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How the EUDR reconfigures evidence ecosystems: implications for equitable climate resilient coffee governance in Ethiopia and Kenya

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Abstract

This paper examines how regulatory interventions influence the evidence ecosystems underlying policymaking. Much research on evidence-informed policymaking focuses on how evidence influences policy decisions, with less attention paid to how policy reforms themselves shape what counts as evidence and who is authorized to generate it. This paper addresses these overlooked issues in the evidence-informed policymaking (EIPM) literature by analysing how the nascent European Union Deforestation Regulation (EUDR) – formulated primarily based on evidence of the impacts of the EU's consumption choices on tropical deforestation – is being interpreted and implemented in the coffee sectors of Ethiopia and Kenya. Drawing in evidence across key informant interviews (19) and four (4) multi-stakeholder workshops across both countries, the paper shows that EUDR compliance requirements are reconfiguring the coffee evidence ecosystems in both countries by elevating standardised, auditable forms of data – such as geolocation, traceability records and deforestation-risk verification – as prerequisites for market access. This shift narrows what counts as policy-relevant evidence, privileges powerful actors with the capacity to generate, curate, and broker such data while marginalising smallholder coffee farmers and locally embedded knowledge systems. The role of evidence with the advent of the EUDR is being transformed from an input to policy deliberation into an instrument of regulatory control, reconfiguring how local actors define and operationalize climate resilient coffee. These findings indicate that supply-chain regulations function not only as legal and market mechanisms but also as epistemic interventions that can reorganise knowledge systems within producer countries. By foregrounding the politics of evidence in global commodity governance, this paper enriches existing discussions on EIPM, equity and climate-resilient agriculture, highlighting the need to address the distributional consequences of emerging data-driven regulatory regimes.

1. Introduction

Coffee production in the tropics is increasingly governed at the intersection of climate risks, sustainability politics and trade regulation. Across producing countries, climate-resilient coffee production has become a central policy objective for many governments, researchers, development partners, and coffee firms (Bracken et al., 2023; Hirons et al., 2018; Jawo et al., 2023). Yet climate resilience is not a neutral or universally agreed objective. As a growing body of work highlights, resilience can be framed in multiple ways (Grabs et al., 2026): from stabilising export supply (Massrie, 2024) and protecting ecosystem functions (Moat et al., 2017), to securing farmer livelihoods (Mergassa et al., 2025) and breeding crop varieties adapted to climate variability (Nantongo et al., 2025; Pokou et al., 2025). These framings reflect different values, priorities and distributions of power, raising fundamental questions about whose resilience is being pursued, to what ends, and on the basis of what forms of knowledge (Hirons et al., 2020).

These questions are becoming more essential as the governance of coffee and other global commodities undergoes a significant transformation. Over recent decades, governance in global commodity sectors and related value chains have largely been organised through market-mediated and

stakeholder coordinative arrangements such as private certification schemes, voluntary sustainability standards, and multi-stakeholder initiatives (Cashore et al., 2004; Auld, 2014; Newell & Paterson, 2010; Wright et al., 2024). Emerging regulatory regimes are introducing more juridified, data-intensive and compliance-oriented forms of supply-chain governance (Fransen et al., 2024; Walter & Plotke-Scherly, 2025). The European Union Deforestation Regulation (EUDR) – promulgated on 29th June 2023 to eliminate deforestation-linked cattle, cocoa, coffee, oil palm, rubber, soy, and timber from the bloc's market – is a prominent example (Gilbert, 2024; Grabs, 2025; McDermott et al., 2025). By requiring firms to demonstrate, through due diligence systems, that commodities placed on the EU market are deforestation-free and legally compliant, the EUDR makes the provision of geolocation data, traceability records, monitoring and audit systems, and risk assessments a condition for market access (EU Parliament & EU Council, 2023; McDermott et al., 2025). In doing so, it shifts evidence from a resource used to inform policy and market decisions to a prerequisite for participation in them.

This paper argues that such regulatory transformations do not simply increase the demand for evidence, but can also actively reconfigure the *evidence ecosystems* within which policymaking occurs. A growing literature on evidence-informed policymaking (EIPM) stresses that evidence does not move linearly from research into policy, but rather through complex systems of actors, and cultural, institutional and relational dynamics (Cairney, 2016; Parkhurst, 2017; Punton et al., 2021). The concept of evidence ecosystems has emerged to capture these dynamics, directing attention to how knowledge is produced, brokered, interpreted and used within socio-political contexts (Elliot et al., 2014; Shepherd, 2014; Stewart et al., 2019; Sempé et al., 2025). Much of the current literature focuses on how evidence shapes policy choices, with comparatively limited attention to how policy reforms and external shocks can (re)shape the conditions under which evidence is generated and mobilised.

This gap is increasingly significant in the context of regulatory approaches such as the EUDR, which further embed data requirements, traceability systems and audit mechanisms within the governance of global supply chains. Insights from political ecology and related fields suggest that such systems of classification, verification and standardisation do not simply describe reality. Alternatively, in order to make reality manageable or governable, they often render certain phenomena legible, allocate responsibility, and privilege particular forms of knowledge and expertise over others (Roe, 1994; Scott, 1998, 2021). This means that changes in governance are simultaneously changes in epistemic authority. Yet how these dynamics unfold as international regulatory mechanisms are interpreted and implemented within producer-country contexts remains insufficiently understood.

Understanding these processes is critical because shifts in evidence systems are closely bound up with questions of equity (McDermott et al. 2025). When compliance becomes contingent on the production of specific forms of data — such as geolocation coordinates or formalised traceability records — actors' ability to participate in markets and policy processes becomes unevenly distributed. Smallholder producers, farmer cooperatives and many local institutions often face significant constraints in accessing the technologies, resources and institutional support required to generate and maintain such evidence (Trujillo et al. 2026). This raises the risk that some actors become effectively invisible or

silenced within emerging data infrastructures (Brockhaus et al. 2024), excluded not through explicit policy decisions but through the absence of recognised evidence. At the same time, more standardised, auditable and quantifiable forms of knowledge may be privileged over experiential, local or indigenous knowledge systems despite the latter's importance for managing complex agroecological systems (Almeida and Soto-Pinto, 2025; Hemmelgarn, 2025). In this way, the reconfiguration of evidence ecosystems is not only a technical process, but a deeply political one, with distributional consequences for who participates in governance and who benefits from it.

These dynamics are also central to how climate resilience is defined and pursued in producing "forest-risk commodities" (FRCs). Climate change is already reshaping FRCs like coffee through rising temperatures, increased rainfall variability, and heightened pest and disease pressures, with significant implications for yields, quality and the long-term viability of *Coffee arabica* cultivation (Bunn et al., 2015). In this context, resilience is inherently multi-dimensional and contested, shaped by interactions between livelihood practices, knowledge systems, institutions and beliefs (Hirons et al., 2018). For smallholder producers, resilience is not only a question of maintaining production, but of securing livelihoods in the face of climate shocks, price volatility and evolving market requirements.

What is measured, monitored and verified plays a critical role in determining how resilience is understood and governed. Where regulatory systems prioritise indicators such as deforestation risk, land-use classification or supply-chain traceability, resilience may become implicitly framed in terms of compliance, environmental metrics and supply security. While these are important dimensions, such framings risk marginalising other aspects of resilience, including the social, economic and institutional conditions that underpin farmers' capacity to cope with and adapt to climate variability — such as access to finance, extension services, diversified livelihoods and locally embedded knowledge systems. As a result, there is a danger that, within reconfiguring evidence ecosystems, policies designed to address deforestation may be assumed to deliver climate resilience, while in practice they risk reinforcing existing inequalities or overlooking the social, economic and institutional drivers of vulnerability that underpin farmers' capacity to adapt.

Against this backdrop, the coffee sectors of Ethiopia and Kenya provide a valuable comparative lens through which to examine how regulatory shifts are reshaping evidence ecosystems in practice. Both countries are the 1st and 5th top coffee producers in Africa, respectively, and have strong state involvement in the sector albeit Kenya having a more liberalized institutional arrangement (Section 2.2). Both countries face increasing pressure to comply with the EUDR in order to maintain access to European markets. Coffee plays a central role in their economies and livelihoods, supporting approximately 15 million people in Ethiopia and around 700,000 in Kenya, while generating significant foreign exchange earnings (USDA, 2025a, 2025b). These similarities and contrasts provide a basis for exploring how a common external regulatory pressure interacts with different institutional contexts to influence what evidence is prioritized in coffee policymaking and with what implications for who participates in evidence ecosystems. To achieve this, we analyse: 1) what counts and is prioritized as evidence; 2) the actors and institutions that gain or lose epistemic authority in the process; and 3) the

processes through which evidence is used in policymaking, and how these shape which policy issues are rendered more visible or marginalised.

By addressing these questions, this paper contributes to three strands of literature. First, it advances work on EIPM by demonstrating that policy reforms do not merely draw on existing evidence but actively reshape evidence ecosystems, influencing what counts as credible knowledge and how it is mobilised. Second, it contributes to scholarship on deforestation-free and due diligence regulation by foregrounding their epistemic and institutional effects within producer-country contexts, moving beyond a focus on compliance mechanisms to examine how such regulations reorganise knowledge systems and authority. Third, it advances debates on climate-resilient coffee by showing how external regulatory pressures interact with domestic governance systems to redefine both the meaning and practice of resilience, often privileging compliance-oriented metrics over locally grounded understandings of adaptation and livelihood security. Overall, the paper argues that unilateral regulatory initiatives such as the EUDR should be understood not only as legal or market interventions, but as epistemic interventions that reorganise what counts as credible knowledge, who is authorised to produce it, and which problems become governable within coffee landscapes.

The remainder of the paper sets out the methodological approach (Section 2) before presenting the empirical findings (Section 3) and discussing their implications for equitable and climate-resilient coffee governance (Section 4).

2. Methods

2.1 Conceptual approach – Evidence, actors and processes

This study draws on the literature on EIPM and the concept of evidence ecosystems to analyse how regulatory change reshapes the production and use of knowledge in policy processes. Evidence is not treated as a neutral input into decision-making, but as embedded within dynamic systems of actors, institutions and incentives that shape how knowledge is generated, circulated and used (Cairney, 2016; Parkhurst, 2017; Punton et al., 2021; Sempé et al., 2025). Evidence ecosystem captures these dynamics by emphasising the relationships between actors, knowledge practices and institutional arrangements that structure evidence use (Elliott et al., 2014; Shepherd, 2014; Stuart et al., 2019). In environmental and development policy contexts, these systems are characterised by uncertainty, contested problem framings and unequal access to expertise and resources, meaning that evidence use is closely bound up with questions of power and authority (Leach et al., 2010; Cairney, 2016; Parkhurst, 2017). While related strands of literature emphasise co-production and the inclusion of diverse knowledge systems in environmental governance (e.g. Turnhout et al., 2020), our focus here is on how regulatory frameworks reshape how different forms of evidence are recognised and mobilised in policymaking.

The EIPM framework (Sempé et al., 2025) provides an analytical structure for parsing out how evidence operates in policymaking. The EIPM framework stresses that policymaking occurs within an ecosystem

of interacting actors – evidence producers, evidence intermediaries and evidence users – that navigate policymaking by drawing on various capabilities, relationships and networks, structures and processes, and the evidence culture within their wider political and institutional contexts. The complexity of interactions acknowledged by the EIPM reinforces the longstanding view in the policy literature that evidence does not move linearly from research into policy; on the contrary, it is mediated through complex and iterative processes (Weiss, 1979; Nutley et al., 2007; Parkhurst, 2017).

Building on this foundation and insights from political ecology and environmental governance studies, we posit that systems of measurement, classification and verification do not simply inform policy but actively shape it. Such systems render particular issues legible, standardise forms of knowledge and allocate authority across actors, often privileging quantifiable and auditable forms of evidence over others (Roe, 1994; Scott, 1998, 2021; Cashore et al., 2004). From this perspective, regulatory interventions, like data-intensive due diligence requirements, can be understood as reconfiguring evidence ecosystems themselves. To capture how this operates, we pay attention to three interrelated dimensions of EIPM literature: evidence, actors and processes.

Firstly, evidence refers to the forms of knowledge that are produced, prioritised and institutionalised within policy processes. Consistent with a pluralistic understanding, this includes scientific research, administrative and geospatial data, and experiential or locally embedded knowledge. However, rather than assuming equivalence across these forms, we explore how particular types—especially those that are standardised, quantifiable and auditable—are elevated within regulatory contexts (Parkhurst, 2017; Sempé et al., 2025).

Secondly, actors refer to the individuals and organisations involved in producing, brokering and using evidence, including government agencies, research institutions, private-sector actors, civil society organisations and producer groups. These actors are embedded within institutional environments that shape their capacities, incentives and authority, and their interactions are central to how evidence is mobilised in policy processes (Nutley et al., 2007; Weyrauch et al., 2016; Sempé et al., 2025). Our analysis pays particular attention to how regulatory change reconfigures epistemic authority by enabling some actors to define and control evidence systems while constraining others.

Thirdly, processes refer to the pathways through which evidence is generated, circulated and used in policymaking. This includes both formal mechanisms, such as monitoring systems, reporting requirements and audit procedures, and informal dynamics, including relationships, networks and negotiation. Following the EIPM literature (Biesbroek et al. 2013; Cash et al. 2006; Clark et al. 2011; Dupuis & Biesbroek 2013; Norström et al. 2020; Weiss, 1979), these processes are understood as non-linear and shaped by interacting pathways, particularly structures and processes, relationships and networks, and evidence culture. We extend this perspective by focusing on how these processes shape policy problem definition, influencing which issues are rendered visible and governable, and which are marginalised (Roe, 1994; Scott, 1998).

Taken together, these three dimensions provide an analytically tractable framework for examining how regulatory change reshapes evidence ecosystems, enabling us to analyse how new evidentiary requirements within the EUDR redistribute authority across coffee sector actors and reconfigure the processes through which coffee policy problems are defined and addressed.

2.2 Case study contexts

Building on the comparative rationale outlined in the introduction, this section provides a concise overview of the coffee sectors in Ethiopia and Kenya, focusing on the governance, production and institutional dynamics relevant to evidence use and regulatory change.

Ethiopia's coffee sector is a cornerstone of its national economy and rural livelihoods, contributing roughly one-third of total export earnings and supporting an estimated 15 million people across production, processing and trade (USDA FAS, 2024). An origin of coffee, the country is Africa's largest coffee producer and among the world's leading *Coffea arabica* suppliers, with production exceeding 7 million 60-kg bags annually (ICO, 2023). Export markets are diversified, including the European Union, the United States and Saudi Arabia, while strong domestic consumption absorbs approximately half of national output, providing some insulation from global price volatility (USDA FAS, 2024). Coffee production in Ethiopia is closely linked to forest and agroforestry systems, situating the sector at the intersection of agricultural policy, forest governance and trade (Moat et al., 2017; Morel et al., 2019).

The governance of the Ethiopian coffee sector is characterised by a relatively centralised, state-coordinated system in which institutions such as the Ethiopian Coffee and Tea Authority (ECTA) and the Ethiopian Commodity Exchange (ECE) play central roles in regulating production, trade and quality control. At the same time, governance is shaped by overlapping mandates across agriculture, forestry and trade institutions, as well as uneven institutional capacity and fragmented data systems, particularly in relation to monitoring and coordination. These dynamics are situated within a broader policy landscape shaped by national development strategies such as the Climate Resilient Green Economy (CRGE), which seeks to align economic growth, agricultural transformation and environmental sustainability, including through interventions relevant to coffee and forest systems (FDRE, 2011). However, translating these strategic objectives into coordinated implementation and evidence-informed decision-making remains an ongoing challenge (Hirons, 2019).

Kenya's coffee sector, while smaller in scale, remains a high-value export commodity and a critical source of rural livelihoods. Coffee generated approximately US$ 292–300 million in export earnings for Kenya during 2023–2024 season, supporting over 700,000 smallholder farmers, alongside a wider network of actors in processing and trade (FAO, 2024; USDA, 2024). The sector is organised through a liberalised, auction-based marketing system centered on the Nairobi Coffee Exchange, with export markets dominated by the United States and European buyers.

In recent years, the Kenyan government has introduced a series of reforms aimed at restructuring and revitalising the sector. These include changes to trading rules, payment systems and regulatory

oversight, as well as the enactment of the Coffee Act (2023) in March 2026 to reconfigure institutional responsibilities, including establishing a new Coffee Research and Training Institute. Alongside these reforms and in line with the country's digital transformation, there has been increasing emphasis on traceability, geospatial mapping and data systems as tools for sector management and market access within the broader framework of the Kenya Integrated Agricultural Management Information System (KIAMIS).

Across both countries, the introduction of the EUDR adds a common external pressure by linking market access to compliance with deforestation-free and legal production requirements. Early policy responses in both contexts have focused on the development of traceability systems, geolocation mapping and monitoring infrastructures, reorienting attention towards new forms of data and documentation (EFI, 2025a, 2025b; Tefera et al., 2025). We treat such developments as an empirical entry point for analysing how new evidentiary requirements are being integrated into existing governance systems, and how they interact with institutional arrangements, actor configurations and policy-making processes.

2.3 Data collection and analysis

We combine data from 19 semi-structured key informant interviews and 4 multi-stakeholder workshops with 15–25 participants held across Ethiopia and Kenya between August 2025 and March 2026. Key informant interviewees and workshop participants were purposively sampled, covering various actors across government agencies, research institutions, private-sector actors, civil society organisations, and coffee producer groups. These actors also covered the core categories of actors, including evidence producers (e.g. research institutions), intermediaries (e.g. NGOs, platforms) and users (e.g. government agencies, regulators). The first round of workshops was used to discuss and refine insights from the key informant interviews while the second was used to finesse and validate the findings. This included discussing the stakeholder relational map produced from the key informant interviews and discussions (Section 3.2).

Data analysis followed a hybrid coding approach combining deductive and inductive strategies. An initial coding framework was developed deductively based on the three analytical dimensions of evidence, actors and processes. This was complemented by inductive coding to identify emergent themes and ensure that analysis was not overly constrained by the framework. Coding was conducted iteratively, with themes refined through comparison across interviews, workshops and country cases, enabling us to document how the EUDR is influencing what counts as evidence in the coffee evidence ecosystem of Ethiopia and Kenya (Section 3.1), the key actors legitimized to generate and use such evidence (Section 3.2), and the pathways that are emerging for producing and contesting the logics of EUDR-driven evidence (Section 3.3).

Ethical approval, including processes of informed consent, anonymisation and data security, for the study was granted by the University of Oxford, School of Geography and the Environmental Departmental Research Committee (DREC ID: 2014308). While the sample captures a wide range of actors, smallholder producers, in particular, were underrepresented relative to institutional stakeholders,

reflecting broader structural constraints in access and participation, particularly within the constraints of the project.

3. Results: The impacts of the EUDR on evidence ecosystem for coffee policy in Ethiopia and Kenya

Our findings show that the EUDR is not simply adding a new compliance layer to coffee governance in Ethiopia and Kenya, but operates as an epistemic intervention that reshapes the evidence ecosystems within which policymaking takes place. In doing so, it reconfigures what counts as credible knowledge, who is authorised to produce it, and how it is mobilised, extending existing work on evidence-informed policymaking by demonstrating how policy reforms actively restructure the conditions under which evidence is generated and used. We identify three interrelated dynamics through which this occurs: a narrowing of evidence towards standardised and auditable data; a reordering of epistemic authority in favour of actors able to generate and broker such evidence; and a shift in policy processes from deliberation towards compliance. These dynamics are not merely technical adjustments but reflect deeper political processes through which certain forms of knowledge are rendered legible and actionable, while others are marginalised. In this sense, the EUDR exemplifies how contemporary supply-chain regulations operate not only through legal and market mechanisms, but through epistemic interventions with far-reaching impacts on evidence ecosystems in producer-country contexts.

3.1 The constitution of evidence: a narrowing of what counts as evidence

The coffee policy evidence ecosystem across both Ethiopia and Kenya were, before EUDR, and remain, relatively pluralistic, albeit with unevenly weighted understanding of what counts as legitimate evidence amongst different actors. Evidence around agronomic and varietal research, market and price data, policy evaluations remain centre stage, with experiential, indigenous knowledge of coffee farmers often at the margins of policymaking (ECTA et al., 2019; Government of Kenya, 2025). Indeed, the weighting of these evidence types was never purely technical. Alternatively, it depends on various actors' proximity to power and their positioning within the influence orbit of policymaking (Maas Aparisi, 2024), as highlighted by one key informant in Kenya.

The big companies have their thinktanks and consultants to ensure coffee policy align to their interest. But for cooperatives and farmers, some of these policies feel like an ambush, creating challenges for downstream actors. (K01, 08.2025).

The EUDR is further narrowing this pre-existing coffee evidence ecosystem in Ethiopia and Kenya. It has reorganized EU market access into an institutionalized evidence problem, with operators required to prove origin, geolocation, legality, deforestation-free production, traceability, and risk management through auditable records (EUDR, Article 9, 2023). These information demands effectively constitute a

technical evidence standard which transcends the broader coffee landscape of policy relevant knowledge and its epistemic assumptions. Stakeholders across both countries recognized and reflected on EUDR information demands, stressing both its emergence from asymmetrical power relations between the EU and producer countries, and also the cost implications of compliance evidence for coffee producers and producer countries.

In our experience, collecting geo-data alone from each coffee farmer is about USD 5. This needs to reflect in the coffee price paid to the farmers. If not, it means that they will be the losers contrary to what the EU claims. (GO5, 08.2025).

“Everything in our coffee sector is now EUDR. We do not agree with the EUDR and its approach, which neglects Kenya’s proven history of forest conservation. The EUDR is now draining our resources. We’ve mapped about 93% of coffee farmers, wasting limited resources to generate data and proof for the EU. It is unfair but we don’t have any option because of the market access consequences. Meanwhile, geodata is a question of sovereignty and security. It is unfair when a bloc asks a country to send them such information all in the name of market access. It undermines trust for multilateral cooperation.” (Workshop Participant, Kenya, March 2026).

Frankly, the EUDR implementation will be problematic. Ethiopia is a needy country and have limited capital to collect data for complying with the EUDR’s stringent data requirements measures. Without substantial support, there is no way we can be ready for compliance in 2–3 years. (G04, 08.2025).

These concerns demonstrate that EUDR evidence demands are placing considerable pressure on the limited resources of institutions governing Ethiopia and Kenya’s coffee sectors. Under such circumstances, evidence that does not meet the EUDR’s technical specifications, irrespective of their policy relevance in other domains, risks progressively being repositioned as secondary within the coffee evidence ecosystem. This includes evidence from agronomic and socioeconomic research produced by various national and international institutes, universities and NGOs. It also includes experiential and place-based knowledge of smallholder coffee farmers and producer cooperatives. Such actors are not only distant from the technical data infrastructures required for compliance, but are also subject to evidentiary demands that risk misrecognizing their culture and ways of living, as highlighted by one workshop participant in Ethiopia.

It is vital we remember that the EUDR’s evidence demands transcend plot location and deforestation risk assessment. There are also issues like child labor, which will be extremely challenging to resolve because what the EU and many Western institutions consider as child labor is often incompatible with our local culture. This creates a value and evidence asymmetry that will be difficult to monitor and document (Workshop Participant, Ethiopia, March 2026).

The participants reflections indicate that a narrowing of evidence is not politically neutral. Indeed, across both countries, various interviewees argued that coffee is “a political crop” and a strategic national asset. They often invoked the political nature of coffee to articulate their unease with an externally

defined evidence standard that prioritizes mandatory due diligence in external markets over their national development priorities, and devalues their histories of conservation, and in the case of Ethiopia, coffee's cultural and instrumental embeddedness as tools for halting or reversing deforestation.

3.2 Actors within the evidence ecosystem

The reorganization of what counts as evidence in the race towards EUDR compliance has not affected all actors equally. The evidence ecosystem in Ethiopia and Kenya is structured as a relational proximity field rather than a flat network of equal actors. EUDR compliance initiatives across both countries is steepening gradients between well positioned and marginalized actors in the evidence ecosystems of both countries rather than lessening them.

[Fig. 1. The evidence ecosystem as a relational field: actor configurations and legitimization dynamics in Ethiopian and Kenyan coffee policymaking.] **Please see Figure attachment.**

Figure 1 shows the structural organization of evidence actors based on the EIPM framework (Sempe et al. 2025). Evidence intermediaries, primarily consultants, occupy the core of the ecosystem, operating as active curators who shape which evidence reaches policy processes and on whose terms. Evidence producers and mandate holders (like government) flank the intermediaries, while multilateral institutions and bilateral development partners exert agenda-setting pressure. The orbit of influence denotes the informal proximity dynamic which featured consistently across interviews, with access to policymakers and legitimacy gained as much by relational positioning as by epistemic quality. The main difference across both countries is that Kenya's 2010 constitution makes public participation mandatory in policy formulation while it is treated as a best practice in Ethiopia.

Across the coffee policy landscape of Ethiopia and Kenya, consultants, consultancies and NGOs are emerging as key beneficiaries of EUDR evidence requirements. The pre-existing position of such actors – as intermediaries who curate, reframe and package evidence for policy audiences – has been elevated owning to the demand for credible, technical evidence, including geodata, deforestation risks and proof of legality compliance. This corroborates and extends findings from the broader knowledge brokerage literature on the structural advantages intermediaries hold when evidence demand accelerates due to their technical capacity and access to networks (Shaxson, 2005).

Meanwhile, government actors present a more complex picture. Formally, both the Ethiopian and Kenyan agricultural policy apparatus retain authority over coffee sector governance. In practice, however, the EUDR has introduced a parallel evidence logic that is driven by market access imperatives rather than national policy cycles and priorities. For example, coffee-governing institutions like the Ethiopian Tea and Coffee Authority (ECTA) and Kenya's Coffee Directorate, Agriculture and Food Authority (AFA) are expected to develop credible mechanisms for meeting EUDR's evidence demands. However, the works revealed that they are ill-equipped at present to adequately achieve this:

Compliance with the EUDR requires very high upfront cost. Mapping farmers but also developing a robust and trustworthy data management architecture for the coffee sector is very demanding. We simply do not have the funds at the moment to complete this. We have collected most of the data but currently do not have the Coffee Information Management System in place (Workshop participant, Kenya, March 2026).

Many external actors, including the embassies and development cooperation arms of various countries try to fill the reported funding gap through project financing, technical assistance and agenda setting. Projects from such initiatives start and end with the premise of meeting compliance requirements, leaving little space for open discussion about whose evidence needs are being pursued.

The actors most consequentially marginalized by the EUDR's evidence needs and its influence on the coffee evidence ecosystems of both countries are coffee producers and their organizations. Already occupying the edges of the policymaking influence orbit (Fig. 1), smallholder coffee farmers and their representatives do not often have the wherewithal to participate meaningfully in the compliance evidence landscape. In Kenya, the constitutional right to public consultation, established in 2010, provides a formal entry point that has no equivalent in Ethiopia. However, many interviewees and workshop participants were doubtful about whether this translates into meaningful participation. According to them "*most smallholder coffee farmers are not aware of the EUDR and its information demands*" (Workshop participants, Kenya, March 2026). Thus, it is highly unlikely that they can directly influence the evidence architecture. In practice, most evidence producers, intermediaries and users treat coffee farmers as objects of governance whose farms and production systems must be mapped rather than as subjects with rights, needs, concerns and priorities that need to be safeguarded amid reconfiguration of the coffee evidence ecosystem by EUDR.

3.3 Processes: two paths, one evidence ecosystem

EUDR compliance readiness across Ethiopia and Kenya draws on different actor capacities and access to networks, as highlighted in Section 3.2. Across both countries, these actors operate along two analytically distinct but co-existing pathways with contradictory logics: the discursive pathway and compliance pathway, depicted in Fig. 2.

[Fig. 2. Evidence pathways and the EUDR influence function: discursive resistance and operational compliance in transition.**] Please see Figure attachment.**

Along the discursive pathway, different actors frame evidence as a mechanism for deliberative policy learning, institutional programming and change. Within this path, some actors draw on knowledge and connections with farmers to generate evidence that improves coffee's contributions to farmers' and national development priorities:

If you are not doing anything on the ground, you cannot influence anybody. What we do on the ground is visible to our partners and communities. (CSO 2, 08.25).

When implementing projects, the goal is to develop lessons that can influence policy through practice on the ground, experiences on the ground that are documented and can be taken as lessons. (GO4, 08.25).

NGOs and other stakeholders that are active in coffee-growing communities serve as a bridge and conduit for grassroots voices to be heard and recognized in policy making processes. Often such actors were critical of the EUDR, arguing that it is a "*unilateral imposition from the EU which is unlikely to work because it neglects local realities*." (K04, 08/2025).

Whereas evidence retains its framing as a tool for reflexive learning in the discursive pathway, it is progressively recast as a compliance output, a product to be generated, certified, and submitted in response to externally-defined requirements of the EUDR. The EUDR operates as an external forcing mechanism whose influence is asymmetric across paths, encountering rhetorical resistance in the discursive path, where interviewees characterized it as unilaterally imposed and unlikely to be implementable at the grassroots given resource and awareness constraints, while concurrently driving accelerated project commissioning, farm-level geospatial data collection and evidence standardization in the compliance path.

Despite such rhetorical resistance, many actors embrace a reactive stance on the compliance path, where evidence functions primarily as a compliance input. In this role, various NGOs, government officials and the coffee companies, are generating evidence not for deliberative purposes but to satisfy the EUDR's technically specified market access requirements. Interviews and workshop discussions revealed an acceleration of donor-funded projects focused on farm-level geospatial data collection, propelled by the fear of missing the EUDR's regulatory deadlines and its associated threat of exclusion from EU markets. The fact that nearly 40% (2025) and 58% (2024) of Ethiopia and Kenya's coffee exports are to EU countries was often used to justify the pragmatic pursuit of compliance.

This divergence between how actors resist and reject the EUDR discursively, but nevertheless respond its demands suggests that the processes by which evidence is legitimized and those through which evidence is acted upon are not necessarily aligned, nor do they move at the same pace or direction. Under compressed timelines, the prioritisation of compliance-oriented evidence risks deepening the divide between high-level evidentiary procedures and grassroots actors, with implications for whose knowledge informs policy and what aspects of climate resilience and equity are prioritised. We reflect on this by way of discussion in the next section.

4. Discussion – implications for questions of equity and resilience

Our findings indicate that the evidence ecosystems for coffee governance in Ethiopia and Kenya appear to be undergoing an epistemic transformation. The evidentiary demands of EUDR are serving both as an additional compliance layer imposed onto both countries' existing evidence ecosystem, and also as an

epistemic intervention that is reorganizing the terms on which knowledge is produced, legitimized and operationalized. This is manifested as a narrowing of evidence towards compliance data, a reordering of authority, and a shift in evidence use from deliberative to compliance purposes. We discuss each of these three shifts and their implications for more equitable climate resilient coffee governance in the following sections.

4.1 Shifting stakeholder attention and evidence pluralism

Prior to the emergence of EUDR and its mandatory due diligence requirements, both the Ethiopian and Kenyan coffee evidence ecosystems accommodated a relatively pluralistic range of knowledge types, including agronomic research outputs, market and price data, policy evaluations and experiential knowledge. The emergence of EUDR has not changed this plurality *per se*. However, it has introduced a hierarchy into the evidence ecosystem. By making specific evidence as prerequisites for market access, the EUDR has effectively elevated such evidence above others by making them a priority that stakeholders need to generate if they are to meet EUDR timelines and associated market access. This dynamic is consistent with Scott's (1998) argument that systems of classification and standardization render certain phenomena legible to regulatory authority while obscuring others. Indeed, the EUDR's technical specifications functions precisely as a mechanism for ordering evidence because it prioritizes evidence that is auditable, quantifiable, and verifiable in ways that other evidences such as coffee field trial data, cooperative governance records, or farmers tacit knowledge are not. This does not mean that the latter evidences are disappearing. They are simply being pushed from the core to the margins of the evidence ecosystem. Our findings suggest that this does not occur through deliberate exclusion, but rather through the concentration of institutional attention, donor financing and capacity of evidence intermediaries to meet the EUDR's evidence demands.

At the same time, our insights from both countries that the narrowing of what counts as evidence is not politically neutral has important implications for navigating evidence and knowledge production across actors. Our interviewees and workshop participants' repeated recall of coffee's national significance across Ethiopia and Kenya, both countries' history on forest conservation, and questioning of sovereignty over geodata reflects a tension between two competing legitimacy claims. On the one hand lies the EUDR's claim to epistemic authority on the basis of technical verification. On the other hand, is the Ethiopian and Kenyan governments' claim on the basis of historical stewardship and locally embedded knowledge. This tension suggests that the authority to define what counts as credible knowledge or evidence has political consequences just like the knowledge itself. This means that understanding the legitimacy of who defines knowledge for whom and on what terms is essential if policymakers are to provide a fair space for, and access to, diverse and divergent knowledges in an evidence ecosystem.

4.2 Epistemic reordering and the geography of exclusion

By shifting stakeholders' attention to meet its data requirements and verification systems, the mandatory due diligence required by EUDR represents an epistemic intervention in the evidence ecosystem that defines the conditions under which knowledge becomes authoritative. This creates a

power imbalance challenge because the EUDR's evidence standard to which all actors must conform are not established through either Ethiopian or Kenyan domestic deliberative processes but via transnational actors. It has been argued that evidence ecosystems are shaped by the institutional environment in which they are embedded. The EUDR, as a set of conditions for market access, represents such an unusually powerful institutional environment, one whose reach transcends national boundaries and whose effects on evidence ecosystems of producer countries are only now being revealed becoming even more profound by the day.

Our findings suggest that the reshaping of what counts as evidence under EUDR pressure has not impacted all stakeholders equally. As demonstrated in the Fig. 1 (Section 3.2), the relational proximity of various actors to evidence intermediaries is structured by considerable inequities of access and influence. Consultants, government and NGOs occupy more favorable positions in the evidence ecosystem's influence orbit relative to coffee farmers and their cooperatives, with our interviews demonstrating that formal consultation channels are often weak and tokenistic, even where they are a constitutional right like in Kenya. While this dynamic persists, there is good chance that by privileging highly technical data (e.g., geolocation data, traceability records, due diligence statements, etc.), compliance with the EUDR will inadvertently worsen the gap observed between actors that currently dominate evidence production and those on the margins within the evidence ecosystem.

Indeed, the structural centrality of consultants and other intermediaries in evidence production within the coffee evidence ecosystem across both countries warrants further reflections. Firstly, their pre-existing position as evidence brokers translates directly into the new compliance landscape, where the demand for technically credible, rapidly deliverable geospatial and supply chain data is likely to lead to an expansion of consultancy-led project activity. This corroborates and extends findings from the knowledge brokerage literature on the structural advantages that intermediaries hold in conditions of accelerated evidence demand (Ward et al. 2009; Jones et al. 2009). Secondly, it raises questions about whose interest is served by the brokerage role in contexts where intermediaries can concurrently be private sector actors, evidence curators and compliance contractors. The quality, inclusivity and directionality of brokerage, regarding whose knowledge gets amplified, on whose terms, and towards what ends, can affect the products of evidence ecosystems and requires further research. Otherwise, there is a risk of further marginalising the voices of actors at the periphery of evidence ecosystems.

Many smallholder coffee producers in both Ethiopia and Kenya already face serious barriers in accessing finance, extension services and market information. The EUDR requirements add a further layer of data infrastructure, the generation of which depends on technical capacities and institutional support that are unevenly distributed across the coffee sector. This is consistent with recent findings about the various risks that smallholder producers are exposed to due to EUDR compliance, including from additional costs and exclusion from supply chains (Zhanusova et al. 2022; Zabel et al. 2025; and McDermott et al. 2025).

4.3 Compliance, vulnerability and the limits of regulatory knowledge

Apart from its equity implications, the reconfiguration of the evidence ecosystems in Ethiopia and Kenya carries consequences for how climate resilience is defined and pursued in coffee policy, consequences that risk being obscured by the urgency of compliance activity. Climate change is already reshaping coffee production across both countries through rising temperatures, increased rainfall variability and heightened pest and disease pressures, with significant implications for yields, quality and the long-term viability of *Coffea arabica* cultivation (Grabs et al., 2026; Hirons et al., 2018; Sisay, 2018). In this context, resilience needs to be inherently multidimensional and contested, shaped by interactions between livelihood practices, knowledge systems, institutions and power relations. For smallholder coffee farmers, resilience is not only a question of maintaining production but securing livelihoods in the face of climate shocks, price volatility and evolving market requirements (Grabs et al., 2026).

The tension between stakeholders' discursive and operational paths to EUDR compliance across both countries illuminate a paradox at the core of the EUDR's relationship with equitable climate resilience. Under the compliance path, actors are generating significant volumes of geospatial and traceability data, producing more detailed cartography of the coffee landscape than has previously existed in either country. Data on farm boundaries and traceability can be used for land-use planning, conservation monitoring and market governance. However, the focus on accelerating compliance-oriented data is absorbing resources for slower, more deliberative processes through which farmers experiential knowledge and felt concerns could be mobilized for policymaking to improve the coffee sector. Policymakers often operate under bounded rationality, and the evidence that achieved salience is typically that which is most legible, most timely and most aligned with prevailing institutional demands (Cairney et al., 2016; Maas Aparisi, 2024; Scott, 1998)). The EUDR has considerably raised the institutional salience of geolocation data, traceability and related data, with consequences for what else is and can be heard in coffee policy processes of Ethiopia and Kenya.

Some of the evidence base most relevant to supporting smallholder adaptation to climate variability is precisely the kind of locally embedded, agronomically specific knowledge that currently risks becoming de-prioritised within the emerging EUDR-compliance landscape. This includes information about which coffee varieties perform well under shifting rainfall patterns, which land management practices maintain soil health, which institutional arrangements help farmers smooth income across volatile seasons, etc. There is a growing risk that a regulation motivated in part by environmental concerns inadvertently undermines the evidence conditions necessary for adaptive, context-sensitive governance on which long-term climate resilience depends., the EUDR may be producing a more legible coffee value chain while simultaneously reducing the capacity of producer-country institutions to govern that system for multidimensional resilience. EUDR compliance and climate resilience embody different objectives, and the evidence systems being built to serve EUDR may actively constrain the pursuit of climate resilience in coffee production.

4.4 Towards a more equitable and resilient epistemic framework

Our findings point toward several implications for policy, practice and future research. Implementing EUDR in producer countries needs to be accompanied by active investment in evidence ecosystems that go beyond compliance data systems. This means developing systems that provide sustained support for national research institutions, farmer knowledge networks, and participatory monitoring systems whose outputs are recognized as legitimate evidence in both domestic and international policy processes. The current trajectory, where compliance-focused data systems are being developed rapidly while the broader evidence ecosystem is being inadvertently reorganized around it, risks locking in an epistemic architecture whose distributional consequences have not been adequately considered.

Meanwhile, the evidence intermediary role that is currently being played primarily by consultants and NGOs requires closer analysis from both researchers and policymakers' perspectives. Strengthening the evidence brokerage capacity of farmer organizations, cooperatives and other civil society actors, rather than relying exclusively on private intermediaries whose incentives are shaped by project cycles and compliance timelines, could produce more equitable distributions of epistemic authority and more durable contributions to adaptive governance.

Meanwhile, the discursive and compliance dichotomy identified by the study where various stakeholders across Ethiopia and Kenya are criticizing the EUDR while simultaneously racing to develop compliance systems appear to reflect a reactive response to a coercive market access regulation in contexts where non-compliance carries existential ramifications for Ethiopia and Kenya. The power asymmetry introduced into the evidence ecosystem by EUDR is a cause of legitimate concern in Ethiopia and Kenya. The shift in the focus of the evidence ecosystem, and also of the resources needed to operate it, risks undermining efforts to address some of the most pressing challenges in the coffee sector, including producer poverty and growing climate impacts.

More broadly, our study highlights the importance of treating evidence ecosystems as objects of governance in their own right and not merely as instruments through which good policy is made. They are systems whose functionality, inclusivity, and resilience have intrinsic value for the quality and equity of the governance processes they support. Unilateral regulatory mechanisms like the EUDR should be understood not only as legal or market interventions but as epistemic transformations that reorganize what counts as credible knowledge, who is authorized to produce it, and which problems become governable within coffee landscapes. Addressing their effects on evidence ecosystems is as important a dimension of responsible implementation as the technical compliance questions that currently dominate policy attention in producer countries of all the commodities affected by EUDR.

5. Conclusion

Several agricultural commodities are subject to the European Union Deforestation Regulation (EUDR), which introduces new data demands to facilitate supply chain governance. This paper set out to examine how such changes is influencing what counts as evidence, who can produce it and use it in the context of climate resilient coffee policymaking in Ethiopia and Kenya. Analysis of data from key informant interviews and multistakeholder workshops across both countries show that the EUDR is adding a mandatory compliance requirement to an already complex policy landscape. Additionally, it is functioning as an epistemic intervention this is giving rise to a reorganizing of the evidence ecosystems which support coffee policymaking, with ramifications that transcend the technical dimensions of the regulation in at least three key ways.

Firstly, the EUDR has introduced a hierarchy within previously pluralist evidence landscapes by elevating technically specified, market-legible knowledge like geospatial data, traceability records etc above a wide range of agronomic, socioeconomic and experiential knowledge that has historically shaped coffee policy in both countries. This narrowing of evidence reflects and reinforces an externally imposed epistemic standard whose organizing logic is market access rather than national developmental priorities, conservation histories, or the lived experiences of smallholder coffee producers.

Secondly, the reorganization of what counts as evidence has deepened prior gradients of access and influence within the evidence ecosystems of both countries. Consultants, consultancy firms, who are already structurally central as evidence intermediaries, have consolidated their position within the emerging compliance landscapes. Producer organizations and coffee farmers who are on the margins of the orbit within which evidence flows into coffee policymaking in Ethiopia and Kenya are at an even greater risk of marginalization than before. This is not merely through explicit exclusion but also via the absence of technical infrastructure, financial resources and relational proximity required to participate meaningfully in EUDR-driven evidence processes.

Thirdly, we have identified a structural gap between discursive resistance and pragmatic compliance that has key implications for how evidence ecosystems respond to external regulatory shocks. Many actors across Ethiopia and Kenya's coffee sector express scepticism toward the EUDR, characterizing it as unilateral, externally imposed, technically and financially demanding, and poorly aligned with grassroots and national realities. Yet, they are simultaneously accelerating compliance-oriented evidence activities. This gap between what actors proclaim about evidence and what they do with it points to a feature of evidence ecosystems that require future theoretical and empirical attention. This is because the processes through which evidence is legitimized and those through which it is acted upon are not necessarily the same, nor do they move at the same pace or in the same direction.

Overall, our findings extend the evidence-informed policymaking literature by demonstrating how policy reforms can reshape evidence ecosystems. Additionally, we also contribute to the growing literature on deforestation-free and due diligence regulation by foregrounding their epistemic and institutional effects within producer countries, an issue that is largely missing in the current literature, which focuses on technicalities of compliance and mechanisms for identifying and documenting impacts. Furthermore,

our findings advance discussion on climate-resilient coffee governance by showing how external regulatory pressures interact with domestic evidence ecosystems to reshape both the meaning and practice of resilience, in ways that risks privileging compliance with EU deforestation policy over local adaptive capacity. Future research is need to better understand how to create more space for experiential evidence and tacit knowledge in the evidence ecosystem, thereby improving the positioning of coffee farmers and others currently on the margins for more equitable evidence-informed coffee policymaking.

Declarations

Author Contribution

E.M.K, A.M. and M.H. Conceptualisation, Data Analysis and First Draft; E.M.K, M.H., T.G., T.G, A.N.K, and A-L.K: Data collection and Curation. All authors reviewed the manuscript.

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Data Availability

Data available with restricted access: This is because they involve interviews with actors in sensitive positions and were conducted under conditions of confidentiality.

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Figures



Figure 1

The evidence ecosystem as a relational field: actor configurations and legitimization dynamics in Ethiopian and Kenyan coffee policymaking

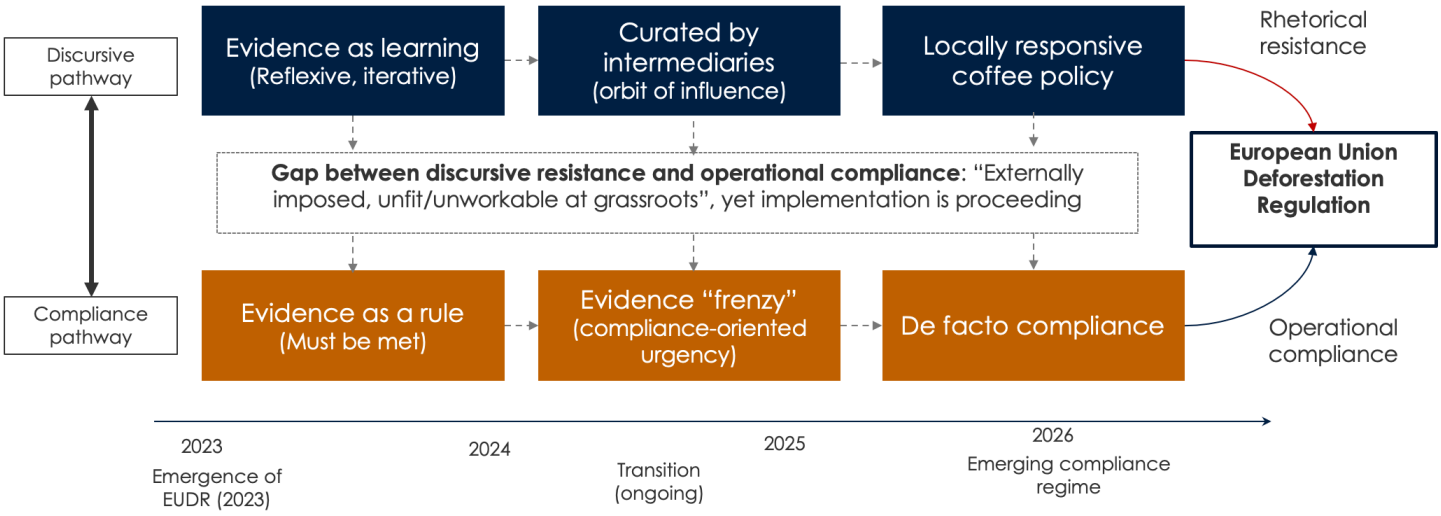


Figure 2

Evidence pathways and the EUDR influence function: discursive resistance and operational compliance in transition