

Traceability Problems in the Peruvian Amazon's Timber Supply Chain: Illegal logging, exploitation, and forced labour

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Abstract

Peru has developed an extensive set of regulations, managerial instruments, and trade standards, largely influenced by free trade agreements, that appear to ensure strict control of the Amazonian timber supply chain. In practice, however, at least 20 per cent of logging is illegal (and up to 86 per cent in some areas), around 70 per cent of companies are informal, and there is repeated evidence of labour exploitation and forced labour. This article explores the relationship between these elements through a systematic review of regulatory and corporate frameworks, interviews with timber workers in Amazonian river ports, and an expert panel analysis. The findings reveal not so much a system of control as one that simulates control: a dense institutional framework that is highly permeable to illegal flows, a traceability scheme that looks modern but lacks accountability, and a trade chain that ultimately relies on a forest regent, a notebook, and a pen. In short, the Peruvian timber sector presents a paradox of international regulatory frameworks and enforcement weaknesses, where compliance is more often performed than achieved.

Keywords: timber, traceability, illegal logging, illegal economies, supply chain, forced labour, Peru

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Introduction

Trade, in great deal, depends on global supply chains—a corporate model based on the fragmentation of production processes and geographic offshoring—to reduce costs and increase productivity. The consequences are clear: overproduction and excessive consumption generate overexploitation of resources, pollution, and job insecurity. In response to trade regulations (on extraction, production, customs), environmental, safety, and labour regulations are being introduced.¹

Most South American states have joined international treaties and agreements on trade, and environmental and labour regulations related to commodity supply chains, aligned with the Sustainable Development Goals (SDGs) and other instruments. This has involved adjusting national regulations and developing institutions, policies, and budgets tied to the sustainability agenda, including regulations on the origin of commodities.

Companies have also sought to adapt to sustainability standards (in processes of extraction, production, origin, size, weight, labelling, certification, as well as labour and environmental regulations) applied to international and national regulations and free trade agreements.² This has led part of the formal sector to incorporate sustainability and traceability narratives, instruments, and practices to maintain access to regulated markets.

However, there is evidence of at least two related problems undermining mechanisms to address labour exploitation in supply chains. First, even though economic, environmental, and social transparency is formally required for supply chain governance, opaque and harmful practices remain widespread—outsourcing to firms that violate legislation, trading with countries with weak regulatory environments, environmentally damaging activities, and recurrent labour abuses. These practices, involving both multinational enterprises and source-country actors, led to the proliferation of binding and voluntary frameworks such as Sustainable Supply Chain Management (SSCM), Shared Responsibility, Corporate Social Responsibility (CSR), Corporate Due Diligence, and Environmental, Social and Governance (ESG) criteria. Although these instruments articulate stronger corporate accountability commitments, they have only limited effectiveness in

¹ UN Environment Programme, *Environmental Rule of Law: First Global Report*, UNEP, 2019, p. 26–30, retrieved 22 March 2025, https://wedocs.unep.org/bitstream/handle/20.500.11822/27279/Environmental_rule_of_law.pdf?sequence=1&isAllowed=y.

² M Wilhelm, ‘Mandatory due diligence legislation: A paradigm shift for the governance of sustainability in global value chains?’, *Journal of International Business Policy*, vol. 7, 2024, pp. 459–465, <https://doi.org/10.1057/s42214-024-00193-4>.

stopping illegal products and practices from entering global markets. Second, state regulations often fail to confront pervasive illegal extractive and production dynamics that, beyond contravening regulatory frameworks, directly violate criminal codes.

Amazon forests represent 33 per cent of the world's forest area³ and have experienced deforestation of more than 542,581 km² from 2000 to 2021⁴ associated with extractive activities. Logging is one of the main economic activities in the Peruvian Amazon, where, in addition to the environmental consequences, there is evidence of widespread labour exploitation and forced labour. For example, the International Labour Organization has estimated that in Amazonian communities in Ucayali (Peru), '83.8% of subjects over 18 years of age and 70.5% of those under 18 years of age surveyed present elements associated with a "hard life and work" (...) and 6.1% of adults and 9.1% of those under 18 years of age presented clear indicators of forced labour'.⁵

In Peru, despite state regulations and corporate sustainability instruments, there is evidence of widespread illegal logging, deforestation, and forced labour. Regulations have permeable channels, allowing illegal logging to penetrate formal business dynamics; and, conversely, private regulations and voluntary standards can become formalities with lax filters for illegal products and practices. These dynamics reveal persistent gaps between the normative frameworks and the realities of workers and communities embedded in the timber supply chain.

In this context, this article examines timber extraction in Peruvian forestry as a case study because it illustrates the shortcomings of contemporary mechanisms designed to address labour exploitation in global supply chains. Rather than surveying the entire chain, it focuses on the critical point of origin, where the validity of the instrument is first challenged. At this stage, the entire regulatory architecture—state norms and private standards alike—ultimately depends on a single actor (the instrument implementer, the forest regent), a pen, and a standardised form with limited categories. In other words, the whole system rests on the discretion of a regent whose supervision is largely performative and whose

³ Worldwide Fund for Nature, *The Amazon Rainforest*, WWF, retrieved 23 March 2025, <https://www.wwf.org.uk/where-we-work/amazon>.

⁴ Red Amazónica de Información Socioambiental Georreferenciada, *Amazónica 2021: Áreas Protegidas y Territorios Indígenas*, RAISG, 2021, retrieved 23 March 2025, <https://www.raisg.org/es/publicacion/amazonia-2021-areas-protegidas-y-territorios-indigenas/>.

⁵ International Labour Organization, *Precariedad y trabajo forzoso en la extracción de madera: un estudio en espacios rurales de la Amazonía peruana*, ILO, 2018, p. 45, https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@americas/@ro-lima/documents/publication/wcms_427032.pdf.

tools are intrinsically weak: the assessment criteria reduce complex ecological reality to a binary threshold, and the resulting data are merely administrative entries rather than representations of the phenomenon on the ground.

This problem is exacerbated by the scale of oversight: only 212 forest regents are responsible for supervising hundreds of thousands of square kilometres of forest in a region facing severe environmental pressure. The position functions as an institutional patch (for supply chain accountability), and the core source of information about timber is not the timber itself but a *traceability document* (instrument) validated by a small number of overextended regents associated with serious indicators of compromised integrity. The instrument, therefore, produces the appearance of control while systematically failing to capture empirical reality. This critical node not only authorises the exit of timber from the forest under formal and accountable documentation but also constitutes the primary opening through which illegal practices and labour exploitation are laundered into ostensibly legitimate supply chains.

Methodology

Our research had four specific objectives: 1) describe the Peruvian regulatory framework for timber extraction, trade, and export; 2) determine traceability limitations; 3) determine the sustainability standards of the logging private sector; and 4) identify the links that lead to the concentration of illegal logging, forced labour, and timber laundering.

A qualitative and exploratory design was used to describe the structure of the illegal timber supply chain, the dynamics of exploitation and forced labour, government regulations, and business regulations.

The supply chain was reconstructed using crime script methodology on a dashboard for systematising the results of several instruments, in two phases. **Phase 1** (desk research): a) systematisation sheet of previous research (30 academic articles and 30 regulatory documents) and b) official databases (25 management documents and official reports, 20 reports from the private sector, international cooperation, and civil society). **Phase 2** (fieldwork): c) semi-structured interviews with forestry officials (4), timber entrepreneurs (4), and former high ranking civil bureaucrats (4); d) semi-structured interviews with timber workers (41) at river ports in Pucallpa (central Amazon of Peru). Information on regulations was collected in a sheet and compared on the same supply chain dashboard (to associate regulations with links in the chain). The results were validated by a panel of five experts, composed of academics, former forestry officials, and civil society members with experience in the sector, who reviewed our supply chain reconstruction and confirmed the critical traceability failure points. The chain reconstruction was carried out between January and July 2024. The phase of

contrasting state and business regulations and their gaps was carried out between February and April 2025.

Supply chain information was processed in Excel; data on regulations and control gaps were added to the dashboard and compared to determine the concentration of responses that identified key points in the supply chain.

Findings

The Regulatory and Institutional Framework for Timber and the Challenge of Traceability in Peru

Peru has developed a comprehensive regulatory and institutional framework for the management of timber resources, closely aligned with international standards. Its participation in international agreements, adoption of national legislation, and establishment of specialised agencies demonstrate a strong formal commitment to sustainable forestry and labour rights. However, despite this robust framework, enforcement challenges persist, particularly in the area of timber traceability, where the system remains vulnerable to manipulation.

The country has signed twenty Free Trade Agreements (FTAs)⁶ including with the United States, the European Union, Canada, China, Japan, and others. These agreements include provisions on environmental protection and labour rights that apply to forestry. The US–Peru Trade Promotion Agreement, in force since 2009, links tariff preferences to verification of legal timber under the US *Lacey Act*, which prohibits products obtained through illegal logging. Similarly, the Peru–EU Trade Agreement (2013) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (2017) establish environmental and labour obligations that condition market access. Commercially and strategically, these FTAs commit Peru to respect international trade standards, particularly in sectors vulnerable to illegality such as timber.

Domestically, the Constitution defines natural resources as national heritage and establishes the conditions for their use and exploitation.⁷ The *Forestry and Wildlife Law* (No. 29763 from 2011) provides the legal foundation for forest management, regulating concessions, harvesting, processing, and trade.⁸ It incorporates Peru’s commitments under the Convention on International Trade in Endangered

⁶ Ministerio de Comercio Exterior y Turismo, *Acuerdos Comerciales del Perú*, MINCETUR, retrieved 9 April 2025, <https://www.acuerdoscomerciales.gob.pe/>.

⁷ Section 3(2)(66–69) of the Political Constitution of Peru 1993.

⁸ Section 3(a–f) of the *Forestry and Wildlife Law* 2011.

Species of Wild Fauna and Flora (CITES), which regulates global trade in threatened species and sets out procedures for sustainable use. The Penal Code criminalises illegal logging and trafficking in timber as offences against natural resources⁹ and forced labour and trafficking in persons as offences against human dignity.¹⁰ The specialised prosecutor's offices for organised crime (FECOR) and for environmental matters (FEMA), and police units have been created to investigate and prosecute these crimes, reflecting an institutional effort to link environmental enforcement with human rights protections.

National public policies complement this legal framework. State Policy No. 19 on Sustainable Development and Environmental Management (2002) initiated modern forest governance, followed by the National Forestry and Wildlife Policy (2013). Social risks associated with forestry are also recognised: the National Plan to Combat Forced Labour (2019) and the National Policy against Human Trafficking (2021) identify the forestry sector as a priority for prevention and prosecution. In this way, Peru's framework integrates both environmental and social dimensions of sustainability.

Forestry governance is shared across several agencies. The Ministry of the Environment (MINAM), established in 2008, sets environmental policy, with oversight conducted by the Environmental Assessment and Oversight Agency (OEFA). The Ministry of Agriculture (MINAGRI) oversees the National Forest and Wildlife Service (SERFOR), which acts as the CITES authority¹¹ and coordinates the National Forest and Wildlife Management System (SINAFOR). This system integrates national, regional, and local authorities to coordinate policy and enforcement.

Forestry management at the regional level is decentralised to regional governments through Forestry and Wildlife Management Units (UGFFS).¹² A key figure in this system is the 'forest regent', a licensed professional responsible for preparing and validating forest management plans. Regents are jointly liable with concession holders for compliance with the law.¹³ This illustrates how Peru's multi-level institutional structure has a decisive starting point in this specific individual, a natural person in the local space.

⁹ Section 8(2)(308-313) of the Penal Code, 1991.

¹⁰ Section 8(2)(310) of the Penal Code, 1991.

¹¹ *Forestry and Wildlife Law*, 2011, Section 14(g).

¹² *Ibid.*, Section 2(4)(21).

¹³ *Ibid.*, Section 1(3)(23).

Forestry management is based on titles granted by the state to companies, communities, and individuals for forest use.¹⁴ These require the submission of a forest management plan, prepared and signed by a regent, and the documentation of harvesting, processing, and transport through official records.¹⁵ The catalogue of logbooks for forest inventory (instruments) include commercial inventories,¹⁶ management plans,¹⁷ operations books,¹⁸ primary processing centres,¹⁹ and Forest Transport Guides (GTF).²⁰ Together, these are designed to create a paper trail that ensures traceability from forest to market. Ultimately, the paper record serves as a political artifact, where the recorded data is not an empirical fact, but an arbitrary construction shaped by administrative bias (when designing the instruments) and prevailing power dynamics.

Thus, Peru possesses a comprehensive and formally robust legal and institutional framework for timber governance. Its Constitution, *Forestry and Wildlife Law*, Penal Code, and policy instruments are aligned with major international conventions and trade agreements. Specialised agencies, oversight bodies, and decentralised authorities have been created, while enabling titles and management plans are designed to regulate sustainable forest use. Formally, the system is coherent and consistent with international administrative standards. However, this very coherence underscores the article's central argument: a complex regulatory apparatus operates alongside an almost total absence of enforcement, challenging prevailing assumptions about state capacity and crime policy in countries embedded in illicit global value chains.

Business Standards

The timber sector is largely informal and illegal. In 2014, 89,547 companies were registered in the sector, of which 73.3 per cent (65,596), mainly microenterprises, were informal—they did not pay taxes and did not have an updated Single

¹⁴ *Ibid.*, Section 2(2)(61)(c).

¹⁵ *Ibid.*, Section 2(2)(56).

¹⁶ Servicio Nacional Forestal y de Fauna Silvestre, *Guía práctica para el registro de información en el Libro de Operaciones de los Títulos Habilitantes*, SERFOR and FOREST, 2021, p. 10, <https://www.gob.pe/institucion/serfor/informes-publicaciones/2378237-guia-practica-para-el-registro-de-informacion-en-el-libro-de-operaciones-de-los-titulos-habilitantes>.

¹⁷ Supreme Decree 018-2015-MINAGRI, Regulations on Forest Management, Section 7(43)(m).

¹⁸ *Forestry and Wildlife Law*, 2011, Section 8(52).

¹⁹ *Ibid.*, Section 25(171)(b).

²⁰ *Ibid.*, Section 25(172)(a).

Taxpayer Registry with the tax authority.²¹ Only 26.7 per cent (23,951) were formal. In 2015, 24,495 formal companies were registered in the sector; 5,683 participate in extraction and primary processing (3,556 dedicated to forestry and extraction, and 1,993 to sawmilling and planing). These segments employ 28 per cent of the sector's workforce (354,818 people).²²

The formal timber sector is grouped into five national business associations: i) the Timber and Derivatives Industry Committee, ii) the Small Industry Committee (both associated with the National Society of Industries) (only one of its 24 members is a timber industry),²³ iii) the Timber and Timber Industry Committee, iv) the Crafts Committee (associated with the ADEX Exporters Association), and v) the SME Committee (integrated into the Lima Chamber of Commerce).²⁴ A group of formal businesses are organised into regional associations (chambers of commerce in each timber region). At the local level, the following are registered: i) forestry producers' associations, made up of individuals who carry out forest management and primary processing activities (but only 30 are formally registered nationwide); and ii) timber industrial associations, made up of legal entities (companies) that carry out primary processing activities.²⁵

Although the state promotes certification for forest management, chain of custody, sustainable forest management, and timber traceability,²⁶ only a small group of companies apply international standards, and very few have ISO certifications for the forestry sector²⁷—ISO 9001 (quality management), ISO 14001 (environmental management), and ISO 45001 (occupational health and safety). Of the total area under forest concessions in 2013 (7,885,963 hectares), less than 10 per cent (755,477 hectares) had Forest Stewardship Council (FSC) certification. By January 2025, with an area of 1,064,052 hectares certified, the FSC had certified only 94 initiatives: only 12 correspond to forest management certificates (ten company initiatives, one indigenous community, and one NGO);

²¹ *Ibid.*, pp. 16–17, 79.

²² Food and Agriculture Organization of the United Nations and Instituto Tecnológico de la Producción, *La Industria de la Madera en el Perú*, FAO and ITP, 2018, p. 15, <https://openknowledge.fao.org/server/api/core/bitstreams/e500a79d-18c5-41c0-ae00-fbb2000ee2bf/content>.

²³ Sociedad Nacional de Industrias, *Comité de la pequeña industria*, SNI, 2025, <https://sni.org.pe/comite-la-pequena-industria/>.

²⁴ FAO and ITP, pp. 80–81.

²⁵ *Ibid.*, pp. 78–79.

²⁶ CEPLAN, 2025, p. 85.

²⁷ Programme for the Endorsement of Forest Certification, 'Find Certificate', PEFC, n.d., retrieved 25 March 2026, <https://www.pefc.org/find-certified>.

the rest (82 certifications) are from chain of custody and only 25 from timber companies (the rest are from paper and derivatives companies).²⁸

Although SERFOR identifies some good practices, it notes that they are very few: use of satellite imagery in forest management planning, GPS for forest censuses, selected silvicultural practices, monitoring of forest harvesting (traceability of products from the census to forest removal), and protection of wildlife during harvesting activities.²⁹ Most companies operate within a framework of regulations whose accountability is vulnerable to illegal practices, or are simply informal.³⁰

In 2019, 406 companies were registered as exporters of timber products with a free-on-board value of over USD 124 million.³¹ These companies must comply with FTA regulations; however, there are indications of the widespread use of exploitative labour in the extraction of timber in the Peruvian Amazon that enters the formal traceable circuit. This is possible due to the permeability of current traceability documents, which are complicated and ineffective in enforcing any type of accountability. Thus, timber that reaches the export channel moves with uncertainty about its origin.

In this context, the Joint Declaration of the Peru–US Meetings (2016) points to serious problems in ‘ensuring the legality of timber throughout the supply chain’.³² The Ombudsman’s Office³³ pointed out to MINAGRI the limitations in verifying environmental certifications and land-use authorisations. In 2017, the US indicated that, eight years into the FTA, Peru had not formalised its forestry sector, even though it had allocated nearly USD 75 million in technical assistance

²⁸ Forest Stewardship Council, *Datos y cifras al 31 de enero 2025*, FSC, 2025, p. 2, retrieved 9 April 2025, <https://www.pe.fsc.org/sites/default/files/2025-04/D%26C%20ENERO%202025.%20%285%29.pdf>.

²⁹ SERFOR, 2022.

³⁰ FAO and ITP, 2018, p. 99.

³¹ Observatorio Nacional de Política Criminal, *La tala ilegal en la Amazonía peruana*, INDAGA, 2022, p. 53, <https://cdn.www.gob.pe/uploads/document/file/3095185/Documento%20-%20La%20tala%20ilegal%20en%20la%20Amazon%20C3%ADa%20peruana.pdf?v=1654203896>.

³² PROMPERU, *Declaración Conjunta de las Reuniones Perú – Estados Unidos Consejo de Asuntos Ambientales, Comisión de Cooperación Ambiental y Sub-Comité sobre el Manejo del Sector Forestal*, 2016, p. 2, https://www.acuerdoscomerciales.gob.pe/En_Vigencia/EEUU/Documentos/docs/Comunicado_Conjunto_VersionFinal.pdf.

³³ Defensoría del Pueblo, *Deforestación por cultivos agroindustriales de palma aceitera y cacao: Entre la ilegalidad y la ineficacia del Estado*, DP, 2017, p. 13, <https://www.defensoria.gob.pe/wp-content/uploads/2018/05/Informe-de-Adjuntia-001-2017-DP-AMASPP1.MA-1.pdf>.

since 2009.³⁴ It has been noted that the legalisation of timber of dubious origin with official documents is a recurring practice³⁵—with many cases of sanctions against Peruvian companies,³⁶ a situation reported in the Recommendations for the Export of Peruvian Timber to the US.³⁷

Although instruments, standards, and ISO certifications are in place, and a limited number of companies comply with regulations (especially in the export market), a significant portion of the sector remains informal or operates within opaque boundaries. The sources studied converge on the finding that the severe limitations of traceability mechanisms at the first link of the chain pose no significant obstacle to the incorporation of illegal timber further downstream. In practice, compliance with bureaucracy and formalities can be achieved even while seamlessly integrating illicit products.

The (Illegal) Supply Chain of Illegal Timber Extraction and Trade

Nearly 80 per cent of Peru's twenty-first-century economy is underground³⁸—the sum of illegal and informal service provision and commodity production activities³⁹—and 71 per cent of the economically active population depends on informal activities.⁴⁰ In this context, (conservative) official data indicate that at least 20 per cent of timber extraction and trade is illegal, although it may reach

³⁴ Agencia Agraria de Noticias, 'Perú no formaliza su sector forestal y EE.UU. Le aplica sanciones a través del TLC', *Agencia Agraria de Noticias*, 7 November 2017.

³⁵ Environmental Investigation Agency, *The Laundering Machine: How fraud and corruption in Peru's concession system are destroying the future of its forests*, EIA, 2012, <https://eia-international.org/wp-content/uploads/The-Laundering-Machine.pdf>.

³⁶ Agencia Agraria de Noticias, 2017.

³⁷ J Araujo and M Carbajal, *Recomendaciones para exportar madera peruana a los Estados Unidos de América*, USAID-SPDDA, <https://spda.org.pe/wp-content/uploads/2024/02/Recomendaciones-para-exportar-madera.pdf>.

³⁸ G López and C Mendoza, 'Estimación del tamaño de la economía sombra: Evidencia empírica para Ecuador, Perú y Colombia', *Revista Economía y Política*, vol. 36, 2022, pp. 97–117, <https://doi.org/10.25097/rep.n36.2022.07>.

³⁹ J Escobar, *Una Medición de la Economía Subterránea Peruana, A través de la demanda de Efectivo: 1980-2005*, Instituto de Investigaciones Económicas, Lima, 2008.

⁴⁰ INEI, *Producción y Empleo Informal en el Perú: Cuenta Satélite de la Economía Informal 2022-2023*, INEI, 2024, p. 116, retrieved 28 March 2025, <https://cdn.www.gob.pe/uploads/document/file/7448702/6344108-produccion-y-empleo-informal-en-el-peru-cuenta-satelite-de-la-economia-informal-2022-2023.pdf>.

86 per cent in certain areas.⁴¹ Despite regulations and standards, the dynamics of the first links in the timber supply chain have changed little: a structurally informal economy, with precarious conditions, poverty, and blatant exploitation, especially in the Amazon regions.

The evidence of a structure of labour exploitation at the base of the supply chain is clear and not new. Records of extraction, sustained by the exploitation of indigenous labour and forced labour,⁴² have been evident since the second half of the nineteenth century.⁴³ These conditions have changed but have not been eliminated, nor are they close to disappearing.⁴⁴ The neoliberalisation processes of the Peruvian economy generated a new boom in the extraction of minerals, hydrocarbons, and timber since the end of the twentieth century.

In fact, research shows the persistence of patronage systems, enlistment, and debt bondage in the timber supply chain in the twenty-first century,⁴⁵ which are associated with various forms of exploitation and forced labour.⁴⁶ Although there is no official estimate, the government acknowledges the extent, pervasiveness, and significance of the problem in its public policies, and the ILO notes its alarming magnitude.⁴⁷ This acknowledgment, however, remains largely rhetorical unless contrasted with the concrete experiences of those directly involved in the sector. Testimonies from our field research corroborate the systemic nature

⁴¹ Organismo de Supervisión de los Recursos Forestales y de Fauna Silvestre, *Estimación del índice y porcentaje de tala y comercio ilegal de madera en el Perú 2021*, OSINFOR, 2024, p. 30, <https://cdn.www.gob.pe/uploads/document/file/6516466/5683472-policy-brief-estimacion-del-indice-y-porcentaje-de-tala-y-comercio-ilegal-de-madera-en-el-peru-el-2021.pdf>.

⁴² Ministerio del Ambiente, *Historia ambiental del Perú. Siglos XVIII y XIX*, MINAM, 2016, <https://www.minam.gob.pe/wp-content/uploads/2016/07/Historia-ambiental-del-Per%C3%BA.-Siglos-XVIII-y-XIX.pdf>.

⁴³ F de la Rosa, 'La era del caucho en el Amazonas (1870-1920): Modelos de explotación y relaciones sociales de producción', *Anales del museo de América*, vol. 12, 2004, pp. 183–204.

⁴⁴ J Mujica, *Precariedad y trabajo forzoso en la extracción de madera: Un estudio en espacios rurales de la Amazonía peruana*, ILO, Lima, 2015, https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@americas/@ro-lima/documents/publication/wcms_427032.pdf.

⁴⁵ E Bedoya, A Bedoya and P Belser, 'El peonaje por deudas en la tala ilegal de madera en la Amazonía peruana', *Debate Agrario*, vol. 42, issue 1, 2007, pp. 1–31.

⁴⁶ E Bedoya and A Silva-Santisteban, *Trabajo Forzoso en la Extracción de la Madera en la Amazonía Peruana*, ILO, Geneva, 2005.

⁴⁷ International Labour Organization, *Hard to see, harder to count: Handbook on forced labour surveys*, 2024, <https://www.ilo.org/publications/hard-see-harder-count-handbook-forced-labour-surveys>.

of the problem and also expose the ways in which illegality is normalised and embedded in everyday practices of timber extraction.

The normalisation of abuse is evident in payment practices. Workers frequently reported that verbal agreements were ignored. As a 23-year-old day labourer in Yarinacocha explained, “The *Patrón* [employer] got a bit stubborn with me... He failed to keep his word. He told me, “you are going to work this many hours”, but he made me work more and didn’t pay me anyway.”

This precarity extends to small-scale employers, who are often cheated by larger buyers, perpetuating a cycle of debt. A 69-year-old employer in Puerto de Pucallpa described how arbitrary quality assessments are used to withhold payment: “[The buyer says], “The wood came out bad... [so] *tas con tas* [we’re eve] with the money.”... He completely stiffed me (*me cerró*) out of 5,000 Soles. It made me bitter, my wife cried.”

Our field data confirms the widespread dynamics of exploitation, forced labour, child labour, and human trafficking for labour and sexual exploitation,⁴⁸ in the first links of the extractive chain, both in the Loreto region in the northern Amazon,⁴⁹ in the Madre de Dios region in the southern Amazon,⁵⁰ and in the Ucayali region in the central Peruvian Amazon.⁵¹ The supply chain reconstruction, validated by our expert panel and field observation, identified four links, eight activities, and 40 tasks. Within these, timber extraction and processing involve a high and clearly identifiable presence of labour exploitation.⁵²

Workers consistently described the extraction sites as fraught with physical danger and devoid of social protection. A 30-year-old day labourer in Callería highlighted the isolation and risks: ‘It’s really heavy [work], very risky. You have the danger of vipers... [or] a log hits you... You can break your finger... And to get you out

⁴⁸ See also: J Mujica, ‘Trabajo adolescente en la extracción de madera en la Amazonía peruana: Explotación laboral, trabajo forzoso, trata de personas’, *Revista De Derechos E Garantías Fundamentales*, vol. 17, issue 2, 2016, pp. 155–180, <https://doi.org/10.18759/rdgf.v17i2.786>.

⁴⁹ International Labour Organization, *El trabajo forzoso en la extracción de madera: Un estudio en la triple frontera de Perú, Brasil y Colombia*, ILO, Lima, 2018.

⁵⁰ J Mujica, *Elementos comparados del impacto de la trata de personas en la salud de víctimas adolescentes en el contexto de la minería ilegal de oro en Madre de Dios*, Promsex, Lima, 2014

⁵¹ Mujica, 2015.

⁵² J Mujica *et al.*, ‘Vigilar y performar. La cadena de suministro de la madera ilegal en Perú’, *URVIO Revista Latinoamericana de Estudios de Seguridad*, vol. 38, 2024, pp. 49–68, <https://doi.org/10.17141/urvio.38.2024.6093>; J Mujica *et al.*, ‘Trabajo forzoso y riesgos en la cadena de suministro de la madera ilegal en el Perú’, *Conflicto Social*, vol. 17, issue 32, 2024, pp. 115–147.

of there? You are not near the city, you are not near a town.’ This physical risk is exacerbated by the total absence of health coverage. As a 33-year-old employer in Callería admitted, ‘We don’t have life insurance, we don’t have any insurance at all... [When we get sick], no, we don’t have any SIS [public health insurance] or anything, only by our own means. Sometimes we self-medicate.’

Beyond physical risks, the labour conditions often meet the criteria for forced labour, particularly through restriction of movement and threats. One 27-year-old labourer in Yarinacocha described a surveillance system designed to prevent exit: ‘It’s like we are watched so we can’t... leave... It’s like they want to watch [us], and then nobody gets out.’ This immobility is reinforced by the geography itself; as a 45-year-old cook in Callería noted, quitting is dangerous: ‘If you said something, they could say, “Ah, so stay here then. Walk. How will you get back to the community?”’ No, there was a lot of danger because of that too.’

Control is further maintained through threats regarding identity documents and food. The same 33-year-old employer cited above acknowledged that owners would threaten ‘that they would take away our document [ID]... and besides that, they wouldn’t give us food’. Furthermore, the environment is permissive of severe gender-based violence. A 54-year-old labourer in Manantay reported sexual abuse against women in the camps: ‘Several cooks have been raped there... sometimes there are some people, the same chainsaw operators (*motosierristas*), ... they abuse them, they rape them.’

In our field work, we found two results that confirm previous research: 1) a high frequency of the system of entrapment due to debt or deception, in an economy where there is no state surveillance or effective controls. The entire sample (41 subjects interviewed in the river ports of Ucayali) recounted experiences of labour exploitation, and 16 described conditions that could be considered as forced labour. 2) Labour exploitation is discernible in simple observation (absence of any type of safety instruments, work in remote areas of the Amazon forest without the possibility of leaving the area for extended periods), or simple records (no contracts, agreements are verbal, payments are sporadic or not made). These are not occasional situations, but rather a common, widespread dynamic rooted in the Amazonian extractive logic.⁵³

Our field data also showed a high concentration of illegal logging. We identified that most illegally extracted forest products (in prohibited concessions, with falsified extraction documents, without a permit, under exploitative conditions, among other methods) are mixed with legal timber and are part of the same supply chain sequence to enter the formal market, confirming the state’s

⁵³ *Ibid.*

estimates of the percentage of illegal timber,⁵⁴ the number of judicial cases,⁵⁵ and institutional alerts.⁵⁶ This is associated with the absence of control mechanisms in the extraction areas, mostly in the Amazon forest without any type of physical institutional presence.

Discussion

Despite the elaborate legal and institutional framework, traceability remains the weakest link.⁵⁷ Instruments rely on paper records and sworn statements from concession holders and regents, with limited verification capacity. Inventories may include non-existent or off-site trees; operational plans can be manipulated; transport guides may be cloned or falsified; and processing centres may mix legal and illegal timber.⁵⁸ In practice, the system documents procedure fulfilment rather than tracking timber itself.

This reliance on documentation undermines credibility. Interviews with specialists, traders, and officials confirm that malpractices are common, beginning with inflated or falsified inventories and continuing through transportation and marketing. Without independent verification—through technology, field monitoring, or accountability mechanisms—the framework cannot prevent the laundering of illegal timber into legal supply chains.

Effectiveness remains contingent upon traceability, which continues to be prone to illegality, forced labour and human trafficking. The dissonance between the strength of Peru's regulatory framework and the fragility of its enforcement mechanisms underscores the persistence of illegal logging, forced labour and human trafficking. In the final analysis, the framework's legitimacy rests less on the comprehensiveness of its laws and institutions than on its structural (in)capacity

⁵⁴ OSINFOR, 2024, p. 11.

⁵⁵ Ministerio de Justicia y Derechos Humanos, *La tala ilegal en la Amazonía peruana*, MINJUSDH, 2022, p. 177, <http://cdn.www.gob.pe/uploads/document/file/3095185/Documento%20-%20La%20tala%20ilegal%20en%20la%20Amazon%3%ADa%20peruana.pdf.pdf>

⁵⁶ Ministerio del Ambiente, *Bosque y Pérdida de Bosque*, MINAM, 2023, <http://geobosques.minam.gob.pe/geobosque/view/perdida.php>.

⁵⁷ Centro Nacional de Planeamiento Estratégico, *El sector forestal en el Perú: Propuestas estratégicas para fortalecer su desarrollo*, CEPLAN, 2023, pp. 23–24, <https://cdn.www.gob.pe/uploads/document/file/5605664/4973838-ceplan-el-sector-forestal-en-el-peru.pdf>.

⁵⁸ J Urrunaga *et al.*, *Moment of Truth. Promise or Peril for the Amazon as Peru Confronts Its Illegal Timber Trade*, EIA, 2018, <https://s3.amazonaws.com/environmental-investigation-agency/assets/2018/02/MoT/MomentofTruth.pdf>.

to enforce compliance in environmental, commercial, and labour domains.

The prevalence of exploitation and forced labour is linked to the large scale of extractive activity, which cannot be explained without the exploitation of local labour, as demonstrated by the data in this article, as well as previous research, state and ILO reports, and ethnographic studies, especially at the base of the chain: the extractive link. The extractive dynamics and the trade of these products cannot be understood without the presence of a vast timber laundering system, which mixes illegal and legal resources. What enables these dynamics?

Peru has signed international agreements and conventions, organised its system of standards, public policies, and penal code, designed a specialised institutional structure, and developed a comprehensive system aligned with global trade standards and sustainability regulations. However, formal processes do not guarantee monitoring (in practice) of timber origin, and there are various vulnerabilities, especially at the beginning of the supply chain, such as extraction, licencing, and personnel recruitment. The complex network of standards, regulations, and institutions overseeing the legal chain is sustained by a single actor—the forest regent—and a single object—a manual logbook for forest inventory. The administrative chain and the comprehensive traceability system depend on ‘good intentions’ to prepare these documents, which lack accountability and are radically vulnerable to the incorporation of illegal products extracted under exploitative conditions.

Thus, the system is designed to trace documents rather than objects (trees, timber, derivatives). It behaves as a simulation bureaucracy: an administrative structure that performs regulation through procedures, meetings, and documentation, while maintaining only a symbolic or ritual connection to the material world it purports to control. As a consequence, regulation targets the instruments accompanying the timber rather than the timber itself, allowing significant volumes of wood—often tied to illegal extraction and labour exploitation—to enter the formal supply chain.

Due diligence requirements and corporate sustainability instruments are often presented as the primary solution to these issues. However, our findings suggest these instruments are fundamentally insufficient, as they target only the small fraction of formal companies that engage with them, while the vast majority of the shadow economy operates in illegality and informality, completely outside these frameworks. Furthermore, these instruments are essentially declarative because they rely on the same flawed, state-level traceability system—the forest regent and his logbook—that enables illegality in the first place.

We argue that these two phenomena are closely linked; the state’s ‘simulation of control’ emerges as the logical response to this flawed international demand. The international community, through FTAs and due diligence requirements, prioritises documented compliance. The Peruvian state, rather than undertaking

the costly and complex task of controlling the vast shadow economy, responds by providing exactly what is demanded: an elaborate performance of legality, deeply permeable to illegal interests. The consequence of this response is twofold: (a) the international pressure for corporate responsibility standards is satisfied not with empirical control, transparency, or justice, but with the state's simulation of it; and (b) the vast majority of actors are accountable to no one, as they are not regulated at all, existing completely outside even this flawed, paper-based system.

While it is possible to study the operational and logistical limitations for surveillance (forest size, staff, budget), they are insufficient to understand the decision behind a clearly permeable system that has not changed despite evidence of illegality and exploitation. We interpret this logic as a performative dynamic of regulation and a simulation of control, whose function is to comply with formal standards for international trade, the goals and indicators of international conventions, and public policies, but with a system designed for *laissez-faire*, *laissez-passer*. The state assumes it cannot effectively regulate or control the illegal dynamics of the timber extraction and trade due to its size, cost, and location (and its own ineffectiveness), and produces an exercise in simulated control. Extractors and producers simulate being monitored, officers simulate control, and companies simulate compliance with regulations, all sustained by a dense set of documents.

Conclusion

Our field data, as well as previous studies, confirm a systemic paradox: Peru's vast timber supply chain, rife with labour exploitation, forced labour, and illegal logging, is managed by an equally vast regulatory architecture. This architecture, however, is not designed for control, but for simulation and lacks effective accountability mechanisms. Our analysis exposed the precise mechanism of this simulation: the entire chain's legitimacy rests not on verified control, but on the declarative, paper-based instruments of a single actor, the 'forest regent'. This 'flaw of origin' is not an oversight; it is the central feature that allows the state to perform legality. It provides a formal mechanism for laundering illegal timber—and the exploitation required to harvest it—directly into the domestic and export supply chains. This dynamic creates a dangerous symbiosis: the international community receives its auditable paperwork, the state performs its sovereignty, and the vast, violent, and unpoliced shadow economy is left undisturbed to fuel the formal market. As long as the international focus demands *paper* rather than *control*, the simulation will prevail, and the exploitation will continue.

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