Technology Tools to Manage Forced Labor Risks in Supply Chains

Addendum to TAT's Landscape Assessment of Anti-Trafficking Tech Tools

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OSCE

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Contents

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Objectives

This brief is intended for use by human rights and responsible sourcing practitioners at global companies, as well as by civil society organizations and policymakers.

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1. **Analyze the landscape of supply chain anti-trafficking tools:** Evaluate the expanding range of technology tools utilized in supply chain management

2. **Synthesize updates since 2020:** Showcase insights that complement the original 2020 TAT-OSCE landscape assessment, providing updated recommendations and best practices with a focus on supply chain management tools

3. **Examine technology's role in strengthening supply chain due diligence:** Assess the ways in which technology is being employed to enhance due diligence in supply chains and its contribution to anti-trafficking efforts

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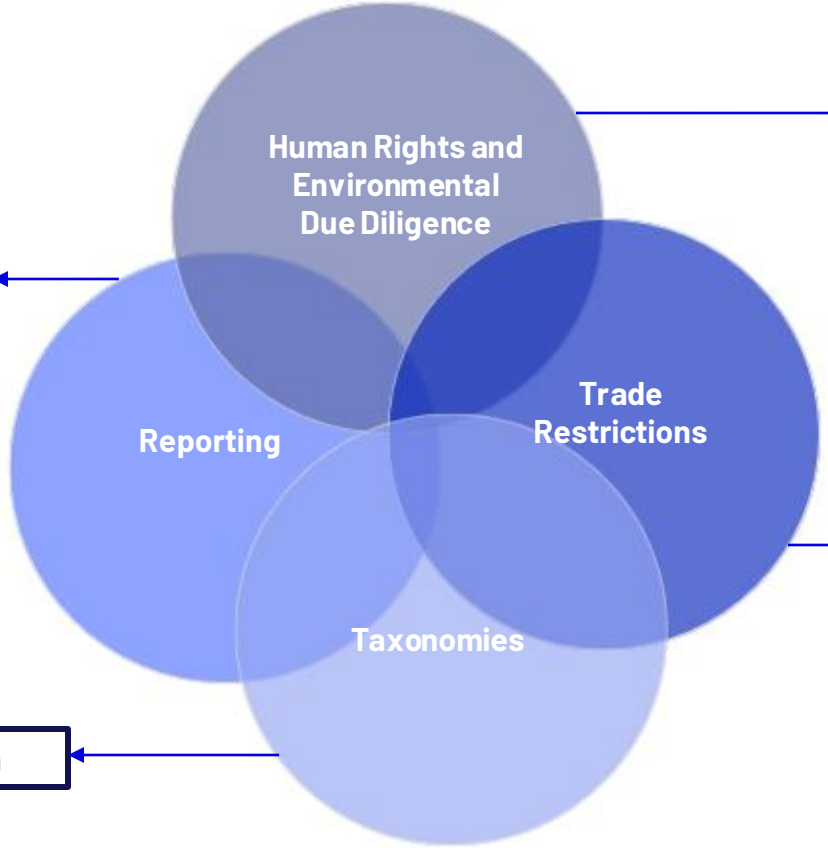
The Evolving Regulatory Context

The Evolving Regulatory Landscape

- Recent national and regional developments have created new **human rights due diligence** (HRDD) **obligations and reporting duties**, in addition to **trade bans**, that affect business operations.
- These duties have shifted from **voluntary corporate social responsibility** (CSR) to **binding legal requirements**, obliging companies to *conduct* human rights and environmental due diligence and / or to *report* on how they address human rights risks, including on forced labor.
- Governments are adopting four types of laws to regulate business conduct in relation to human rights impacts: **due diligence**, **reporting, trade restrictions and taxonomies.**
- These laws focus either **specifically** on **forced labor** or **more broadly on human rights and environmental impacts.**
- Understanding the business and human rights regulatory landscape **helps contextualize one of the key drivers for business and other stakeholders of adopting tech tools for compliance and human rights due diligence.**

Business and Human Rights Regulation Overview



- EU Corporate Sustainability Reporting Directive (EU CSRD)
- Australian Modern Slavery Act
- Canada Fighting Against Forced Labor and Child Labor
- California Transparency in Supply Chains Act
- UK Modern Slavery Act

- EU Corporate Sustainability Due Diligence Directive (CSDDD)
- French Corporate Duty of Vigilance Law
- Germany's Supply Chain Due Diligence Act
- Norway's Transparency Act

- EU Forced Labor Regulation
- Section 307 of U.S. Tariff Act
- Uyghur Forced Labor Prevention Act

- EU Taxonomy Regulation

Why Use Tech Tools for Supply Chain Management?

In the context of evolving HRDD and supply chain regulation, companies benefit from using technology tools for supply chain management to assess forced labor risks:

- **Verify fair labor practices:** Blockchain-based traceability tools help verify working conditions at both regional and supplier levels
- **Create targeted approach to safeguarding workers' rights:** By flagging forced labor risks in specific supply chains or commodities (e.g., palm oil), tech platforms enable targeted interventions
- **Complement gaps that standard due diligence processes may overlook:** AI-driven monitoring supports detection of exploitative practices that conventional due diligence may miss (e.g., recruitment fee exploitations among migrant workers)
- **Align with global and regional standards:** Automated compliance dashboards map against ILO protocols and requirements of existing and upcoming regulation, including EU CSDDD

Types of Technology Tools

Technology Tool Categories

Defining Technology Tools for Supply Chain Management

- ✓ Used by companies, investors and other stakeholders to improve supply chain visibility and human rights risk identification in the supply chains
- ✓ May address broader human risks, but include analysis of forced labor risks
- ✓ Support stronger human rights due diligence and regulatory alignment

Types of tools

1. Traceability and Supplier Mapping Tools
End-to-end traceability, blockchain

2. Risk Screening and Assessment Platforms Supplier risk mapping, alerts

3. Worker Voice and Engagement Tools
Anonymous reporting, grievance systems

4. Auditing, Monitoring & Verification
On-site/remote audits, unannounced inspections

5. Reporting, Benchmarking, and Disclosure Tools
UN/ILO standards, business and human rights legislation, audits, certifications

Advances since 2020

Trends 2020 vs. 2025 (1/2)

This section highlights insights that complement the original 2020 TAT-OSCE landscape assessment.

1. Real-Time Monitoring

- *Progress:* In 2020, monitoring was often periodic; newly identified tools have advanced their capabilities, enabling faster detection and response to human trafficking risks in real-time.
- *Persisting Issues:* Some regions still lack reliable data infrastructure, and real-time monitoring can be limited by local connectivity issues or resource constraints in certain industries.

2. Enhanced Worker Voice

- *Progress:* Previously limited to basic reporting, today's platforms offer multiple, secure, and anonymous reporting channels, empowering workers to report exploitation without fear using tools such as AI.
- *Persisting Issues:* Despite advancements, workers may still fear retaliation, and many workers in remote areas or informal sectors may lack access to these reporting systems or technologies.

Trends 2020 vs. 2025 (2/2)

This section highlights insights that complement the original 2020 TAT-OSCE landscape assessment.

3. AI & Machine Learning Deployment

- *Progress:* Use of AI has strengthened early-warning systems for companies and regulators, improving visibility beyond Tier 1 suppliers and supporting compliance with reporting and ethical sourcing obligations. AI is applied in several areas:
  - **Enhanced Risk Detection:** AI analyzes large datasets to spot irregular supplier behavior and exploitation patterns that audits may miss.
  - **Predictive Analytics:** Machine-learning models forecast trafficking risks, allowing companies to address vulnerabilities early.
  - **Social Media Monitoring:** AI tools scan online platforms for trafficking indicators and at-risk individuals, as traffickers often recruit through these channels.
  - **Comprehensive Supply Chain Mapping:** AI mapping identifies high-risk suppliers and regions, enabling proactive mitigation.
- *Persisting Issues*: Limited data quality and resource constraints — especially for smaller companies — still hinder broader adoption of AI and machine learning.

Updated Mapping of Supply Chain Tools

Newly Identified Tools

- Since the original **2020 TAT-OSCE** landscape assessment, 27 of the 36 foundational tools identified were included in this analysis.
- There has been a notable rise in tools integrating **AI and predictive analytics**, enhancing risk detection and forecasting capabilities.
- The field has also seen **greater specialization**, with new tools tailored to address specific forms of exploitation.

27 tools identified

1. Traceability and Supplier Mapping Tools

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Function: Digitally mapping and visualizing supply chains across tiers helps track material flows, identify upstream suppliers, and enhance overall transparency. In some cases, blockchain technology or advanced data integration supports these objectives.

Intended users/beneficiaries:

- **Companies:** To achieve greater visibility beyond the top suppliers, pinpoint areas of risk, and comply with legal reporting requirements.
- **Auditors/Regulators:** To validate disclosures and compliance.

Example of tools:

- Diginex LUMEN
- DNK Platform
- Kodiak Hub, Mekong Club digital maps
- MSAT (Modern Slavery Assessment Tool
- TrusTrace

2. Risk Screening and Assessment Platforms

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Function: Consolidate data on a country's environmental, social, and governance (ESG) performance, labor rights, and political risk to generate a risk score for a given country, industry, or supplier. These systems often integrate satellite imagery, media scraping, and AI-driven alerts to enhance accuracy and responsiveness.

Intended users/beneficiaries:

- **Companies:** To target due diligence efforts and audits in regions with the highest risk levels.
- **Investors:** To evaluate exposure to human rights risks within investment portfolios.

Example of tools :

- Fairsupply Modern Slavery Application
- IntegrityNext
- Prewave AI-powered risk monitoring
- Sedex Radar
- Social Fingerprint®
- Traffik Analysis Hub
- Unseen UK Modern Slavery Helpline App
- Verisk Maplecroft Human Rights Risk Indices

3. Worker Voice and Engagement Tools

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Function: Enable direct feedback on labor conditions and rights issues. Digital tools can also facilitate self-identification by vulnerable workers, extending outreach, raising awareness, and supporting the early detection of trafficking risks beyond formal reporting channels.

Intended users/beneficiaries:

- **Companies:** To get real-time, ground-level insights and address issues proactively.
- **NGOs/Unions:** To support advocacy and worker empowerment.
- **Workers:** To safely report abuses or concerns without retaliation.

Example of tools:

- LaborLink
- My Labor Matters
- SafeStep
- SmartRights
- Ulula Grievance Mechanism

4. Audit, Monitoring, and Verification Tools

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Function: Digitize audit management through remote monitoring technologies (IoT, wearables, satellite, and AI-powered document checks) and standardize corrective action tracking. These tools enhance oversight, reduce manual errors, and improve the reliability of audit outcomes.

Intended users/beneficiaries:

- **Auditing firms and third-party verifiers:** To streamline evidence collection and reporting.
- **Companies:** To ensure continuous monitoring instead of one-off audits.
- **Suppliers:** To track and demonstrate improvements transparently.

Example of tools:

- Apprise App
- OTRIS Intelligence
- Thomson Reuters Foundation STOP App

5. Reporting, Benchmarking, and Disclosure Tools

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Function: Assist companies in preparation for mandatory HRDD, modern slavery reporting, or CSRD reports; benchmark performance against peers; and align with global human rights standards (GRI, UNGPs, OECD Guidelines).

Intended users/beneficiaries:

- **Companies:** To comply with legal and voluntary disclosure requirements.
- **Regulators & Civil Society:** To assess corporate transparency and accountability.
- **Consumers & Investors:** To make informed decisions about ethical performance.

Example of tools:

- CSDDD Software Matcher (Matchilla)
- Law Code
- Liberty Shared Data Portal
- SRN – Sustainability Report Navigator
- WikiRate International Open Data Platform

Enhancing Supply Chain Tools for Better Management of Forced Labor Risks

What Is the Added Value of Supply Chain Tools for Forced Labor Detection?

Real-time risks	Unusual patterns and behaviors can be automatically flagged (e.g. sudden workforce changes) and alert companies to potential issues as they arise.
Enhanced traceability	In some cases, use of blockchain allows companies to track the origin and journey of labor in their supply chains, from recruitment to final deployment.
Worker-driven insights	Worker voice tools provide anonymous channels for workers to report exploitation or labor abuses directly to third-party platforms, avoiding barriers in traditional reporting systems.

What Are the Curremt Limitations of Supply Chain Tools for Forced Labor Detection?

Limited Data Beyond Tier 1

Most tools have limited visibility beyond Tier 1 suppliers, where forced labor risks are often highest and data is least available.

Data Quality and Reliability

Supply chain data frequently relies on self-reported questionnaires, third-party audits, or open-source information, all of which may lack accuracy and consistency.

Limited Worker Voice Integration

Direct worker input and feedback (e.g. via hotlines, surveys, grievance platforms) remains limited across the majority of tools.

Fragmentation and Lack of Interoperability

The landscape of forced labor detection tools is fragmented, with inconsistent data standards and methodologies aligned with the ILO indicators.

Recommendations for Tool Enhancement

Test impact of tools through pilot projects

- Launch **cross-sector pilot project** to test and validate tool effectiveness in real-world supply chains
- Partner with local NGOs, suppliers, and workers to ensure tools are contextually relevant and user-centered

Establish structured feedback loops and lived experience input

- **Promote feedback between workers, companies, and tool developers** to ensure continuous improvement, transparency, and responsiveness to on-the-ground realities
- **Integrate lived experience insights** into the design, implementation, and evaluation of tools and processes.

Recommendations for Tool Enhancement (2/2)

- **Measure effectiveness and benchmark**
  - Develop shared **Key Performance Indicators (KPIs) to compare tools**, including:
    - Number of alerts triggered and resolved
    - Workers reached and engaged
    - Verified improvements and law enforcement referrals
  - Conduct **independent benchmarking** to assess performance, scalability, and cost-effectiveness
  - Encourage open reporting and peer learning through industry coalitions

- **Leverage AI to enhance tool performance and worker protection**
  - **Explore use of "alternative" forced labor risk indicators** (e.g. satellite imagery, financial transaction data) to identify patterns and predict risks (e.g., recurring violations, hotspot regions, or systemic issues) for earlier and more targeted interventions
  - **Safeguard data integrity and privacy** for sensitive worker information, through secure data governance frameworks.

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Thank You