

Vogel, Joseph H.; Ruiz Muller, Manuel; Angerer, Klaus; May, Christopher

**Research Report**

## Movement forward on ABS for the Convention on Biological Diversity: Bounded openness over natural information

Research Paper, No. 160

**Provided in Cooperation with:**

South Centre, Geneva

*Suggested Citation:* Vogel, Joseph H.; Ruiz Muller, Manuel; Angerer, Klaus; May, Christopher (2022) : Movement forward on ABS for the Convention on Biological Diversity: Bounded openness over natural information, Research Paper, No. 160, South Centre, Geneva

This Version is available at:

<https://hdl.handle.net/10419/270385>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

160

Research  
Paper

21 July 2022

# Movement Forward on ABS for the Convention on Biological Diversity: Bounded Openness Over Natural Information

Joseph Henry Vogel,  
Manuel Ruiz Muller, Klaus Angerer,  
and Christopher May



 **SOUTH  
CENTRE**





## RESEARCH PAPER

160

# MOVEMENT FORWARD ON ABS FOR THE CONVENTION ON BIOLOGICAL DIVERSITY: BOUNDED OPENNESS OVER NATURAL INFORMATION

Joseph Henry Vogel,<sup>\*</sup> Manuel Ruiz Muller,<sup>\*\*</sup> Klaus Angerer,<sup>\*\*\*</sup>  
and Christopher May<sup>\*\*\*\*</sup>

SOUTH CENTRE

21 JULY 2022

---

<sup>\*</sup> Joseph Henry Vogel is Professor of Economics at the University of Puerto Rico-Río Piedras.

<sup>\*\*</sup> Manuel Ruiz Muller is Senior Advisor and Researcher, Sociedad Peruana de Derecho Ambiental.

<sup>\*\*\*</sup> Klaus Angerer is Scientific Project Coordinator, Centre Responsible Digitality, Technical University (TU) of Darmstadt.

<sup>\*\*\*\*</sup> Christopher May is Emeritus Professor of Political Economy, Lancaster University.

This paper has benefited greatly from the discerning comments of Newton C. Fawcett, Stanley P. Kowalski and Omar Oduardo-Sierra. We would also like to thank Myriam Huet and Alejandra Sánchez for the French and Spanish translations of the abstract.



## **SOUTH CENTRE**

In August 1995, the South Centre was established as a permanent intergovernmental organization. It is composed of and accountable to developing country Member States. It conducts policy-oriented research on key policy development issues and supports developing countries to effectively participate in international negotiating processes that are relevant to the achievement of the Sustainable Development Goals (SDGs). The Centre also provides technical assistance and capacity building in areas covered by its work program. On the understanding that achieving the SDGs, particularly poverty eradication, requires national policies and an international regime that supports and does not undermine development efforts, the Centre promotes the unity of the South while recognizing the diversity of national interests and priorities.

## NOTE

The views contained in this paper are attributable to the author/s and do not represent the institutional views of the South Centre or its Member States. Any mistake or omission in this study is the sole responsibility of the author/s.

Any comments on this paper or the content of this paper will be highly appreciated. Please contact:

South Centre  
International Environment House 2  
Chemin de Balexert 7–9  
POB 228, 1211 Geneva 19  
Switzerland  
Tel. (41) 022 791 80 50  
[south@southcentre.int](mailto:south@southcentre.int)  
[www.southcentre.int](http://www.southcentre.int)

Follow the South Centre's Twitter: [South Centre](#) 

## ABSTRACT

"Access to genetic resources" and "fair and equitable sharing of benefits arising [from their] utilization" is the third objective of the 1992 United Nations Convention on Biological Diversity (CBD). The expression is included in the full title of the 2010 Nagoya Protocol (NP). Neither agreement defined "material" in the phrase "genetic material" which resulted in misinterpretation that the object of access for R&D is tangible. Unfairness ensues: competition among provider Parties leads to the elimination of economic rents, which is desirable for tangibles but undesirable for intangibles. Once interpreted as natural information, the economics of information justifies a Global Multilateral Benefit-Sharing Mechanism (GMBSM) (Article 10 NP) which collects and distributes rents on value added to genetic resources. "Bounded openness over natural information" is the modality proposed for the GMBSM. The Executive Secretary of the United Nations Secretariat of the CBD recognized the argument in the 2021 Note "Digital Sequence Information on Genetic Resources".

*"L'accès aux ressources génétiques et le partage juste et équitable des avantages découlant de leur utilisation" (APA) est le troisième objectif de la Convention sur la diversité biologique des Nations Unies de 1992 (CDB). L'expression apparaît dans le titre complet du Protocole de Nagoya de 2010 (PN). Aucun des deux accords ne définissent le terme "matériel" dans la phrase "matériel génétique", entraînant l'interprétation erronée que l'objet d'accès pour la recherche et le développement est tangible. L'injustice s'ensuit: la compétition entre fournisseurs entraîne l'élimination des rentes économiques, ce qui est désirable pour les biens tangibles mais indésirable pour les biens intangibles. Un temps considérée comme information naturelle, l'économie de l'information justifie un Mécanisme Multilatéral Mondial de Partage des Avantages (MMMPA) qui collecte et distribue des rentes sur la valeur ajoutée aux ressources génétiques. "L'ouverture limitée sur l'information naturelle" est la modalité proposée par le MMMPA. Le Secrétaire exécutif du Secrétariat du CDB aux Nations Unies reconnaît l'argument dans une note de 2021 à propos des "Séquences numériques d'informations sur les Ressources Génétiques".*

*"Acceso a recursos genéticos" y "la participación justa y equitativa de los beneficios que se derivan de su utilización". El tema es el tercer objetivo de la Convención sobre la Diversidad Biológica de las Naciones Unidas de 1992 (CDB). Las expresiones entre citas aun se encajan en el pleno título del Protocolo de Nagoya de 2010 (PN). Ninguno de los dos acuerdos define el término "material" en la frase "material genético", así resultando en que el objeto de acceso para I+D pueda ser entendido como tangible. La tergiversación impide la justicia y equidad. La competencia entre proveedores lleva a la eliminación de rentas económicas, que es deseable para tangibles empero indeseable para intangibles. Una vez los recursos genéticos sean interpretados como información natural, la economía de la información justifica un Mecanismo Mundial Multilateral de Participación en los Beneficios (MMPB) (Art. 10 de PN) que recauda y reparte las rentas sobre el valor añadido. La "Apertura delimitada sobre información natural" es la modalidad propuesta para el MMPB. La Secretaria ejecutiva de la Secretaría del CDB de la NU reconoció el argumento de la Nota de 2021 titulada "Información digital sobre secuencias de recursos genéticos".*



## TABLE OF CONTENTS

1. INTRODUCTION AND MISE-EN-SCÈNE .....	1
2. GLOBAL MULTILATERAL BENEFIT-SHARING MECHANISM .....	2
3. IS THE CART BEFORE THE HORSE?.....	3
4. NAMING THE OBJECT OF ACCESS .....	4
5. RENTS AS RAISON D'ÊTRE .....	5
6. BOUNDED OPENNESS OVER NATURAL INFORMATION.....	7
7. WHO GETS WHAT?.....	8
8. FINAL REMARKS, RECOMMENDATIONS AND A CALL FOR SUBMISSIONS.....	9

## ACRONYMS

ABS	"Access to genetic resources" and the "fair and equitable sharing of benefits arising [from their] utilization"
AHTEG	Ad Hoc Technical Expert Group
CBD	Convention on Biological Diversity
COP	Conference of the Parties
DSI	Digital Sequence Information
FCCC	Framework Convention on Climate Change
GMBSM	Global Multilateral Benefit-Sharing Mechanism
IPRs	Intellectual Property Rights
NP	Nagoya Protocol
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UN	United Nations
UNSCBD	United Nations Secretariat of the Convention on Biological Diversity





Mount Washington Hotel, Bretton Woods, New Hampshire, USA. Source: Georgio 2006.

## 1. INTRODUCTION AND MISE-EN-SCÈNE

Theory compacts information and reveals the essential. This was the opinion of the famed ecologist Garrett Hardin.<sup>1</sup> Compaction is now urgently needed in the discussion about the 1992 Convention on Biological Diversity (CBD)<sup>2</sup> and 2010 Nagoya Protocol (NP).<sup>3</sup> "Information overload" describes the literature on "ABS", which is the acronym for "access to genetic resources" and the "fair and equitable sharing of benefits arising [from their] utilization". ABS is the third of three interrelated objectives of the CBD; conservation and sustainable use, are the first and second. With ratification of the CBD in 1993, ABS took off as did its antonym, viz. biopiracy.

Parties to the CBD addressed ABS and biopiracy in the Tenth Conference of the Parties held in Nagoya, Japan, in October 2010. Haste in the drafting of the CBD in 1992 was also evident in the drafting of the NP.<sup>4</sup> Parties imported definitions from the Convention into the Protocol without revision. Thus "material" in "genetic material" of Article 2 of the CBD remained undefined in Article 2 of the NP. Is the object of access tangible or intangible for R&D? Technology answers decisively.

---

<sup>1</sup> Garrett Hardin, *Living within Limits* (Oxford 1993), p. 102.

<sup>2</sup> United Nations Convention on Biological Diversity (5 June 1992). Available from <https://www.cbd.int/convention/text/>.

<sup>3</sup> Nagoya Protocol on Access to Genetic Resources and Fair and Equitable Sharing of Benefits Arising from their Utilization. (29 October 2010). Available from <https://www.cbd.int/abs/text/>.

<sup>4</sup> M. Chandler, "The Biodiversity Convention: Selected issues of interest to the international lawyer", *Colorado Journal of International Law & Policy*, vol. 141, No. 4 (1993), pp. 141-175, 174.

Some specimens cannot only be dematerialized but also rematerialized in the ongoing Fourth Industrial Revolution. In the second half of the Fifteenth COP, scheduled from 5 to 17 December 2022 in Montreal, Canada, scientists must disabuse Northern delegates who insist that the undefined "material" be interpreted as only tangible.<sup>5</sup> Parties should interpret the object of access for what it is, viz. an intangible for R&D. Only then can theory be applied to ABS and compaction ensue.

## 2. GLOBAL MULTILATERAL BENEFIT-SHARING MECHANISM

The compactor for ABS is the economics of information.<sup>6</sup> As will be shortly explained, modern economies require that the State either produce information as a public good or institutionalize a regime that enables a market in information. Given globalization, the latter solution also requires the multilateral approach of intellectual property agreements.

By COP9 in 2008, the African Group of Provider Parties intuited that fairness and equity in ABS would require a multilateral approach. What they did not intuit is that a *quid pro quo* with intellectual property would also be efficient. At COP10, the African Group insisted that multilateralism be included in the negotiation. User Parties acquiesced at the eleventh hour.<sup>7</sup> Article 10 of the NP is titled the Global Multilateral Benefit-Sharing Mechanism (GMBSM). Defenders of bilateralism may have consoled themselves that the article requires only that Parties "shall consider" a GMBSM and not actually do anything.

Due consideration of the GMBSM has not transpired in the intersessional periods from COP10 to COP15.<sup>8</sup> The principal-agent problem looms large.<sup>9</sup> The principals are the citizens of the Parties and the agents, the delegates to the COP. For the principals, logic dictates that investment in a wrong decision does not justify continued investment.<sup>10</sup> Fearing accountability for the failure of bilateralism, the same deduction does not hold for the agents. To understand how to move the discussion forward in COP15, the previous paragraphs require unpacking in the context of COP13 and COP14.

---

<sup>5</sup> See: submission from Japan to Note from Executive Secretary. Submission of views and new information on policy approaches, options or modalities for digital sequence information on genetic resources, SCBD/NPU/TS/CGA/AC/89861 (5 July 2021). Available from <https://www.cbd.int/conferences/post2020/submissions/2021-063>.

<sup>6</sup> Pioneers in the field have won the Memorial Nobel Prize in Economics: Friedrich Hayek (1974), George Stigler (1982), Ronald Coase (1991), and Joseph Stiglitz, Michael Spence and George Akerlof (2001). Available from <https://www.nobelprize.org/prizes/lists/all-prizes-in-economic-sciences/>.

<sup>7</sup> M.B. Buck and C. Hamilton, "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", *RECIEL* vol. 20, No. 1 (2011), pp. 47-61, 59-60.

<sup>8</sup> J.H. Vogel, K. Angerer, M. Ruiz Muller and O. Oduardo-Sierra, "Bounded openness as the Global Multilateral Benefit-Sharing Mechanism for the Nagoya Protocol", in *Routledge Handbook on Biodiversity and the Law*, C. R. McManis and B. Ong, eds. (Routledge, 2018), pp. 377-394.

<sup>9</sup> See Comment # 5148, Discussion Forum Article 10 Nagoya Protocol (2013) and Discussion Forum on DSI Policy Issues (UNSCBD, 2021). Available respectively from [https://absch.cbd.int/forums/art10\\_groups](https://absch.cbd.int/forums/art10_groups) and <https://www.cbd.int/dsi-gr/forum.shtml?threadid=2044>.

<sup>10</sup> Should they continue investment, principals will be committing the fallacy of sunk costs. See: Hal R Arkes and Catherine Blumer, "The psychology of sunk cost", *Organizational Behavior and Human Decision Processes*, vol. 35, No. 1 (1985), pp. 124-140.

### 3. IS THE CART BEFORE THE HORSE?

The naturalist E.O. Wilson often cites the Chinese saying that "the first step to wisdom... is getting things by their right names".<sup>11</sup> COP13 commissioned a fact-finding study on "digital sequence information on genetic resources" (DSI) even though interpreting "material" as information would have obviated the commission and invited the relevant economics.<sup>12</sup> Undeterred by the mixed reviews of the fact-finding study,<sup>13</sup> COP14 persevered in putting the cart, not just in front of the horse, but out of sight. The metaphor merits explanation: the cart is the policy options for access; the horse, the object of access; and the destination, fair and equitable benefit sharing. What is the right name for the horse? An Ad Hoc Technical Expert Group (AHTEG) from the United Nations (UN) Secretariat of the CBD took up that question in 2018. They reached consensus: "digital sequence information is not the appropriate term".<sup>14</sup> Nevertheless, they hoped to use DSI "without prejudice to future consideration of alternative terms".<sup>15</sup> That hope proved forlorn.

Nine months after the 2018 AHTEG Report, COP14 commissioned four more studies on DSI: Concept and Scope (#1); Traceability and Databases (#2&3); and Domestic Measures (#4).<sup>16</sup> Novella-length drafts were published in 2019 for "peer review" via a template more appropriate for copyediting than for critique.<sup>17</sup> Absent were the boxes that academics usually tick: "accept as is", "accept with revisions" or "reject". No matter what the reviewers opined, the studies would be published. The wheels of the cart were greased. DSI was a placeholder in name only. Reification was in full gear. As of this writing (7 July 2022), Google generates 80,700 hits for "digital sequence information" and Google Scholar, some 702, yet the placeholder DSI remains undefined!

Because DSI was not defined, the Combined Study#2&3 and Study#4 were impossible to execute as commissioned. The authors of the former study rolled the dice and assumed that Nucleotide Sequence Data would displace DSI; those of the latter deployed several alternatives in surveying national legislations and then went in all directions. The authors of Study#1 were spared the agony inflicted on the authors of the Combined Study#2&3 and Study#4. The commission of Study#1 constituted the horse, viz. concept and scope. To execute it *properly*, however, the authors would have to grapple with the question of origins. Wherefore DSI?

E.O. Wilson is also fond of distinguishing ultimate from proximate causation. Answering the why and how of DSI can clarify the concept and scope. Pat Mooney coined "biopiracy" in 1993 and later updated his *j'accuse* for the new millennium.<sup>18</sup> "Digital biopiracy" roiled the meetings

<sup>11</sup> E.O. Wilson, *Consilience* (Alfred A. Knopf, Inc., 1998), p. 4

<sup>12</sup> S. Laird and R. Wynberg, "Fact Finding and Scoping Study on Digital Sequence Information on Genetic Resources in the Context of the Convention on Biological Diversity and Nagoya Protocol", (CBD/DSI/AHTEG/2018/1/3, 2018). Available from <https://www.cbd.int/doc/c/e95a/4ddd/4baea2ec772be28edcd10358/dsi-ahteg-2018-01-03-en.pdf>.

<sup>13</sup> M. Ruiz Muller, K. Angerer, J.H. Vogel and J.C. Acabá-Torres, "Common Ground, Cause and Sense for Users, Providers and Agents: Bounded Openness over Genetic Resources," (Food and Agricultural Organisation of the United Nations. International Treaty on Plant Genetic Resources for Food and Agriculture Submissions on digital sequence information, 2019). Available from <http://www.fao.org/3/ca4018en/ca4018en.pdf>.

<sup>14</sup> Report of the Ad Hoc Technical Expert Group on Digital Sequence Information on Genetic Resources. CBD/DSI/AHTEG/2018/1/4/ (UNSCBD, 2018), p. 5. Available from <https://www.cbd.int/doc/c/4f53/a660/20273ca-dac313787b058a7b6/dsi-ahteg-2018-01-04-en.pdf>.

<sup>15</sup> *Ibid.*

<sup>16</sup> Inter-sessional period Studies on Digital Sequence Information on Genetic Resources (UNSCBD. 2019-2021). Available from <https://www.cbd.int/dsi-gr/2019-2021/studies/>.

<sup>17</sup> *Ibid.*

<sup>18</sup> J. Martinez Alter, "International biopiracy versus the value of local knowledge", *Capitalism Nature Socialism* vol. 11, No. 2 (2000), pp. 59-66, DOI: 10.1080/10455750009358913.

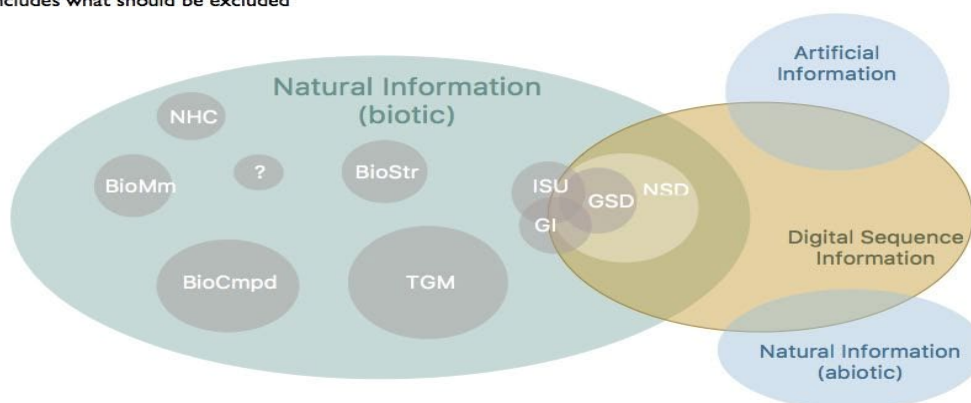
at COP10,<sup>19</sup> where delegates learned how synthetic biology was fueling exponential growth in open-access databases. The 2015 UNSCBD meeting of experts on synthetic biology was the crucible in which "digital sequence information" was first heard.<sup>20</sup> No one present at the meeting has ever identified who uttered it.

#### 4. NAMING THE OBJECT OF ACCESS

Parsing the three words of DSI conveys a meaning which violates the criteria of breadth and discrimination in the crafting of definitions.<sup>21</sup> For the object of access in R&D, DSI includes that which should be excluded and excludes that which should be included (Figure 1). The resilience of the term is thus all the more stunning. Through a Venn diagram, one can conceptualize the relationship of DSI to alternative terms. Figure 1 is titled "The Phenom" in deference to what will be the right name for the object of access.

Figure 1: "The Phenom"

"DSI" excludes what should be included  
and includes what should be excluded



#### KEY

Natural Information (biotic) = Any unintentional distinction, non-uniformity or difference extracted from matter that is living or was once alive.

Natural Information (abiotic) = Complement of Natural Information (biotic) with respect to that which is not living and was never alive.

Artificial Information = Any human-made distinction, non-uniformity or difference that is intentional.

Digital Sequence Information = Placeholder for the "Phenom"

NHC = Non-human cultures

BioStr = Biomolecular structures

BioMm = Biomimicry

BioCmpd = Formula of biochemical compounds

<sup>19</sup> "Synthetic Biology: Creating Artificial Life Forms - Briefing and Recommendations for CBD Delegates to COP10" (ETC Group, 2010). Available from [http://www.etcgroup.org/files/publication/pdf\\_file/ETC\\_COP10SynbioBriefing081010.pdf](http://www.etcgroup.org/files/publication/pdf_file/ETC_COP10SynbioBriefing081010.pdf).

<sup>20</sup> E. Hammond, "Comments of Third World Network on Digital Sequence Information", (SCBD/NPU/DC/VN/KG/RKi/87804, 2019). Available from <https://www.cbd.int/abs/DSI-views/2019/TWN-DSI.pdf>.

<sup>21</sup> "A definition must be neither too broad nor too narrow", Irving M. Copi Carl Cohen. Kenneth McMahon, *Introduction to Logic*. 14th ed. (Routledge, 2014), p. 101, Available from <https://dorshon.com/wp-content/uploads/2018/03/Introduction-to-Logic.pdf>.

TGM = Tangible genetic material  
GI = Genetic information  
GSD = Genetic sequence data  
ISU = *In silico* utilization (of genetic resources)  
NSD = Nucleotide Sequence Data  
? = Unidentified natural information (biotic)

**Image Credit:** Valeria M. Berríos-Arroyo

---

Source: Adapted from J.H. Vogel, Peer Review of Combined Study#2&3 (2019). Available from <https://www.cbd.int/abs/DSI-peer/2019/Study2-3/JosephHenryVogel.pdf>.

Natural information (biotic) was not cited once in either Study#1 or the Combined Study#2&3 and was mentioned only *en passant* in the Annex of Study#4. One cannot say that the marginalization was oversight. The African Group had requested consideration of "natural information" ever since the online discussions about the GMBSM in 2013.<sup>22</sup> The aforementioned fact-finding Report on DSI also referenced "natural information" five times.<sup>23</sup> Most significantly, peer reviews of all four studies highlighted in italics the importance of "natural information" in opening key messages.<sup>24</sup>

Study#1 on Concept and Scope states in the introduction "[t]his study is scientific in scope and does not cover associated policy implications".<sup>25</sup> Why not? ABS gave rise not only to DSI but also to "natural information" **decades earlier**.<sup>26</sup> Fully aware of "natural information", the authors omitted the term from an otherwise comprehensive list of alternative terms. Inasmuch as science militates against elision, COP15 should reject Study#1 as an apparent attempt to winnow the policy implications for ABS. But will COP15? Sunk costs are very real.<sup>27</sup> A conflict of interest with the pharmaceutical industry was also disclosed at the end of Study#1.<sup>28</sup>

## 5. RENTS AS RAISON D'ÊTRE

Psychology is seldom broached in the discussion about ABS. Yet the dynamics of the COPs lend themselves to behavioral analysis.<sup>29</sup> Nested dominance hierarchies are an apt description of relationships within and among delegations. Outside ideas expose egregious errors, undermine authority and hazard accountability. Cognitive dissonance preserves the *status quo*. Nowhere is this more evident than in the studied ignorance of the economics of

---

<sup>22</sup> See, Note 8 p 387; Note 9, Comment, [#5298]; and Ethiopia, "Potential implications of the use of "digital sequence information on genetic resources", (UNSCBD, 2017), p. 2. Available from <https://www.cbd.int/abs/DSI-views/Ethiopia-AU-DSI.pdf>.

<sup>23</sup> See Note 12.

<sup>24</sup> See Note 16.

<sup>25</sup> Wael Houssen, Rodrigo Sara, Marcel Jaspars, "Digital Sequence Information on Genetic Resources: Concept, Scope and Current Use", (UNSCBD, 2020), p. 10. Available from <https://www.cbd.int/doc/c/fe9/2f90/70f037ccc5da885dfb293e88/dsi-ahteg-2020-01-03-en.pdf>.

<sup>26</sup> J.H. Vogel, "The intellectual property of natural and artificial information", *CIRCI/T Newsletter* (Centre for International Research on Communication and Information Technologies, June 1991), p. 7.

<sup>27</sup> See note 10.

<sup>28</sup> See Note 25, p. 48.

<sup>29</sup> J. H. Vogel, "Peer Review of the "Study on Concept and Scope", (UNSCBD, 2019). Available from <https://www.cbd.int/abs/DSI-peer/2019/Study1/JosephHenryVogel.pdf>.



information applied to the Nagoya Protocol.<sup>30</sup> The power of economic abstraction renders a solution for ABS which rests on the highly abstract notion of "rent" (Textbox 1).

Questions about rent were repeatedly asked and not answered in the 2020-2021 Webinar Series on DSI, hosted by the UNCBD and The ABS Capacity Development Initiative.<sup>31</sup> Such avoidance cannot be attributed to the format of video-conferencing. Long before Zoom, Teams, and similar platforms facilitated participation, rents had entered COP9 as one of four questions to be addressed "at the appropriate time" in preparation for COP10.<sup>32</sup> Perhaps advocates of bilateralism will claim that the appropriate time never arose in COP10...or in any of the subsequent COPs, online discussions or webinars. The ancient wisdom "If not now, when?" remains propitious for COP15.

#### Textbox 1

##### Rent in Economics

Economics inveighs against monopolies but makes an exception for information. Without protection from competition, much information would not exist. Producers will wait until a competitor creates information so that they can then copy it. Piracy is as inefficient as it is unfair. The analogy with genetic resources is actually a homology. Books, software and medicines are media of artificial information for which the fixed costs of creation can be staggering, although the marginal costs of reproduction are infinitesimal. Genes and their expressions are natural information for which the opportunity costs of conservation are also staggering, and the marginal costs of access, similarly infinitesimal. The salient difference between natural and artificial information lies in diffusion. Whereas artificial information is usually concentrated on one titleholder, the claims for natural information will be dispersed. For this reason, the counterpart to limited-in-time monopolies for intellectual property would be the limited-in-time oligopoly of a Global Multilateral Benefit-Sharing Mechanism.

Oligopolies disburse "rents", which is a word that risks equivocation. Rent in economics is not what a tenant owes the property owner at the end of the month. Rent is the difference between the price paid and the price which would have been paid had the market been perfectly competitive. A price war, or the **anticipation of one**, eliminates rents. An example of the latter hails from Brazil, which shares the Amazon basin with nine other countries. Anticipating the elimination of rents, Brazil went straight to the bottom in a metaphorical race-to-the-bottom. The 2015 Brazilian ABS legislation allows royalties as low as 0.1 per cent in sectoral agreements.<sup>33</sup> On a billion-dollar blockbuster commercialization, only one million dollars would be collected. And blockbusters are rare. If the modality of ABS is bilateral, the Parties must ask themselves: why bother?

<sup>30</sup> J.H. Vogel, N. Álvarez-Berrios, N. Quiñones-Vilche, J.L. Medina-Muñiz, J. Santiago-Rios, "The Economics of Information, Studiously Ignored in the Nagoya Protocol on Access and Benefit Sharing", *Law Environment and Development Journal* vol. 7, No. 1 (2011), pp. 51-65. Available from <http://www.lead-journal.org/content/11052.pdf>.

<sup>31</sup> Denied were the requests to the UNSCBD that Q&As and Comments from the Chat be uploaded with the video (pers. communication 5 November 2021). See: Webinar Series on Digital Sequence Information on Genetic Resources (UNSCBD, 2021). Available from <https://www.cbd.int/article/dsi-webinar-series-2020>.

<sup>32</sup> COP9 Decision IX/12: Access and benefit sharing, <https://www.cbd.int/decision/cop/default.shtml?id=11655> (UNSCBD, 2008)

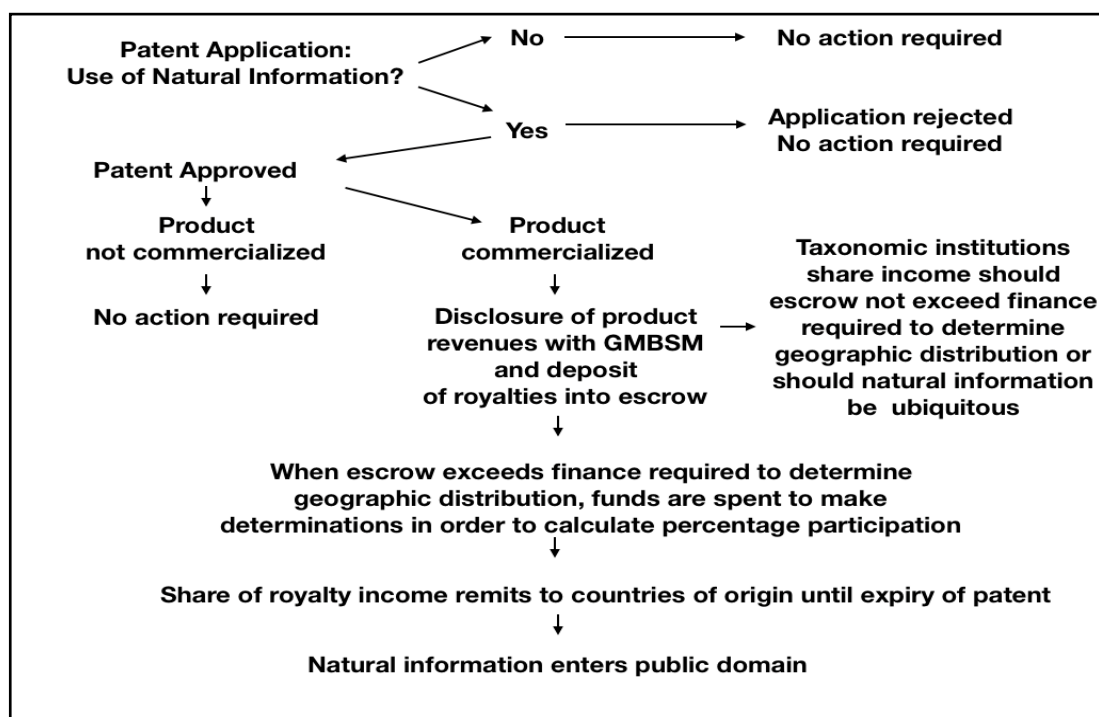
<sup>33</sup> Brazil: Law No. 13.123 (2015). Articles 20 & 21. Available from <http://www.wipo.int/edocs/lexdocs/laws/pt/br/br161pt.pdf>.

## 6. BOUNDED OPENNESS OVER NATURAL INFORMATION

Any enthusiasm for intellectual property must be tempered by the transaction costs of rendering information into property. The Creative Commons movement offers a nuanced version in which boundaries are drawn on ownership with a greater sensitivity to efficiency and equity, which are balanced when in conflict. "Bounded openness" emerges as an overarching concept for the continuum between enclosure and open access, where the focus shifts toward openness.<sup>34</sup> The concept uses the norms established in the realm of intellectual property and embedded in the TRIPS Agreement.

Robustness of "bounded openness" requires a modifying clause for treaties with ABS provisions,<sup>35</sup> hence "bounded openness over natural information". The provenance and prospects of the modality have been elaborated elsewhere;<sup>36</sup> suffice it to say here that unencumbered access will increase innovation for which limited-in-time monopoly Intellectual Property Rights (IPRs) are sought. Should an IPR be successfully commercialized, royalty income from ABS would remit to the countries of origin, proportional to the habitat of terrestrial species (plural) that contain the natural information utilized. Figure 3 is a flow diagram of how ABS would work.

Figure 2  
**Disclosures and Disbursements**



Source: Adapted from M. Ruiz Muller, *Genetic Resources as Natural Information* (Routledge, 2015)

<sup>34</sup> C. May, "Why IPRs are a global political issue", *European Intellectual Property Review*, vol. 25, No. 1 (2003), pp. 1-6.

<sup>35</sup> J.H. Vogel, M. Ruiz Muller, K. Angerer, D. Delgado Gutiérrez, A. Gálvez Ballón, "Bounded Openness: A Robust Modality of Access to Genetic Resources and the Sharing of Benefits", *Plants People Planet* (2021). DOI: 10.1002/ppp3.10239.

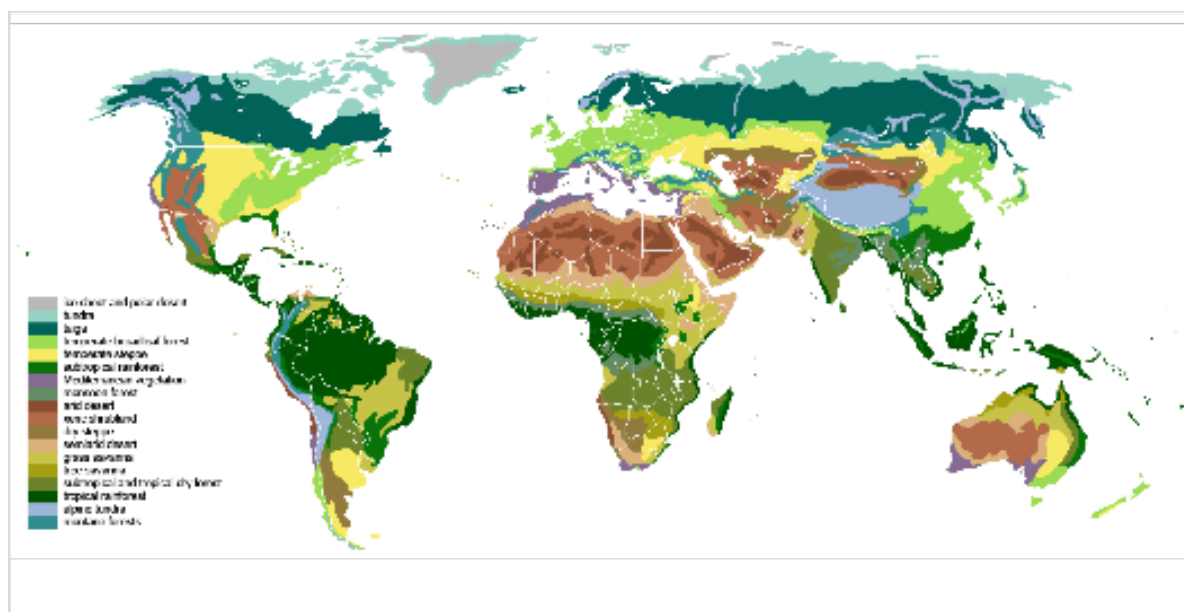
<sup>36</sup> J. H. Vogel, M. E. Santori-Aymat, O. Tomaiconza, .B. S, Cortés-Lumbi, M. Fernandez-Maldonado, "Bounded Openness over Natural Information", *Elgar Encyclopedia of Ecological Economics* (Edward Elgar, forthcoming 2023).

## 7. WHO GETS WHAT?

The GMBSM would levy a royalty according to the type of utilization. Goods and services which exhibit high elasticity of demand, would have a low percentage royalty; those with a low elasticity, a high percentage. This asymmetry owes to the Ramsey Rule in Public Finance,<sup>37</sup> which derives from criteria of efficiency. Rents are embedded in the percentages. Parties will be able to spend the income on whatever activity yields the highest social return, thereby respecting sovereignty, achieving efficiency, and averting the problem of fungibility, also known as adverse selection. The GMBSM is also self-financing. Operational costs are covered by royalties on ubiquitous natural information. With global annual sales in biotechnology approaching one trillion US dollars, ABS could become the chief mechanism to align incentives for conservation as well as mobilize resources for taxonomy, which is an international public good that has long been underfunded (see the right-hand side of Figure 2).

Biomes afford a rough approximation of how to ascertain who will get what for ABS on terrestrial species (Figure 3). The enduring hope is that the incentives created will help societies transition to the limits of half-Earth.<sup>38</sup> For marine species, acidification from atmospheric CO<sub>2</sub> is the chief threat of ecosystem collapse (e.g., species of the phyla Arthropoda and Mollusca). ABS would thus be tied to beyond-agreed-target reductions of CO<sub>2</sub> emissions by Parties to the United Nations Framework Convention on Climate Change.<sup>39</sup>

Figure 3  
**Terrestrial Biomes**



Source: Ville Koistinen (user Vz83), CC BY-SA 3.0

<sup>37</sup> H.S. Rosen, *Public Finance* (Irwin 1992), p. 334.

<sup>38</sup> J. H. Vogel, "Not Just A Matter Of Matter: 'The Way Forward' For The UNCBD, NP And Half-Earth", *Inside Views. Intellectual Property Watch / International IP Policy News* (7 September 2018). Available from <http://www.ip-watch.org/2018/09/07/not-just-matter-matter-way-forward-uncbd-np-half-earth/>.

<sup>39</sup> Sociedad Peruana de Derecho Ambiental, *Fairness, Equity and Efficiency for the Convention on Biological Diversity and the Nagoya Protocol: Analysis of a Rodent, a Snail, a Sponge and a Virus* (The ABS Capacity Development Initiative, 2021). Available from <https://www.abs-biotrade.info/fileadmin/Downloads/Resources/Fairness-Equity-Efficiency-for-the-CBD-and-the-NP/Study-Fairness-Equity-Efficiency-for-the-CBD-and-the-NP-2021.pdf>.

## 8. FINAL REMARKS, RECOMMENDATIONS AND A CALL FOR SUBMISSIONS

Economics is not diplomacy. In 1997 former Federal Reserve Bank economist and Princeton University professor Alan S. Blinder published an article in *Foreign Affairs* titled "Is Government too Political?"<sup>40</sup> The theoretician and practitioner answers in the affirmative and explains what to do: delegate authority or at least, follow more closely the advice of experts. The counsel of the former may be arguable, but the latter seems unassailable. Although Blinder had the US Congress in mind, he presents the argument as potentially robust. For ABS, relevant antecedents exist in the 1944 Bretton Woods Conference which established the international monetary system for post-war recovery.

Lord John Maynard Keynes led the British delegation and proposed a supranational currency, called the bancor. His proposal would have solved the problem of trade imbalances, which led to the collapse of Bretton Woods in 1971. The bancor would have also solved the debt crises that have bedeviled flexible exchange rates ever since.<sup>41</sup>

The economic argument for "bounded openness over natural information" has a trajectory as long the 1992 CBD and fourteen COPs. An up-to-date analysis can be found in the 2021 Report from The ABS Capacity Development Initiative, titled *Fairness, Equity and Efficiency for the Convention on Biological Diversity and the Nagoya Protocol: Analysis of a Rodent, a Snail, a Sponge and a Virus*.<sup>42</sup> Other multilateral systems have also been proposed, some quite recently, that are similar but distinct.<sup>43</sup> Theory mercifully compacts. Rival systems distinguish themselves by disregarding rents. Only through rents can ABS enable conservation and sustainable use. COP15 must not cherry pick. Such is the lesson of Bretton Woods.

How to get from here to there? Delegates should consider the proposal "Legal Elements for the 'Global Multilateral Benefit-sharing Mechanism' as contemplated in the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization."<sup>44</sup> The 25 articles reflect "thought experiments" had bounded openness been the modality for iconic cases of utilizations. Submission of more such experiments is the call for a 2023 Special Issue of *PLANTS*,<sup>45</sup> titled "Nothing in 'Access and Benefit-Sharing Makes Sense Except in the Light of Economics'".<sup>46</sup> An extended and refined Version 4.0 of "Legal Elements" will result and provide a framework for a fair, equitable and efficient solution.

The point remains to change the system.

---

<sup>40</sup> A.S. Blinder, "Is Government too Political?", *Foreign Affairs* (November/December 1997).

<sup>41</sup> T. Hirai, M. C. Marcuzzo and P. Mehrling. 2013. *Keynesian Reflections: Effective Demand, Money, Finance and Policies in the Crisis*. (Oxford University Press 2013).

<sup>42</sup> See Note 39.

<sup>43</sup> They include "common pools", "Mare Geneticum" and "Option 2 of the WiLDSI Project" with Addendum. See, respectively: E. C. Chege-Kamau and G. Winter, *Common Pools of Genetic Resources: Equity and Innovation in International Biodiversity Law* (Routledge, 2013); A. Broggiato, T. Vanagt, L.E. Lallier, M. Jaspers, D. Muyldermans, "Mare Geneticum: Balancing Governance of Marine Genetic Resources in International Waters", *The International Journal of Marine and Coastal Law* vol. 33, No. 1 (2018): pp. 3-33, A. Scholz, U. Hillebrand, J. Freitag, I. Cancio, E. van Zimmeren, 2020, "Finding Compromise on ABS and DSI in the CBD: Requirements & Policy Ideas from a Scientific Perspective" and Addendum, half as long as the Report. Available from, respectively, <https://doi.org/10.1163/15718085-13310030>, [https://www.dsmz.de/fileadmin/user\\_upload/Collection\\_all/Final\\_WiLDSI\\_White\\_Paper\\_Oct7\\_2020.pdf](https://www.dsmz.de/fileadmin/user_upload/Collection_all/Final_WiLDSI_White_Paper_Oct7_2020.pdf), and [https://www.dsmz.de/fileadmin/user\\_upload/Presse/WiLDSI/WiLDSI\\_ADDENDUM\\_to\\_white\\_paper\\_Feb\\_2021.pdf](https://www.dsmz.de/fileadmin/user_upload/Presse/WiLDSI/WiLDSI_ADDENDUM_to_white_paper_Feb_2021.pdf).

<sup>44</sup> See Note 39, Appendix VI, Version 3.0., pp. 110-114.

<sup>45</sup> Deadline for submission is 15 October 2022; author enquires are welcome. Call for submissions, *PLANTS*: [https://www.mdpi.com/journal/plants/special\\_issues/ABS\\_economics#info](https://www.mdpi.com/journal/plants/special_issues/ABS_economics#info).

<sup>46</sup> Theodosius Dobzhansky, "Nothing in Biology Makes Sense Except in the Light of Evolution", *American Biology Teacher*, 35:125-129 (1973)

## RECENT SOUTH CENTRE RESEARCH PAPERS

No.	Date	Title	Authors
91	February 2019	Key Issues for BAPA+40: South-South Cooperation and the BAPA+40 Sub-themes	Vicente Paolo B. Yu III
92	March 2019	Notification and Transparency Issues in the WTO and ' November 2018 Communication	Aileen Kwa and Peter Lunenburg
93	March 2019	Regulating the Digital Economy: Dilemmas, Trade Offs and Potential Options	Padmashree Gehl Sampath
94	April 2019	Tax Haven Listing in Multiple Hues: Blind, Winking or Conniving?	Jahanzeb Akhtar and Verónica Grondona
95	July 2019	Mainstreaming or Dilution? Intellectual Property and Development in WIPO	Nirmalya Syam
96	Agosto 2019	Antivirales de acción directa para la Hepatitis C: evolución de los criterios de patentabilidad y su impacto en la salud pública en Colombia	Francisco A. Rossi B. y Claudia M. Vargas P.
97	August 2019	Intellectual Property under the Scrutiny of Investor-State Tribunals Legitimacy and New Challenges	Clara Ducimetière
98	September 2019	Developing Country Coalitions in Multilateral Negotiations: Addressing Key Issues and Priorities of the Global South Agenda	Adriano José Timossi
99	September 2019	Ensuring an Operational Equity-based Global Stocktake under the Paris Agreement	Hesham AL-ZAHRANI, CHAI Qimin, FU Sha, Yaw OSAFO, Adriano SANTHIAGO DE OLIVEIRA, Anushree TRIPATHI, Harald WINKLER, Vicente Paolo YU III
100	December 2019	Medicines and Intellectual Property: 10 Years of the WHO Global Strategy	Germán Velásquez
101	December 2019	Second Medical Use Patents – Legal Treatment and Public Health Issues	Clara Ducimetière
102	February 2020	The Fourth Industrial Revolution in the Developing Nations: Challenges and Road Map	Sohail Asghar, Gulmina Rextina, Tanveer Ahmed & Manzoor Illahi Tamimy (COMSATS)
103	February 2020	Eighteen Years After Doha: An Analysis of the Use of Public Health TRIPS Flexibilities in Africa	Yousuf A Vawda & Bonginkosi Shozi

104	March 2020	Antimicrobial Resistance: Examining the Environment as Part of the One Health Approach	Mirza Alas
105	March 2020	Intersección entre competencia y patentes: hacia un ejercicio pro-competitivo de los derechos de patente en el sector farmacéutico	María Juliana Rodríguez Gómez
106	March 2020	The Comprehensive and Progressive Agreement for the Trans-Pacific Partnership: Data Exclusivity and Access to Biologics	Zeleke Temesgen Boru
107	April 2020	Guide for the Granting of Compulsory Licenses and Government Use of Pharmaceutical Patents	Carlos M. Correa
108	April 2020	Public Health and Plain Packaging of Tobacco: An Intellectual Property Perspective	Thamara Romero
109	May 2020	Non-Violation and Situation Complaints under the TRIPS Agreement: Implications for Developing Countries	Nirmalya Syam
110	May 2020	Estudio preliminar del capítulo sobre propiedad intelectual del acuerdo MERCOSUR – UE	Alejandra Aoun, Alejo Barrenechea, Roxana Blasetti, Martín Cortese, Gabriel Gette, Nicolás Hermida, Jorge Kors, Vanesa Lowenstein, Guillermo Vidaurreta
111	May 2020	National Measures on Taxing the Digital Economy	Veronica Grondona, Abdul Muheet Chowdhary, Daniel Uribe
112	June 2020	La judicialización del derecho a la salud	Silvina Andrea Bracamonte and José Luis Cassinerio
113	June 2020	La evolución de la jurisprudencia en materia de salud en Argentina	Silvina Andrea Bracamonte and José Luis Cassinerio
114	June 2020	Equitable Access to COVID-19 Related Health Technologies: A Global Priority	Zeleke Temesgen Boru
115	July 2020	Special Section 301:US Interference with the Design and Implementation of National Patent Laws	Dr. Carlos M. Correa
116	August 2020	The TRIPS Agreement Article 73 Security Exceptions and the COVID-19 Pandemic	Frederick Abbott
117	September 2020	Data in Legal Limbo: Ownership, sovereignty, or a digital public goods regime?	Dr. Carlos M. Correa

118	September 2020	Re-thinking Global and Local Manufacturing of Medical Products After COVID-19	Dr. German Velásquez
119	October 2020	TRIPS Flexibilities on Patent Enforcement: Lessons from Some Developed Countries Relating to Pharmaceutical Patent Protection	Joshua D. Sarnoff
120	October 2020	Patent Analysis for Medicines and Biotherapeutics in Trials to Treat COVID-19	Srividya Ravi
121	November 2020	The World Health Organization Reforms in the Time of COVID-19	German Velásquez
122	November 2020	Analysis of the Overcapacity and Overfishing Pillar of the WTO Fisheries Subsidies Negotiations	Peter Lunenborg
123	November 2020	The United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas: One Step Forward in the Promotion of Human Rights for the Most Vulnerable	Maria Natalia Pacheco Rodriguez and Luis Fernando Rosales Lozada
124	November 2020	Practical Implications of 'Vaccine Nationalism': A Short-Sighted and Risky Approach in Response to COVID-19	Muhammad Zaheer Abbas, PhD
125	December 2020	Designing Pro-Health Competition Policies in Developing Countries	Vitor Henrique Pinto Ido
126	December 2020	How Civil Society Action can Contribute to Combating Antimicrobial Resistance	Mirza Alas Portillo
127	December 2020	Revisiting the Question of Extending the Limits of Protection of Pharmaceutical Patents and Data Outside the EU – The Need to Rebalance	Daniel Opoku Acquah
128	February 2021	Intellectual Property in the EU–MERCOSUR FTA: A Brief Review of the Negotiating Outcomes of a Long-Awaited Agreement	Roxana Blasetti In collaboration with Juan I. Correa
129	March 2021	The TRIPS waiver proposal: an urgent measure to expand access to the COVID-19 vaccines	Henrique Zeferino de Menezes
130	April 2021	Misappropriation of Genetic Resources and Associated Traditional Knowledge: Challenges Posed by Intellectual Property and Genetic Sequence Information	Nirmalya Syam and Thamaro Romero
131	June 2021	TRIPS Flexibilities and TRIPS-plus Provisions in the RCEP Chapter on Intellectual Property: How Much Policy Space is Retained?	Vitor Henrique Pinto Ido
132	June 2021	Interpreting the Flexibilities Under the TRIPS Agreement	Carlos M. Correa

133	August 2021	Malaria and Dengue: Understanding two infectious diseases affecting developing countries and their link to climate change	By Mirza Alas
134	September 2021	Restructuring the Global Vaccine Industry	Felix Lobo
135	September 2021	Implementation of a TRIPS Waiver for Health Technologies and Products for COVID-19: Preventing Claims Under Free Trade and Investment Agreements	Carlos M. Correa, Nirmalya Syam and Daniel Uribe
136	September 2021	Canada's Political Choices Restrain Vaccine Equity: The Bolivia-Biolysse Case	Muhammad Zaheer Abbas
137	October 2021	The Ocean Economy: trends, impacts and opportunities for a post COVID-19 Blue Recovery in developing countries	David Vivas Eugui, Diana Barrowclough and Claudia Contreras
138	October 2021	Beyond Corporate Social Responsibility: Strengthening Human Rights Due Diligence through the Legally Binding Instrument on Business and Human Rights	Daniel Uribe Terán
139	October 2021	Governing Seed for Food Production: The International Treaty on Plant Genetic Resources for Food and Agriculture	Nina Isabelle Moeller
140	November 2021	Del SIDA al COVID-19: La OMS ante las crisis sanitarias globales	Germán Velásquez
141	November 2021	Utilising Public Health Flexibilities in the Era of COVID-19: An Analysis of Intellectual Property Regulation in the OAPI and MENA Regions	Yousuf A Vawda and Bonginkosi Shozi
142	4 January 2022	Competition Law and Access to Medicines: Lessons from Brazilian Regulation and Practice	Matheus Z. Falcão, Mariana Gondo and Ana Carolina Navarrete
143	11 January 2022	Direito Brasileiro da Concorrência e Acesso à Saúde no Brasil: Preços Exploratórios no Setor de Medicamentos	Bruno Braz de Castro
144	27 January 2022	A TRIPS-COVID Waiver and Overlapping Commitments to Protect Intellectual Property Rights Under International IP and Investment Agreements	Henning Grosse Ruse-Khan and Federica Paddeu
145	9 February 2022	The Right to Health in Pharmaceutical Patent Disputes	Emmanuel Kolawole Oke
146	16 February 2022	A Review of WTO Disputes on TRIPS: Implications for Use of Flexibilities for Public Health	Nirmalya Syam
147	28 February 2022	Can Negotiations at the World Health Organization Lead to a Just Framework for the Prevention, Preparedness and Response to Pandemics as Global Public Goods?	Viviana Muñoz Tellez



148	7 March 2022	Marine Genetic Resources Beyond National Jurisdictions: Negotiating Options on Intellectual Property	Siva Thambisetty
149	8 March 2022	The International Discourse on the Right to Development and the Need to Reinvigorate its Implementation	Yuefen Li, Daniel Uribe and Danish
150	21 March 2022	The Liability of Internet Service Providers for Copyright Infringement in Sri Lanka in Relation to Infringing Items Carried on their Networks: A Comparative Analysis with the US and English Law	Ruwan Fernando
151	19 April 2022	Escaping the Fragility/Conflict Poverty Trap: How the interaction between service delivery, capacity development and institutional transformation drives the process of transition out of fragility	Mamadou Dia
152	21 April 2022	An Examination of Selected Public Health Exceptions in Asian Patent Laws	Kiyoshi Adachi
153	26 April 2022	Patent Analysis for Medicines and Biotherapeutics in Trials to Treat COVID-19	Srividya Ravi
154	9 May 2022	COVID-19 Vaccines as Global Public Goods: between life and profit	Katiuska King Mantilla and César Carranza Barona
155	27 May 2022	Manufacturing for Export: A TRIPS-Consistent Pro-Competitive Exception	Carlos M. Correa and Juan I. Correa
156	1 June 2022	A Tough Call? Comparing Tax Revenues to Be Raised by Developing Countries from the Amount A and the UN Model Treaty Article 12B Regimes	Vladimir Starkov and Alexis Jin
157	3 June 2022	WTO Moratorium on Customs Duties on Electronic Transmissions: How much tariff revenue have developing countries lost?	Rashmi Banga
158	15 June 2022	Twenty Years After Doha: An Analysis of the Use of the TRIPS Agreement's Public Health Flexibilities in India	Muhammad Zaheer Abbas, PhD
159	15 July 2022	Reaping the Fruits of Research on Microorganisms: Prospects and Challenges for R&D and Industry in Sri Lanka	Ruwan Fernando



# **S** **OUTH** **CENTRE**

International Environment House 2  
Chemin de Balexert 7-9  
POB 228, 1211 Geneva 19  
Switzerland

Telephone: (41) 022 791 8050  
E-mail: [south@southcentre.int](mailto:south@southcentre.int)

Website:  
<http://www.southcentre.int>

ISSN 1819-6926