

CDE POLICY BRIEF



A New Generation of Trade Measures to Support Biodiversity

Biodiversity is declining rapidly worldwide. One of the culprits is international trade of commodity crops – oilseeds, grains, etc. – grown in monocultures using toxic pesticides. These plantations can wipe out forests and kill pollinators, among other harms. In response, the European Union has launched a new generation of trade measures intended to end its reliance on goods produced in ways that threaten biodiversity. This policy brief considers the potential and risks of these new measures, and recommends ways to enhance their effectiveness while empowering vulnerable groups like small farmers and stewards of biodiversity.

Biodiversity: vital and in danger

Biodiversity is many things to many people. For a European, it might mean a beloved meadow teeming with flowers in springtime where they have gone for walks since childhood. For an indigenous person in the Amazon, it might mean a forest they rely on to obtain plants and animals for food and shelter. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) concisely defines biodiversity as “the diversity within

species, between species and of ecosystems”.¹ To operationalize the concept of biodiversity, experts stress the need to detail its temporal dimension (how it changes over time), spatial scale (plot, landscape, region, etc.), and context specificity (how it is influenced by environmental and socio-economic conditions).²

While specialists may disagree about the exact definition and operationalization of biodiversity, virtually everyone agrees on two things: It is fundamental to

KEY MESSAGES

- The European Union has begun ushering in a new generation of trade measures aimed at shrinking its global ecological footprint as quickly as possible. These include trade measures concerning biofuels, pesticides, and – most prominently – deforestation related to large monocultures.
- The measures could support a transformation away from high-volume trading of standardized commodity crops – and towards more biodiversity-friendly agricultural value chains that benefit greater numbers of (vulnerable) small producers. But this will require much better cooperation with stakeholders in the global South than at present.
- Urgently needed improvements could be made by localizing the new trade rules in collaboration with local people in producer countries, harmonizing them by means of integrated landscape approaches, and combining them with (compliance-related) capacity-building for small farmers and strengthened legal rights for local stewards of biodiversity.



The research featured here is focused globally.

human survival on planet Earth, and it is currently disappearing at an unprecedented speed and scale. Grasping the full extent of the crisis is challenging, but a handful of figures can help: between just 2010 and 2015, 32 million hectares of primary or recovering forest were lost globally, an area roughly the size of Vietnam;³ today, 33% of Earth's soils are degraded, and this share could reach 90% by 2050;⁴ national assessments indicate the endangerment of over 40% of bee species, the most important pollinators contributing to reproduction of 75% of the world's flowering plants and 35% of food crops.⁵

Multiple causes, including trade

Biodiversity loss is mainly caused by changes in how we use land and sea, overexploitation of natural resources, pollution of the environment, as well as climate change and invasive alien species.⁶ Taken together, these are referred to as the *direct drivers* of biodiversity loss. But they stem, in turn, from a handful of so-called *indirect drivers* of change that call even greater attention to the central role of human action and societal patterns. These indirect drivers include our modern modes of production (e.g. industrial agriculture) and consumption (e.g. supermarkets, fast food), population dynamics and trends (e.g. urbanization), use of technology (e.g. genetically modified seeds), governance choices (e.g. market liberalization), and – not least – international trade.⁷

Global trade impacts

Fuelled by consumer needs and desires in far-flung countries, large-scale production of commodities for export – e.g. cultivation of wheat, corn, and soybeans – harms biodiversity in producer countries in a variety of ways.⁸ These include conversion of forest to cropland, exhaustion of the nutrients in soils, and pollution from widespread use of pesticides, fertilizers, and fossil fuels. Other sources of harm include transport corridors that disrupt ecosystems, channelling of alien pests and invasive species, as well as wildlife trafficking and species overexploitation.⁹ Indeed, according to recent estimates, international trade is associated with 30% of threatened species globally¹⁰ – such as the spider monkey, which is endangered in Mexico and Central America due to export-driven coffee and cocoa monocultures taking over its habitat.¹¹ Trade is also linked to 32% of the consumption of “scarce water” globally – that is, use of water in regions suffering from water stress, for example when crops are grown in parts of sub-Saharan Africa or Southeast Asia to satisfy consumer demand in North America or China.¹²



Bee pollinating a flower. Photo: LE NY/Shutterstock

Uniformity by design

Notably, international agricultural trade of “conventionally” produced (e.g. not organic) goods – such as bulk trading of cereals and oilseeds – is also *structurally* tied to the loss of *agrobiodiversity*.¹³ To ensure profits, this low-margin trade model demands high volumes of *standardized* (fungible) agricultural commodities that can be easily shipped around the world and processed into different goods. It encourages widespread adoption of the most productive crop varieties, grown in massive monocultures. As a result of this trade-related drive towards uniformity, the diversity of cultivated crops and farmed animals has plummeted worldwide. While historically about 7,000 plant species were cultivated for food, today only about 80 plant species contribute to food supplies globally, with half of all plant-based calories coming from just three species.¹⁴

Outsourced harms

Of particular consequence from a governance perspective, international trade drastically *increases the separation between sites of consumption and production*, stretching and diffusing causes and effects across large distances.¹⁵ As a result, the ecological and socio-economic harms of production are frequently outsourced to places far from where the resulting goods are consumed.¹⁶ For example, consumer demand for soy in Germany has been linked to tropical deforestation and destruction of biodiversity in Brazil.¹⁷ More broadly, EU consumption of soy, palm oil, beef, and other forest-risk commodities is responsible for an estimated 16% of tropical deforestation linked to international trade.¹⁸ Overall, through trade at the global level, 25–50% of production-related environmental impacts – e.g. carbon emissions, chemical pollution, deforestation, and depletion of freshwater

resources – occur in regions other than where actual consumption takes place.¹⁹

Efforts to shed light on these increasingly complex trade-related interactions have given rise to concepts and strands of research including *global value chains*,²⁰ *spillovers*,²¹ *telecoupling*,²² and *footprinting*.²³ Arguably common to all these approaches is the aim of making citizens of relatively rich, market-driven democracies more aware of how their consumptive choices can and do harm vulnerable ecosystems and people in faraway places.

Reconciling trade and biodiversity

Our increasing knowledge of the biodiversity harms embodied in traded goods highlights the responsibility of consuming countries – especially wealthier countries in the global North. It underscores the need for such countries to adopt targeted trade policies that minimize adverse impacts on biodiversity and maximize positive ones, wherever possible – rather than simply relying on individual consumer choice to drive sustainability.²⁴

Against this background, the EU has begun implementing a new generation of unilateral trade measures aimed at promoting greater sustainability. Overall, these new measures align with broader EU policy commitments made in the context of the European Green Deal²⁵ and its sectoral strategies, including the “Farm to Fork” strategy²⁶ and the Biodiversity Strategy for 2030.²⁷ They reflect a now constitutionally enshrined EU obligation to transition to sustainable food systems and reduce Europe's ecological impact globally while ensuring fair competition for local farmers who must also abide by sustainability regulations.²⁸ Key examples of these new trade measures include the following (ordered chronologically, by entry into force):

Renewable Energy Directive (RED II).

Updated in 2023, it explicitly limits the use of crop-based biofuels in achieving renewable energy targets in the EU. This is because these biofuels contribute to (indirect) land use change that harms biodiversity, for example when additional forests or grasslands are cleared for cultivation of food crops due to biofuel feedstock crops taking over previous agricultural areas.²⁹ These criteria were challenged under the EU–Palm Oil disputes brought before the World Trade Organization (WTO)³⁰; the EU measure passed WTO scrutiny in principle, but failed on fine technical details, showing the difficulty of complying with WTO requirements in real-world scenarios.³¹

EU Deforestation Regulation (EUDR).

Formally in force since 2023, it aims to minimize global deforestation driven by EU consumption by imposing stringent due diligence requirements on importers, including first-mile traceability of goods.³² It requires operators and traders who place commodities like cattle, timber, cocoa, rubber, etc. on the EU market to prove that these goods did not originate from, or contribute to, recently deforested land.

EU pesticide regulations, for example Commission Regulation (EU) 2023/334 of 2 February 2023, which bans, by 2026, the import of products containing traces of two neonicotinoid pesticides prohibited in the EU (*thiamethoxam* and *clothianidin*) due to their toxicity to bees and other pollinators.³³ This marks the first time that changes to pesticide residue limits have been proposed due to biodiversity impacts abroad rather than solely based on local food safety concerns.

Transformative potential, but concerns remain

If implemented meaningfully and in a context-sensitive manner, this “new generation” of trade measures has significant potential to address biodiversity loss.³⁴ It could also empower groups and constituencies in producer countries whose values and perspectives on the natural world contrast greatly with dominant agribusiness interests. These stakeholders may include public authorities (e.g. environmental agencies), local communities, indigenous groups, rural women, “biosphere defenders”, and others whose views are seldom taken on board in trade policymaking.^{35,36}

Nevertheless, these new trade measures – especially EUDR – still bear risks with implications not only for fairness, but also for overall relevance and effectiveness.

Lack of context and nuance

Firstly, concerns remain about the sustainability criteria and metrics used in these new trade measures, and about how well they address sustainability issues at the wider landscape scale. For example, EUDR is more appropriate for tackling deforestation by large-scale plantations, but it is not well suited to address the complexities of mixed forest systems important to small-scale producers, such as growers of forest or agroforestry coffee. These smaller production systems include periods of forest degradation and regeneration that could be misperceived as deforestation. Further, it is unclear how narrowly forest-focused trade measures can or will account for other biodiversity-relevant sustainability impacts such as the massive volumes of water used by bigger plantations. Finally, these trade measures arguably only treat *symptoms*, such as the deforestation embedded in imports or pesticide residues on crops, without addressing *key root causes of ecological crises*, especially poverty in contexts where natural resource exploitation and (increasingly commodified) agriculture offer the only livelihood opportunities for millions of people – as part of a system that caters to overconsumption in the global North.³⁷

Risks of displacement

Secondly, these new measures are susceptible to displacement in the form of trade leakages or shifting of ecological harms. This happens when “non-compliance and its manifestations are [...] shifted across time, space, or media”³⁸ Examples include diversion of trade to other markets, such as China, if and when producer countries find it too difficult or unattractive to satisfy the requirements of sustainability-oriented markets like that of the EU, for example as regards pesticides. Or, if a regulation solely targets one ecosystem for protection, such as forests, commodity production may simply be expanded to other vulnerable and valuable ecosystems, such as savannahs, grasslands, wetlands, peatlands, or mangroves. In this way, harms to biodiversity are not prevented, but rather displaced to different settings of flora and fauna.

Exclusion of vulnerable stakeholders

Third, there is a risk of such trade measures leading to the *exclusion of vulnerable smallholders* from participation in high-value commodity supply chains. This can happen when companies are (over)burdened with regulatory compliance and due diligence requirements. As a result, these companies may choose to reduce complications by sourcing from “low-risk” producer countries or better-resourced farmers who can more easily meet new

requirements, such as provision of reliable geolocation data.³⁹ Further, well-intentioned traceability requirements could worsen trends whereby *agricultural profits*, for example from coffee, are increasingly *captured in consuming countries based on non-material attributes and services*.⁴⁰ Less-developed countries generally do not have the technical resources or services needed to fulfil technology-intensive traceability requirements. This gap will likely be addressed by new “nature tech” companies based in rich countries. If the associated service costs are passed down the chain by traders and processors, it could put pressure on commodity prices at farmgate.

Other unintended effects

Lastly, strict regulatory approaches risk having unintended impacts on biodiversity itself when the burden of regulatory impacts is shifted to non-target interests and groups.⁴¹ For example, narrowly conceived trade rules on deforestation may actually benefit established monocultures and harm more biodiversity-friendly smallholders. Under EUDR, for example, this could happen if large-scale monocultures are deemed “deforestation-free” simply because the (forest) land was already cleared for commodity production before the cut-off date specified in the trade measure.⁴² As a result, demand for commodities produced in more biodiverse agroforestry systems could decline, perversely shifting the economic burdens of new “sustainability” measures onto the lives and livelihoods of numerous small producers who farm in more socio-ecologically rich systems.

Thankfully, many of these risks in producer countries can be mitigated, in particular by localizing the new trade rules via participatory, social-ecological systems approaches and flanking them with complementary measures, as summarized in the following policy implications (next page).

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Policy implications

Localize new trade rules in producer countries via participatory processes

To truly benefit biodiversity and the people who foster it, Europe's new generation of (unilateral) trade measures should be firmly grounded in social-ecological framings of biodiversity.⁴³ The definition of deforestation, forest degradation, and sustainable/unsustainable production should be carried out in context, via participatory processes that consider local realities and the concerns of vulnerable producers (e.g. smallholders), as illustrated in model trade agreements (Bürgi et al. 2023).⁴⁴ One promising option is to leverage participatory and adaptive land management initiatives that seek ecological and social sustainability objectives at the landscape level – by means of so-called integrated landscape approaches (Sonderegger et al. 2024).⁴⁵ This could also counter the tendency for firms and other powerful stakeholders to lose the “bigger picture” (e.g. sustainability at the landscape scale) or shift harms around when seeking to comply with a host of narrower rules.

Combine with supply-side measures and inclusive fiscal incentives

Biodiversity-related trade restrictions should be paired with support for local-level capacity in producer countries, so they can comply with new rules. For instance, Aid for Trade⁴⁶ could be utilized to improve producer countries' abilities to implement national traceability systems or to develop agroecological alternatives to pesticides. If tariffs and border tax adjustments are used to discourage “unsustainable” trade, the tax/tariff proceeds collected by the importing country at the border could be directed to an earmarked fund for capacity-building in producer countries. Meanwhile, biodiversity-friendly farmers should be incentivized with fair compensation. Sustainably produced commodities (e.g. deforestation- or pesticide-free crops) should be afforded a premium. In consumer countries (e.g. EU), laws on due diligence and unfair trading practices, as well as mandatory contract mechanisms, could be used to scale up the fair pricing and living income initiatives being tested by some companies.⁴⁷ In producer countries, innovations in transparency law could be used to ensure that improved prices are passed on from export to farmgate, addressing some of the shortcomings of regulated pricing systems.⁴⁸

Maximize effectiveness by ensuring “access rights” to key stakeholders

Finally, EU trade measures aimed at protecting biodiversity should simultaneously ensure enhanced access rights (to information, participation, justice) for those groups in producer countries – e.g. indigenous people, ethnic groups, and local environmental advocates – who traditionally serve as stewards or “defenders” of biodiversity.⁴⁹ These stakeholders should have the ability to report any concerns about non-compliance to the relevant authorities in importing countries (e.g. EU/EFTA bodies). For instance, they should be able to notify EU authorities about locally operating agribusinesses not meeting new EU sustainability requirements for imports. They should also be given access to an independent public body (e.g. court) competent to review their concerns (as provided for in EUDR). This may include enabling victims in producer countries to bring civil liability claims before EU states' national courts.⁵⁰

Suggested further reading

BIO-TRADE: Protecting Biodiversity through Regulating Trade and International Business:
<https://bit.ly/3YDHRMQ>

Bürgi Bonanomi E, Schäli J, editors. 2023. *Federal Act for Sustainable Trade in Agriculture? A Proposal for the Implementation of Art. 104a lit. d of the Swiss Federal Constitution*. <https://bit.ly/3YztbOM>

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Musselli I, Sonderegger G. Forthcoming. *Trade and Biodiversity Loss: Disentangling the Complexities for Effective Policy Action*.

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³² See: Regulation (EU) 2023/1115 of the European Parliament and of the Council of 31 May 2023 on the making available on the Union market and the export from the Union of certain commodities and products associated with deforestation and forest degradation and repealing Regulation (EU) No 995/2010 [2023] OJ L 150/206 (hereafter, EUDR). https://environment.ec.europa.eu/topics/forests/deforestation/regulation-deforestation-free-products_en

³³ Commission Regulation (EU) 2023/334 of 2 February 2023 amending Annexes II and V to Regulation (EC) No 396/2005 of the European Parliament and of the Council as regards maximum residue levels for clothianidin and thiamethoxam in or on certain products [2023] OJ L 47/29. Imported products will no longer be able to contain any detectable residues of the two neoticotioids as of 7 March 2026, unless “import tolerances” are granted on a case-by-case basis.

³⁴ See, for example: FERN.org. “EU Regulation on deforestation-free products”. <https://www.fern.org/issues/eu-regulation-on-deforestation-free-products/>

³⁵ For example, beekeepers associations in Costa Rica and Argentina were advocating for a ban on neonics, while trade delegates from Costa Rica and Argentina in the WTO were arguing for the flexibility to continue using neonics, strongly objecting to the EU ban on residues of neonics in imported crops; for more details, see: Musselli I, Ituarte-Lima C. Human Rights Innovations, Pesticides Regulation and Trade Governance: From Pesticide Toxicity to Healthy Agroecological Systems. In: Ituarte-Lima C, editor. *Innovations on Biodiversity Law, Policy and Practice*. Forthcoming. IOSPress;

Musselli I, Ituarte-Lima C. Forthcoming. Biodiversity, EU Pesticides Law, and Trade: Deconstructing the North/South Divide through a Human Rights Lens.

³⁶ It is also important to consider the “disruptive” potential of this new generation of measures in terms of disturbing a production and logistics model that focuses on high-volumes of low-cost, fungible commodities. This model perpetuates intensive industrial agriculture. For example, the EUDR is driving a structural shift in the commodity economy from bulk trade to full traceability and segregation. This is pushing towards the “de-commoditization” of cocoa, coffee, and other covered commodities, in line with horizontal upgrading policies that focus on high-value, low-volume trade. These possible long-term structural impacts should be considered.

³⁷ Sonderegger G, Musselli I. Forthcoming. Navigating Scales in Supply Chain Governance for Achieving the Global Biodiversity Targets. In: Ituarte-Lima C, editor. *Innovations on Biodiversity Law, Policy and Practice*. Forthcoming. IOSPress.

³⁸ Grabosky PN. 1995. *Counterproductive Regulation: International Journal of the Sociology of Law* 23:347–369. [https://doi.org/10.1016/S0194-6595\(05\)80003-6](https://doi.org/10.1016/S0194-6595(05)80003-6)

³⁹ Ituarte-Lima C, Dupraz-Ardiot A, McDermott CL. 2019. Incorporating international biodiversity law principles and rights perspective into the European Union timber regulation. *International Environmental Agreements* 19(3):255–272. <https://doi.org/10.1007/s10784-019-09439-6>;

Zhunosova E, Ahimbisibwe V, Sen LTH, Sadeghi A, Toledo-Aceves T, Kabwe G, Günter S. 2022. Potential impacts of the proposed EU Regulation on Deforestation-Free Supply Chains on smallholders, indigenous peoples, and local communities in producer countries outside the EU. *Forest Policy and Economics* 143:102817. <https://doi.org/10.1016/j.forpol.2022.102817>

⁴⁰ On the share of value captured by intangibles in the coffee chain, see: Benoit D, Ponte S. 2005. *The Coffee Paradox: Global Markets, Commodity Trade and the Elusive Promise of Development*. London, UK, and New York, USA: Zed Books, Bloomsbury Publishing. <https://www.bloomsbury.com/uk/coffee-paradox-9781848136298/>

⁴¹ See, for example: Ituarte-Lima C, Dupraz-Ardiot A, McDermott CL. 2019. Incorporating international biodiversity law principles and rights perspective into the European Union timber regulation. *International Environmental Agreements* 19(3):255–272. <https://doi.org/10.1007/s10784-019-09439-6>;

Zhunosova E, Ahimbisibwe V, Sen LTH, Sadeghi A, Toledo-Aceves T, Kabwe G, Günter S. 2022. Potential impacts of the proposed EU Regulation on Deforestation-Free Supply Chains on smallholders, indigenous peoples, and local communities in producer countries outside the EU. *Forest Policy and Economics* 143:102817. <https://doi.org/10.1016/j.forpol.2022.102817>

⁴² Ituarte-Lima C, Dupraz-Ardiot A, McDermott CL. 2019. *Op. cit.*

⁴³ Musselli I, Sonderegger G. Forthcoming. *Op. cit.*

⁴⁴ Model frameworks have been developed by academics and other stakeholders that illustrate how trade and markets could be regulated different to foster supply of alternative, value added products from biodiversity-friendly vulnerable producers. See: Bürgi Bonanomi E, Schläli J, editors. 2023. *Federal Act for Sustainable Trade in Agriculture? A Proposal for the Implementation of Art. 104a lit. d of the Swiss Federal Constitution*. Zurich, Switzerland: DIKE. <https://bit.ly/3YztbOM>

⁴⁵ Sonderegger G, Providoli I, Hett C, Bürgi Bonanomi E, Oberlack C, Zeleke G. 2024. *Sustainable Landscapes: How Can the Private Sector Contribute?* CDE Policy Brief, No. 21. Bern, Switzerland: CDE. <https://bit.ly/3C15eao>

⁴⁶ For a summary of “Aid for Trade”, see: https://www.wto.org/english/tratop_e/devel_e/a4t_e/aid4trade_e.htm

⁴⁷ For a detailed assessment of these options, refer to the project “Exploring pricing models in cocoa value chains”: https://www.cde.unibe.ch/research/projects/exploring_pricing_models_in_cocoa_value_chains/index_eng.html

⁴⁸ Ibid.

⁴⁹ See, for example: Ituarte-Lima C. 2023. Biosphere defenders leveraging the human right to healthy environment for transformative change. *Environmental Policy and Law* 53:1–13. <https://doi.org/10.3233/epl-239003>

⁵⁰ This could also include the availability of collective complaint procedures, procedural rights to file complaints “on behalf of”, and guaranteed access to information and legal aid relevant to pursue effective remedy.