



Equity in unilateral value chain policies: A monitoring framework for the EUDR and beyond

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ABSTRACT

Unilateral value chain policies have recently emerged as a key strategy of international land use governance. They're part of a broader trend towards trade-based environmental policies, from corporate due diligence to sustainability certification and trade moratoria, that has been critiqued for reinforcing inequities in global trade. Such critique has been heightened by the current rise of unilateralism, whereby states impose environmental rules on imported commodities. Debates have ensued over the political legitimacy of unilateralism, the unequal distribution of its socio-economic impacts, and the need to safeguard local producers and communities.

This paper informs these debates by developing and applying a framework for monitoring equity across scales and phases of the policy process. The framework is applied to the 2023 EU Deforestation-free Regulation (EUDR), which aims to stop EU imports of commodities linked to deforestation. We find that EUDR policy references equity as a desired outcome, but excludes affected actors from the design process. Drawing on the case of cocoa in Ghana, we identify diverse potential impacts on smallholder farmers and economies. Opportunities for the EUDR to improve equity include embedding non-EU stakeholders in international decision-making processes, enhanced and equitable partnerships with producing countries and major investments in farmer support. The paper concludes by providing an equity checklist and agenda for monitoring progress, adaptable to a wide range of unilateral and trade-based policies.

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1. Introduction

In 2023, the EU passed the Deforestation Regulation (EUDR) (2023/1115), requiring due diligence by firms to ensure that seven key ‘forest risk’ commodities are not placed on the EU market if their production is associated with recent deforestation and forest degradation. The seven commodities – oil palm, soya, wood, cocoa, coffee, cattle and rubber – are leading global drivers of forest loss, and associated carbon emissions and loss of biodiversity. The EUDR aims to harness the EU’s global market power to catalyze a reduction in commodity-driven deforestation. As such the regulation represents two broad trends in international forest and land use governance. The first is the growing predominance of trade-based approaches, including both private and state-based initiatives, as a means to address the ‘telecoupled’ or interlinked impacts of commodity value chains that cross jurisdictional boundaries (Hermans et al., 2023; Newig et al., 2020; Sotirov et al., 2022). The second is a more recent shift towards policy unilateralism, whereby states enact import requirements that address how products are produced in foreign countries (Videgal, 2022; McDermott et al., 2024; deVillie et al., 2023). These unilateral policies range from illegal logging bans such as the EU Timber Regulation (EUTR) and the US Lacey Act, to France’s National Strategy Against Imported Deforestation (SNDI), the EU Corporate Sustainability Due Diligence Directive (CSDDD) and the EU Carbon Border Adjustment mechanism (CBAM).

This rise of unilateralism has heightened debates about equity, including the legitimacy of one country or group of countries imposing rules on how products are produced in other countries without their consent, and the distribution of costs and benefits between and within countries (e.g. Verhaeghe and Ramcilovic-Suominen, 2024; Kothke et al., 2023). While equity may not be a core goal of such policies, equity as a principle has gained increasing prominence in international environmental governance as both a moral obligation and critical to policy effectiveness (Petersson and Stoett, 2022). The aim of this paper, therefore, is to develop and apply an equity framework for assessing how unilateral value chain policies are improving or worsening equity, and identifying available actions to address this.

Substantial evidence from past research indicates that trade-based policies risk entrenching inequalities in global trade itself, both between countries in the global north and south, and between producers and consumers in the value chain (e.g. Kleinschmit et al., 2024; Kleinschmit et al., 2023). These inequalities are of key importance both instrumentally, in that they hinder progress towards environmental goals such as stopping deforestation, and normatively, given numerous international commitments to improve equity and avoid harm to marginalized communities (Petersson and Stoett, 2022). As an example of equity’s instrumental importance to deforestation, many formerly colonized countries struggle with a legacy of unequal trade relations and international debt that drains the resources available to meet international demands to stop deforestation (Brockhaus et al., 2021; Kume and Ramcilovic-Suominen, 2023). Meanwhile, the majority of profits from commodities driving deforestation are captured by relatively few highly capitalized firms, while smallholder farmers who produce globally traded commodities struggle to earn a living income (Waarts et al., 2021; van Vliet et al., 2021). This reduces farmers’ capacity and resources for sustainable land use (Brack, 2019).¹ To address these instrumental and intrinsic concerns, many trade-based strategies (Bennett, 2022; McDermott et al., 2024), as well as other international sustainability interventions (Löfquist et al., 2022), articulate equity-related priorities, such as multi-stakeholder decision-making, social safeguarding or community benefit-sharing. Yet these additional priorities create yet more costs and barriers for smallholder farmers to

access global markets. Even farmers meeting these requirements are likely to capture only a small fraction of any profits they generate (Ibid; Dompereh et al., 2021; Kleinschmit et al., 2024). Analysis of a range of trade-based approaches, from voluntary corporate due diligence and sustainability certification, to state-based bilateral Voluntary Partnership Agreements to eradicate illegal logging, to national moratoriums, has highlighted the need for proactive policy action to address equity, e.g. through inclusive dialogue processes and sustained support for smallholders, in order to mitigate these risks (e.g. Cammelli et al., 2022; Grabs et al., 2021; Villanueva et al., 2023). The shift towards unilateral trade-based policies (deVillie et al., 2023) may heighten risks to equity, particularly if they are designed without the support and engagement of the foreign countries, farmers and communities affected.

This paper, therefore, proposes an analytical framework to monitor and evaluate the equity impacts of unilateral trade-based policies, drawing on the case of the EUDR. The purpose of the framework is two-fold. The first is to provide a structured approach to assess the available evidence regarding the risks to equity posed by trade-based and unilateral value chain policies such as the EUDR, and how different policy approaches interact with these risks. The second is to provide an indicative checklist for monitoring and evaluation (M&E) activities that can inform measures to improve equity. As such, we directly address calls by researchers (Grabs et al., 2021; Martins, 2020; Lombardo et al., 2017) and other stakeholders (Jones, 2009) to better embed social equity in the design of international land use and trade governance. Given the global scale and the wide diversity of commodities, countries and landscapes covered by policies such as the EUDR, we combine a global-scale policy analysis with analysis of implementation in a specific country context, i.e. cocoa production in Ghana, to illustrate the importance of tailoring monitoring frameworks to address local context.

The following sections proceed as follows. Section 2 introduces our analytical framework, drawing on theories of ‘meta’, ‘mesa’ and ‘multi-dimensional’ equity, and linking these to different phases of international policymaking. Sections 3 and 4 then apply this framework to the EUDR in two complementary ways. Firstly we draw on evidence from the existing literature regarding the key risks to equity from trade-based policies and unilateralism, and secondly we identify indicators for monitoring these risks. Section 3 assesses the EUDR policy process and policy content, and Section 4 analyzes EUDR policy content. Results of Sections 3 and 4 are summarized in a series of boxes, which together provide an actionable monitoring agenda. Section 5 concludes. Finally, Appendix 1 draws on these findings to provide an equity monitoring template for unilateral value chain policies more generally.

2. Building the conceptual foundations for evaluating and monitoring equity in unilateral value chain policies

Monitoring and evaluating governance interventions is never power neutral, involving choices about what to measure and monitor, how, by whom and for whom (Nost and Goldstein, 2022), and at what stages of decision-making. In this paper, we aim to navigate these tensions by employing a multi-scale, multi-dimensional understanding of equity that encompasses all stages of the policy process, and explore its particular relevance to trade-based unilateral governance.

‘Equity’ is closely related to concepts of justice and fairness, and implies some form of equality (Leach et al., 2018; Schroeder and Pisupati, 2010; McDermott et al., 2013). Precisely what must be equal to achieve ‘equity’ (e.g., inputs, outcomes, capacities), however, varies across cultures and contexts.

Indeed, as argued by (McDermott et al., 2013), an initial task when assessing equity is to consider how equity is being defined by particular institutions or policies. They refer to this initial parameter-setting as ‘meta-equity’. Meta equity addresses 1) how the “parameters” of what constitutes equity are set, 2) what the resulting definition of equity is and 3) who is considered entitled to equity (Ibid). The resulting definitions of equity may be assessed across multiple dimensions, including

¹ For example, it is estimated that Ghanaian cocoa farmers receive as little as 3 % of the value of a chocolate bar sold in foreign markets, down from 50 % in the 1970s (Brack, 2019).

procedural, distributive and recognitional equity (McDermott et al., 2013; Martin et al., 2016). Procedural equity refers to the equity of decision-making processes, distributive equity to the distribution of costs and benefits, and recognitional equity as referring to whose norms, cultures and knowledge systems are recognized and empowered (Martin et al., 2016). These various dimensions are overlapping and co-constitutive – for example, inequalities in recognition of different knowledge systems shape, and are shaped by, inequalities in process and the unequal distribution of resources. Hence, we use the idea of three-dimensional equity as a heuristic device for better identifying and pinpointing a diverse range of equity concerns, rather than as a means of strict categorization.

Given this comprehensive understanding of equity, assessing equity in policy requires an equally comprehensive approach that considers all phases of the policy-making process. This includes what we call the ‘meta-equity’ phases of agenda-setting, policy formulation and decision-making processes, where equity is defined. It also includes the “mesa equity” phases of policy implementation, monitoring and evaluation (Jordan and Adelle, 2012; Perl, 2020). Based on this understanding, Fig. 1 below provides a multidimensional framework for assessing policy equity.

This assessment framework provides a way to conceptualize and organize a relatively broad and systematic assessment of equity in unilateral value chain policies such as the EUDR. However the sheer scope, scale and complexity of such policies presents a number of barriers to holistic assessment. Reflecting this, much of the existing literature on assessing and monitoring environmental policies and interventions adopts a much narrower scope. Assessments often focus either at the project level (e.g. Vanclay, 2020), or at very large national or global scales (e.g. SDSN, 2015). Methodologies also vary greatly across disciplines, e.g. from the use of remote sensing, ‘big data’ and modeling of expected impacts (Polyakova et al., 2019) to community-based, ground up assessments (Thompson et al., 2019). These disciplinary, policy and political preferences for quantitative, qualitative, spatial or mixed methods measurement reflect and reinforce power relations. Large-scale assessments, in particular, tend to focus on a relatively few, narrowly defined variables that are most readily measured (Pacheco-Romero et al., 2020).

Yet there may be little or no correlation between the significance of a policy impact and ease of measurement. For example in the case of the EUDR, local and indigenous communities and smallholder producers often lack clear and globally legible land rights. While they may be highly vulnerable to impacts, there is often inadequate data to monitor, quantify or otherwise assess changes to their welfare (McDermott et al.,

2022). Non-material impacts, e.g. on political power and legitimacy, economic dynamics, or knowledge and identity, are not readily quantified but may be profound and far-reaching.

Understanding questions of attribution further complicates assessments – the enactment of the EUDR occurs in tandem with a wide range of other governance and socio-economic changes, without clear and linear relationships between cause and effect. Challenges of attribution are even greater for impacts that are indirect, intersecting, and variable across contexts and dynamic over time, as demonstrated by assessments of the EU Timber Regulation (EUTR) (Sotirov et al., 2021; Köthke and Sotirov, 2024; Giurca and Jonsson, 2015; Moral-Pajares et al., 2020). Furthermore, given that power, knowledge and social values are always plural and contested, views will likewise be diverse about what constitutes an equitable socio-economic impact, in what context, and within what time frame. All of these complexities considered together increase the likelihood of mixed and contested monitoring results. Yet regardless of how these challenges are navigated, it is critical to acknowledge their role in shaping the equity and effectiveness of international forest and land use governance in the future. This is particularly true for unilateral processes that bypass the sharing of power and responsibility with other countries, thus making them uniquely (un)accountable for their impacts.

The following Sections 3 and 4 apply the analytical structure outlined in Fig. 1 to the EUDR. We begin with the meta-equity levels of agenda-setting and policy content (Section 3) followed by implementation (Section 4), applied to the case of cocoa in Ghana.

3. The framing of equity through EUDR legislation: meta-equity

3.1. Policy agenda-setting and decision-making processes

3.1.1. Who writes the rules?

From colonial times to the present day, trade in global commodities has been characterized by a highly unequal distribution of costs and benefits (e.g. Hornborg, 1998; Hickel et al., 2021), both between the global north and south, and between a small number of large international firms and the millions of smallholders, labourers and local businesses who depend on commodity production for their livelihoods (Hickel, 2018). These distributive inequalities shape and are shaped by procedural inequalities in who dictates the terms of this trade, as well as inequalities in the recognition of different norms of ‘good governance’, and different knowledge systems. In the case of the EUDR, the EU is leveraging its historical dominance as a key buyer of global commodities, and also a key historical and current driver of the deforestation

	Recognitional Equity	Procedural Equity	Distributive Equity
Meta equity (Section 3)	Agenda Setting and Decision-making 1) Who writes the rules?		
	Policy Content 2) To whom and what do the rules apply? 3) How is equity defined? 4) Who are the subjects of equity?		
Mesa equity (Section 4 - case study of Ghana)	Implementation		
	E.g. Incorporation of local knowledge	E.g. Local participation in land use decision-making	E.g. Distribution of costs & benefits
	Monitoring & Evaluation		
	E.g. Incorporation of diverse knowledge as evidence	E.g. Involvement of diverse actors in M&E	E.g. Distribution of M&E costs & benefits

Fig. 1. Equity in International Policy - A monitoring framework.

associated with it, to place the removal of deforestation from these commodities as a top political priority for exporting countries. By doing so, it de facto lowers the relative priority placed on other socio-ecological agendas of global south governments and communities in regards to these commodities. Many of these governments and communities may also support forest conservation, but have priorities that differ from global North agendas, such as secure access to land and water, reduced exposure to pesticides, or local economic development (e.g. Lapegna, 2016; Hochstetler and Keck, 2007).

The EU's power to leverage its demand for deforestation-free commodity production to slow forest loss depends in part on the level of dependence of Southern producers otherwise engaged in deforestation to access EU markets. This varies significantly by commodity. For example, in the case of soy, EU imports are half those of China, and the latter imports roughly 40 % of internationally traded soy by weight (Vasconcelos et al., 2024). In the case of cocoa and coffee, Europe is the world's largest import destination (Brack and Wellesley, 2016; Brack, 2019; International Coffee Organization, 2020; Gilbert, 2024) making access to EU markets more economically critical for exporting countries and farmers.

Commodity trade also varies in terms of the level of market concentration, and hence the power of different actors along the value chain to influence or dictate terms of trade, including rules, prices and quality standards (Hernández et al., 2023). This is especially true for the value chains of cocoa, coffee and oil palm, which draw from millions of smallholder producers, but in which power and profits are concentrated among relatively few international enterprises holding intermediary roles in the value chain (Daviron and Gibbon, 2002; Lee et al., 2012; Snashall and Poulos, 2023).

In regards to meta equity in decision-making processes, the EUDR's design as a unilateral policy by definition means the EU holds the sole decision-making authority to design and ratify the EUDR, and decide on its policy content (McDermott et al., 2024; deVillie et al., 2023). A consortium of EUDR-affected countries have disputed the legitimacy of this approach and brought their concerns to the World Trade Organization (WTO), claiming that the EUDR is an unfair violation of international agreements on free trade. As stated in the filings (WTO, 2022: G/AG/GEN/213; WTO, 2023a: WT/CTE/GEN/33; WTO, 2023b: WT/GC/W/912), the EUDR risks setting an international precedent for unilateral actions in the domain of environmental and especially anti-deforestation policies by imposing external standards on forest and land use governance in foreign countries, while undermining the 'weakest players in any given value chain, with its very high bar or requirements and conditions' (WTO, 2023b: 3). At the same time, these "weakest players", as well as civil society groups claiming to represent them, might themselves be marginalized in land use decision-making processes in their own countries. Hence a strengthening of recognition equity would require recognizing and assessing the priorities and concerns of different governments, civil society groups and local communities, as well as understanding how these actors perceive the equity and fairness of EUDR decision-making processes.

In sum, the above contestations over equity in the EUDR's agenda-setting and decision-making processes point to a number of key areas to monitor over time. These include monitoring changes in the balance and direction of international trade in the seven forest risk commodities, as well as the distribution of profits along value chains. Qualitative research will also be important to unpack how different EU and non-EU actors are influencing the EUDR's policy agenda-setting and decision-making processes (e.g. see Arts et al., 2024), as well as how particular dominant agendas and legislative decisions align with, or contradict, the economic and political interests of different EU and non-EU actors (e.g. see Winkel and Sotirov, 2015). Box 1 summarizes these points as indicators to be monitored over time.

3.2. Policy content

3.2.1. To whom and what does the policy apply?

In regards to the written content of the EUDR, many of its elements shape its potential socio-economic impacts and equity, whether positively or negatively. Key among these include, firstly, decisions on the EUDR's scope (EU Regulation 2023/1115: 219 Article 1). The EUDR prioritizes stopping deforestation over other environmental and social goals, as discussed above. This is consistent with a trend in international forest governance towards reframing complex environmental problems as reducible to a few readily measurable, and hence globally legible, phenomena that can be largely resolved through the correct trade incentives (McDermott, 2014; Scott, 1998).

The EUDR includes provisions for expanding its scope, but these remain within the narrow constraints of global legibility and global commodity production. They include a provision to potentially expand trade prohibitions to encompass the conversion of non-forest ecosystems (EUDR: 219), as well as expand the number of commodities covered beyond cattle, cocoa, coffee, oil palm, soya, wood and rubber (Ibid). Any such expansions in scope, if effectively implemented, would expand the populations affected and bring wider socio-economic impacts, whether positive or negative.

While commodity-driven land use conversion is the primary focus of the EUDR, a core mechanism for its implementation are company due diligence statements (EUDR: Article 3). These require evidence to demonstrate that the production of the forest risk commodities did not involve deforestation after the cut-off date at the end of 2020, and evidence that such production did not violate "relevant" domestic legislation (Ibid). Legislation considered relevant includes a list of eight categories, including international and domestic laws, and declarations governing human rights, labour, and environmental protection (Ibid: Article 2.40). This complex assemblage of laws addresses important equity concerns, but it remains to be seen how the EUDR will ensure compliance.

In addition to issues of scope, the range of actors affected by the EUDR will also depend on differences in how the Regulation is applied. The EUDR delegates authority for the enforcement of the regulation to the Competent Authorities in EU member states (EUDR: Ch. 3) which, as witnessed in the EUTR (McDermott and Sotirov, 2018), may result in various levels of enforcement and contestation among EU Member States and other actors. The EUDR requirements for due diligence also vary depending on the level of risk of deforestation in the importing country (EUDR: Art. 10). According to the Regulation, the designation of risk levels will determine the extent and cost of the required due diligence measures that companies must pursue to ensure that imported forest risk commodities are deforestation-free. The balance of actors involved in designing risk ratings is a matter of procedural equity. In terms of distributive equity, higher risk ratings may be assigned to regions where rapid deforestation has been driven by large-scale capitalized commodity production. In such cases, the policy might help protect some communities from the harmful practices of agribusiness actors operating in these deforestation frontiers. However, establishing risk ratings based on historical deforestation does not account for current efforts to address deforestation, or for differences in government capacities (Pham et al., 2025).

The EUDR's Article 30 on "Cooperation with third countries" speaks to some of these capacity challenges by calling for partnerships and cooperation to support affected countries and citizens. The Article places particular emphasis on support to facilitate EUDR compliance, and on legal reforms and data transparency to address the EU's priority of stopping deforestation. But there is also generalized language for partnerships to "allow full participation of all stakeholders" (EUDR: Art. 30.2) in governance reforms and to "optimise gains for the landscape, tenure security, agriculture productivity and competitiveness... [and to] strengthen the rights of forest dependent communities" (EUDR: Art. 30.3). It will be important to monitor how these commitments to

Box 1

Who sets the agenda and writes the rules?

- North/South, cross-stakeholder balance of actors and interests in the shaping of discourses, agendas, and decision-making, e.g. legislative amendments, country risk assessment processes; EU Joint Task Forces for implementation (e.g. [European Commission, 2023](#)), etc.
- Balance and direction of trade, industry consolidation, and the distribution of profits along the value chain for the seven forest risk commodities
- Diversity of third parties engaged in EUDR monitoring and Evaluation (M&E) processes, including non-EU countries and stakeholders

partnerships evolve over time, including the development of further policies to guide them (e.g. see the Global Gateway initiative; [European Commission, 2024](#)).

3.2.2. *Is equity a goal or a hoped-for outcome, and how is it defined?*

The “Subject matter and scope” of the EUDR is focused squarely on forest loss, and does not include a statement on equity (EUDR: Art 1). However, the Regulation’s preamble contains a number of direct and indirect references to improving equity. The first paragraph alludes to issues of distributive equity, by linking the conservation of forests with social benefits and environmental services, and the ‘livelihoods of the most vulnerable people’ (Ibid:206.1), with the implication that these will be helped by this legislation. The sixth paragraph refers explicitly to ‘intergenerational equity’ as well as ‘gender equality’ (Ibid:207.6), thus implying these are also underlying goals. There is also a reference to promoting an ‘equitable multilateral trading system’ (Ibid: 209.23), as well as references to other international agendas, including the European Green Deal (Ibid:207.10) and the global SDGs (referenced numerous times, including Ibid:208.11), that contain commitments directly related to equity and equality.

A concern for distributive and procedural equity is also implied through a range of other aspirational references in the text, including transformation to a ‘fair and prosperous society’, where ‘no person is left behind’ and where there is ‘sustainable and rule-based free trade’, and a ‘fair and environmentally-friendly food system’ (Ibid:207.10). The framing does not engage, however, with notions of recognitional equity, in terms of differing ideas of what constitutes fair trade and fair food systems, or who should hold the power to decide ([Popke, 2006](#)). Rather, the legislation adopts a normative framing of ‘good governance’, defined by EU authorities, that emphasizes state laws and tackling ‘weak governance’ (e.g. Ibid:210.27). It does not mention customary and traditional rule-making. In regards to multi-species justice, there are numerous references to the importance of ‘biodiversity’, though framed exclusively in terms of ‘ecosystem services’ for humanity (e.g. Ibid:207.5).

In general, these various equity-related concerns in the EUDR are framed in terms of the anticipated outcomes of the legislation rather than as precise goals, and therefore lack pathways to impact that are clearly defined and facilitate assessment and accountability. The key exception, discussed in the above section, is the requirement to demonstrate due diligence of compliance with certain environmental, human rights and labour laws and declarations (EUDR Article 2.40). It will be important to monitor whether EUDR regulatory texts and guidelines change over time in their framing of equity and whether they articulate actionable steps to more precisely define, monitor and improve on their equity goals.

3.2.3. *Who counts as subjects of equity?*

The EUDR text emphasizes the value of biodiversity and human well-being as expected outcomes of the Regulation. There is also a strong emphasis on indigenous and local communities and ‘vulnerable people’ (EUDR 2023:206) as victims of deforestation, but also the possibility that the EUDR could negatively impact some smallholder producers. There are no mandatory requirements to ensure that the EUDR does not negatively or disproportionately impact smallholder producers, or prevent companies importing forest risk commodities from excluding smallholders entirely if they are perceived as high risk sources. However there are several measures addressing the need to monitor or address

smallholder impacts in different parts of the document. For example, the preamble contains the following aspirational clause: “When sourcing products, reasonable efforts should be undertaken to ensure that a fair price is paid to producers, in particular smallholders, so as to enable a living income and effectively address poverty as a root cause of deforestation.” (Ibid:214:50). Likewise Article 30 calls for Partnerships with producing countries that, among other objectives, ‘strengthen the rights of forest-dependent communities, including smallholders, local communities and indigenous peoples’ (Ibid:Article 30.3).

It is also important to consider how the design of the legislation itself shapes who does or does not count as subjects of equity (e.g. [Sikor, 2013](#)). While the EUDR preamble touches on broader social issues such as societal well-being and vulnerable peoples more generally, the foundation of EUDR requirements on global commodities, systems of corporate due diligence, legal compliance and product traceability may obscure attention to many of the most marginal and vulnerable actors, particularly in tropical producing countries. These include not only smallholder producers of these commodities who often lack clear statutory land and resource rights and title – and hence legal standing – and risk losing market access, but also labourers, intermediaries and other marginalized actors embedded in the economy of commodity producing landscapes and their value chains. Such marginalized actors also include children engaged in commodity production whose livelihood priorities and perspectives have long been rendered invisible ([Berlan, 2009](#)).

The EUDR text also frames what is and isn’t included as non-human subjects of equity. The Regulation’s focus on commodity-based deforestation focuses on treed landscapes that are classified as forests according only to EUDR legislation and FAO definitions, and only deforestation associated with particular commodities. This, coupled with a focus on biodiversity in terms of its service to humanity, maintains a long-standing bias towards trees and forests at the expense of other plant and animal species, ecosystems and broader landscapes more generally (e.g. [Dove, 2004](#); [Veldman et al., 2015](#)).

Finally, the subjects of equity in the EUDR are further alluded to through Article 34, which spells out a process for an “impact assessment” of the legislation every five years. Much of the focus of this assessment is on compliance with the legislation, its impact on deforestation and opportunities for expanding its scope to other commodities and ecosystems. However Article 34 notably also calls for support for “LDCs highly impacted by this Regulation”, an assessment of impacts “on farmers, and in particular smallholders, indigenous peoples and local communities”, and “changes in trade patterns...when those changes could be an indication of...circumvention” [EUDR Article 34: 6a,b,e]. This opens a pathway for an explicit recognition of these stakeholders as subjects of equity who have a right to raise their interest and visions of equity, and whose outcomes would formally matter in EUDR monitoring and evaluation.

Box 2 summarizes this [Section 3.2](#) on the meta-equity of Policy Content, in the form of indicators to monitor over time.

4. EUDR implementation: mesa equity, and the case of cocoa in Ghana

The commodities and countries affected by the EUDR are highly diverse. Hence it is important to develop contextualized and tailored approaches to monitoring and evaluating the mesa equity dynamics of how the EUDR is implemented in practice. This section draws on the specific case of cocoa in Ghana to illustrate why such context matters,

Box 2

Policy Content (EUDR regulatory text and accompanying legislation).

To whom and what do the rules apply?

- Scope of products and prohibitions covered under the EUDR [as outlined in Article 34.6e, but with a focus on equity]
- Scope of the due diligence requirements
- Differences between EU Member states in their enforcement of the Regulation
- Assignments of EUDR compliance risk ratings across countries and their correlation with measures of country capacities, e.g. in terms of Gross Domestic Product, Human Development Index, Good Governance ratings, etc.

How is equity defined?

- Evolution of EUDR regulatory text regarding explicit and implicit framings of equity and their symbolic and functional role in shaping policy

Who are the subjects of Equity?

- Framing of actors as victims, or perpetrators and beneficiaries of deforestation
- Types and numbers of actors identified for receiving EU cooperation and support

and how this might be addressed. We focus on cocoa as a crop of particular concern for equity, and on Ghana as the world's second largest cocoa producer (Fountain and Huetz-Adam, 2020).

The EU imports up to 60 % of the global trade of cocoa (European Commission, 2022), which together with coffee is the largest share of any of the forest risk commodities covered under the EUDR (Gifford 2024). Ghana is the EU's second biggest cocoa supplier (Gaia Cocoa, 2021), and many of the companies trading in Ghanaian cocoa are headquartered in Europe. These structural factors, taken together, give the EU a particularly large role in both driving cocoa-driven deforestation, and shaping (in)equity in the cocoa value chain.

Many of the equity concerns around cocoa relate to the crop's importance to smallholders. Globally, an estimated 90 % of cocoa is produced on smallholdings of under 5 ha (Bermudez et al., 2022). Many cocoa growers are poor and they receive a decreasing share of global cocoa profits (currently as little as 3 % of the price of a chocolate bar versus 50 % in the 1970s) (Brack, 2019). Cocoa prices are also volatile and climate change is increasingly threatening the viability of cocoa production (Ibid). Ghanaian cocoa is produced by roughly 620,000 smallholders, within a sector that supports over two million people (GSS, 2020; Teye and Nikoi, 2023). The strong dependence of cocoa producers in Ghana and elsewhere on trade with the EU means most farmers will face strong pressure to meet the requirements of the EUDR, be forced to seek alternative buyers or leave the sector altogether. At the same time, Ghana has repeatedly leveraged cocoa to pay its mounting national debt and hence is under heavy pressure to increase cocoa production (Frimpong-Ansah, 1991).

Ghana is also of significant environmental relevance to the EUDR, given cocoa is the country's largest direct driver of deforestation and tree cover loss (Agariga et al., 2021; Brobbey et al., 2020; Reinier et al. under review). Ghana overall has the highest level of cocoa-driven deforestation among all cocoa producing countries (Parra-Paitan et al., 2024) and deforestation rates have increased in recent years (Kalischek et al., 2023). While cocoa is increasingly expanding into lands already used for food crops, this displaces food crops into forest areas (Renier et al., 2025).

In sum, Ghana is a critical test case for the EUDR in terms of both deforestation and equity, and it faces conflicting international pressures to both increase cocoa production and eliminate associated deforestation. At the same time, Ghanaian cocoa is important to millions of livelihoods in ways that are highly dynamic and complex. The following subsections draw on the available research and literature to parse out key ways in which EUDR implementation might impact distributive, procedural and recognitional equity, and how this might be monitored and evaluated from the global to local level.

4.1. Distributive equity - distribution of material costs and benefits

Our analysis begins with the distribution of material costs and benefits from implementation of the EUDR. This dimension, and in particular the question of how the EUDR impacts smallholder farmer livelihoods, has arguably received the most international attention. Yet the complexity of cocoa production and trade, the diversity of local

communities involved, and the diversity of potential impacts, defies simple narratives of universally positive or negative impacts. Below we provide a foundational structure for a *holistic and inclusive approach to assessing costs and benefits*. We begin with identifying distributional issues across international cocoa value chains, then address direct costs and benefits among smallholder cocoa farmers, and finally consider how access to benefits and exposure to costs might vary between the EU and Ghana, and across social groups in cocoa-growing communities and landscapes.

4.1.1. Supply chain benefits and costs

The majority of cocoa produced in Ghana is sold, unprocessed, into international markets in Europe (e.g. 62 % of the total in 2024) and elsewhere (EEAS, 2025). Cocoa remains an economically very important crop for the national economy, and particularly for cocoa growing regions in southern Ghana. Cocoa is also currently being used to service Ghana's rising international debt (Asante-Poku and van Huellen, 2021). Hence it is particularly critical for Ghana to monitor whether or not the EUDR coincides with a shift in global sourcing of cocoa to other countries, as this could impact the country's international balance of trade and its economy more generally. These include shifts in the volume and world price of cocoa, as well as shifts in the direction of trade, e.g. between countries considered high versus low risk, as witnessed for example under the EU Timber Regulation (EUTR) (Brusselsaers and Buysse, 2021). It includes impacts on consumers, producers, traders, processors, labour, infrastructure, credit, associated industry impacts and spill over impacts on regions and communities.

The distribution of power and profits in the cocoa value chain is also highly concentrated among international buyers and sellers, while a large proportion of cocoa farmers do not earn a living income and are vulnerable to major price fluctuations (van Vliet et al., 2021; Waarts et al., 2021). Monitoring value chain impacts will also need to consider changes in how the benefits and costs of cocoa commodity production are distributed across the entire length of the value chain.

4.1.2. Direct benefits and costs to cocoa farmers

There has been a growing discursive debate around the potential direct costs and benefits of the EUDR for smallholder farmers. Some civil society groups have emphasized potential net benefits. For example, (Christian, 2024) argues that the EUDR could support the development of nation-wide traceability systems, and digitized cocoa payments, and that this would make pricing more transparent and negotiable by farmers. This nationalization and digitization, it is proposed, could help by "ridding the local cocoa sector of corruption" in the form of underpayments to farmers for cocoa (Ibid). Likewise, a letter from a group of NGOs and farmers' organizations in Côte d'Ivoire states that EUDR traceability requirements will help cut out "middlemen" in the value chain and allow farmers to negotiate more directly with cocoa buyers (Zei et al., 2022).

Within this line of argument, the assessment of costs has largely focused on the costs of compliance with the EUDR's requirements for georeferencing of farms. According to (Christian, 2024) "advocates respond that this can be done in a few clicks via a map application on a

smartphone, but admit it does require a smartphone and internet access". Yet in Ghana, as in many cocoa growing countries, the complexities of legal and traditional land tenure systems, as well as broader, systemic governance challenges belie this characterization of verification as simply a matter of access to technology.

To illustrate these complexities, it is important to unpack cocoa's 'first mile' from harvest to processing and local sale. Here the EUDR requirements for tracing cocoa back to the farm level are complicated by a number of factors, e.g. a single farmer's cocoa plots may be widely dispersed, with disparate tenure arrangements for each plot, cocoa beans from various farmers and fields are commonly mixed together in the pre-sale process of drying the beans at the farm and buyer levels, and farmers often sell to numerous cocoa buyers (Stoop et al., 2021). Farmers may also hold legal or traditional rights to farms in forest reserves, and in many cases deforestation predated the establishment of the reserve and took place well before the EUDR cut off date of 2020 (Kumeh et al., 2022, p 6; Kumeh and Ramcilovic-Suominen, 2023). Even though some of these farms may be considered EUDR compliant (EFI, 2024), ongoing fieldwork in southern Ghana shows that some licensed buying companies are rejecting cocoa beans that are produced on farms close to forest reserves or on farms that are operating legally within forest reserves (Kumeh and Ramcilovic-Suominen, 2023). It may be considered too costly or risky to ensure deforestation-free cocoa in such cases, leading even those farmers who are technically compliant with the EUDR to nevertheless lose market access. Meanwhile non-compliant farmers will presumably lose access to lucrative EU markets. The ability of farmers to navigate these challenges is also likely to differ for farmers selling individually to intermediaries, or through certified or non-certified cooperatives, or to different government licensed buying companies.

4.1.3. Broader access to benefits and exposure to costs

While much of the international attention on distributive equity has focused on cocoa value chains and cocoa farmers, the EUDR also impacts a much broader range of Ghanaian actors and landscapes across national to local scales. Article 30 of the EUDR makes reference to the need to form partnerships with producing countries in order to support EUDR compliance (e.g. EUDR 2023 L. 150/209: 18), although it does not define the level of investment required, or the nature of those partnerships. Monitoring the degree to which such partnerships contribute to distributive equity could include measuring EU and EU Member State investments in these partnerships, as well as the benefits and costs of implementation for the Ghanaian government.

It will also be important to consider how government and private sector investments in cocoa traceability are impacting relative government expenditures on food crops and other priorities for environmental health and social welfare. Furthermore, increased government attention to cocoa could drive other investments, e.g. in enhanced cocoa productivity, which may also affect the distribution of benefits among farmers (Hütz-Adams, 2022). Within cocoa growing regions, the poorest and most vulnerable community members are least likely to have access to high quality cocoa farmlands, and to receive government extension and subsidized cocoa inputs (Hirons et al., 2018), but may nevertheless depend on income from cocoa, work as labourers on cocoa farms, or engage in small-scale mining or other local livelihood alternatives (Amfo et al., 2022). These vulnerable actors have been identified by the EUDR and other international policy instruments as high priority from an equity perspective (see above), and are at high risk of losing market access to cocoa, yet present some of the greatest challenges to external monitoring (Zhunusova et al., 2022). On the other hand, if the EUDR effectively reduces deforestation rates, this could bring ecological or social benefits to some farmers, such as micro-climate regulation or access to forest products, depending on (changes in) legal and customary access to these resources (Morel et al., 2024; Obeng et al., 2020).

Monitoring these diverse, multi-scale determinants of distributive equity in Ghana will require multiple methodologies employed at

international, national and field-based levels. Monitoring could involve systematic data collection to extend available demographic statistics as well as detailed ethnographic work. It will be important to conduct stratified sampling of diverse communities and farming households, at varying distances from forest reserves, to capture differing impacts between different social groups. While comprehensive monitoring of these diverse impacts across all affected landscapes is not likely to be feasible, much could be learned from engaging diverse actors at multiple scales in such monitoring efforts.

Box 3 below summarizes this analysis and provides an indicative framework for monitoring distributive equity over time.

All of the above socio-economic dynamics also interact with ecological processes in much broader ways than would be captured by the EUDR's monitoring of deforestation on cocoa farms, and this in turn affects human and multi-species equity and well-being. While a larger discussion of these social ecological interactions is beyond the scope of this paper, there is a need to integrate socio-economic and ecological monitoring at landscape and larger scales.

4.2. Procedural and recognitional equity

4.2.1. Representation, participation and recognition in EUDR implementation and related processes

Consistent with the importance of cocoa to Ghana's economy, the Ghanaian government has been investing heavily in measures to facilitate the implementation of the EUDR. These include farmer outreach and land registration programmes and further development of a national cocoa traceability system. These programmes can be monitored and evaluated from a procedural point of view in regards to the level of representation, participation, and recognition they grant to different actors and social groups. From the perspective of recognitional equity, it would also be relevant to recognize, and monitor, how satisfied different social groups are with the equity of decision-making processes on EUDR implementation, and what changes are required to improve equity and satisfaction levels.

The EUDR also interacts with, and influences, other sustainable cocoa and land use initiatives. Such other initiatives are numerous and growing (Nelson and Phillips, 2018), from cocoa certification to REDD+ to the FLEGT Voluntary Partnership Agreement aimed at eliminating illegal logging, to initiatives to eradicate child labour, among others. Within this context, the EUDR adds additional requirements, costs and participatory burdens for the Ghanaian government, the private sector, NGOs and smallholders who may already be engaged in these multiple programmes. Some have therefore suggested a 'landscape approach', e.g. where the EUDR recognizes the landscape-scale monitoring of deforestation under REDD+ and characterizes as low risk those areas that have received REDD+ finance for avoided deforestation (van der Haar et al., 2023). The monitoring of equity impacts, likewise, could be done in collaboration with other initiatives. However, it is critical to recognize that some actors, such as children informally employed in the cocoa sector, have been consistently excluded from the design of international initiatives claiming to protect their interests (Berlan, 2009, 2013, 2021). According to Berlan, this has generated a blindness to systemic issues such as food insecurity, underfunded schools and the prevalence of child labour outside the cocoa sector that help explain the continued failure of cocoa-centric anti-child labour interventions (Ibid). The EUDR could potentially play a role in designing a more inclusive approach to monitoring that recognizes and addresses such forms of social exclusion.

More indirectly, the focus of the EUDR and many other international sustainability initiatives in Ghana on cocoa, has fueled a major concentration of investments in land use decision-making processes into the cocoa sector (Amuzu et al., 2022; Staritz et al., 2023; Teye and Nikoi, 2023), as opposed to other sources of local livelihoods. To the extent this trend is reinforced by the EUDR, this could also have intersectional impacts on representation and participation in decision-making across

Box 3

Distribution of material costs and benefits across scales and social groups

- Value chains
 - Volume, price and direction of the international cocoa trade
 - Percent of cocoa price captured by farmers, national governments, international actors
 - Size and distribution of cocoa sales & cocoa income at national, regional, community and intra-household levels
- Direct benefits of EUDR implementation for farmers
 - Income additionality from deforestation-free cocoa
 - Prevalence of direct trade (e.g. to test hypothesis that EUDR will cut out middle-men)
- Direct costs of EUDR implementation for farmers
 - Farm geolocation costs
 - Labour costs for plot level sourcing and segmented processing, e.g., drying
 - Loss of access to EU markets, including compliant farmers located close to or in non-forested reserve areas
- Broader exposures to costs and access to benefits
 - EU, Member state investments in partnerships with Ghana, smallholder support
 - Ghanaian state expenditures on meeting EUDR requirements and impacts on other government programmes and priorities
 - Opportunity costs of lost access to land/forests near or in forest reserves
 - Size and diversity of social groups engaged in cocoa farming
 - E.g. Gender balance, ethnic diversity, migratory status
 - Distribution of land for cocoa versus food crops and other livelihood sources, including resources from forests and their access
 - Number of intermediaries employed, their income and access to alternative livelihoods
 - Access to credit and extension for cocoa, food crops and other livelihood sources
 - Migration patterns
 - Number and distribution of cocoa labourers
 - Labour wage rates
 - Levels of poverty and food security

gender, ethnicity, age, migratory status, etc. On average, older men with long-term residency have greater access to high value, legally registered cocoa land, and play a dominant role in land use decision-making around cocoa. In contrast, women invest in food crop production as critical to household food security (Evans et al., 2015), while migratory labour and mining provide important income for young adults (Amfo et al., 2022; Nunoo et al., 2023). It will be important to track any shifts in the priorities of governments and other actors towards or away from the current predominant focus on cocoa-based participatory processes.

Box 4 below provides an indicative monitoring framework to assess changes in representation, participation and recognition across governance systems and across scales. While the primary focus is on monitoring EUDR implementation, this framework can also be applied to the decision-making processes within the EUDR and other processes operating at a global scale.

4.2.2. Legal and traditional rights and knowledge systems

The procedural and recognition equity impacts of the EUDR are also shaped by the degree to which the Regulation's implementation recognizes and influences plural, multi-level governance arrangements, including existing legal and traditional rights of diverse social groups. Rural areas in Ghana are governed by a mix of legal and traditional governance systems, and commodity value chains are also governed by voluntary market-based certification systems. The majority of farmlands are customary land, owned by traditional authorities and families, and are distributed to farmers through diverse leasing and sharecropping arrangements. Naturally occurring trees on farms are under the fiduciary control of the state, farmers lack legal rights to these trees, and the trees may be allocated under government timber harvest permits (Parliament of Ghana, 1962 (ACT 124)). These traditional systems also mediate access to cocoa labor, for example sharecroppers exchange labour for a share of cocoa yields. In contrast to the hybrid state and customary law recognized by cocoa farmers and local communities, the EUDR focuses exclusively on state law in defining tenure and other

rights and benefits. This includes requirements for evidence of due diligence to ensure compliance with laws governing human rights and labour. It also requires the georeferencing of cocoa farms for the purpose of assessing legality of ownership rights and for the detection of deforestation on cocoa plots. In that sense, the EUDR delegates to state laws and formal governance processes the possible recognition, or not, of local and traditional norms, customs and knowledge systems.

In regards to EUDR requirements for compliance with human and labour laws, the degree to which this protects local rights depends on the content of Ghanaian legislation, and how it is adjudicated and enforced. Monitoring the direct impact of the EUDR on procedural equity would involve monitoring the degree to which EUDR implementation changes the enforcement of human rights and labour laws, who benefits or incurs costs or burdens from these changes, and whether there is evidence that laws governing human and labour rights and their implementation are changing as a result of the EUDR. For example, the EUDR's emphasis on georeferenced cocoa farms could incentivize further formalization and privatization of traditional land tenure systems, with differing impacts across social groups, including negative impacts among the most vulnerable and marginalized, who may in turn resort to further deforestation.

Evidence thus far suggests that the EUDR is already impacting government priorities for state-driven tenure formalization. In response to the EUDR's georeferencing requirements, the Ghana Forest Compliance Service partnership is producing land cover maps and the government agency COCOBOD has engaged in a programme of accelerated physical registration of cocoa farms and a digitized Cocoa Management System (CMS). This registration includes not only physical coordinates, but biodata and data on farming households, none of which is publicly available. This further centralizes government monitoring, and the concentration of data and associated knowledge and power in the central state. The costs of this programme, which predate the enactment of the EUDR, have been covered by a loan from the African Development Bank, along with strict terms to repay the debt (AfDB, 2018). It is as yet unclear

Box 4

Representation, participation and recognition in governance processes

- Balance of representation among diverse social groups in decision-making forums related to the implementation of the EUDR and other sustainability initiatives
- Relative influence of diverse social groups on decision-making within these forums
 - Whose knowledge and priorities are reflected in decisions?
- Satisfaction of diverse social groups with decision-making processes
- Availability and use of redress mechanisms, e.g. regarding verification of land rights claims, deforestation free cocoa

whether Ghana's current investments will meet EUDR requirements, or result in lost government revenue, and thereby increase national debts in Ghana and other exporting countries. At the same time, COCOBOD's heavy investment in recording land rights for cocoa overlooks numerous other land uses for food crops, oil palm, etc. that are particularly critical for the livelihoods of women, children, minorities and other vulnerable groups (Amfo et al., 2022) and are also highly relevant for deforestation (Kumeh and Ramcilovic-Suominen, 2023; Nunoo et al., 2023; Reiner et al., 2023; Ermgassen et al., 2023). It is important to track whether the EUDR's traceability requirements reinforce existing biases in government allocation of funds, research, databases, and extension that favor learning and support for cocoa farming over more holistic and integrated agricultural development.

The mismatch between the Ghanaian legal and traditional tenure systems and the EUDR's conception of privately owned and managed, and georeferenced farms, is further amplified by differences between the definitions of 'forest' in EU and Ghanaian legislation and local customary practices. The EUDR adopts the FAO definition of forests which is more expansive than that defined in Ghana's REDD+ programme, meaning that areas not considered forest in Ghanaian law may count as forests to the EU (EFI, 2024). It also means that those farmers who hold legal and traditional rights to farm in areas the EUDR defines as forested, will lose the ability to produce and sell cocoa from those areas to the EU. The EUDR provides no clear pathway for support or compensation to such affected farmers.

Box 5 below provides an indicative monitoring framework for assessing whose rules, rights and knowledge systems are recognized and protected over time. It covers potential direct as well as indirect impacts across governance systems and across scales.

5. Discussion, conclusion and recommendations

Unilateral value chain policies are, by definition, enacted without multilateral agreement, and are embedded in systems of global trade that are rooted in historical inequalities. This creates deficits in accountability and legitimacy that heighten the importance of monitoring and evaluating their socio-economic impacts. Such social impacts are important because equity is widely accepted as both an ethical imperative of international governance, and critical to addressing global environmental challenges, regardless of whether the policy instruments under analysis include equity as a core objective. Therefore this paper presents a multi-scale, multidimensional framework for assessing policy equity that serves the dual purpose of 1) facilitating a relatively comprehensive and structured reflection on the current and potential equity impacts of unilateral value chain initiatives, and, 2) providing a platform for monitoring and addressing their realized impacts over time. Monitoring is itself a political process, and fraught with contestations over what should be monitored, why, by and for whom (Rametsteiner et al., 2011). This paper's application of a multi-scale, multi-dimensional equity framework to all phases of the policy process can help parse out diverse direct and indirect effects of such policies, in ways that inform rather than preclude negotiation over what balance of equalities or inequalities is the most equitable result.

Drawing on the illustrative case of the EUDR, our analysis begins with the 'meta-equity' of agenda-setting, decision-making and policy content. We note how the EUDR agenda was set largely by EU actors, albeit with input from other actors. The EU holds sole authority to establish and enforce rules governing all actors engaged in the trade of

forest risk commodities with EU members, as well as to set definitions and terms of operations that are to be followed in both EU and non-EU states. In terms of policy content, the EUDR places top priority on eradicating deforestation over the other governance priorities of countries producing these commodities, such as food sufficiency, poverty alleviation, economic development, and other environmental and social goals. The EUDR text also articulates some goals for equity, in the form of broad claims and ambitions for intergenerational equity and global societal benefit, and avoidance of harm to smallholders. However, specific measures to address these ambitions are limited to requirements for companies to demonstrate due diligence that product production did not violate state-based environmental, human and labour rights laws and declarations. Differences in country capacity for fair and equitable law enforcement is not addressed, nor is the role of customary laws and governance systems.

We then assess the 'meso-equity' of EUDR implementation, across distributional, procedural and recognition equity. As would be expected for a wide range of unilateral and trade-based policies, we note that the impacts of implementation will vary widely between commodities and countries. We draw on the case of cocoa in Ghana, as a crop produced by smallholders, to illustrate a range of potential impacts. In regards to distributive equity, the EUDR may impact the overall size, value and direction of Ghana's cocoa trade, as well as the distribution of profits along the value chain. It may impact the costs and benefits of cocoa production for farmers, and in ways that vary based on land tenure security, access to high value cocoa land and distance from forest reserves. It may also impact the Ghanaian government's relative investments in cocoa versus other crops, such as food crops critical to local livelihoods. Regarding procedural equity, it is important to consider how the EUDR interacts with decision-making in other sustainability interventions, and how this differently impacts women, labourers, children, migrants and other intersectional social groups. The EUDR's systems of verification and enforcement currently favor legal over traditional governance systems, and certain forms of knowledge – e.g. cadastral surveys and remote sensing of forest cover within fixed time frames – over local and traditional knowledge of landscapes as culturally embedded, complex, biodiverse and dynamic.

In sum, there are many and diverse potential effects of the EUDR and other unilateral value chain policies. Appendix A provides a generalized framework of indicators for monitoring such dynamics in other EUDR commodities besides cocoa, and in other unilateral environmental value chain policies. In the case of the EUDR, the time window opened by its recent postponement provides a critical opportunity to begin the development and phased implementation of such a system and bring much needed visibility to equity concerns. While evaluating how diverse impacts play out in practice will require ongoing monitoring, there are nevertheless a number of actions that could be taken immediately to mitigate inequities. These include the involvement of more diverse actors in policy agenda-setting and decision-making, investments in partnerships with producing countries, and the provision of support for affected smallholder farmers and communities.

Monitoring international value chain policies is inherently a large and complex endeavour. We recognize that it is neither feasible for the EU or any other singular political body to assess all possible impacts, nor would it be desirable for any single actor to control the monitoring process. However, there is also tremendous scope for the co-production of monitoring programmes that engage a diversity of actors, at multiple scales. For example, efforts could be made to coordinate existing

Box 5

Recognition and protection of different rules, rights and knowledge systems.

- Content of existing legal and traditional rights
- Evidence of EUDR influence on changes to these rights, e.g. land and tree tenure reform
- Which legal rights are addressed through EUDR legality requirements, e.g. through company due diligence systems and compliance monitoring, how and for whom?
- Access of diverse social groups to locally legible information about their rights under the EUDR
- Incorporation of diverse forms of knowledge into EUDR-related decision-making and monitoring

academic and applied research programmes, and government, private sector and NGO monitoring systems, in ways that contribute to a holistic monitoring agenda. Such an inclusive and equitable approach may not only greatly expand on-the-ground monitoring capacity, but also contribute key learnings for all involved. If appropriately designed, it could also help ensure that international policies addressing trade and land use safeguard the poorest and most vulnerable and enhance, rather than undermine, equity and sustainability.

CRediT authorship contribution statement

Constance L. McDermott: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Thomas Addoah:** Writing – review & editing. **Tawiah Agyarko-Kwarteng:** Writing – review & editing. **Rebecca Asare:** Writing – review & editing. **Alex Assanvo:** Writing – review & editing. **Mairon Bastos Lima:** Writing – review & editing. **Helen Bellfield:** Writing – review & editing. **Amanda Berlan:** Writing – review & editing. **Sophia Carodenuto:** Writing – review & editing. **Toby Gardner:** Writing – review & editing, Writing – original draft, Conceptualization. **Rachael D. Garrett:** Writing – review & editing. **Caitlin Hafferty:** Writing – review & editing. **Mark Hiron:** Writing – review & editing, Writing – original draft, Conceptualization. **Verina Ingram:** Writing – review & editing. **Eric Mensah Kumeh:** Writing – review & editing, Writing – original draft, Conceptualization. **Joss Lyons-White:** Writing – review & editing, Writing – original draft. **John Mason:** Writing – review & editing. **Patrick Meyfroidt:** Writing – review & editing, Writing – original draft, Conceptualization. **Jasper Montana:** Writing – review & editing. **Gustavo L.T. de Oliveira:** Writing – review & editing, Writing – original draft, Conceptualization. **Sabaheta Ramcilovik-Suominen:** Writing – review & editing. **Metodi Sotirov:** Writing – review & editing. **William Thompson:** Writing – review & editing. **Georg Winkel:** Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

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Data availability

Data will be made available on request.

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