for fund disbursement, staffing, trust location and other issues.<sup>83</sup> These would be worth consulting today, as funds once again receive attention within ABS policy fora. Many examples also exist of funds set up to channel benefits to communities from mining, tourism, conservation and other initiatives. The spectrum of approaches may include CBNRM, co-management, corporate social responsibility, fair trade and certification, revenue sharing, Payments for Ecosystem Services or pro-poor tourism, each having varied outcomes and ideological bases. They also use certain tools to distribute benefits, such as permits, community levies and equity in shares.<sup>84</sup>

Although many funds already exist that can be repurposed for channelling benefits from ABS, interesting new models are also emerging. Brazil, for example, embeds conservation priorities in its decree, and provides two options from which users can choose. The first requires companies or users to pay money directly into a national fund, governed by a Board that is represented by 50 per cent IPLCs and 50 per cent government. The second option enables companies or users to perform their own projects or to hire NGOs to execute projects. Early experiences suggest the effectiveness of this approach, which not only gives users a choice of where to invest, but also provides a mechanism that provides clarity and ease.

Finally, Article 10 of the Nagoya Protocol enables the possibility of a global multilateral benefit sharing mechanism for conservation and sustainable use, which could be an important approach for resources and knowledge that straddle national borders, as well as for channelling benefits arising from the use of DSI.<sup>85</sup> However, the governance of such funds is complex and expensive, and is also accompanied by questions of how to achieve distributional equity and transparency, and to ensure that funding is directed towards an inclusive and rights-driven conservation agenda that places IPLCs at the centre.

## **Conclusion**

A great deal of change has occurred over the last 30 years in science and technology, the state of biodiversity and in the evolving policy framework, but ABS approaches have remained largely unchanged – focused on negotiations, bi-lateral agreements and a view of benefit sharing that is often now outdated. In the last few years, with the arrival of DSI on the policy stage, and at the same time as evidence revealing both the staggering loss of biodiversity, and the role of IPLCs in conserving biodiversity, a re-evaluation is taking place of the relationship between ABS and conservation. In this time of transition, there are many opportunities to explore new approaches that more effectively address the direct and overwhelming threats to biodiversity, the potential conservation benefits of biodiscovery and biotrade, the need to support biodiversity research in order to better understand the massively threatened natural world and the importance of securing funding to address these concerns.



However, in the face of highly destructive and extractive industries linked to industrial agriculture, oil and gas, mining and timber it is clear that ABS forms only a small part of the solution. As Sebastian Oberthür and Kristin Rosendal remarked, ABS was never intended to carry sole responsibility for biodiversity conservation and is part of a much wider patchwork of measures and actions that are required.<sup>86</sup> Moreover, as many critics note, there is limited evidence of the effectiveness of market-based mechanisms such as ABS,<sup>87</sup> primarily because they do not fundamentally address the problems that cause biodiversity loss in the first place.<sup>88</sup>

Nonetheless, ABS still has an important role to play in supporting equitable research on biodiversity, and can contribute to biodiversity conservation and sustainable use, albeit smaller than initially and usually envisioned, and one that governments and others need to carefully consider. Today, there is a slow but steady rise in government interest in bringing biodiversity conservation more systematically back into ABS. This is promising, but it is important that governments and others understand that many conservation benefits are not monetary, and that non-monetary benefits like biodiversity research and building conservation management capacity can also result from government support and policy.

As we develop approaches that better link ABS and conservation, recognition of the centrality of IPLCs who continue to be custodians of most of the planet's biological wealth is critical. Affirming community rights over natural resources and supporting their efforts to sustainably use and conserve these resources must remain a fundamental pillar of conservation strategies. Although ABS can only contribute in a small way towards resolving the biodiversity crisis, it is an important part of the solution. As we work on a post-2020 Biodiversity Framework and consider urgent actions to stem the biodiversity crisis, now is a good time to think about how to broaden the suite of practical, meaningful and effective options that are available to support conservation within ABS.

## Notes

- 1 For example, Walter Reid, Sarah Laird, Carrie Meyer *et al.* (eds.), *Biodiversity Prospecting: Using Genetic Resources for Sustainable Development* (World Resources Institute, Instituto Nacional de Biodiversidad, Rainforest Alliance and African Centre for Technology Studies, 1993) p. 341; Timothy Swanson, *Intellectual Property Rights and Biodiversity Conservation. An Interdisciplinary Analysis of the Values of Medicinal Plants* (Cambridge University Press, 1998) p. 288; Charles Weiss and Thomas Eisner, 'Partnerships for Value-Added through Bioprospecting' (1998) 20 *Technology in Society* 481; Christopher Barrett and Travis Lybbert, 'Is Bioprospecting a Viable Strategy for Conserving Tropical Ecosystems?' (2000) 34 *Ecological Economics* 293; World Wide Fund for Nature, *ABS: What's in It for Conservation? An Inquiry Aimed at Stimulating Debate on the Role of Conservation Organisations in ABS*, prepared by WWF for discussion with experts at the Working Group on Access and Benefit Sharing (WWF, 2007); Riccardo Pavoni, 'Channelling Investment into Biodiversity Conservation: ABS and PES Schemes' in Pierre-Marie Dupuy and Jorge Viñuales (eds.), *Harnessing Foreign Investment to Promote Environmental Protection: Incentives and Safeguards* (Cambridge University Press, 2013) p. 470.

- 2 (1992) 1760 UNTS 79 (CBD).
- 3 CBD, Art. 1.
- 4 Kathleen McAfee, 'Selling Nature to Save It? Biodiversity and Green Developmentalism' (1999) 17 *Environment and Planning D: Society and Space* 133, 133–134.
- 5 E. Brondizio, J. Settele, S. Diaz and H. Ngo (eds.), *Global Assessment Report on Biodiversity and Ecosystem Services* (IPBES Secretariat, 2019) p. 56 available at <<https://ipbes.net/global-assessment>> (28 February 2022).
- 6 Partha Dasgupta, *The Economics of Biodiversity: The Dasgupta Review*, Final Report (HM Treasury, 2021) p. 610.
- 7 Sarah Laird, Rachel Wynberg, Michelle Rourke *et al.*, 'Rethink the Expansion of Access and Benefit Sharing' (2020) 367 *Science* 1200; Divakaran Prathapan, Rohan Pethiyagoda, Kamaljit Bawa *et al.*, 'When the Cure Kills – CBD Limits Biodiversity Research' (2018) 360 *Science* 1405.
- 8 *Ad Hoc* Technical Expert Group on Digital Sequence Information on Genetic Resources, *Fact-Finding and Scoping Study on Digital Sequence Information on Genetic Resources in the Context of the Convention on Biological Diversity and the Nagoya Protocol* (2018) CBD/DSI/AHTEG/2018/1/3, pp. 39–56.
- 9 Conference of the Parties to the Convention on Biological Diversity, *Case Studies on Benefit-Sharing Arrangements* (1998) UNEP/CBD/COP/4/Inf.7; Sarah Laird, Sam Johnston, Rachel Wynberg, Estherine Lisinge and Dagmar Lohan, *Biodiversity Access and Benefit-Sharing Policies for Protected Areas: An Introduction*, UNU/IAS Report (United Nations University/Institute of Advanced Studies, 2003) p. 39.
- 10 Jorge Cabrera Medaglia, *A Comparative Analysis on the Legislation and Practices on Access to Genetic Resources and Benefit Sharing (ABS): Critical Aspects for Implementation and Interpretation* (IUCN Environmental Law Centre, 2004) p. 238; Rachel Wynberg, 'Benefit Sharing and Biodiversity Commodification: A Failed Approach for Justice, Equity and Conservation?' in M. Bollig, S. Lendelwo, A. Mosimane and R. Nghitevelekwa (eds.), *Commodifying the 'Wild': Conservation, Markets and the Environment in Southern and Eastern Africa* (James Currey Publishing) forthcoming.
- 11 Conference of the Parties to the Convention on Biological Diversity, *Report of the Tenth Meeting of the Conference of the Parties to the Convention on Biological Diversity* (2010) UNEP/CBD/COP/10/27, [103] and Annex (Decision X/1, Annex 1, pp. 89–109) (Nagoya Protocol). See also Bradnee Chambers, 'WSSD and an International Regime on Access and Benefit Sharing: Is a Protocol the Appropriate Legal Instrument?' (2003) 12 *Review of European, Comparative and International Environmental Law* 310, 310; WWF 2007, above n. 1.
- 12 Sarah Laird and Rachel Wynberg, *Connecting the Dots ... Biodiversity Conservation, Sustainable Use and Access and Benefit Sharing, with a Focus on Cameroon, Madagascar, Namibia, and South Africa* (GIZ, People and Plants International, University of Cape Town, Voices for BioJustice, 2021) p. 96 available at <[https://www.iucncongress2020.org/sites/www.iucncongress2020.org/files/sessions/uploads/study-connecting-the-dots-conservation-sustainable-use-abs-2019\\_1.pdf](https://www.iucncongress2020.org/sites/www.iucncongress2020.org/files/sessions/uploads/study-connecting-the-dots-conservation-sustainable-use-abs-2019_1.pdf)> (28 February 2022).
- 13 International Union for Conservation of Nature and World Wildlife Fund, *World Conservation Strategy: Living Resource Conservation for Sustainable Development* (IUCN, 1980) p. 75 (IUCN and WWF).
- 14 CBD, Art. 2.
- 15 See, for example, John Muir, *Our National Parks* (Houghton, Mifflin and Company, 1903). Noting, however, that this worldview within the field of conservation varies and manifests differently in different cultures and geographies of the world, and that Indigenous cultures typically do not see a disconnect between people and nature: <<https://www.iccaconsortium.org>> (28 February 2022).
- 16 Dan Brockington, *Fortress Conservation: The Preservation of the Mkomazi Game Reserve, Tanzania* (Indiana University Press, 2002) p. 196.

- 17 Krishna Ghimire and Michael Pimbert (eds.), *Social Change and Conservation: Environmental Politics and Impacts of National Parks and Protected Areas* (EarthScan, 1997) p. 356; Marcus Colchester, 'Conservation Policy and Indigenous Peoples' (2004) 7 *Environmental Science and Policy* 145, 146; Daniel Brockington and James Igoe, 'Eviction for Conservation: A Global Overview' (2006) 4 *Conservation and Society* 424; Dilys Roe and Joanna Elliott (eds.), *The Earthscan Reader in Biodiversity Conservation and Poverty Reduction* (Earthscan, 2010) p. 416.
- 18 Colin Macilwain, 'When Rhetoric Hits Reality in Debate on Bioprospecting' (1998) 392 *Nature* 535.
- 19 IUCN and WWF, above n. 13, p. 75.
- 20 World Commission on Environment and Development, *Our Common Future: The World Commission on Environment and Development* (Oxford University Press, 1987) p. 300.
- 21 United Nations Conference on Environment and Development, *Agenda 21: Action Plan for the Next Century* (UNCED, 1992) (Agenda 21); United Nations General Assembly, *Report of the United Nations Conference on Environment and Development* (1992) A/CONF.151/26 (Vol. I), Annex I (*Rio Declaration on Environment and Development*) (Rio Declaration).
- 22 United Nations General Assembly, *Transforming Our World: The 2030 Agenda for Sustainable Development* (2015) A/RES/70/1.
- 23 Nik Heynen and Paul Robbins, 'The Neoliberalization of Nature: Governance, Privatization, Enclosure and Valuation' (2005) 16 *Capitalism Nature Socialism* 5; Roe and Elliott, above n. 17, p. 416.
- 24 William Adams, Ros Aveling, Dan Brockington *et al.*, 'Biodiversity Conservation and the Eradication of Poverty' (2004) 306 *Science* 1146.
- 25 Graham Dutfield, *Intellectual Property Rights, Trade and Biodiversity* (IUCN and Earthscan, 2000) p. 238.
- 26 Sian Sullivan, 'Elephant in the Room? Problematising "New" (Neoliberal) Biodiversity Conservation' (2006) 33 *Forum for Development Studies* 105.
- 27 Swanson, above n. 1, p. 288; Hanne Svarstad, Susan Paulson, Lisa Gezon *et al.*, 'A Global Political Ecology of Bioprospecting' in Susan Paulson and Lisa Gezon (eds.), *Political Ecology Across Spaces, Scales, and Social Groups* (Rutgers University Press, 2004) pp. 239–256.
- 28 Bram Büscher and Robert Fletcher, 'Towards Convivial Conservation' (2019) 17 *Conservation and Society* 283; Bram Büscher and Robert Fletcher, *The Conservation Revolution: Radical Ideas for Saving Nature beyond the Anthropocene* (Verso Trade, 2020) p. 224.
- 29 See Darrell Posey (ed.), *Cultural and Spiritual Values of Biodiversity* (United Nations Environment Programme, 1999).
- 30 See, for example, Darrell Posey, 'Protecting Indigenous Peoples' Rights to Biodiversity' (1996) 38 *Environment: Science and Policy for Sustainable Development* 6; Darrell Posey and Graham Dutfield, *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities* (International Development Research Centre (Canada), 1996).
- 31 Rights and Resources Initiative, *Estimate of the Area of Land and Territories of Indigenous Peoples Local Communities, and Afro-Descendants Where Their Rights Have Not Been Recognized*, Technical Report (2020) p. 32 available at <<https://rights-and-resources.org/publication/estimate-of-the-area-of-land-and-territories-of-indigenous-peoples-local-communities-and-afro-descendants-where-their-rights-have-not-been-recognized>> (28 February 2022); <<https://www.iccaconsortium.org>> (28 February 2022).
- 32 David Hulme and Marshall Murphree (eds.), *African Wildlife and Livelihoods: The Promise and Performance of Community Conservation* (James Currey Ltd, 2001) p. 336.

- 33 (1989) 28 ILM 1382.
- 34 Agenda 21, above n. 21.
- 35 Rio Declaration, above n. 21.
- 36 United Nations General Assembly, *Report of the Human Rights Council (2007) A/61/L.67, Annex (United Nations Declaration on the Rights of Indigenous Peoples)*.
- 37 For example: Declaration of Belem, 1988; Kari-Oca Declaration and Indigenous Peoples Earth Charter, 1992; Mataatua Declaration, 1993; COICA/UNDP Santa Cruz Declaration, 1994; International Alliance of Indigenous Tribal Peoples of the Tropical Forests, 1995.
- 38 Conference of the Parties to the Convention on Biological Diversity, *Report of the Seventh Conference of the Parties to the Convention on Biological Diversity (2004) UNEP/CBD/COP/7/21, [236]* and Annex (Decision VII/12, Practical Principal 2). See also Laird and Wynberg, above n. 12, p. 34.
- 39 Reid *et al.*, above n. 1, pp. v–vi.
- 40 Gordon Cragg, Flora Katz, David Newman and Joshua Rosenthal, ‘The Impact of the United Nations Convention on Biological Diversity on Natural Products Research’ (2102) 29 *Natural Product Reports* 1407.
- 41 Sarah Laird, Catherine Monagle and Sam Johnston, *Queensland Biodiscovery Collaboration: The Griffith University AstraZeneca Partnership for Natural Products Discovery – An Access and Benefit Sharing Case Study* (United Nations University and the Australian Government, 2008) pp. 28–34.
- 42 Joshua Rosenthal and Flora Katz, ‘Natural Products Research Partnerships with Multiple Objectives in Global Biodiversity Hot Spots: Nine Years of the International Cooperative Biodiversity Groups Program’ in Alan Bull (ed.), *Microbial Diversity and Bioprospecting* (ASM Press, 2003) pp. 458–466; Laird and Wynberg, above n. 12, p. 58.
- 43 Medaglia, above n. 10, p. 238.
- 44 Personal communication, 2020.
- 45 WWF 2007, above n. 1.
- 46 Chambers, above n. 11, p. 313.
- 47 Nagoya Protocol, Annex, [1(f)].
- 48 Nagoya Protocol, Annex, [2(k)].
- 49 *Regulation (EU) No 511/2014 of the European Parliament and of the Council of 16 April 2014 on Compliance Measures for Users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization in the Union* (2014) L150/59.
- 50 *Decree on Management of Access to Genetic Resources and Benefit Sharing Arising from Their Utilization*, No. 59/2017/ND-CP (2017). See also Laird and Wynberg, above n. 12, p. 43.
- 51 Law No. 13/123 of May 20, 2015 (*Access and Benefits Sharing of Genetic Resources and Associated Traditional Knowledge*).
- 52 *Access to Biological and Genetic Resources and Associated Traditional Knowledge Act 2017* (Namibia) s 2. See also Wana Chinsembu and Kazhila Chinsembu, “‘Poisoned Chalice’: Law on Access to Biological and Genetic Resources and Associated Traditional Knowledge in Namibia’ (2020) 9 *Resources* 83.
- 53 J. Lavelle, *The Missing Link: Embedding Conservation Benefits and Sustainable Use in Biotope and Bioprospecting, Namibia*. Report Produced for Bioinnovation Africa Project (GIZ, 2020); Laird and Wynberg, above n. 12, pp. 69–70.
- 54 Marcelin Mahop Tonye, ‘The Post Nagoya Protocol ABS Regime in Cameroon: Exploring the Extent to which Ongoing Policy, Regulatory Developments and ABS Practices Uphold the Obligations of the Protocol’ in Evanson Kamau (ed.), *Implementation of the Nagoya Protocol: Fulfilling New Obligations among Emergency*

- Issues* (Bundesamt für Naturschutz, 2021) pp. 49–54; Sarah Laird, Verina Ingram, Abdon Awono and Stella Asaha, ‘Conservation and Equity in the Trade and Use of Biological and Genetic Resources: What Does ABS Bring to the Table? Access and Benefit Sharing and the Case of Bush Mango (*Irvingia* spp.) in Cameroon’, *Voices for BioJustice Policy Brief* (2020) available at <[www.voices4biojustice.org/policybriefs](http://www.voices4biojustice.org/policybriefs)> (12 December 2021).
- 55 Laird and Wynberg, above n. 12, p. 44.
- 56 Decree N°2017-066 of January 31, 2017 on the Regulation of Access and Sharing of Benefits Arising from the Use of Genetic Resources.
- 57 N. Ranaivoson, *Madagascar: Equitable Benefit Sharing for the Conservation of Biodiversity* (GIZ Bio Innovation Programme, 2020); Laird and Wynberg, above n. 12, p. 45.
- 58 Rachel Wynberg, ‘One Step Forward, Two Steps Back? Implementing Access and Benefit-Sharing Legislation in South Africa’ in Charles McManis and Burton Ong (eds.), *Routledge Handbook of Biodiversity and the Law* (EarthScan, 2018) p. 21.
- 59 Laird and Wynberg, above n. 12, pp. 46–47.
- 60 Subsidiary Body on Implementation, *Statistical Overview of the Answers Provided in the Interim National Report for the Nagoya Protocol* (2018) CBD/SBI/2/INF/4, p. 30.
- 61 Laird and Wynberg, above n. 12, p. 48.
- 62 Sarah Laird, Rebecca McLain and Rachel Wynberg (eds.), *Wild Product Governance: Finding Policies that Work for Non-Timber Forest Products* (Earthscan, 2010) p. 422.
- 63 Laird and Wynberg, above n. 12, p. 45.
- 64 Personal communication, 2020.
- 65 Personal communication, 2020.
- 66 Personal communication, 2020.
- 67 Sarah Ives, *Steeped in Heritage: The Racial Politics of South African Rooibos Tea* (Duke University Press, 2017) p. 272; Rachel Wynberg, ‘Making Sense of Access and Benefit Sharing in the Rooibos Industry: Towards a Holistic, Just and Sustainable Framing’ (2017) 110 *South African Journal of Botany* 39, 42–44.
- 68 Rachel Wynberg, ‘Rooibos: A Testing Ground for ABS in South Africa and beyond, Policy Brief’ (2020) available at <[https://www.voices4biojustice.org/wp-content/uploads/2017/12/Rooibos-Policy-Brief\\_2020.pdf](https://www.voices4biojustice.org/wp-content/uploads/2017/12/Rooibos-Policy-Brief_2020.pdf)> (28 February 2022).
- 69 Büscher and Fletcher (2019), above n. 28, p. 291.
- 70 Personal communication, 2020.
- 71 Rights and Resources Initiative, above n. 31, p. 32.
- 72 See also Elsa Ordway, Gregory Asner and Eric Lambin, ‘Deforestation Risk Due to Commodity Crop Expansion in Sub-Saharan Africa’ (2017) 12 *Environmental Research Letters* 044015; Patrick Meyfroidt, Kimberly Carlson, Matthew Fagan *et al.*, ‘Multiple Pathways of Commodity Crop Expansion in Tropical Forest Landscapes’ (2014) 9 *Environmental Research Letters* 074012.
- 73 Laird and Wynberg, above n. 12, p. 37.
- 74 Laird and Wynberg, above n. 12, p. 47; Witness Kozanayi, Rachel Wynberg and Frank Matose, ‘Customary Governance of Baobab in Eastern Zimbabwe: Impacts of State-Led Interventions’ in Merle Sowman and Rachel Wynberg (eds.), *Governance for Justice and Environmental Sustainability* (Routledge, 2014) pp. 242–262; <<https://www.iccaconsortium.org>> (28 February 2022).
- 75 Rachel Wynberg and Sarah Laird, ‘Fast Science and Sluggish Policy: The Herculean Task of Regulating Biodiscovery’ (2018) 36 *Trends in Biotechnology* 1.
- 76 Laird and Wynberg, above n. 12, pp. 52–54.
- 77 Personal communication, 2020.
- 78 TRUST, ‘Global Code of Conduct for Research in Resource-Poor Settings’ (2018) available at <<https://www.globalcodeofconduct.org/wp-content/uploads/2018/05/Global-Code-of-Conduct-Brochure.pdf>> (28 February 2022).

- 79 South African San Institute, 'San Code of Research Ethics' (2017) available at <[https://www.globalcodeofconduct.org/wp-content/uploads/2018/04/San-Code-of-RESEARCH-Ethics-Booklet\\_English.pdf](https://www.globalcodeofconduct.org/wp-content/uploads/2018/04/San-Code-of-RESEARCH-Ethics-Booklet_English.pdf)> (28 February 2022).
- 80 International Society of Ethnobiology, 'The ISE Code of Ethics' available at <<https://www.ethnobiology.net/what-we-do/core-programs/ise-ethics-program/code-of-ethics>> (28 February 2022).
- 81 Dasgupta, above n. 6, p. 610; David Meyers, John Bohorquez, Tracey Cumming *et al.*, *Conservation Finance: A Framework* (Conservation Finance Alliance, 2020) p. 45.
- 82 Andrew Deutz, Geoffrey Heal, Rose Niu *et al.*, *Financing Nature: Closing the Global Biodiversity Financing Gap* (The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability, 2020) p. 256.
- 83 Marianne Guerin-McManus, Kent Nnadozie and Sarah Laird, 'Sharing Financial Benefits: Trust Funds for Biodiversity Prospecting' in Sarah Laird (ed.), *Biodiversity and Traditional Knowledge: Equitable Partnerships in Practice* (Routledge, 2002) p. 2.
- 84 Rachel Wynberg and Maria Hauck, 'People, Power and the Coast: A Conceptual Framework for Understanding and Implementing Benefit Sharing' (2014) 19 *Ecology and Society* 27.
- 85 Laird *et al.*, above n. 7, p. 1202.
- 86 Sebastian Oberthür and Kristin Rosendal (eds.), *Global Governance of Genetic Resources: Access and Benefit Sharing after the Nagoya Protocol* (Routledge, 2013) p. 288.
- 87 Jim Igoe and Dan Brockington, 'Neoliberal Conservation: A Brief Introduction' (2007) 5 *Conservation and Society* 432; Douglas McCauley, 'Selling out on Nature' (2006) 443 *Nature* 27, 27–28.
- 88 Sian Sullivan, 'Making Nature Investable: From Legibility to Leverageability in Fabricating "Nature" and "Natural Capital"' (2018) 31 *Science and Technology Studies* 47; Büscher and Fletcher (2019), above n. 28, pp. 283–296; Büscher and Fletcher (2020), above n. 28, p. 224.