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COULD A MORE LIMITED ENVIRONMENTAL GOODS AGREEMENT RESOLVE CONTINUED ISSUES IN CITES COMPLIANCE?

ANDREW COCCOLI*

*No longer does the giant sandworm roam free, producing the spice melange. The spice! Dune was noteworthy only as the source of melange, the only source. What an extraordinary substance. No laboratory has ever been able to duplicate it. And it is the most valuable substance humankind has ever found. . . . With it, I create Peace. They have had more than three thousand years of Leto's Peace.*¹

In Frank Herbert's *Dune*, the known universe is dependent on the single, renewable natural resource of the spice melange.² The desert setting, the role of spice in facilitating space travel, and superficial parallels between Paul Atreides and T.E. Lawrence tempt critics to compare spice to oil.³ Yet this analogy runs as tepid as Denis Villeneuve's attempt to fulfill the promise of David Lynch's flawed masterpiece.⁴ One of the

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¹ FRANK HERBERT, *GOD EMPEROR OF DUNE* 23 (1981).

² FRANK HERBERT, *DUNE* 54–55, 600–01, 660–61 (2005).

³ See Aaron Back, *How 'Dune' (Sort of) Explains Today's Economy*, WALL ST. J. (Oct. 20, 2021, 8:00 AM), <https://www.wsj.com/articles/the-spice-wars-of-dune-mirror-todays-global-economy-11634731200> [<https://perma.cc/PK5Z-W2KE>]; see also Bilal Qureshi, *With 'Dune,' Denis Villeneuve Has Made Hollywood's Definitive Post-9/11 Epic*, NPR (Oct. 21, 2021, 11:33 AM), <https://www.npr.org/2021/10/21/1047784204/dune-2021-movie-sept-11-frank-herbert-denis-villeneuve> [<https://perma.cc/W985-XV7T>].

⁴ See Eric Kohn, *'Dune' vs. 'Dune': Why David Lynch's Version Is a Lot More Fun than Denis Villeneuve's*, INDIEWIRE (Oct. 23, 2021, 11:00 AM), <https://www.indiewire.com/2021/10/dune-david-lynch-version-better-than-denis-villeneuve-1234673280/> [<https://perma.cc/W6GW-YW9K>]; Justin Chang, *Sci-Fi Epic 'Dune' Is an Immersive but Incomplete Experience*, NPR (Oct. 22, 2021, 7:00 AM), <https://www.npr.org/2021/10/22/1047969054/dune-film-review> [<https://perma.cc/64SQ-XMYH>] (Chang published a similarly critical review

greater themes of *Dune* is how humanity uses and manages living, renewable natural resources that enable modern society and an enhanced quality of life.⁵

Spice is, in large part, sustainably managed in *Dune*.⁶ Essential but small quantities of the commodity are extracted, while vast reserves of wilderness allow healthy sandworm populations.⁷ Throughout the series, spice production is almost always centrally managed, whether by a single, feudal House awarded a commercial monopoly or by the imperial administration of Leto II.⁸ Herbert demonstrates sensitivity to the diversity of stakeholders in spice—from Fremen, to smugglers, to industry, to local and universal politics—in further testament to his work's status as a pioneering ecological novel.⁹

Returning to twenty-first century Earth, if our world is to continue enjoying a modern, high quality of life, and if humanity is ever to travel to space and discover worlds such as Arrakis, it must learn to manage natural resources sustainably.¹⁰ International environmental law in its current form has evolved out of the struggle against climate change.¹¹ It must also seek to develop a global natural resources law.¹² An initial attempt was made by the Convention on International Trade in Endangered Species (“CITES”), but while administration of this treaty has increased in sophistication and found partners with other international

in the *L.A. Times*, entitled ‘*Dune*’ Kicks Up a Dust; Latest Version Is a Visionary Spectacle but Feels Too Dry, but this review was taken down from the *Times*’ website and as of this Note, the links redirect to positive coverage by a different author.); see also Justin Chang, ‘*Dune*’ Kicks Up a Dust; Latest Version Is a Visionary Spectacle but Feels Too Dry, PRESS-READER (Oct. 22, 2021), <https://www.pressreader.com/usa/los-angeles-times/20211022/282127819678403> [<https://perma.cc/49VL-TTHV>].

⁵ Frank Herbert, *Dune Genesis*, OMNI, July 1980, at 72, 74; see Jathan E. Day, Water as Power in Frank Herbert’s *Dune* 2–3, 33–34 (Aug. 2014) (M.A. thesis, University of Alaska, Anchorage) (ProQuest).

⁶ See Timothy Morton, *Imperial Measures: Dune, Ecology and Romantic Consumerism*, ROMANTICISM ON NET, Feb. 2001, ¶¶ 7–8, 10, 15, 19–20, <https://www.erudit.org/en/journals/ron/1900-v1-n1-ron433/005966ar/> [<https://perma.cc/J8YA-VD93>]; see also Kara Kennedy, *Spice and Ecology in Herbert’s Dune: Altering the Mind and the Planet*, 48 SCI. FICTION STUD. 444, 448, 450, 457–60 (2021).

⁷ See Morton, *supra* note 6, ¶¶ 7–8, 10, 15, 19–20; see also Kennedy, *supra* note 6, at 448, 450, 457–60.

⁸ HERBERT, *supra* note 2, at 39, 54–58.

⁹ *Id.* at 679–80.

¹⁰ See Daniel C. Esty, *Breaking the Environmental Law Logjam: The International Dimension*, 17 N.Y.U. ENV’T L.J. 836, 837 (2008).

¹¹ See *id.* at 838.

¹² EYAL BENVENISTI, SHARING TRANSBOUNDARY RESOURCES: INTERNATIONAL LAW AND OPTIMAL RESOURCE USE 15, 18–21 (2012).

organizations, its narrow subject matter meant that it never achieved notoriety comparable to the other landmark treaties of the 1960s.¹³ While international environmental legal academia has long pined for a dedicated and global administrative entity for the environment, there are clear signals of only limited political commitment to new ventures at present.¹⁴ Instead, a global natural resources law should be developed using existing institutions.¹⁵ Because natural resources exist in relation to humans, essentially as internationally traded commodities, natural resources policymakers should more seriously consider what role the World Trade Organization (“WTO”) should play.¹⁶

The WTO, the CITES Conference of Parties (“CITES CoP”), and other multilateral environmental agreement secretariats should adopt new measures and establish new bodies with the goal of accomplishing three primary objectives. First, they should continue working towards transparent supply chains and a more complete global inventory of CITES-listed resources traded internationally. Second, they should use trade policy to incentivize a race to the top in the global supply of sustainably managed natural resources, both endangered and non-endangered. Third, they should design measures to promote future harmonization between international bodies and to encourage more regular, centralized management of total global supply.

This Note will adopt an economic perspective while advocating for the most sustainable practices in natural resources management. It will first conduct a series of case studies of natural resources for which there is transnational or international demand, but unsustainable management. While CITES-listed resources will be considered with particular attention, unlisted and more conventional resources will also be considered. In its second part, this Note will consider mechanisms currently available in international trade to accommodate environmental progress, then will set forth various new measures the WTO could adopt to incentivize sustainable management of the Part I resources. Part III will consider new

¹³ See WILLEM WIJNSTEKERS, INT’L COUNCIL FOR GAME & WILDLIFE CONSERVATION, THE EVOLUTION OF CITES 31–46 (9th ed. 2011), https://cites.org/sites/default/files/common/resources/Evolution_of_CITES_9.pdf [<https://perma.cc/8BPF-F2DD>].

¹⁴ See, e.g., Karl Mathiesen, *The Last-Minute Coal Demand that Almost Sunk the Glasgow Climate Deal*, POLITICO (Nov. 13, 2021, 8:29 PM), <https://www.politico.com/news/2021/11/13/coalglasgow-climate-deal-521802> [<https://perma.cc/5HCM-B7NN>].

¹⁵ See John Carter Morgan III, *Fragmentation of International Environmental Law and the Synergy: A Problem and a 21st Century Model Solution*, 18 VT. J. ENV’T L. 134, 135–37, 171–72 (2016).

¹⁶ See WORLD TRADE ORG. (“WTO”), WORLD TRADE REPORT 2010, at 5–6, 160–65, 176–91 (2010).

roles for CITES, U.N. bodies, and other international associations in working with the WTO to encourage sustainability. Finally, this Note will conclude by suggesting that environmental groups and trade associations in the developed world pressure their governments to consider using the WTO not only to liberalize global trade but to resolve environmental problems created by free trade.

I. RENEWABLE NATURAL RESOURCES IN NEED OF SUSTAINABLE MANAGEMENT

The CITES appendices cover a wide range of endangered flora and fauna that are traded internationally.¹⁷ CITES Appendix I includes “species threatened with extinction,” trade in which is “permitted only in exceptional circumstances.”¹⁸ Appendix II species face less imminent danger, but the CITES CoP has determined their “trade must be controlled in order to avoid utilization incompatible with their survival.”¹⁹

Solutions to international trade in endangered species depend on all phases of the supply chain, from before the species taking, to end-consumer purchase.²⁰ This implicates various ecological, economic, and political considerations; the following cases are representative of the dynamics of some of the most widely or notoriously traded endangered species.

A. *Fisheries and Marine Life*

1. Sea Turtles

Many species of sea, freshwater, and land turtles are listed in the CITES appendices.²¹ Historical use of tortoiseshell resulted in magnificent pieces of cultural heritage, from Tokugawa Ieyasu’s eyeglasses to a

¹⁷ Convention on International Trade in Endangered Species of Wild Fauna and Flora apps. I, II & III, *opened for signature* Mar. 3, 1973, 27 U.S.T. 1087, 993 U.N.T.S. 243 [hereinafter CITES].

¹⁸ *How CITES Works*, CITES, <https://cites.org/eng/disc/how.php> [<https://perma.cc/AGW6-UL9D>] (last visited Nov. 13, 2022).

¹⁹ *Id.*

²⁰ See Convention on the Conservation of Migratory Species of Wild Animals art. I(1)(I), *opened for signature* June 23, 1979, 1651 U.N.T.S. 28395 [hereinafter CMS]; *id.* art. II; see also Jack Liebeck, *Is Your Musical Instrument Compliant with Endangered Species Rules?*, CLASSICALMUSIC (Nov. 5, 2018), <https://www.classical-music.uk/resources/article/is-your-musical-instrument-compliant-with-endangered-species-rules> [<https://perma.cc/A9MT-7985>].

²¹ CITES, *supra* note 17, at 48.

violin bow by Charles Nicolas Bazin for the Exposition Universelle of 1889.²² Demand for tortoises and tortoise products for purposes of artisanal materials, pets, food, and medicine persists, primarily in U.S. and East Asian markets.²³ Consumer attitudes can be difficult to address due to the anthropological and psychological reasons for demand in tortoise-shell.²⁴ Preconvention stock, while legal, may support demand for illegal material by artificially prolonging retail markets.²⁵ As with its cousin, prestige material ivory, poaching and smuggling are the principal issues in the international trade of endangered turtles.²⁶

2. Overfishing of Non-endangered Species

Many commercial species, such as tuna, are not listed in the CITES appendices.²⁷ Nevertheless, sustainable management of fisheries is a significant economic, international, legal, and environmental area of research and discussion.²⁸ It has also been the subject of federal statutes, such as the Magnuson-Stevens Fisheries Act, designed to strengthen U.S. enforcement of fishing in the more distant reaches of its Exclusive Economic Zone.²⁹ Taking tuna as an example, both the Atlantic and the

²² Justin Grubb, *Trade in Sea Turtle Products Is Banned, but They're Still Sold in Japan*, NAT'L GEOGRAPHIC (Sept. 20, 2019), <https://www.nationalgeographic.com/animals/article/sea-turtles-for-sale-in-japan> [<https://perma.cc/MT77-5KN4>]; see JEAN-FRANÇOIS RAFFIN, YANNICK LE CANU, SYLVAIN BIGOT, ARTHUR DUBROCA & LOTHAIRE MABRU, *LES ARCHETIERS DE LA FAMILLE BAZIN 1824–1987*, at 170–71 (2021).

²³ ASS'N OF FISH & WILDLIFE AGENCIES, CASE STUDY: U.S. FRESHWATER TURTLES AND TORTOISES 1–5 (2020), https://www.fishwildlife.org/application/files/7815/9352/0162/Case_Study_U.S._Freshwater_Turtles_and_Tortoises_CITES_2020_FINAL.pdf [<https://perma.cc/W3WJ-3Z5Y>].

²⁴ V. Camille Westmont, *Faux Materials and Aspirational Identity: Celluloid Combs and Working Class Dreams in the Pennsylvania Anthracite Region*, 25 J. MATERIAL CULTURE 93, 97–102 (2020) (documenting ivory and tortoiseshell articles as a display of class status).

²⁵ See Grubb, *supra* note 22; JAPAN WILDLIFE CONSERVATION SOC'Y, *HAWKSBILL TRADE REVIVED? ANALYSIS OF THE MANAGEMENT SYSTEM OF DOMESTIC "BEKKO" TRADE IN JAPAN* 11 (2000), <https://www.jwcs.org/data/000401-1e.pdf> [<https://perma.cc/GGX7-3L9F>].

²⁶ See, e.g., *United States v. Cottrell*, Crim. Action No. 16-15, 2016 WL 6124212, at *1, *3 (E.D. La. Oct. 20, 2016); *InvestEGGator Sea Turtle Eggs*, PASO PACÍFICO, <https://pasopacifico.org/project/investeggator-sea-turtle-eggs/> [<https://perma.cc/NQ65-7Q2A>] (last visited Nov. 13, 2022); WIJNSTEKERS, *supra* note 13, at 32, 450–51, 653–54.

²⁷ CITES, *supra* note 17, at 1–78.

²⁸ See *A Decade of Discovery*, INT'L SEAFOOD SUSTAINABILITY FOUND., <https://www.iss-foundation.org/timeline/> [<https://perma.cc/RUD6-KYAC>] (last visited Nov. 13, 2022) (interactive timeline from 2009, with a menu of linked articles and reports, showing the diversity of sustainable fishery initiatives).

²⁹ John K. Powell, *Reauthorization of the Magnuson-Stevens Fishery Act: In Pursuit of Tight Lines and Full Nets*, 93 FLA. BAR J. 47, 47–50 (2019).

Pacific fisheries have evoked concern over sustainability.³⁰ As with CITES-listed species, transparency and supply chain integrity are central themes in promoting sustainable practices.³¹

Comparable to CITES-listed resources, tuna suffers from illegal, unregulated, and unreported fishing.³² In the Indian Ocean, developing nations' tuna fisheries have benefitted from regional fishery management organizations ("RFMOs"), which channel both best practices guidance by developed nations and eco-labelling initiatives by NGOs and trade associations.³³ However, guidance from other nations, and industry in particular, also leads to concerns over political and financial maneuvering.³⁴ Despite their benefits, RFMOs can result in greater fragmentation of international environmental law and are vulnerable equally to regional political jockeying as well as movements in the greater global market.³⁵

Sustainable management of fisheries could be promoted in general through the WTO by reducing its constraints on domestic regulation, modifying or eliminating subsidies to induce best practices, and improving the dispute resolution mechanism.³⁶ The General Agreement on Tariffs and Trade ("GATT") could also be reinterpreted to better afford states the ability to enforce governmental eco-labelling.³⁷ While these approaches may be successful, they open the door to further fragmentation by targeting domestic law; however, a new Environmental Goods Agreement that addresses the fringes of CITES enforcement as well as broader natural resources management problems would provide a more comprehensive solution.³⁸

³⁰ See Kirsten E. Boon, *Overfishing of Bluefin Tuna: Incentivizing Inclusive Solutions*, 52 U. LOUISVILLE L. REV. 1, 1–9, 19–30 (2013); Grant W. Walton, Meg Keen & Quentin Hanich, *Can Greater Transparency Improve the Sustainability of Pacific Fisheries?*, MARINE POL'Y, Feb. 2022, at 1, 1.

³¹ Boon, *supra* note 30, at 35; Walton et al., *supra* note 30, at 1.

³² Hussain Sinan, Megan Bailey & Wilf Swartz, *Disentangling Politics in the Indian Ocean Tuna Commission*, MARINE POL'Y, Sept. 2021, at 1, 9.

³³ *Id.* at 8–9.

³⁴ *Id.* at 10–11.

³⁵ *Id.* at 10–12.

³⁶ Stephen Floyd, *Fishing for Answers: Illegal Fishing, Depleted Stocks, and the Need for WTO Fishing Disciplines*, 52 GEO. J. INT'L L. 797, 823–34 (2021).

³⁷ Lauren Sullivan, *The Epic Struggle for Dolphin-Safe Tuna: To Be Continued—a Case for Accommodating Nonprotectionist Eco-Labels in the WTO*, 47 VAND. J. TRANSNAT'L L. 861, 885–98 (2014).

³⁸ See discussion *infra* Parts II–IV; cf. Boon, *supra* note 30, at 29–32 (discussing another sort of incentive scheme through RFMOs, but which differs from the Generalized Systems of Preferences ("GSP") model).

3. International Trade in Whales and Whale Products

All members of the *Cetacea* infraorder—whales, dolphins, and porpoises—are listed in CITES Appendix II, and several specific species are listed in Appendix I.³⁹ Japan is the primary market for internationally traded whale meat.⁴⁰ It finds willing trade partners principally in Norway and Iceland.⁴¹ While some former trade partners, such as Russia, have now banned whaling and whale capture due to domestic environmentalist pressure,⁴² Japan left the International Whaling Commission in 2019.⁴³ In 2017, Japan imported one-third of its whale meat.⁴⁴ Though consumption of whale meat has declined, whaling has remained a cultural cause célèbre and unit of political currency in Japan.⁴⁵ Domestic whaling practices resulted in Japanese liability before the International Court of Justice in 2014.⁴⁶ Therefore, the most difficult issue of international environmental law as it pertains to whaling is Japan's national policy of non-compliance.⁴⁷

³⁹ CITES, *supra* note 17, at 14.

⁴⁰ See Simon Denyer, *Japan Still Hunts Whales. But Now It's More Profitable to Watch Them.*, WASH. POST (Dec. 20, 2019), <https://www.washingtonpost.com/world/2019/12/20/japan-still-hunts-whales-now-its-more-profitable-watch-them/> [<https://perma.cc/5RMQ-QD9D>]; *Norway Defies International Trade Ban, Exports Tons of Whale Products to Japan*, ANIMAL WELFARE INST. (Apr. 8, 2013) [hereinafter ANIMAL WELFARE INST.], <https://awionline.org/press-releases/norway-defies-international-trade-ban-exports-tons-whale-products-japan> [<https://perma.cc/HH5C-EQB9>].

⁴¹ ANIMAL WELFARE INST., *supra* note 40.

⁴² See *Russia To Ban Capturing Whales for Aquariums*, FRANCE 24 (Dec. 10, 2021, 9:20 PM), <https://www.france24.com/en/live-news/20211210-russia-to-ban-capturing-whales-for-aquariums> [<https://perma.cc/32L8-4M99>]; Danny Groves, *Russian Ban on Orca and Beluga Capture Is Extended*, WHALE & DOLPHIN CONSERVATION (Mar. 24, 2021), <https://uk.whales.org/2021/03/24/russian-ban-on-orca-and-beluga-capture-is-extended/> [<https://perma.cc/EN3U-RPLH>]. See Joseph Robert Berger, *Unilateral Trade Measures To Conserve the World's Living Resources: An Environmental Breakthrough for the GATT in the WTO Sea Turtle Case*, 24 COLUM. J. ENV'T L. 355, 392–96, 404–07 (1999).

⁴³ *Commercial Whaling*, INT'L WHALING COMM'N, <https://iwc.int/commercial> [<https://perma.cc/KG6K-W226>] (last visited Nov. 13, 2022).

⁴⁴ Ben Dooley & Hisako Ueno, *Japan Resumes Commercial Whaling. But Is There an Appetite for It?*, N.Y. TIMES (July 1, 2019), <https://www.nytimes.com/2019/07/01/business/japan-commercial-whaling.html> [<https://perma.cc/9VDZ-8JHX>].

⁴⁵ Gabriel Fung & Andy Ka Hei Vu, *The Resilience of Japanese Whaling*, DIPLOMAT (Aug. 11, 2021), <https://thediplomat.com/2021/08/the-resilience-of-japanese-whaling/> [<https://perma.cc/7B6J-K2TU>].

⁴⁶ *Whaling in the Antarctic (Australia v. Japan: New Zealand intervening)*, Judgment, 2014 I.C.J. Rep. 226, ¶¶ 42–48, 247 (Mar. 31).

⁴⁷ See, e.g., Shunsuke Managi, *Is Japan's Commercial Whaling Doomed?*, NATURE (Sept. 3, 2019), <https://www.nature.com/articles/d41586-019-02624-2> [<https://perma.cc/87BM-Z67B>].

B. Forests

1. Rosewood

Rosewood is a generic term used for any of the members of the *Dalbergia* genus.⁴⁸ The genus contains over 250 species across Central and South America, Africa, and Asia.⁴⁹ The entire genus is listed in CITES Appendix II, with exceptions for finished products under ten kilograms and finished musical instruments; *Dalbergia nigra*, a Brazilian species, is listed in Appendix I.⁵⁰

Demand for rosewood comes from the western guitar industry and the Chinese furniture industry.⁵¹ The guitar industry has vigorously opposed CITES's listings of rosewood, as well as similar species of beautiful exotic wood, used in all musical instruments.⁵² For example, in a 2019 statement to the CITES CoP, a consortium of guitar making and violin making associations stated that rosewood was essential, not only to guitars, but to violins.⁵³ While this is demonstrably false according to long-standing and well-known practice in the violin trade,⁵⁴ it was likely due to the guitar industry's much larger economic and cultural power that it was able to enlist violin makers to its cause.⁵⁵ The 2011 and 2012 Gibson raids, while stirring concerns over the Lacey Act's consequences for unlimited guitar production, exposed the institutional reliance in the music industry on CITES-illegal supply chains.⁵⁶ American production is not

⁴⁸ Tin Hang Hung, Thea So, Syneath Sreng, Bansa Thammavong, Chaloun Boounithiphonh, David H. Boshier & John J. McKay, *Reference Transcriptomes and Comparative Analyses of Six Species in the Threatened Rosewood Genus Dalbergia*, 10 SCI. REPS., 2020, at 1, 1–2.

⁴⁹ *Id.*

⁵⁰ CITES, *supra* note 17, at 69–70.

⁵¹ See James B. Greenberg, *Good Vibrations, Strings Attached: The Political Ecology of the Guitar*, 4 SOCIO. & ANTHROPOLOGY 431, 431–37 (2016); NAOMI BASIK TREANOR, CHINA'S HONGMU CONSUMPTION BOOM: ANALYSIS OF THE CHINESE ROSEWOOD TRADE AND LINKS TO ILLEGAL ACTIVITY IN TROPICAL FORESTED COUNTRIES, at iii–vi (2015).

⁵² See SEVENTIETH STANDING COMM., STATEMENT OF PRINCIPLES. MUSICAL INSTRUMENTS AND APPENDIX II ANNOTATION #15, at 2–3 (2018), <https://cites.org/sites/default/files/eng/com/sc/70/Inf/E-SC70-Inf-27.pdf> [<https://perma.cc/3FW8-CVKZ>].

⁵³ *Id.*

⁵⁴ See generally, e.g., Andy Fein, *Pegs for Violins, Violas & Cellos—Ebony, Rosewood or Boxwood?*, VIOLIN SHOP (Oct. 19, 2011), <http://blog.feinviolins.com/2011/10/pegs-for-violins-violas-cellos-ebony.html> [<https://perma.cc/4ZSW-BWYH>] (discussing varied use of hardwoods for violin pegs, where ebony is the most common).

⁵⁵ Cf. Greenberg, *supra* note 51, at 433–34 (“2. Politics and the Lacey Act”).

⁵⁶ See *id.*; *Endangered Species Trafficking: What Did Gibson Guitar Know?*, MONGABAY (July 7, 2011), <https://news.mongabay.com/2011/07/endangered-species-trafficking-what>

the only malfeator; Chinese factory production of low-quality instruments, meant more to be ordered online than to be played for long periods, is also a significant problem for the music trade.⁵⁷ While most of the rosewood for more expensive guitars now comes from India or Madagascar, the historic use of Brazilian rosewood by great makers such as Louis Panormo has resulted in niche demand for *Dalbergia nigra* in particular.⁵⁸

Rosewood and lookalike species are generally known as *hongmu* in China.⁵⁹ China classifies thirty-three species as *hongmu*, seven of which are CITES-listed.⁶⁰ The United Nations Office of Drugs and Crime's ("UNODC") World Wildlife Crime Report 2020 estimated that in 2018, Chinese imports of tropical logs totaled roughly \$2.8 billion, where rosewood logs made up a fifth of that total (roughly \$560 million).⁶¹ Starting in 2012, African sources of rosewood (generally West African, as opposed to Madagascar) overtook Latin American and Southeast Asian sources to become the near-exclusive supply feeding Chinese markets by 2018.⁶² The availability of such data changed, however, with the 2017 CITES listing of the entire *Dalbergia* genus, as well as certain associated *hongmu* species.⁶³

-did-gibson-guitar-know/ [https://perma.cc/RT28-LV8J]. Compare Matthew S. White, *Overcriminalization Based on Foreign Law: How the Lacey Act Incorporates Foreign Law To Overcriminalize Importers and Users of Timber Products*, 12 WASH. U. GLOB. STUD. L. REV. 381, 381–85 (2013), with Sean H. Waite, *Blood Forests: Post Lacey Act, Why Cohesive Global Governance Is Essential To Extinguish the Market for Illegally Harvested Timber*, 2 SEATTLE J. ENV'T L. 317, 319–23, 336–37 (2012).

⁵⁷ See, e.g., Beat Wettstein, *Do Not Buy that Cheap Chinese Guitar*, I REALLY LIKE GUITARS, <https://www.ireallylikeguitars.com/buying/buy-cheap-chinese-guitar/> [https://perma.cc/XQ3P-QWTZ] (last visited Nov. 13, 2022); cf., e.g., VSO (Violin Shaped Objects), CHATFIELD AREA ELEMENTARY ORCHESTRAS, <https://sites.google.com/jeffcoschools.us/chat-field-elementary-orchestra/vsos-violin-shaped-objects> [https://perma.cc/HK4M-7J5G] (last visited Nov. 13, 2022). See generally Chris Gibson & Andrew Warren, *Friday Essay: The Guitar Industry's Hidden Environmental Problem—and the People Trying to Fix It*, CONVERSATION (May 27, 2021, 4:03 PM), <https://theconversation.com/friday-essay-the-guitar-industrys-hidden-environmental-problem-and-the-people-trying-to-fix-it-159211> [https://perma.cc/VH4G-9LYK].

⁵⁸ See Maarten Dispa, *Tonewoods Explained!*, THE FELLOWSHIP OF ACOUSTICS (Jan. 24, 2018), <https://www.tfoa.eu/nl/blogs/blog/tonewoods-explained/> [https://perma.cc/XKM7-JV99]; Fred Oster, *Louis Panormo, Guitar, 1827, London*, VINTAGE INSTRUMENTS, <https://vintage-instruments.com/shop/guitars/antique-guitars/louis-panormo-guitar-1827-london/> [https://perma.cc/6NB9-SAN4] (last visited Nov. 13, 2022); Waite, *supra* note 56, at 324.

⁵⁹ TREANOR, *supra* note 51, at iii.

⁶⁰ *Id.* at 1.

⁶¹ U.N. OFF. OF DRUGS & CRIME, WORLD WILDLIFE CRIME REPORT 2020: TRAFFICKING IN PROTECTED SPECIES 37, U.N. Sales No. E.20.XI.8 (2020) [hereinafter WORLD WILDLIFE CRIME REPORT 2020].

⁶² *Id.* at 38–40.

⁶³ *Id.* at 39–41.

The UNODC noted that even before the total ban, by 2015, most rosewood imported by China was illegally sourced.⁶⁴ Despite general Chinese crackdowns on corruption, the illicit nature of illegal logging renders the actual volume of the illegal rosewood trade something of an open question.⁶⁵ The actual volume of illegal trade must be extrapolated from statistics on seizures, as well as generalized export data from trade associations that do not specialize in the investigation of environmental crimes.⁶⁶ While rosewood shares with tortoiseshell the same general problems of illegal harvest and smuggling, rosewood markets are larger, more active, and more entrenched.

2. Pernambuco

Pernambuco, *Paubrasilia echinata* or *Caesalpinia echinata*, is used to make bows for stringed instruments, generally of the violin family.⁶⁷ Pernambuco is listed in CITES Appendix II but with an annotation that applies the listing only to unfinished wood articles such as logs or bow blanks.⁶⁸ Pernambuco suffers from many of the same problems as rosewood.⁶⁹

The difference between woods is largely one of scale: Pernambuco's native range is restricted to parts of the Brazilian coast,⁷⁰ and demand is largely restricted to violin bows and the classical music lutherie community.⁷¹ However, demand for Pernambuco is much less flexible than demand for rosewood, in that classical musicians overwhelmingly refuse to accept alternatives.⁷² Additionally, the best modern violin bows can

⁶⁴ *Id.* at 42–43.

⁶⁵ *Id.* at 12–13, 38 (“Because there is no universal definition of ‘rosewood’, there are no global statistics on the rosewood market . . .”).

⁶⁶ See FORESTRY COMM'N OF GHANA, POPULATION STATUS, TRADE AND SUSTAINABLE MANAGEMENT OF AFRICAN ROSEWOOD, *PTEROCARPUS ERINACEUS* IN GHANA 19–20 (2021).

⁶⁷ ELENA MEJÍA & XIMENA BUITRÓN, BRAZILWOOD (*CAESALPINIA ECHINATA*) IN BRAZIL 9 (2008), https://cites.org/sites/default/files/ndf_material/WG1-CS5.pdf [<https://perma.cc/ZW6R-JH88>].

⁶⁸ CITES, *supra* note 17, at 69.

⁶⁹ See U.S. Fish & Wildlife Service and Polícia Federal Coordinate Joint Enforcement Actions To Combat Trafficking of Rare and Endangered Timber from Bra, U.S. EMBASSY & CONSULATES IN BRAZ. (Dec. 1, 2021), <https://br.usembassy.gov/u-s-fish-wildlife-service-and-policia-federal-coordinate-joint-enforcement-actions-to-combat-trafficking-of-rare-and-endangered-timber-from-brazil/> [<https://perma.cc/WB3S-GBEL>].

⁷⁰ MEJÍA & BUITRÓN, *supra* note 67, at 4.

⁷¹ *Id.* at 1–2, 9.

⁷² Compare Benjamin Bowman, *In Search of Perfection: Finding the Right Bow*, STRAD (July 13, 2020), <https://www.thestrads.com/featured-stories/in-search-of-perfection-finding>

achieve impressive prices, sometimes in excess of \$10,000.⁷³ To satisfy universal demand among musicians stemming from inflexible, and to some degree ahistorical,⁷⁴ attitudes surrounding the primacy of Pernambuco, Chinese industry has begun manufacture of extremely low-cost bows.⁷⁵ It is by now an open secret in the violin trade that this Chinese production relies on illegally harvested Pernambuco.⁷⁶ Because finished violin bows enjoy an exception to CITES protections of Pernambuco, Chinese manufacturers are able to exploit a loophole, creating something of a triangle trade in illegal bows: They benefit from lax enforcement, fraud, or corruption in the Brazilian-Chinese transit, then pose their finished bows as legally produced from old stock to U.S. Fish & Wildlife enforcement.⁷⁷ While it is a violation of the Lacey Act to import finished articles, when the importer knows or should know of illegally obtained source material,⁷⁸ the Fish & Wildlife Service has stated that it presumes all imported violin bows contain legal material.⁷⁹ While this stance is easily criticized as arbitrary given the common knowledge of China's vast markets for illegally sourced lumber, it is also understandable given the general difficulty of obtaining any sort of reliable and authentic evidence of supply chain compliance.⁸⁰ Pernambuco, therefore, suffers from a perfect storm: limited range and lower visibility than rosewood, but with a more certain market,

-the-right-bow/10942.article?adredir=1 [https://perma.cc/Y8M6-VBRX], *with* RESULTATS, VICHY ENCHÈRES (2022), <https://vichy-encheres.com/wp-content/uploads/2022/07/2022-06-31.01.02-quatuor-resultats.pdf> [https://perma.cc/55K7-UVVD], *and* Lynn Hannings, *Pernambuco-Free Bows*, LYNN ARMOUR HANNINGS, BOWMAKER, <https://shop.lahbows.com/pages/bows-pernambuco-free-bows> [https://perma.cc/NQ5G-QXRM] (last visited Nov. 13, 2022).

⁷³ See Gilles Nehr, TARISIO, https://tarisio.com/cozio-archive/browse-the-archive/makers/maker/?Maker_ID=1910 [https://perma.cc/KK9D-S2LH] (last visited Nov. 13, 2022); Charles Espey, TARISIO, https://tarisio.com/cozio-archive/browse-the-archive/makers/maker/?Maker_ID=2761 [https://perma.cc/79VJ-5XLP] (last visited Nov. 13, 2022) (Gilles Nehr and Charles Espey are renowned modern masters; others include Pierre Guillaume and the late Bernard Millant. These auction results are lower than retail prices.).

⁷⁴ See RESULTATS, *supra* note 72.

⁷⁵ See, e.g., *Violin Bow*, WANGBOW, <https://www.wangbow.com/Violin-Bow?sort=p.price&order=ASC> [https://perma.cc/2NT6-3Q5K] (last visited Nov. 13, 2022) (manufacturer in China advertising Pernambuco bows for as little as \$100; the lowest priced bows are in brazilwood, for \$34).

⁷⁶ See Louise Lee, *Made in China, Played in the USA*, STRINGSMAG. (Feb. 24, 2014), <https://stringsmagazine.com/made-in-china-played-in-the-usa/> [https://perma.cc/DT2T-4NCZ]; *cf.* Hannings, *supra* note 72.

⁷⁷ See Lee, *supra* note 76.

⁷⁸ 16 U.S.C.A. § 3373(a)(1), (d)(2) (Westlaw through Pub. L. No. 117-214).

⁷⁹ Lee, *supra* note 76.

⁸⁰ *Cf.* Greenberg, *supra* note 51, at 433, 435–36.

whose demand comes both from volume manufacturers and from high-end, specialist artisans.

II. PROPOSED SOLUTION

Solutions to international trade in endangered species are many: (1) ecological efforts to monitor and increase population before taking;⁸¹ (2) microeconomic solutions targeting taking activities by local populations;⁸² (3) environmental criminal enforcement against criminal enterprises at the source and along the supply chain of raw materials;⁸³ (4) supply chain verification and enforcement as raw materials are converted to products;⁸⁴ and (5) economic or legal incentives for consumers, who are often bona fide purchasers.⁸⁵ These solutions exist on a spectrum from ecological and localized to increasingly macroeconomic, political, and legal.

The Sustainable Development Goals (“SDGs”), launched in 2015, envision integration across all of these fields.⁸⁶ SDGs 12 (“Ensure sustainable consumption and production patterns”), 14 (“Conserve and sustainably use the oceans, seas and marine resources . . .”), and 15 (“Protect, restore and promote sustainable use of terrestrial ecosystems . . .”) lie at

⁸¹ See CMS Standing Comm., CMS-CITES Joint Work Programme 2021–2025, at 1–3, U.N. Doc. UNEP/CMS/StC52/Outcome 4 (Oct. 11, 2021), https://www.cms.int/sites/default/files/document/cms_stc52_doc.17_cms-cites-joint-pow_e_0.pdf [<https://perma.cc/W666-SLEA>]; *Cooperations and Partnerships*, CITES, <https://cites.org/eng/disc/coop.php#2> [<https://perma.cc/7DPT-2HP9>] (last visited Nov. 13, 2022); CMS, *supra* note 20, arts. II, V.

⁸² See, e.g., CITES Res. Conf. 16.6 (Rev. CoP18), CITES and Livelihoods, at 1–4 (Aug. 28, 2019) [hereinafter CITES Res. Conf. 16.6], <https://cites.org/sites/default/files/document/E-Res-16-06-R18.pdf> [<https://perma.cc/97HS-XXLG>]; see generally *CITES and Livelihoods*, CITES, <https://cites.org/eng/prog/livelihoods> [<https://perma.cc/M2PG-KMHZ>] (last visited Nov. 13, 2022); ANIMALS COMM. & PLANTS COMM., AC31 Doc. 10/PC25 Doc. 11, Capacity Building, 7–12 (July 17, 2020), <https://cites.org/sites/default/files/eng/com/ac-pc/ac31-pc25/E-AC31-10-PC25-11.pdf> [<https://perma.cc/MFB5-PMH8>].

⁸³ See generally *The International Consortium on Combatting Wildlife Crime*, CITES, https://cites.org/eng/prog/icccwc_new.php [<https://perma.cc/9QBP-NZAD>] (last visited Nov. 13, 2022).

⁸⁴ See, e.g., CITES Standing Comm., SC70 Inf. 33 bis, Information on Projects Related to Traceability, at 1–11 (Oct. 5, 2018), <https://cites.org/sites/default/files/eng/com/sc/70/Inf/E-SC70-Inf-33.pdf> [<https://perma.cc/33AB-2SMB>]; see also 16 U.S.C.A. §§ 3371–78 (Westlaw through Pub. L. No. 117-214).

⁸⁵ Cf. Liebeck, *supra* note 20; see also *About Us*, INT’L PERNAMBUCO CONSERVATION INITIATIVE, <http://www.ipci-usa.org/about.html> [<https://perma.cc/M29C-RWBK>] (last visited Nov. 13, 2022).

⁸⁶ See *Sustainable Development Goals*, U.N. DEP’T OF ECON. & SOC. AFFS., <https://sdgs.un.org/goals> [<https://perma.cc/U7RQ-FQLP>] (last visited Nov. 13, 2022).

the heart of the CITES agenda.⁸⁷ United Nations implementation of the SDGs vary by secretariat, with the U.N. Environment Programme (“UNEP”) and U.N. Conference on Trade and Development (“UNCTAD”) heavily involved in SDG Twelve.⁸⁸ When it comes to macroeconomic solutions, these are not the only international organizations: The WTO is also a powerful influence on international trade.⁸⁹

Including the WTO in the SDGs’ agenda integration would be particularly powerful because trade policy can target the supply chain at several points: export of natural resources, points of transit along the value chain, and import as a finished article. A primary weakness in policing many endangered species’ supply chains is their relationship to legal, non-endangered species, whether through mixing at source of taking,⁹⁰ exploitation of confusion over species identification,⁹¹ or laundering through rules of origin loopholes.⁹²

While CITES initiatives admirably address listed species, they must be expanded to include those legal, non-endangered species that are used to facilitate trade in CITES-listed resources. These particular non-endangered species may be called “CITES-adjacent species.” Furthermore, if CITES Appendices list an exception to trade in an article using the listed resource, that article’s provenance must be completely verified.⁹³ A preferential system of tariffs could be applied progressively to these legal resources and articles on the basis of the extent of their supply chain’s verification.⁹⁴ An unverified article would face very high tariffs.

⁸⁷ G.A. Res. 70/1, Transforming Our World: The 2030 Agenda for Sustainable Development, at 14, 22–25 (Sept. 25, 2015).

⁸⁸ *Indicator 12.6.1*, U.N. ENV’T PROGRAMME, <https://www.unep.org/explore-topics/sustainable-development-goals/why-do-sustainable-development-goals-matter/goal-12-7> [<https://perma.cc/29RD-BKV9>] (last visited Nov. 13, 2022).

⁸⁹ *The WTO*, WTO, https://www.wto.org/english/thewto_e/thewto_e.htm [<https://perma.cc/A8EH-W48N>] (last visited Nov. 13, 2022).

⁹⁰ See *FAQ: Illegal, Unreported, and Unregulated Fishing*, PEW CHARITABLE TRS. (Aug. 27, 2013), <https://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2013/08/27/faq-illegal-unreported-and-unregulated-fishing> [<https://perma.cc/26BD-7WTP>]; WORLD WILDLIFE CRIME REPORT 2020, *supra* note 61, at 11, 15.

⁹¹ See WORLD WILDLIFE CRIME REPORT 2020, *supra* note 61, at 37–38.

⁹² See *id.* at 40.

⁹³ Cf. VICTORIA MUNDY & GLENN SANT, TRACEABILITY SYSTEMS IN THE CITES CONTEXT: A REVIEW OF EXPERIENCES, BEST PRACTICES AND LESSONS LEARNED FOR THE TRACEABILITY OF CITES-LISTED SHARK SPECIES 31, 42 (2015).

⁹⁴ Cf. Hale Neilson, *Combating OPEC at the Intersection of the Prisoners’ Dilemma and Stag Hunt*, 88 MISS. L.J. 455, 476–77 (2019) (proposing progressive tariffs on oil as a method of commodity price control); Vivien Deloge, *Road to 2015: The European Union*

An article with reliable and authentic confirmation not only that the taking was legal, but that every subsequent transfer was legal, would face very low tariffs. The many cases in between would experience a range of tariffs depending on the degree of information provided, always with the goal of making total supply chain transparency the cheapest option.⁹⁵

UNEP would expand existing projects to more comprehensively supply necessary scientific and legal expertise in species identification and environmental policy, providing scientifically based, impartial, easily accessible, and international criteria for verification and transparency.⁹⁶ This would be designed to be a firmer sort of encouragement than the current best-practices approach, whose deficiencies include fragmentation, opacity, and inconsistent application by private stakeholders.⁹⁷ Use of experienced monitoring bodies would correct existing problems in Generalized Systems of Preferences (“GSP”) compliance,⁹⁸ but as trade policy, it would not amount to the imposition of global administrative law.⁹⁹

Revenues from higher tariffs would be channeled back into UNEP, UN Development Programme (“UNDP”), and SDG initiatives as contributions from member nations.¹⁰⁰ These contributions would address existing

and the Realisation of the Human Right to Water, 16 N.Z. J. ENV'T L. 1, 27–29 (2012) (outlining progressive rates on water as a way of implementing water-saving policy goals).

⁹⁵ Cf. Deloge, *supra* note 94, at 27–29.

⁹⁶ See, e.g., CITES Standing Comm., SC70 Inf. 34, Managerial Best Practice Guidelines for Planning and Implementing CITES Traceability Systems, ¶¶ 9–14 (Oct. 5, 2018) [hereinafter SC70 Inf. 34], <https://cites.org/sites/default/files/eng/prog/e/E-SC70-Inf-34%20bis.pdf> [<https://perma.cc/ZQC2-UE6B>]; CITES Standing Comm., SC70 Inf. 32, Traceability: Technical Standards, ¶¶ 2–5 (Oct. 5, 2018); but see MUNDY & SANT, *supra* note 93, at 46–48. “Traceability systems implemented for CITES-listed timber vary widely across countries. As CITES does not prescribe specific traceability requirements for CITES-listed timber, Parties have considerable latitude to develop systems appropriate to their national contexts.” *Id.* at 46. This fragmentation and decentralization, though politically expedient, can pose barriers both to efficient use of funding, and to establishment of the large databases the authors subsequently propose: “[A] key constraint is the need to establish very large reference databases for most methods[,] . . . the cost of which may be prohibitive . . .” *Id.* at 47.

⁹⁷ Cf. SC70 Inf. 34, *supra* note 96, ¶¶ 4–8, 13, 16.

⁹⁸ See Eline Blot & Marianne Kettunen, *Green, Sustainable Partnership?—the GSP from an Environmental Perspective*, GSPHUB, <https://gsphub.eu/news/interview-ieep> [<https://perma.cc/77HE-DRSJ>] (last visited Nov. 13, 2022).

⁹⁹ See BENVENISTI, *supra* note 12, at 15, 18–21.

¹⁰⁰ Compare CITES Res. Conf. 11.3 (Rev. CoP18), Compliance and Enforcement, ¶¶ 6, 17–18 (Aug. 28, 2019) [hereinafter CITES Res. Conf. 11.3], <https://cites.org/sites/default/files/document/E-Res-11-03-R18.pdf> [<https://perma.cc/S2DA-4TBV>], with CITES CoP18 Doc. 16, CITES Tree Species Program, ¶¶ 4–8, 16–18, Annex 6 (June 3, 2019), <https://cites.org/sites/default/files/eng/cop/18/doc/E-CoP18-016.pdf> [<https://perma.cc/PC89-V6S5>],

funding needs as well as expand monitoring, repopulation, livelihoods, rule of law, anti-corruption, sustainable management transition efforts, ensuring less compliant members of the international community are given the help they need to become more compliant.¹⁰¹ While this would be a step in the direction of a more progressive trade policy by the WTO, it is supported by precedent surrounding the SDGs.¹⁰²

III. THE WTO, GSPs, AND GREEN INTERNATIONAL TRADE

The WTO exists to lower barriers to global trade.¹⁰³ Historically, it has sought to achieve this principally by enforcing the non-discrimination and tariff-binding provisions of the GATT, and by providing a mechanism for dispute settlement.¹⁰⁴ GATT Article XX allows nations to make a general exception to its provisions where “necessary to protect human, animal or plant life or health;” “necessary to secure compliance with laws or regulations which are not inconsistent with [the GATT], including those relating to customs enforcement;” and above all, “relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.”¹⁰⁵ Since the beginning of the Doha round of negotiations in 2001, the WTO has, as a body, moved from a neutral to an active posture in seeking to mitigate the consequences of free global trade on the environment.¹⁰⁶

and About the CITES Tree Species Programme, CITES TREE SPECIES PROGRAMME, <https://cites-tsp.org/about/> [<https://perma.cc/Z9NB-6MXX>] (last visited Nov. 13, 2022).

¹⁰¹ See, e.g., CITES Res. Conf. 11.3, *supra* note 100, ¶¶ 6, 17–18; CITES CoP18 Doc. 16, *supra* note 100, at Annex 6; see also CITES Res. Conf. 16.6, *supra* note 82, at 1–4.

¹⁰² See, e.g., LUDIVINE TAMIOTTI, ANNE OLHOFF, ROBERT THE, BENJAMIN SIMMONS, VESILE KULAÇOĞLU & HUSSEIN ABAZA, WTO & UNEP, TRADE AND CLIMATE CHANGE, at xix, 80–83 (2009) (“The general approach under WTO rules has been to acknowledge that some degree of trade restriction may be necessary to achieve certain policy objectives, as long as a number of carefully crafted conditions are respected. WTO case law has confirmed that WTO rules do not trump environmental requirements.”).

¹⁰³ *What We Stand For*, WTO, https://www.wto.org/english/thewto_e/whatis_e/what_stand_for_e.htm [<https://perma.cc/8ELC-EW8K>] (last visited Nov. 13, 2022); see WTO, UNDERSTANDING THE WTO 9–25 (5th ed. 2015) [hereinafter UNDERSTANDING THE WTO]; see also *What We Do*, WTO, https://www.wto.org/english/thewto_e/whatis_e/what_we_do_e.htm [<https://perma.cc/8S5M-AVGW>] (last visited Nov. 13, 2022).

¹⁰⁴ See UNDERSTANDING THE WTO, *supra* note 103, at 9–25.

¹⁰⁵ General Agreement on Tariffs and Trade art. XX, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194.

¹⁰⁶ See *Negotiations on Trade and the Environment*, WTO, https://www.wto.org/english/tratop_e/envir_e/envir_negotiations_e.htm [<https://perma.cc/EF6U-65N3>] (last visited Nov. 13, 2022).

A. *The Current WTO Framework Supporting Sustainable Natural Resources Management*

The WTO was created with a Trade and Environment Committee (“Committee”) in the 1994 Uruguay round, but the committee’s goals came into focus with the Doha round.¹⁰⁷ The Doha round contains three principal goals: (1) negotiating the relationship between the WTO and Multilateral Environmental Agreements (“MEAs”); (2) exchanging information between the WTO and MEA secretariats; and (3) reducing both tariff and non-tariff barriers to environmental goods and services.¹⁰⁸

At this point, the most visible body of activity of the Committee concerns discussion.¹⁰⁹ One more recent dialogue initiative is the Trade and Environmental Sustainability Structured Discussions, which began in 2021.¹¹⁰ The 2022 plan for these discussions involves “identification of good practices, voluntary actions and partnerships”¹¹¹ These discussions, as well as others, are therefore essentially an open forum which allows countries to report successful or novel attempts at regulation, but which does not contemplate any joint action through the WTO.¹¹²

The most concrete initiative by the Committee in recent years was the Environmental Goods Agreement (“EGA”).¹¹³ Negotiations began in 2014, but collapsed in 2016, due to last minute demands by China and subsequent abandonment by the United States during the Trump

¹⁰⁷ See UNDERSTANDING THE WTO, *supra* note 103, at 65–71.

¹⁰⁸ WTO, Ministerial Declaration of 14 November 2001, WTO Doc. WT/MIN(01)/DEC/1, 41 ILM 746 (2002).

¹⁰⁹ See, e.g., WTO, Ministerial Statement on Trade and Environmental Sustainability, WTO Doc. WT/MIN(21)/6/Rev.2 (Dec. 14, 2021) [hereinafter Ministerial Statement 2021], <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:WT/MIN21/6R2.pdf&Open=True> [<https://perma.cc/TH5W-UZHM>].

¹¹⁰ *New Initiatives Launched To Intensify WTO Work on Trade and the Environment*, WTO (Nov. 17, 2020), https://www.wto.org/english/news_e/news20_e/envir_17nov20_e.htm [<https://perma.cc/66FP-254L>]; see also *First Meeting Held to Advance Work on Trade and Environmental Sustainability*, WTO (Mar. 5, 2021), https://www.wto.org/english/news_e/news21_e/tessd_08mar21_e.htm [<https://perma.cc/G5RH-GQZ9>].

¹¹¹ Ministerial Statement 2021, *supra* note 109, at 4.

¹¹² See, e.g., *Members Note Work in Three Environment Initiatives and Discuss Anti-deforestation Efforts*, WTO (Feb. 2, 2022), https://www.wto.org/english/news_e/news22_e/envir_02feb22_e.htm [<https://perma.cc/9EK2-86CG>]; *Plastics Pollution Dialogue Advances Discussions, Eyeing MC12 Outcome*, WTO (June 21, 2021), https://www.wto.org/english/news_e/news21_e/ega_21jun21_e.htm [<https://perma.cc/AR2F-ZCLR>].

¹¹³ See generally *Environmental Goods Agreement (EGA)*, WTO, https://www.wto.org/english/tratop_e/envir_e/ega_e.htm [<https://perma.cc/PA2N-8JQX>] (last visited Nov. 13, 2022).

Administration.¹¹⁴ The EGA is forecast to remain a pawn in U.S.-China trade disputes and a “bottom-tier priority for the Biden administration.”¹¹⁵ Even were the EGA to have succeeded, however, its principal focus was on industrial and technological components in clean energy generation and environmental remediation.¹¹⁶ It was Chinese objections to measures regarding much of this technology that ended negotiations when they were about to succeed.¹¹⁷ The overly broad scope of the negotiations also may have interfered with their success by eliciting debate over definitions and by eliciting hostility from virtually every industry or country that had an economic stake against environmental goods in the market sectors they dominated.¹¹⁸

B. *GSPs, Tariff Rate Quotas, and the Environmental Agenda*

Since 1971, UNCTAD has coordinated developed nations’ adoption of GSPs.¹¹⁹ These schemes vary by nation, but fundamentally they form the basis on which developed nations reduce tariffs on goods from developing or least-developed nations.¹²⁰ GSP-eligible nations vary in size and wealth; for example, U.S. designations range from Tuvalu and Chad to Brazil and Thailand.¹²¹ In 2018, the U.S. GSP program covered 3,572 tariff entries, and the total value of GSP-eligible imports was \$23.6 billion.¹²²

Since the 1990s, GSPs have been influenced to some degree by environmental concerns.¹²³ Currently, the European Union’s (“EU”) GSP+

¹¹⁴ WILLIAM A. REINSCH, EMILY BENSON & CATHERINE PUGA, ENVIRONMENTAL GOODS AGREEMENT: A NEW FRONTIER OR AN OLD STALEMATE? 1–2 (2021).

¹¹⁵ *Id.* at 22.

¹¹⁶ *Environmental Goods Agreement*, OFF. OF THE U.S. TRADE REPRESENTATIVE, <https://ustr.gov/trade-agreements/other-initiatives/environmental-goods-agreement> [<https://perma.cc/U4JM-ZFJ6>] (last visited Nov. 13, 2022).

¹¹⁷ REINSCH ET AL., *supra* note 114, at 9–10.

¹¹⁸ *Id.* at 5–9.

¹¹⁹ *Generalized System of Preferences*, UNCTAD, <https://unctad.org/topic/trade-agreements/generalized-system-of-preferences> [<https://perma.cc/WXG5-ALUL>] (last visited Nov. 13, 2022).

¹²⁰ *See, e.g., Generalized Scheme of Preferences*, EUR. COMM’N, <https://ec.europa.eu/trade/policy/countries-and-regions/development/generalised-scheme-of-preferences/> [<https://perma.cc/V97K-Q6GB>] (last visited Nov. 13, 2022).

¹²¹ OFF. OF THE U.S. TRADE REPRESENTATIVE, U.S. GENERALIZED SYSTEM OF PREFERENCES GUIDEBOOK 14 (2020).

¹²² OFF. OF THE U.S. TRADE REPRESENTATIVE, GSP BY THE NUMBERS (2019).

¹²³ Ingo Borchert, Paola Conconi, Mattia Di Ubaldo & Cristina Herghelegiu, *The Pursuit of Non-Trade Policy Objectives in EU Trade Policy*, 20 WORLD TRADE REV. 623, 623–25, 628, 633–34 (2021).

(“Anything but Arms”) requires eligible countries to ratify twenty-seven international conventions, including CITES, and to participate in monitoring on effective, good faith implementation of the conventions.¹²⁴ However, there is little evidence that the GSP+’s environmental requirements have led to more sustainable practices in eligible nations.¹²⁵ Problems include under-participation, outdated requirements and “lack of financial resources and capacity [D]ata lags on environmental indicators impede monitoring and enforcement efforts”¹²⁶

Current GSPs therefore neither adequately address source nations’ exports of CITES resources, nor loopholes in importing nations’ enforcement, and their fragmented, discretionary nature allows continued existence of rogue markets.¹²⁷ Despite support by environmental law, such as separate civil and criminal penalties under the U.S. Lacey Act,¹²⁸ rules of origin can be exploited to transform more highly regulated resources into less regulated finished articles.¹²⁹ Supply chain loopholes are a general problem in international trade; for example, in 2021, the U.S. Trade Representative characterized entry of unfairly competitive Chinese metals into U.S. and EU markets as “leakage.”¹³⁰ The United States and EU have recently attempted to remedy this leakage by agreeing to a specialized Tariff Rate Quota system on steel and aluminum.¹³¹ Among other measures, this system lowers tariffs between the two parties within

¹²⁴ UNCTAD, GENERALIZED SYSTEM OF PREFERENCES: HANDBOOK ON THE SCHEME OF THE EUROPEAN UNION, at 15–16, U.N. Doc. UNCTAD/ITCD/TSB/Misc.25/Rev.5 (2021).

¹²⁵ Blot & Kettunen, *supra* note 98.

¹²⁶ *Id.*

¹²⁷ See, e.g., CITES, CoP19 Prop. XXX, *Consideration of Proposals for Amendment of Appendices I & II* [Proposal by Brazil], §§ 4–6, 8.3.1, 11 (June 23, 2022) [hereinafter CoP19 Prop. XXX], https://cites.org/sites/default/files/eng/cop/19/prop/as_received/E-Paubrasilia_echinata.pdf [<https://perma.cc/9ZQQ-6J63>]; see generally discussion, *supra* Sections I.A.1 and I.B.2.

¹²⁸ E.g., 16 U.S.C.A. § 3373 (Westlaw through Pub. L. No. 117-57).

¹²⁹ See CITES, *supra* note 17, at 69; see also *Generalised Scheme of Preferences Wood*, EUR. TRADE COMM’N, https://trade.ec.europa.eu/doclib/docs/2013/may/tradoc_151178.pdf [<https://perma.cc/HK9W-HCAZ>] (last visited Nov. 13, 2022); see also CoP19 Prop. XXX, *supra* note 127, §§ 6.5, 7.2, 8.3.1–8.3.2, 11.

¹³⁰ *USTR’s Tai Says EU Trade Deal Will Prevent Metals ‘Leakage’ from China*, REUTERS (Nov. 2, 2021, 2:50 PM), <https://www.reuters.com/article/usa-trade-eu-steel-idAFL1N2RT1RY> [<https://perma.cc/UQH4-S9GF>]; see also David Lawder, *USTR Tai Urges New Laws Aimed at Chinese Overseas Steel Investment*, U.S. NEWS: MONEY (Nov. 2, 2021, 2:51 PM), <https://money.usnews.com/investing/news/articles/2021-11-02/ustrs-tai-says-eu-trade-deal-will-prevent-metals-leakage-from-china> [<https://perma.cc/XT32-ABR4>].

¹³¹ Tom Lee, *Details of the U.S.-EU Aluminum and Steel Tariff Rate Quota System*, AM. ACTION F. (Nov. 9, 2021), <https://www.americanactionforum.org/research/details-of-the-u-s-eu-aluminum-and-steel-tariff-rate-quota-system/> [<https://perma.cc/4HHH-AM6D>].

a given quota, keeping in place tariffs on Chinese metals, and explicitly identifying stages in the manufacturing of the fifty-four categories of steel products the system encompasses.¹³² While the agreement was likely motivated in part by political, economic, and industrial interests, it was the immediate product of the Glasgow Climate Pact.¹³³ China's steel sector is estimated to generate between 10–20% of the country's total emissions, and its industry relies on dirtier power, such as use of coal for fuel as well as a metallurgical component.¹³⁴ Global steel production is estimated to generate 10% of total global carbon emissions.¹³⁵

The White House claims this agreement is novel because it is “carbon-based.”¹³⁶ This may simply be a reference to the context in which the deal was struck, as official sources note only resolutions to take into account carbon intensity during future negotiations.¹³⁷ However, given that policy-oriented trade agreements such as GSPs have historically determined tariffs by taking into account countries' economic factors, and, despite GSP+ ambitions, have been generally decoupled from compliance under other treaties, there is still some merit to White House claims of novelty.¹³⁸ The metals agreement reached at Glasgow is perhaps a first glimpse of a new generation of environmental initiatives in international trade, which, as the EGA had imagined, direct tariffs according to their environmental, rather than economic, utility.¹³⁹

¹³² *Id.*; see also Ewelina Czaplá, *The Results of COP26*, AM. ACTION F. (Nov. 17, 2021), <https://www.americanactionforum.org/insight/the-results-of-cop26/> [https://perma.cc/UYH8-YBXR].

¹³³ See *id.*

¹³⁴ *Id.*; Jeff Mason & Jan Strupczewski, *EU and U.S. End Clash Over Steel and Aluminum, Take Aim at China's 'Dirty' Steel*, REUTERS: AEROSPACE & DEF. (Oct. 31, 2021, 4:30 PM), <https://www.reuters.com/business/aerospace-defense/eu-us-end-clash-over-steel-aluminum-tariffs-work-global-deal-2021-10-31/> [https://perma.cc/6M95-TFR7].

¹³⁵ See *FACT SHEET: The United States and European Union To Negotiate World's First Carbon-Based Sectoral Arrangement on Steel and Aluminum Trade*, THE WHITE HOUSE (Oct. 31, 2021) [hereinafter *White House TRQ Fact Sheet*], <https://www.whitehouse.gov/briefing-room/statements-releases/2021/10/31/fact-sheet-the-united-states-and-european-union-to-negotiate-worlds-first-carbon-based-sectoral-arrangement-on-steel-and-aluminum-trade/> [https://perma.cc/2KQH-PKSY].

¹³⁶ *Id.*; see also *Fact Sheet: U.S.-EU Arrangements on Global Steel and Aluminum Excess Capacity and Carbon Intensity*, OFF. OF THE U.S. TRADE REPRESENTATIVE (Oct. 2021), <https://ustr.gov/about-us/policy-offices/press-office/fact-sheets/2021/october/fact-sheet-us-eu-arrangements-global-steel-and-aluminum-excess-capacity-and-carbon-intensity> [https://perma.cc/U5MR-JZXD].

¹³⁷ See *id.*; *White House TRQ Fact Sheet*, *supra* note 135.

¹³⁸ Compare *White House TRQ Fact Sheet*, *supra* note 135, with UNCTAD, *supra* note 124, at 6–8, 13–15.

¹³⁹ Cf. REINSCH ET AL., *supra* note 114, at 21–22.

C. *Negotiating an EGA to Close CITES Loopholes*

Conventional commodities under the abandoned EGA, or GSP+ and Tariff Rate Quota systems share problems with trade in CITES-listed resources: lack of sufficient national enforcement and international monitoring, rule of origin loopholes, and rogue markets.¹⁴⁰ These trade programs form precedent on which to build an EGA supporting CITES policy goals. There are several reasons why, as a basic concept, such an agreement could be accepted.

First, CITES has been ratified in some form by 184 parties, including China.¹⁴¹ Most of the world has already made at least a nominal acknowledgment of the need to tightly control these endangered resources, contrasting with more rebellious attitudes surrounding climate commitments.¹⁴² Second, CITES covers a very limited set of resources, meaning economic and political disputes would at least be less harmful than in EGA and GSP negotiations.¹⁴³ Due to the success of the Convention so far, trade in endangered species has been diminished, if not totally controlled, a positive indicator supporting continued action.¹⁴⁴ Furthermore, while trade in certain CITES-listed resources can total hundreds of millions of dollars annually, these totals pale in comparison to annual import value of non-CITES-listed resources in the same category.¹⁴⁵ Third, the CITES CoP and Secretariat have already catalogued

¹⁴⁰ See *supra* Part I.

¹⁴¹ *List of Contracting Parties*, CITES, <https://cites.org/eng/disc/parties/chronolo.php> [<https://perma.cc/Y28K-WHML>] (last visited Nov. 13, 2022).

¹⁴² Compare *id.*, with, e.g., Mathiesen, *supra* note 14.

¹⁴³ See CITES, *supra* note 17, at 1; see also, e.g., EUR. COMM'N, TRADE/HUMAN RIGHTS: WITHDRAWAL OF CAMBODIA'S PREFERENTIAL ACCESS TO THE EU MARKET—FACTSHEET 3–4 (2020).

¹⁴⁴ See *The CITES a Success?*, EUR. ACAD. L., https://www.era-comm.eu/Biodiversity_and_Wildlife_Trafficking/module_1/1_Chapter_13_success.html [<https://perma.cc/QM9Q-S8L4>] (last visited Nov. 13, 2022); *CITES Has Its Critics but Record Breaking Conference Is Critical for World's Wildlife*, WORLD WIDE FUND FOR NATURE (Sept. 19, 2016) [hereinafter *CITES Has Its Critics*], https://wwf.panda.org/wwf_news/?278415/CITES-has-its-critics-but-record-breaking-conference-is-critical-for-worlds-wildlife [<https://perma.cc/XUK8-UV6C>]; *CITES CoP16: Successes and Failures*, ANIMAL WELFARE INST.: AWI Q. (Spring 2013), <https://awionline.org/awi-quarterly/2013-spring/cites-cop16-successes-and-failures> [<https://perma.cc/SJ6J-XKYD>]; see also *Wildlife Treaty Comes of Age—CITES Celebrates 30 Years of Achievement*, CITES (Jan. 12, 2021), https://cites.org/eng/news/pr/2005/050_630_30cites.shtml [<https://perma.cc/L2BN-CEBC>].

¹⁴⁵ Compare WORLD WILDLIFE CRIME REPORT 2020, *supra* note 61, at 37, with *China Wood*

the resources in question, identified specific threats, and amassed decades' worth of expert scientific and economic input on factors affecting trade in listed species.¹⁴⁶

The CITES Secretariat already gathers information, collaborates with parties, and offers guidance on trade.¹⁴⁷ But the plain language of the treaty makes it difficult to address leakage through mixing or fraud, other than through an extravagantly comprehensive enforcement, or achieve lasting change in root production and end-consumption patterns.¹⁴⁸ An EGA, only one of many necessary solutions, could be implemented on a shorter time scale and tighter budget. Within the examples given, it could cover the types of *hongmu* that are not true *Dalbergia* species and that can be used as legal pretenses to smuggle genuine rosewood; it could cover products with annotated exceptions for certain uses, such as Pernambuco; it could cover works of art made from ivory or tortoiseshell that claim pre-convention provenance, but are in fact made with illegal new material; and finally, it could cover yet-unlisted species and resources that are vulnerable to unsustainable practices or that are undergoing reviews of significant trade.¹⁴⁹ In cases where a country categorically refuses to follow the international community, such as Japan on the topic of whaling, an EGA might not be feasible, or it would have to touch more remotely related goods. This could include unlisted fish species caught by the whaling fleet or unlisted species which conventional fisheries kill as bycatch of listed species.¹⁵⁰ The most politically

Imports by Country in US\$ Thousand 2018, WORLD INTEGRATED TRADE SOLS., https://wits.worldbank.org/CountryProfile/en/Country/CHN/Year/2018/TradeFlow/Import/Partner/by-country/Product/44-49_Wood [<https://perma.cc/BH5D-W7W7>] (last visited Nov. 13, 2022), and FLANDERS INV. & TRADE, *THE WOOD MARKET IN CHINA 1–4* (2019) (where 2018 rosewood imports totaled approximately \$560 million, total wood imports totaled \$21.09 billion).

¹⁴⁶ See *Cooperation with States, Agencies and Organisations*, EUR. ACAD. L., https://www.era-comm.eu/Biodiversity_and_Wildlife_Trafficking/module_1/1_Chapter_10_coop.html [<https://perma.cc/9MFW-QMNN>] (last visited Nov. 13, 2022).

¹⁴⁷ See, e.g., *CITES Permit System*, CITES, https://cites.org/eng/prog/Permit_system [<https://perma.cc/VR5E-LQ6Z>] (last visited Nov. 13, 2022); *Export Quotas*, CITES, https://cites.org/eng/resources/export_quotas [<https://perma.cc/9JL8-AF3D>] (last visited Nov. 13, 2022); *Non-Detriment Findings*, CITES, <https://cites.org/eng/prog/ndf/index.php> [<https://perma.cc/CSB8-KWBS>] (last visited Nov. 13, 2022).

¹⁴⁸ See CoP19 Prop. XXX, *supra* note 127, §§ 6.2, 7.2, 8.3.1.

¹⁴⁹ See *Review of Significant Trade (RST)*, CITES, <https://cites.org/eng/imp/sigtradereview> [<https://perma.cc/VMF8-8BZT>] (last visited Nov. 13, 2022).

¹⁵⁰ See *generally Bycatch*, INT'L WHALING COMM'N, <https://iwc.int/bycatch> [<https://perma.cc/S4LU-GPCF>] (last visited Nov. 13, 2022).

controversial topics may best be avoided in favor of laying a solid foundation—a test case for future, broader EGAs.¹⁵¹

The goals of a CITES-related EGA should be fourfold: (1) to create strong economic incentives for sustainable practices that further the CITES mission; (2) to eliminate havens and rogue markets through universal participation by markets at all stages of the manufacturing process; (3) to strengthen information-gathering and reporting initiatives so that illegally harvested materials can be more easily reported; and (4) to aid source countries of CITES-listed species to improve their national enforcement and monitoring. With 164 members, including all major economies, the WTO is the necessary global setting for accomplishing these goals.¹⁵²

IV. COLLABORATION WITH CITES AND OTHER MULTILATERAL ENVIRONMENTAL AGREEMENT SECRETARIATS

A. *Impartiality Through Subject Matter Expertise*

Though such an EGA would benefit widely ratified treaties such as CITES and result in favorable treatment of developing countries' sustainably managed exports, it would find acceptance in the developing world only by demonstrating its economic utility—it would need to avoid criticism as “colonialist” intervention in developing nations' sovereign rights to their natural resources.¹⁵³ Normally, new trade agreements are

¹⁵¹ Cf. *CITES Has Its Critics*, *supra* note 144 (“CITES is a consensus-orientated body but it can take decisions by two-thirds majority when required, so that some debates have inevitably become politicised.”).

¹⁵² See *Members and Observers*, WTO, https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm [<https://perma.cc/W9F3-N74D>] (last visited Nov. 13, 2022).

¹⁵³ See International Covenant on Economic, Social and Cultural Rights arts. 1, 11, 25, opened for signature Dec. 19, 1966, 993 U.N.T.S. 3; Zack Colman, *Emerging Economies Spar with U.S. over ‘Carbon Colonialism’*, POLITICO (Nov. 11, 2021, 5:17 PM), <https://www.politico.com/news/2021/11/11/us-europe-climate-pledges-developing-countries-520968> [<https://perma.cc/27RZ-MCNT>]; see also Douglas de Castro, *The Colonialist Aspects of the International Environmental Law—Treaties as Promoters of Continuous Structural Violence*, 5 GRONINGEN J. INT’LL. 168, 168–69, 189–90 (2017); Ronnie D. Lipschutz, *Why Is There No International Forestry Law?: An Examination of International Forestry Regulation, Both Public and Private*, 19 UCLA J. ENV’T L. & POL’Y 153, 154–60 (2001); cf. CoP19 Prop. XX [Proposal by India and Nepal], ¶¶ A, C(11)(iii) (June 23, 2022), https://cites.org/sites/default/files/eng/cop/19/prop/as_received/E-Dalbergia_Sissoo.pdf [<https://perma.cc/9NXM-HRHQ>].

negotiated by specialists in international trade, considering primarily political and macroeconomic interests.¹⁵⁴ For its part, the WTO eschews any regulatory role with regard to the environment.¹⁵⁵ In a joint 2015 publication, the WTO and CITES Secretariat appear at first glance to hold each other at arm's length, characterizing their cooperation as “a practical framework that enables trade in wildlife specimens to contribute to sustainable development and use.”¹⁵⁶ However, the publication also acknowledges the “intensification” of “worldwide efforts to achieve sustainable development,” and contemplates “more active forms of cooperation, including targeted institutional and policy dialogues, and joint technical assistance and capacity building activities.”¹⁵⁷ So far, this has taken the form of CITES participation in the Committee's work and advice to national governments—but the weight of this cooperation is belied by CITES' observer status in Committee proceedings.¹⁵⁸

Since 2015, circumstances have changed: The ambitious EGA negotiations collapsed;¹⁵⁹ sustainable development has generally become a higher priority despite stagnation of the global economy and wealth consolidation;¹⁶⁰ the Paris Agreement was negotiated and the United States joined, left, and rejoined;¹⁶¹ rosewood was banned entirely by CITES and hundreds of new species have been listed or changed status;¹⁶² and Japan

¹⁵⁴ See *Whose WTO Is It Anyway?*, WTO, https://www.wto.org/english/thewto_e/whatis_e/tif_e/org1_e.htm [<https://perma.cc/HH42-5STY>] (last visited Nov. 13, 2022); *World Trade Organization (WTO)*, OFF. OF THE U.S. TRADE REPRESENTATIVE, <https://ustr.gov/issue-areas/trade-organizations/world-trade-organization-wto> [<https://perma.cc/FJ8Z-D6SH>] (last visited Nov. 13, 2022).

¹⁵⁵ See UNDERSTANDING THE WTO, *supra* note 103, at 65 (“The WTO is not an environmental agency . . .”).

¹⁵⁶ WTO & CITES, CITES AND THE WTO: ENHANCING COOPERATION FOR SUSTAINABLE DEVELOPMENT 4 (2015) [hereinafter CITES AND THE WTO].

¹⁵⁷ *Id.* at 9–11.

¹⁵⁸ *Id.*; see generally *International Intergovernmental Organizations Granted Observer Status to WTO Bodies*, WTO, https://www.wto.org/english/thewto_e/igo_obs_e.htm [<https://perma.cc/TP53-LM2R>] (last visited Nov. 13, 2022).

¹⁵⁹ See discussion, *supra* Section III.A.

¹⁶⁰ See U.N. INTER-AGENCY TASK FORCE ON FIN. FOR DEV., FINANCING FOR SUSTAINABLE DEVELOPMENT REPORT 2021, at xiii–10, U.N. Sales No. E.21.I.6 (2021).

¹⁶¹ Melissa Denchak, *Paris Climate Agreement: Everything You Need to Know*, NRDC (Feb. 19, 2021), <https://www.nrdc.org/stories/paris-climate-agreement-everything-you-need-know> [<https://perma.cc/29FD-G8XG>].

¹⁶² See *New CITES Trade Rules Come into Effect as 2017 Starts*, CITES (Jan. 12, 2021), https://cites.org/eng/new_CITES_trade_rules_come_into_effect_as_2017_starts_02012017 [<https://perma.cc/887P-WG39>].

left the International Whaling Commission, among many other developments.¹⁶³ There may now be more appetite for CITES and the WTO to take their active cooperation to the next level, achieving a degree of more formal integration.¹⁶⁴

Because the preferential tariffs in a CITES-related EGA would be decided on the basis of conservation needs rather than economic benefit, the CITES experts in environmental science and environmental crime would take the lead in proposing a tariff schedule, supported by trade experts.¹⁶⁵ The roles in Committee meetings would reverse, with WTO economic experts backstopping a fundamentally environmental agreement.¹⁶⁶ The CITES Secretariat's long experience of monitoring and field work would enable it to identify with particularity the measures that could achieve desired microeconomic effects.¹⁶⁷ Finding itself "at the intersection between trade, the environment and development,"¹⁶⁸ the CITES Secretariat is also in the best position to mediate between trade associations such as the International Tropical Timber Organization and more technical environmental organizations such as the International Union for Conservation of Nature ("IUCN").¹⁶⁹ Most importantly, however, these impartial observations and technical discussions on the science of conservation would take tariff negotiations out of the realm of political jockeying for economic gain and elevate them to the realm of existing commitments under CITES.

¹⁶³ See discussion, *supra* Section I.A.3.

¹⁶⁴ Cf. WTO & U.N. ENV'T, MAKING TRADE WORK FOR THE ENVIRONMENT, PROSPERITY AND RESILIENCE 90–95 (2018).

¹⁶⁵ See Phoebe Barnard, William R. Moomaw, Lorenzo Fioramonti, William F. Laurance, Mahmoud I. Mahmoud, Jane O'Sullivan, Christopher G. Rapley, William E. Rees, Christopher J. Rhodes, William J. Ripple, Igor P. Semiletov, John Talberth, Christopher Tucker, Daphne Wysham & Gina Ziervogel, *World Scientists' Warnings into Action, Local to Global*, SCI. PROGRESS, Oct.–Dec. 2021, at 1, 2–4, 17–21.

¹⁶⁶ Cf. *id.*

¹⁶⁷ See, e.g., JOHN A. HART, CITES, EVALUATION OF THE FIELD DATA COLLECTION: FORMS, SAMPLING DESIGN, LEM: MONITORING ILLEGAL KILLING OF ELEPHANTS (MIKE) (2001), https://cites.org/fra/prog/mike/pilot/tech_rep5.shtml [<https://perma.cc/BQ8A-HNZH>]; *Methods, CITES WILDLIFE TRADEVIEW*, <https://tradeview.cites.org/en/methods> [<https://perma.cc/ZAJ7-8AC6>] (last visited Nov. 13, 2022).

¹⁶⁸ CITES AND THE WTO, *supra* note 156, at 4.

¹⁶⁹ See *ITTO-CITES Programme on Tree Species*, CITES, <https://cites.org/eng/prog/itto.php> [<https://perma.cc/UJF6-28YF>] (last visited Nov. 13, 2022); CITES & IUCN, MEMORANDUM OF UNDERSTANDING BETWEEN THE SECRETARIAT OF THE CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA AND IUCN—THE WORLD CONSERVATION UNION (Oct. 8, 1999), <https://cites.org/sites/default/files/eng/disc/coop/CITES-IUCN.pdf> [<https://perma.cc/D35Y-2RUZ>].

B. A GSP+-Like Set of Conditions and Benefits for Signatories of a CITES-Related EGA

1. Integration with the WTO to Achieve More Comprehensive Monitoring

CITES and the WTO both have reporting requirements.¹⁷⁰ However, given that the principal problems in CITES supply chains are transparency, fraud, and smuggling, more stringent reporting requirements would be a central commitment of a new agreement.¹⁷¹ Trade data complements ecological data gathered by other MEA secretariats, such as those of the Convention on Migratory Species and the Convention on Biodiversity.¹⁷²

CITES requires annual reports of legal trade, but the contents are subject only to guidelines and are “not subject to compliance procedures.”¹⁷³ The findings of the UNODC World Wildlife Crime Report 2020 support a more demanding reporting policy with regard to current guidelines, as well as the need for new areas of reporting.¹⁷⁴ In the cases of both illegally harvested timber and illegal fishing, supply “is not sold in acknowledged illegal markets, but rather fed into legal industries where its illegal origin is obscured.”¹⁷⁵ Illegal markets must be reconstructed forensically using a combination of data from legal trade and seizures.¹⁷⁶ The UNODC identifies a host of data that are not often available, from business structures

¹⁷⁰ *Annual report*, CITES, https://cites.org/eng/imp/reporting_requirements/annual_report [<https://perma.cc/PLJ3-AH3U>] (last visited Nov. 13, 2022); *Ad hoc reports*, CITES, https://cites.org/eng/resources/reports/Ad_hoc_reports [<https://perma.cc/8K2G-Z2UE>] (last visited Nov. 13, 2022); William Alan Reinsch, Sanvid Tuljapurkar & Jack Caporal, *Transparency at the WTO: Why Does Transparency Matter, and Are Members Meeting Their Obligations?*, CTR. FOR STRATEGIC & INT’L STUD. (Apr. 22, 2020), <https://www.csis.org/analysis/transparency-wto-why-does-transparency-matter-and-are-members-meeting-their-obligations> [<https://perma.cc/V2LN-XAJL>].

¹⁷¹ See Greenberg, *supra* note 51, at 433–35; Waite, *supra* note 56, at 329–32, 340–42.

¹⁷² *E.g.*, *Database of Scientific Assessments*, CONVENTION ON BIOLOGICAL DIVERSITY, <https://www.cbd.int/assessments/> [<https://perma.cc/8ZDP-ULP8>] (last visited Nov. 13, 2022) (one of many information-sharing programs across the website); CMS Res. 11.24, Central Asian Mammals Initiative, at 13, U.N. Doc. UNEP/CMS/Resolution 11.24 (Feb. 2020), https://www.informea.org/sites/default/files/decisions/cms/cms_cop13_res.11.24_rev.cop13_e.pdf [<https://perma.cc/47DT-S8CR>].

¹⁷³ *Annual report*, *supra* note 170; *Annual illegal trade report*, CITES, https://cites.org/eng/resources/reports/Annual_Illegal_trade_report [<https://perma.cc/F3XX-DEEP>] (last visited Nov. 13, 2022).

¹⁷⁴ See WORLD WILDLIFE CRIME REPORT 2020, *supra* note 61, at 13, 19–27 (“[B]oth the legal trade data and the seizure data need to be considered in assessing the illicit flow.”).

¹⁷⁵ *Id.* at 13; PEW CHARITABLE TRS., *supra* note 90.

¹⁷⁶ WORLD WILDLIFE CRIME REPORT 2020, *supra* note 61, at 13–14, 21–22.

and illicit financial flows to “controlled deliveries” and centralized databases for law enforcement.¹⁷⁷ Two areas in particular stand out as candidates that could benefit from a collaboration with the WTO: chain of custody data and trade in non-CITES-listed species.¹⁷⁸

Country notifications to the WTO revolve around policy, rather than the factual circumstances or history of the country’s trade.¹⁷⁹ This is similar in concept to the mandatory Implementation Reports under CITES, which regard “legislative, regulatory and administrative measures taken to enforce the Convention.”¹⁸⁰ The WTO also collaborates with UNCTAD, the World Bank, and other organizations to compile statistics on import and export data.¹⁸¹

To facilitate data gathering goals, a CITES-related EGA would factor adequacy of reporting into its tariff calculations. One set of preferences, applied on an import-by-import basis, would be based on the degree to which there is complete data on origin and chain of custody of the given import. Examples include certification of legal catch aboard a factory ship or authentication of instruments or art made with pre-convention rosewood, Pernambuco, tortoiseshell, ivory, and other species.¹⁸² While digital systems for supply chain tracking of timber have already been implemented in Brazil, hacking, fraudulent data entry, inaccurate algorithms, and lack of open data sources have all been cited as threats to the systems’ integrity.¹⁸³ Emerging technologies such as blockchain would solve some of these problems by providing a secure, efficient, easily accessible, and transferrable certification system; improvements in digital infrastructure and increased reporting requirements to gather larger datasets would also help.¹⁸⁴

¹⁷⁷ *Id.* at 21–23.

¹⁷⁸ *Id.* at 22, 24.

¹⁷⁹ See Reinsch et al., *supra* note 170.

¹⁸⁰ *Implementation report*, CITES, https://cites.org/eng/resources/reports/Implementation_report [https://perma.cc/6VEC-429D] (last visited Nov. 13, 2022).

¹⁸¹ *World Integrated Trade Solutions*, WORLD BANK, <https://wits.worldbank.org/> [https://perma.cc/HX4Q-6H4U] (last visited Nov. 13, 2022); see also *About Us*, WORLD BANK, <https://data.worldbank.org/about> [https://perma.cc/K75Z-VYSF] (last visited Nov. 13, 2022).

¹⁸² See *FAQ: Illegal, Unreported, and Unregulated Fishing*, *supra* note 90; *Certification*, CABINET JEAN-FRANCOIS RAFFINARCHETIERS—EXPERTS, <http://www.jfraffin.fr/en/services/> [https://perma.cc/AF5L-6VD6] (last visited Nov. 13, 2022) (select “Values & Services”; then select “Certification”); cf. Joseph Furlett, *The Insufficiency of the Musical Instrument Passport Program Under CITES and the Lacey Act: The Need for a Centralized Wood Title and Certification System for Manufactured Wood Products and Wooden Musical Instruments*, 48 J. MARSHALL L. REV. 495, 501–06 (2015).

¹⁸³ MUNDY & SANT, *supra* note 93, at 53–54.

¹⁸⁴ See WORLD ECON. F., UNLOCKING TECHNOLOGY FOR THE GLOBAL GOALS 16–17, 19, 21–22 (2020).

Another factor in calculating tariffs, applied by country of origin, would be the adequacy of that country's submission of aggregate macro and microeconomic datasets pertinent to the enforcement and scientific goals of CITES, its affiliates, and certain stakeholders.¹⁸⁵ UNEP and SDG initiatives have begun to embrace the power of big data and data analytics in conducting environmental research, not only using cutting-edge technologies, but actively researching and developing digital technology for SDG-specific use.¹⁸⁶ While access to data may be limited by human rights concerns over privacy,¹⁸⁷ new Artificial Intelligence ("AI") tools can be developed to synthesize quantitative and qualitative data provided by governmental sources in environmental, customs, and economic fields.¹⁸⁸ This data can be used not only to analyze trends and launch new policies, but to predict the movements of environmental criminals, smugglers, and noncompliant manufacturers for enforcement purposes.¹⁸⁹

Rather than fixing tariff/data relationships in an article of the agreement, tariff percentages and data requirements would be determined dynamically through a regularly updated schedule and in response to evolving trends.¹⁹⁰ While CITES already collaborates with the World

¹⁸⁵ See *id.*; see also, e.g., *CITES Secretariat and UNEP-WCMC Develop Innovative Ways To Use the CITES Checklist and Species+*, U.N. ENV'T PROGRAMME WORLD CONSERVATION MONITORING CTR. (Oct. 2015), <https://www.unep-wcmc.org/en/news/cites-secretariat-and-unesp-wcmc-develop-innovative-ways-to-use-the-cites-checklist-and-species> [<https://perma.cc/CLH7-8TF6>]; *Frequently Asked Questions*, IUCN RED LIST, <https://www.iucnredlist.org/about/faqs#Who%20assesses%20taxa%20for%20the%20Red%20List> [<https://perma.cc/9CTX-GSUY>] (last visited Nov. 13, 2022) (select "Who assesses species for The IUCN Red List?"); *About ITTO*, INT'L TROPICAL TIMBER ORG., https://www.itto.int/about_itto/ [<https://perma.cc/6RE2-MACA>] (last visited Nov. 13, 2022); *Our Work*, INT'L ALL. OF VIOLIN & BOW MAKERS FOR ENDANGERED SPECIES, <https://www.alliance-usa.org/our-work/> [<https://perma.cc/C55Q-FPUR>] (last visited Nov. 13, 2022).

¹⁸⁶ COAL. FOR DIG. ENV'T SUSTAINABILITY, ACTION PLAN FOR A SUSTAINABLE PLANET IN THE DIGITAL AGE 3, 13–14, 24–27 (2022) [hereinafter CODES]; see also U.N. SEC. GEN., *Road Map for Digital Cooperation: Implementation of the Recommendations of the High-level Panel on Digital Cooperation*, ¶ 10, U.N. Doc A/74/821 (May 29, 2020), <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N20/102/51/PDF/N2010251.pdf?OpenElement> [<https://perma.cc/443U-4GHX>].

¹⁸⁷ See *id.* ¶¶ 25, 44, 78.

¹⁸⁸ See Gabriella D'Amore, Assunta Di Vaio, Daniel Balsalobre-Lorente & Flavio Boccia, *Artificial Intelligence in the Water-Energy-Food Model: A Holistic Approach Towards Sustainable Development Goals*, SUSTAINABILITY, Jan. (II) 2022, at 1, 3–4, 7–9; CODES, *supra* note 186, at 44–48; cf. INT'L TELECOMM. UNION, UNITED NATIONS ACTIVITIES ON ARTIFICIAL INTELLIGENCE (AI) 8, 88–90 (2021), https://www.itu.int/dms_pub/itu-s/opb/gen/S-GEN-UNACT-2021-PDF-E.pdf [<https://perma.cc/B9ND-BPLF>].

¹⁸⁹ Cf. *id.* at 88–90, 143–48, 163–65.

¹⁹⁰ Compare CITES art. VIII(6)–(8) Mar. 3, 1973, 27 U.S.T. 108, with WORLD WILDLIFE

Customs Organization to gather “information of common interest,” as well as with INTERPOL, the UNODC, and the World Bank,¹⁹¹ an EGA adding the WTO to this list would balance current legal collaboration with greater economic incentives, particularly encouraging reporting by private parties.

CITES works with other MEAs to gather and share scientific data through independent and coordinated activities and through submissions by State Parties.¹⁹² Research by the Convention on Migratory Species focuses on fauna and provides a more complete picture of species at the beginning of supply chains, often before the taking or the analysis of the manner of taking.¹⁹³ The Convention on Biodiversity focuses on conservation, sustainable use, and restoration of species, as opposed to illegal trade, and emphasizes a holistic approach focusing on biome health and social patterns.¹⁹⁴ The IUCN is not derived from any particular treaty but works closely with the UN Educational, Scientific and Cultural Organization (“UNESCO”) and UNEP.¹⁹⁵ The IUCN provides a comprehensive source of scientific research on endangered species around the world, but

CRIME REPORT 2020, *supra* note 61, at 13–14 (“[T]his edition represents a first assessment of trends. In several instances, these trends have been dramatic. . . . Some previously covered markets . . . are not continued in this report, due to a lack of available new data.”), and *Raw Data to Red List*, IUCN RED LIST, <https://www.iucnredlist.org/assessment/process#Prioritising%20efforts%20for%20reassessing%20speciose%20taxonomic%20groups> [<https://perma.cc/B7XW-6TBY>] (last visited Nov. 13, 2022) (“[R]eassessments are vital for using The IUCN Red List as an indicator of biodiversity trends over time . . . and all assessments on the Red List become officially out of date after ten years.”).

¹⁹¹ *E.g.*, CITES, MEMORANDUM OF UNDERSTANDING BETWEEN THE WORLD CUSTOMS ORGANIZATION (WCO) AND THE CITES SECRETARIAT (July 4, 1996), <https://cites.org/sites/default/files/eng/disc/sec/CITES-WCO.pdf> [<https://perma.cc/2VMM-FGRQ>]; *ICCWC partners*, CITES, <https://cites.org/eng/prog/iccwc/partners.php> [<https://perma.cc/P95F-ZUA5>] (last visited Nov. 13, 2022).

¹⁹² *See Cooperation and Partnerships*, *supra* note 81; *see also MEA Information and Knowledge Management Initiative*, CONVENTION ON BIOLOGICAL DIVERSITY, <https://www.cbd.int/mea/ikm/> [<https://perma.cc/BQT5-V2TR>] (last visited Nov. 13, 2022).

¹⁹³ *See Scientific Council (SsC)*, CMS, <https://www.cms.int/en/convention-bodies/scientific-council> [<https://perma.cc/5UTN-NNK9>] (last visited Nov. 13, 2022); CMS, *supra* note 20, arts. II, V.

¹⁹⁴ CONVENTION ON BIOLOGICAL DIVERSITY, U.N. Doc. CBD/WG2020/3/3, Annex, *First Draft of the Post-2020 Global Biodiversity Framework*, ¶ 11 (July 5, 2021), <https://www.cbd.int/doc/c/abb5/591f/2e46096d3f0330b08ce87a45/wg2020-03-03-en.pdf> [<https://perma.cc/4DTC-LY9G>]; POPULATION MATTERS, RESPONSE TO SYNTHESIS OF THE PARTIES 1 (2019), <https://www.cbd.int/api/v2013/documents/51116D6A-5AC1-D122-C4D0-4CBB326B10AD/attachments/208039/PopulationMatters.pdf> [<https://perma.cc/8QM8-64NS>].

¹⁹⁵ *About IUCN: History*, IUCN, <https://www.iucn.org/about-iucn/history> [<https://perma.cc/TUS9-KMYJ>] (last visited Nov. 13, 2022); *International Union for Conservation of Nature*, UNESCO, <https://whc.unesco.org/en/iucn> [<https://perma.cc/A3L9-KVZR>] (last visited Nov. 13, 2022).

it is in need of additional resources to expand its coverage of species and ensure its coverage of obscure or hard-to-identify flora species is up to date.¹⁹⁶ Although CITES also partners with the International Trade Centre, UNCTAD, and others to gather trade data, by its nature, the illicit trade in CITES-listed species does not want to be discovered. The global nature of supply chains also contrasts with the static nature of a species' range, posing greater informational, legal, and administrative problems. The proposed EGA would therefore not only incentivize sustainable practices but also the generation and sharing of hard-to-find, critical data.

2. Sustainable Development and Encouraging Participation by Developing Nations

Another set of preferences in a CITES-related EGA should be based on the sustainable practices used at all stages of the manufacturing and importation process but particularly for sustainable management of the origin resources. Tariffs would be levied on goods and resources related to the endangered species trade that also lack proof of sustainable management.¹⁹⁷ Preferences for sustainably managed and supply chain compliant goods would have to be substantial enough to create a genuine competitive advantage that would effectively subsidize the transition to sustainable production.¹⁹⁸

The UNODC report suggests that there is indeed the political will among developed countries to engage in more vigorous monitoring and enforcement against international environmental crimes.¹⁹⁹ Because Article XX of the GATT already allows CITES to completely ban endangered species, it could also be used to justify unilateral tariffs on species and products involved in CITES violations.²⁰⁰ However, a CITES-related EGA should not betray the mission of both organizations by becoming a developed nations' club.²⁰¹ As part of the Sustainable Development Agenda,

¹⁹⁶ See *Challenges of Scaling Up and Financing Ecosystem-Based Adaptation in Africa: The Role of Innovation*, IUCN (July 2, 2021), <https://www.iucn.org/news/ecosystem-management/202107/challenges-scaling-and-financing-ecosystem-based-adaptation-africa-role-innovation> [<https://perma.cc/D9NC-8GTP>]; see also, e.g., *Guaiacum officinale*, IUCN RED LIST, <https://www.iucnredlist.org/species/33701/68085935> [<https://perma.cc/7DB7-LKT7>] (last visited Nov. 13, 2022).

¹⁹⁷ Cf. G.A. Res. 70/1, *supra* note 87, at 15–16, 23–25.

¹⁹⁸ Cf. *id.*

¹⁹⁹ See WORLD WILDLIFE CRIME REPORT 2020, *supra* note 61, at 9, 20.

²⁰⁰ Cf. CITES AND THE WTO, *supra* note 156, at 7–8.

²⁰¹ See *id.* at 3–4.

CITES and the WTO would offer guidance and technical assistance to developing nations on how to benefit from the EGA.²⁰²

CITES, other MEAs, UNCTAD, and the WTO already have their own initiatives for sustainable development and management of listed resources,²⁰³ and these should be expanded and further integrated using the revenues derived from tariffs on unsustainably produced goods and unsustainably managed resources.²⁰⁴ The UNODC report identified the importance of involving local communities in preventing wildlife crimes.²⁰⁵ While the illegal trade is often conducted by organized crime and specialists in particular goods, extraction of the resources can still involve these local communities.²⁰⁶ Tariff revenues would expand existing programs addressing grassroots education, sustainable use, and alleviation of general economic plight to prevent environmental crimes of desperation.²⁰⁷

Contributions to CITES activities and management of the EGA could be calculated as all, or as a percentage of, the tariffs raised, as gross contributions calculated by gross domestic product, as contributions based on level of consumption or import of listed resources and products, or as a combination of factors.²⁰⁸ Importer countries and developed countries would contribute additional funds to administration of the EGA as a new sustainable development initiative, advancing political narratives about commitment to sustainability.²⁰⁹ This is consistent with existing CITES policy; the 18th Conference of Parties issued several documents recognizing the need to secure greater funding from member states; for example in the case of the International Consortium on Combatting Wildlife Crime (“ICCWC”):

²⁰² G.A. Res. 70/1, *supra* note 87, at 3, 7, 10.

²⁰³ See, e.g., *Supporting Sustainable Management of Endangered Tree Species*, CITES, https://cites.org/eng/prog/flora/trees/trees_project [<https://perma.cc/H5MA-FTTS>] (last visited Nov. 13, 2022); *Trade and Environmental Sustainability*, WTO, https://www.wto.org/english/tratop_e/tessd_e/tessd_e.htm [<https://perma.cc/QF8K-ANHU>] (last visited Nov. 13, 2022).

²⁰⁴ CITES Notification to the Parties No. 2020/029, *New Case Studies on CITES and Livelihoods*, ¶¶ 1–2 (Mar. 31, 2020); cf. WORLD WILDLIFE CRIME REPORT 2020, *supra* note 61, at 25.

²⁰⁵ See, e.g., WORLD WILDLIFE CRIME REPORT 2020, *supra* note 61, at 67–69, 76–77 (pangolins), 95, 98 (glass eels), 102 (sea cucumbers), 129 (ivory).

²⁰⁶ *Id.*

²⁰⁷ See, e.g., CITES & ENV'T AFF. REPUBLIC OF S. AFR., REPORT ON THE WORKSHOP ON CITES AND LIVELIHOODS 9–10 (2016); CITES & ORG. OF AM. STATES, HANDBOOK ON CITES LIVELIHOODS: PART II, at 17–20, 29–38 (2015).

²⁰⁸ See generally *How is CITES Financed?*, CITES, <https://cites.org/eng/disc/fund.php> [<https://perma.cc/32FN-V22N>] (last visited Nov. 13, 2022).

²⁰⁹ *New Case Studies on CITES and Livelihoods*, *supra* note 204, ¶ 4.

Regarding enforcement activities[,] . . . the Secretariat

6. URGES the Parties, intergovernmental and non-governmental organizations to provide additional financial support for the enforcement of the Convention, by providing funds for the enforcement assistance work of the Secretariat. . . .

Regarding additional actions to promote enforcement . . .

17. URGES the Parties and the donor community to provide financial support to ICCWC

18. URGES the Parties, intergovernmental and non-governmental organizations to provide, as a matter of urgency, funds and expertise to enable enforcement-related training . . . focusing . . . on developing countries and countries with economies in transition and range States²¹⁰

A structured system of tariffs, though requiring intricate design, would allow for more transparent and consistent financial contributions than voluntary donations.

The EGA's sustainable development objectives would encourage replenishment not only of CITES species, but of unlisted, threatened species that are in danger of being listed or under review of significant trade.²¹¹ The viability of agroforestry and viability of tropical hardwood plantations are areas of continued research that could prove to be lucrative for the inhabitants of unique biomes such as in India, Brazil, and Cameroon.²¹² Compliance monitoring and sustainable management aid

²¹⁰ CITES Res. Conf. 11.3, *supra* note 100, ¶¶ 6, 17–18.

²¹¹ See G.A. Res. 70/1, *supra* note 87, at 24–25.

²¹² CHARLES VICTOR BARBER & KAREN WINFIELD, WORLD RES. INST., IMPLEMENTING CITES ROSEWOOD SPECIES LISTINGS: A DIAGNOSTIC GUIDE FOR ROSEWOOD RANGE STATES 25 (2019); THIAGO RODRIGUES, TEREZA C.M. PASTORE, CLAUDIA M.C. MELO, FLORIANO PASTORE JR. & VERA T.R. CORADIN, PANORAMA OF THE RESEARCH AND MARKET FOR *DALBERGIA* WOOD IN BRAZIL: IMPLICATIONS ON THE PRESERVATION OF THE GENUS 19–21 (2021); *Northeast Project*, INT'L PERNAMBUCO CONSERVATION INITIATIVE USA, <http://www.ipci-usa.org/programs2.html> [<https://perma.cc/9J8V-5436>] (last visited Nov. 13, 2022); SARAH CASEY KANYON CHOW, DIANA KRICHEVSKY, ABIGAIL MEJIA & EMILY PARKER, UCLA, *DEVELOPING A SUSTAINABLE ROADMAP FOR EBONY PRODUCTION IN CAMEROON* 5, 11–12, 43 (2017).

initiatives to resource-exporting nations would be greatly expanded.²¹³ This would bring MEA capacity building and WTO aid for trade initiatives closer together, reducing compliance costs and diffusing political critiques of colonialism.²¹⁴

3. More Remote Privileges Conditioned on Ratification of a CITES-Related EGA

Many CITES-listed species are found in developing and least-developed countries.²¹⁵ Enthusiastic participation in conservation initiatives by the countries in which these resources are found is essential to implementation.²¹⁶ Developing countries that are already mistrustful of sustainable development and environmental goals may demand additional incentives to fully participate in these initiatives.²¹⁷ The WTO already allows compulsory licensing of intellectual property to least-developed countries under the Trade-Related Aspects of Intellectual Property Rights (“TRIPS”),²¹⁸ and the GATT allows preferential treatment of trade in services with least-developed countries.²¹⁹ Developed parties to CITES could encourage participation in an EGA by extending some of these trade privileges, unrelated to CITES, to developing countries in which CITES-listed species are found or by expanding or prolonging these privileges in least-developed countries.²²⁰

²¹³ See G.A. Res. 70/1, *supra* note 87, at 21–23, 26–27.

²¹⁴ See generally *Aid for Trade*, WTO, https://www.wto.org/english/tratop_e/devel_e/a4t_e/aid4trade_e.htm [<https://perma.cc/Q5TA-PA2N>] (last visited Nov. 13, 2022). Cf. Colman, *supra* note 153.

²¹⁵ Sofie H. Flensburg, *Trade in Wildlife as a Pathway to Sustainable Development in Poor Countries—Critical Assumptions*, TRADE FOR DEV. NEWS BY EIF (Nov. 25, 2019), <https://trade4devnews.enhancedif.org/en/news/trade-wildlife-pathway-sustainable-development-poor-countries-critical-assumptions> [<https://perma.cc/VX7C-3WKT>].

²¹⁶ CITES Standing Comm., National Laws for Implementation of the Convention: Report of the Secretariat, SC69 Doc. 27 (Rev. 1), ¶¶ 42–44 [hereinafter National Laws for Implementation of the Convention].

²¹⁷ Cf. Mathiesen, *supra* note 14; Jagadish Thaker & Anthony Leiserowitz, *Shifting Discourses of Climate Change in India*, 123 CLIMATE CHANGE 107, 109–10 (2014).

²¹⁸ *Compulsory Licensing of Pharmaceuticals and TRIPS*, WTO, https://www.wto.org/english/tratop_e/trips_e/public_health_faq_e.htm [<https://perma.cc/VX7C-3WKT>] (last visited Nov. 13, 2022).

²¹⁹ *Trade in Services and LDCs*, WTO, https://www.wto.org/english/tratop_e/serv_e/ldc_mods_negs_e.htm [<https://perma.cc/RRU5-KQS2>] (last visited Nov. 13, 2022).

²²⁰ Cf. Boon, *supra* note 30, at 23–24.

CONCLUSION: A NEW ROLE FOR THE WORLD TRADE ORGANIZATION

The WTO claims not to be an environmental agency, but states that its

overall objective . . . is to help its members use trade as a means to raise living standards, create jobs and improve people's lives . . . [and] to improve the welfare of people around the world. . . . At its heart are the WTO agreements, negotiated and signed by the bulk of the world's trading nations.²²¹

The WTO, therefore, is whatever its member nations—164 in total—want it to be.²²² These nations, members of the United Nations, have adopted, through the General Assembly, the Sustainable Development Agenda.²²³ This Agenda shares certain goals with the WTO, but represents something of a revision of the methods and theory of world trade.²²⁴ That is to say, the “greening” of the WTO should no longer be considered a continuation of established trade policy by incorporating environmental principles, but rather the innovation of more comprehensive international environmental policy through economic means.²²⁵ The WTO need not fear becoming Daniel Esty's proposed “Global Environment Organization.”²²⁶ But like the Bene Gesserit of *Dune*, environmentalists can circumvent present difficulties by adopting a roundabout strategy, laying the seeds for future international administrative law through economic policy rather than direct regulation.²²⁷

The dynamic of international trade in endangered species is characterized by an interesting contrast: The high value of resources extracted from endangered species leads to international interest and a global market, but the ecology of those species is often highly localized, concentrated in only a handful of countries.²²⁸ The relatively narrow focus of CITES as

²²¹ *Who We Are*, WTO, https://www.wto.org/english/thewto_e/whatis_e/who_we_are_e.htm [<https://perma.cc/J2WN-JT74>] (last visited Nov. 13, 2022).

²²² *Id.*

²²³ G.A. Res. 70/1, *supra* note 87, ¶¶ 1–6, 91.

²²⁴ *Id.* at Preamble, ¶¶ 7–9, 60–68.

²²⁵ *Cf. The “Greening” of the WTO Has Started—Lamy*, WTO (Oct. 24, 2007), https://www.wto.org/english/news_e/sppl_e/sppl79_e.htm [<https://perma.cc/L572-83J8>] (referencing the title of Daniel Esty's 1994 book *Greening the GATT*).

²²⁶ Esty, *supra* note 10, at 848–50.

²²⁷ *Cf. HERBERT*, *supra* note 2, at 641–43.

²²⁸ *See National Laws for Implementation of the Convention*, *supra* note 216, ¶¶ 42–44.

well as its widespread adoption makes a CITES-related EGA a good test case for the broader sort of EGA that was originally envisioned. Entrenched cultural and political attitudes by both exporter and importer nations would still complicate negotiations. However, the successful conclusion of one EGA may lead to the creation of more: conventional agriculture, metals, energy and technology, and even travel and culture are all sectors that must cross the green Rubicon and would benefit from an EGA. Sector specific EGAs allow for continued incorporation of the expertise of MEA secretariats in world trade policy. These secretariats' knowledge of hard science and experience in field work lends greater certainty to economic policy.

Frank Herbert, in his first Appendix to *Dune*, wrote that “[b]eyond a critical point within a finite space, freedom diminishes as numbers increase. This is as true of humans in the finite space of a planetary ecosystem as it is of gas molecules in a sealed flask.”²²⁹ A similar logic can be applied to world trade: As national economies integrate, a greater degree of regulation is required.²³⁰ In international environmental law, increased regulation is probably the most direct means to achieve protection, justice, and progress.²³¹ Barring this, however, environmentalists must “continu[e] . . . policy by other means,”²³² and embrace economic solutions in the face of political headwinds.

²²⁹ HERBERT, *supra* note 2, at 621.

²³⁰ See Dimiter Toshkov, *55 Years of European Legislation*, DIMITER TOSHKOV (Feb. 2014), <http://www.dimiter.eu/Eurlex.html> [<https://perma.cc/K3EC-ENMQ>].

²³¹ See Esty, *supra* note 10, at 853.

²³² Clausewitz: *War as Politics by Other Means*, OLL, <https://oll.libertyfund.org/page/clausewitz-war-as-politics-by-other-means> [<https://perma.cc/78CP-B7EY>] (last visited Nov. 13, 2022).