EiQ by LRQA

The Global Trace Protocol

June 2025

GlobalTrace PROTOCOL

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Contents

An Open-Source Protocol for Digital Supply Chain Traceability

Global Trace is an open-source software tool that enables brands, producers, and manufacturers to track and trace products while detecting supplier risk through their entire supply chain. Global Trace can be used to map between supply chain tiers, trace product inputs, and manage risk assessment data from source to the point of purchase. Global Trace is interoperable and commodity-agnostic to help users respond to increasing demands for responsibly produced products.

Supply chain labor risks are particularly acute in upstream production activities, such as raw material extraction and agricultural production, which serve as inputs to other industries. Goods produced with these materials may be included in the U.S. Department of Labor List of Goods Produced by Child Labor or Forced Labor, as required under the Trafficking Victims Protection Reauthorization Act (TVPRA) or to subject to customs' enforcement actions where alleged to have made in whole or part by forced labor. With a primary focus on child and forced labor and related exploitative practices, Global Trace is designed to be flexible, scalable and expandable on labor rights and other social responsibility factors, with the potential to be expanded to cover environmental standards.

The Global Trace GitHub frontend and backend repositories include all technical documentation for system administrators, developers, and API users as well as links to how to videos. For additional information, also visit the Global Trace Protocol (GTP) Project website to access resources such as a traceability glossary, traceability context analysis, commodity mapping reports, and lessons learned through real world implementation.

The Protocol draws upon reports, guidance, and standards from numerous expert sources listed at the end of this document.

Contents of Documentation

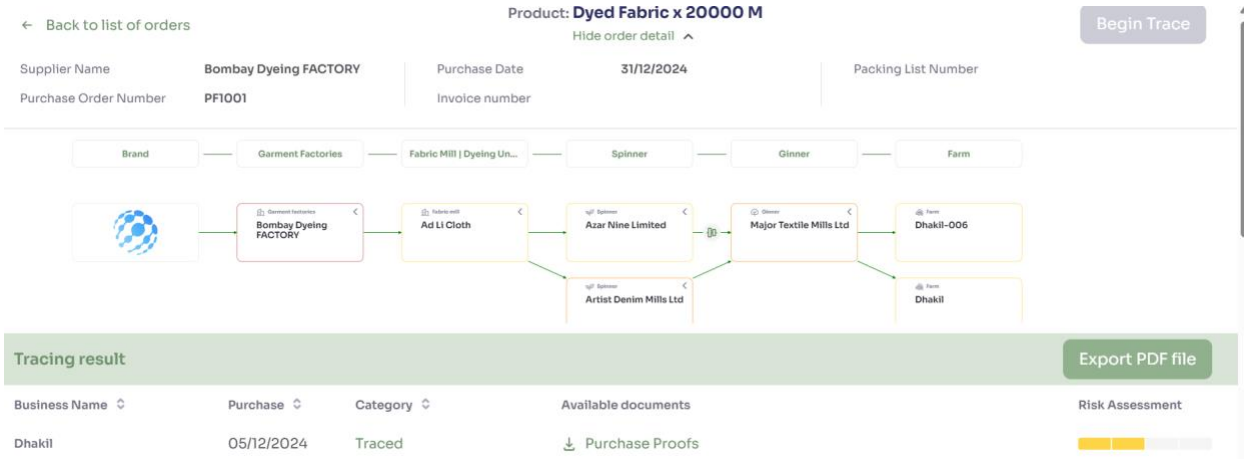
This documentation begins with **Best Practice Guidance (Section I)** for effective traceability. It then details the **Six Configuration Steps (Section II)** required to set up an "instance" of Global Trace specific to the needs of the organization managing the deployment of the system.

The steps are further detailed below in this documentation and on the project GitHub and are:

1. Defining the products in the supply chain and assign Key Data Elements (KDEs) to each product.
2. Defining the user roles and user permissions in the Global Trace instance.
3. Creating a tier map of the supply chain, showing how products will flow and where Critical Tracking Events (CTEs) occur. Assign input and output products for each transformation per Role.
4. Defining a risk management taxonomy (list of indicators) to be used as the framework upon which users will combine Risk Assessment reports and other data inputs.
5. Uploading the assessments or self-assessment questionnaires (SAQs) to be used for each Producer Role. Questions in each assessment will align with the List of Indicators and responses will contribute to the overall risk associated with a producer.
6. Specifying the method by which various assessment inputs will be combined to determine the overall risk associated with a Producer. These inputs can include external risk indices, assessment or SAQ responses DNA test results, and compliance reports filed by assessors.

The final section of this report details the process for **Tracing Goods Using Global Trace** (**Section III**) details**:**

- The process for configuring purchases, sales, and transformations of products within the supply chain.
- The process used to trace products with Global Trace.



Section I: Best Practice Guidance for Traceability to Manage Labor Rights

Implementing the following guidance can help manufacturers, brands, or industry groups track and trace products through a supply chain between raw materials and finished goods. The guidance is meant to inform the design, implementation and evaluation of traceability efforts, grounded both in labor rights principles and supply chain due diligence procedures.

Implementing this guidance can improve a company's due diligence management system, provide evidence for the reliability of an organization's sustainability claims, and help demonstrate appropriate responses to risks and adverse impacts identified through traceability efforts. It also provides suggestions for data management and data sharing related to the supply chain data collected during traceability implementation.

The Global Trace software tool has been designed to be aligned with this guidance.

Management Systems and Preconditions for Effective Due Diligence

- **Responsible Sourcing Policy**: Develop a policy or edit existing sourcing policy to specifically prohibit Child Labor and Forced Labor throughout the supply chain and that commits to supply chain transparency. Extend the policy to include suppliers beyond direct (tier 1) to all tiers of your supply chain to address the potential for hidden exploitation deeper within the supply chain.
- **Prioritize traceability for high-risk inputs**: Identify and focus on tracing inputs known to present the highest risk of labor abuses within the organization's final products. If a company sources from a specific region known to be associated with forced labor, the company should prioritize tracing the origin of its raw material from that region. This approach ensures that resources are allocated effectively to address the most pressing issues.
- **Senior Management Accountability**: Ensure senior management is accountable for implementation and oversight of traceability within the companies supply chain due diligence system. Assign a management representative with responsibility and authority to enforce commitments.
- **Staff Training and Responsibility**: Identify and train all staff involved in supply chain traceability, ensuring they understand their responsibilities and the purpose of the system. Clearly define responsibilities and link them to specific workstations and tasks.
- **Resource Allocation**: Ensure sufficient material and digital resources are available to support the implementation and maintenance of the traceability system.

- **Detailed Procedures**: Develop detailed procedures for implementing track and trace, either as new standard operating procedures (SOPs) or integrated into existing frameworks. Specify the Chain of Custody model/s to be used across tiers.
- **Regular Review and Updates**: Conduct regular internal reviews to identify shortcomings and areas for improvement within the traceability system. Update the system to accommodate new regulations, market demands, and technology.
- **Supply Chain Mapping**: Map all tiers of the supply chain, including direct suppliers, their suppliers, and the origin of raw materials. The map should encompass and be able to describe the whole supply chain from [Raw Material 1] to [Raw material x], in terms of name of the supplier and production address. Suppliers should be separated by production tiers and arrows should be drawn accordingly from supplier to supplier to identify manufacturing/process flow. If the registered name of the supplier and factory is different from each other, both names should be provided.
- **Supplier Information**: Gather minimum profile information for each supplier, including name, address, facility locations, product/service type, worker numbers, and status of audits or assessments.
- **Sustainability and Traceability Claims**: Clearly define and agree internally about the sustainability claims your company intends to make, ensuring they are specific, measurable, achievable, relevant, and time bound. Utilize recognized standards and certifications to substantiate these claims whenever possible. If employing the Mass Balance Chain of Custody model, clarify that the model does not permit claims related to physical traceability for specific products.

Identifiers, Tracking Events, and Data Elements

- **Unique Identifiers**: Utilize standardized, unique identifiers for companies, products, locations, and shipments to facilitate accurate tracking throughout the supply chain, and support information interoperability. Examples of these include (GLN, GTIN, HS Code, DUNS, SSCC, LEI, ISO/IEC 15459).
- **Identification of Critical Tracking Events (CTEs)**: Define the critical tracking events where data will be collected in your supply chain such as production, processing, and shipping to ensure full transparency in the movement and transformation of materials. Use the GS1 Supply Chain Standards for CTEs whenever possible.
- **Definition of Key Data Elements (KDEs):** Define the key data elements that will be collected at each CTE, including such items as batch numbers, production dates, material descriptions, and unique identification numbers across the supply chain. Use the GS1 Supply Chain Standards for KDEs whenever possible.
- **Risk Indicators**: Indicators of risk related to labor rights, working conditions, and the environment must be defined. These indicators should be aligned with international best practice guidelines and the needs of the sector. Track and report on these aspects systematically, aligning traceability efforts with broader sustainability and corporate due diligence goals. These may include ILO Conventions 29, 132 and 182 , OECD Due Diligence Guidance, EU Due Diligence regulations, and the requirements of the U.S D.H.S.
- Indicators should include type, indicator and sub-indicator definition and should include risk ratings (on a scale from no risk to extreme risk).
- **Internal Batch Traceability: Maintain a system that allows for tracking product batches internally from raw material reception to finished** product delivery. Assign unique identification numbers for each stage. This system should record key events like production, processing, and shipping.
- **Definition of Automatic Conversion Ratios**: Define any automatic conversion ratios that are used when raw material is transformed from input to output form at each supplier. Update these ratios regularly based on results of transformation and testing.
- **Linking Purchases to Suppliers**: Ensure that whenever a purchase or delivery is tracked within your traceability system it is linked to specific supplier records to help establish clear accountability within the supply chain. This includes certificates of origin, purchase orders, invoices, and proof of payment, packing lists, payment records, shipping records, including manifests and bills of lading, and inventory records supporting production.

Data Management and Digital Tools

- **Digital Tool Deployment**: Identify and deploy appropriate software and hardware for data collection and management.
- **Automated & Structured Data Entry**: Use mechanisms like automatic entry, structured lists, and mandatory fields to minimize errors, support data accuracy and minimize manual data manipulation risk.

- **Data Carriers**: Utilize automated data capture and tracking in traceability system. Utilize barcodes, QR codes, or RFID tags to store and transmit key data elements like batch numbers, production dates, and unique product identifiers.
- **User Roles and User Rights**: Define specific user Roles according to user type and the system administrators. User types can include such Roles as Producer, Assessor, or Administrator. Assign user rights and Role-based access controls tailored to the needs and boundaries of each Role to protect sensitive information and prevent data leakage.
- **The "Least Privilege Principal"** should be utilized when Role-based access controls are developed, which maintains that a user or entity should only have access to the specific data, resources and applications needed to complete a required task.
- **Traceability Data Management**: Ensure data integrity by maintaining one updated version of data. Use appropriate databases for large data volumes and minimize manual data operations.
- **Third-Party Data Integration**: Ensure compatibility and integration with external data sources for enriched contextual, risk, and traceability information.
- **Data Modification History**: Be able to track and record who entered or modified data and when to ensure accountability. Retain this history as part of the recordkeeping process.
- **Secure Data Storage**: Implement measures to protect traceability information from loss or corruption, including appropriate backups. Secure storage and minimization of manual data operations are vital for protecting data integrity.
- **Data Retention**: Maintain up-to-date records covering all applicable requirements for a minimum of ten years, or as long as national regulations require, whichever is longer. This ensures access to historical data for verification and audits. Use secure erasure tools to remove data permanently once the data retention period has passed.
- **Data Security Requirements**: Classify data based on its sensitivity and put in place access control mechanisms to protect sensitive data. Ensure security of data at rest and in transit using encryption.
- **Data Sharing**: Facilitate secure and efficient data exchange between supply chain actors using tools like EDI and standardize data exchange through APIs using ISO 22095:2020 for common data structures.
- **System Accessibility**: Ensure the traceability system is low-cost, easy to use, and capable of handling different sizes of transactions, from small to large. It should be technically compatible and able to integrate with other systems and databases to enhance its effectiveness and reach.
- **Interface Localization**: Ensure the traceability system can be used by suppliers by localizing interfaces to suit context of use, including: linguistic adaptation; adapting date, numbers, formats, and units of measurement; responsive UI design; and cultural adaptation.

Risk Assessment and Supplier Risk Management

- **Map Labor Conditions**: Build out your supply chain map to also identify the labor providers, recruiters, and labor practices across each tier, using new identifiers where needed.
- **Country-Level Risk Factors**: Evaluate legal and policy protections, political stability, crime levels, corruption, and socioeconomic factors in each country of operation.
- **Sector-Based Risk Factors**: Analyze industry-specific features, like labor demands and workforce vulnerabilities (migrant labor, temporary work, child labor) to assess risk.
- **Cross-Sector Risk Factors**: Consider the impact of broader issues like gender inequality and environmental degradation, which can worsen labor conditions.
- **High-Risk Identification**: Combine country, sector, and cross-sector risk assessments to identify specific geographic regions and suppliers with elevated risk.
- **Existing Data Resources**: Consult other existing resources including publicly and private sector databases for guidance in assessing risks.
- **Production Seasonality**: Document whether production levels fluctuate seasonally, as this may indicate increased reliance on temporary labor and potential risks. Ensure that risk assessments are undertaken across the different points in the season, to obtain a complete understanding of workplace conditions at the facility.
- **Job Type Analysis**: Identify the types of jobs at each worksite, focusing on facilities with higher concentrations of low-skilled, low-paid, hazardous, or undesirable work.
- **Automated Screenings**: Utilize software solutions to automatically screen suppliers for potential risks, such as inconsistencies in data, sanctions violations, or adverse media coverage.

- **Labor Recruiter Screening**: Implement procedures for vetting and monitoring labor recruiters, including background checks.
- **Supplier Assessments & Interviews**: Use questionnaires, interviews, and direct engagement to gather information about supplier labor practices.
- **Assess Suppliers' Systems**: Take stock of the current information management systems used in by supplier organizations (databases, spreadsheets, hardcopy files, apps, servers, etc.).
- **On-Site Assessments**: Verify supplier information through site visits, document reviews, worker interviews, and observations.
- **Establish Grievance Mechanisms**: Create accessible channels for workers and communities to report concerns related to labor rights, environmental issues, and other ethical violations within the supply chain. Ensure integration with traceability system in manner that ensures confidentiality and protects against retaliation.
- **Risk Mitigation Plans**: Develop and implement tailored mitigation plans to address identified labor risks. Plans can include supplier training, worker grievance mechanisms, and improved recruitment processes.

Stakeholder Engagement and Supplier Support

- **Multistakeholder Collaboration**: Engage with suppliers, government agencies, NGOs, and other stakeholders to build traceability systems that can address labor concerns collaboratively.
- **Feedback Mechanisms**: Establish ways to gather feedback from various stakeholders and incorporate it into system improvements.
- **Worker & Community Involvement**: Involve workers and local communities in the traceability process, providing necessary training and education to empower them.
- **Support Government Systems**: Support the development of government-run traceability systems and make private traceability systems interoperable with government systems to enhance overall effectiveness.
- **Develop Tiered Supplier Requirements**: Categorize suppliers based on their risk profiles and capacities. Establish different levels of requirements, with higher expectations for suppliers in high-risk categories or those with greater resources.
- **Provide Resources and Capacity Building**: Offer financial assistance, technical expertise, training programs, and access to tools to support upstream partners in meeting sustainability requirements. This might include: Financial incentives: Subsidize the cost of certifications, technology upgrades, or provide premiums. Training: Provide educational resources on sustainable practices, labor rights, and environmental protection.
- **Financial incentives**: Subsidize the cost of certifications, technology upgrades, or provide premiums.
- **Training**: Provide educational resources on sustainable practices, labor rights, and environmental protection.
- **Technology Transfer**: Facilitate access to digital traceability tools and data management systems to your suppliers and sub-suppliers as needed.
- **Financial incentives**: Subsidize the cost of certifications, technology upgrades, or provide premiums.

Reporting and Compliance

- **Quota System**: Define and implement a quota system to manage the volume of materials sourced from different suppliers, and justify these quotas based on production capacities to avoid over-harvesting or exploitation.
- **Delivery Volume Monitoring**: Implement alerts or periodic checks to verify delivery volumes against established quotas and identify discrepancies.
- **Non-Compliant Procedures**: Establish clear procedures for handling non-compliant suppliers or materials, including improvement actions and documentation of the steps taken.
- **Due Diligence Statements**: Prepare and submit Due Diligence statements (including any required by regulations) demonstrating compliance with traceability and sourcing requirements. These statements should be in a form ready to be uploaded to relevant registries (e.g. EU DDDS Registry and EU Deforestation) and shared with authorities and supply chain partners.
- **Transparency and Communication**: Publicly disclose key information about the company's sustainability efforts, including its traceability systems, supplier requirements, and progress towards meeting sustainability goals. Regularly communicate with stakeholders about the company's commitments and performance.
- **System Updates**: Regularly update the traceability system to adapt to new regulations, market demands, and technological advancements and regularly refresh data.

Roles and Responsibilities

A traceability system that effectively improves labor conditions requires the following roles to be clearly defined.

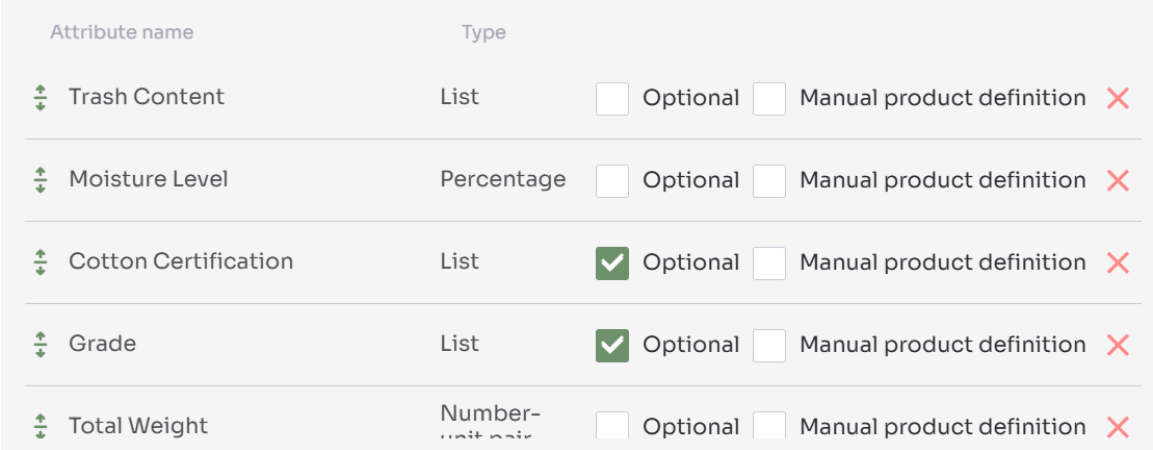
- **System Administrator**: Manages technical infrastructure, including server maintenance, data integrity, system updates, user access, and security.
- **Producers**: Adhere to supplier requirements and protocols, provide accurate production data, and help to facilitate on-site assessments to verify compliance with established standards.
- **System Manager**: Manages the implementation of the traceability protocol, ensures suppliers are meeting their obligations to the traceability system, and coordinates with teams to resolve compliance issues.
- **Assessors and Auditors**: Conduct independent assessments and audits, verify compliance at production sites, and produce detailed compliance reports.
- **Compliance Team**: Analyzes data and reports, ensures adherence to regulations, and recommends corrective actions to improve supply chain integrity.

Section II: Six Steps to Launching a Global Trace Instance

Step 1: Define Traceable Products and Key Data Elements

A System Administrator (Super Administrator) will specify the Key Data Elements (KDEs) to be collected alongside each product input or output product that will be traced in Global Trace.

To define a product, begin by assigning it a unique name. Select the goods associated with the product from the “Product contains” dropdown. Assign data attributes to the product by selecting from a list of pre-defined data attributes or creating a new one. Product data attributes are combined to represent the KDEs of a product. As an example, the following data attributes are defined separately and then combined to represent the product “Seed Cotton”.



As the image shows, in assigning data attributes, the Super Administrator must specify:

- If the data attribute is optional or required when creating the product.
- If the data attribute is only required when the product is defined manually. Consider the definition of a Cotton Bale. In the case where cotton bales are traced from the farm level, the country of origin does not need to be added - it is calculated through tracing. If cotton bales are imported, and added manually into Global Trace, the country of origin must be supplied when creating the bale product.

Data Attribute definition

A data attribute is created by the Super Administrator and has a name, type, category, and other optional defined values.

- The Super Administrator defines the data attribute by assigning it a unique name and selecting the data attribute type and associated category.
- Data attribute types include: Product ID, Product Quantity, or Other. Product ID can be used to identify a unique product, i.e. Personal ID for a person, Serial Number for a mobile device, Code for cotton Product Quantity is the quantity in which the product is bought or sold. Other can be used to define additional information about a product, such as transaction attachments, grouped list (e.g. cotton certifications), and any other supplementary information that doesn't fit in the above criteria
- Product ID can be used to identify a unique product, i.e. Personal ID for a person, Serial Number for a mobile device, Code for cotton
- Product Quantity is the quantity in which the product is bought or sold.
- Other can be used to define additional information about a product, such as transaction attachments, grouped list (e.g. cotton certifications), and any other supplementary information that doesn't fit in the above criteria
- Data attribute categories include: Text, Number, Percentage, Date, List, Number-unit pair, Country / Province / District, and Attachments File & attachment. Percentage defines that the attribute must be a number from 0 to 100.LIST defines that this attribute is a list of values, such as attribute Color with three options: Black, Pink, and Red. Country / Province / District is the address containing three values: Country ID, Province ID, and District ID in one attribute. File & attachment are used to contain uploaded certifications or proofs of the product. This category must contain the blobName and fileName of the uploaded fileNumber-unit pair defines an attribute of two connected properties, for example, attribute Price with type of Number and Currency is one of PKR, USD, and EUR.
- Percentage defines that the attribute must be a number from 0 to 100.
- LIST defines that this attribute is a list of values, such as attribute Color with three options: Black, Pink, and Red.
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Data attribute types include: Product ID, Product Quantity, or Other.

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Data attribute categories include: Text, Number, Percentage, Date, List, Number-unit pair, Country / Province / District, and ATTACHMENTSFile & attachment.

- Percentage defines that the attribute must be a number from 0 to 100.
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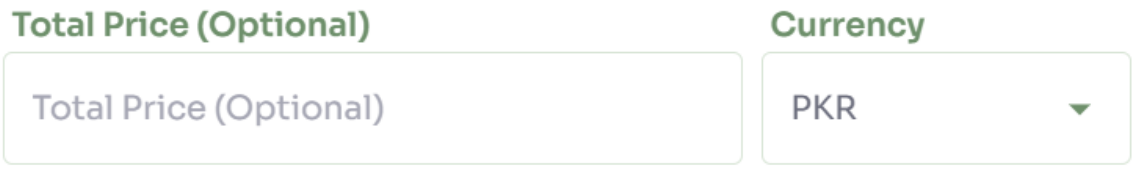
- Country / Province / District is the address containing three values: Country ID, Province ID, and District ID in one attribute.

- File & attachment are used to contain uploaded certifications or proofs of the product. This category must contain the blobName and fileName of the uploaded file
- Number-unit pair defines an attribute of two connected properties, for example, attribute Price with type of Number and Currency is one of PKR, USD, and EUR.



An attribute of type Product ID must have category Text. An attribute of type Product Quantity must have category Number-unit pair.

Step 2: User Role Definition

The Super Administrator must configure each user role required for an instance of Global Trace, as well as assign permissions for features that each role can access.

Global Trace's five role types are: Administrator role; Producer role; Assessor role; Brand role; and API role. Each new role consists of a role name, role type, and list of permissions. A subset of permissions can be selected for each of the role types. Permissions can be selected based on the priorities of the System Administration and the context that the system is intended to be used in.

For example, in some contexts QR codes may be preferred as physical markers on products. In other cases, additive tracers such as DNA markers may be preferred. The Super Administrator can configure which functions will be available when logging product transformations to suit their context.

Administrator Role Configuration

An Administrator role is assigned by the Super Administrator to platform users who help oversee Global Trace but do not have authorization to change the technical configuration of the platform.

All permissions that can be assigned for Administrator roles are found on the GitHub.

API User Role Configuration

An API User Role defines a set of features that API users can be invited to have access to on Global Trace. See the Global Trace GitHub for API instructions.

Producer Role Configuration

A Producer role is assigned to platform users that purchase, transform, and sell products. Producers should be defined using standardized identifiers. Super Administrators can specify whether Producers will use an internally defined facility identifier, or externally defined identifier such as Open Supply Hub Identifier (OS ID), Responsible Minerals Initiative's RMAP ID, or Data Universal Numbering System (DUNS) ID. Refer here for complete details of connecting to Global Trace to an external identifier account.

When defining a Producer role, the Super Administrator must specify if the facility extracts raw material (Yes/No) and the Chain of Custody Model (Product segregation/Mass Balance) that will be supported during the use of Global Trace.

See the Global Trace GitHub for all possible specifications.

Assessor Role Configuration

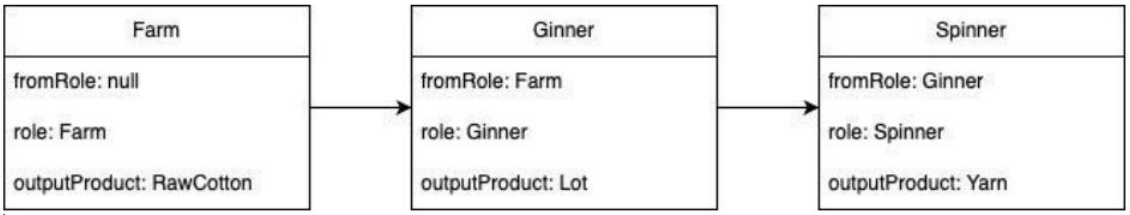
An Assessor role is assigned to platform users who will assess conditions in facilities and report on them. Assessment can be undertaken reactively (after receiving a request for investigation), or proactively (by creating an Incident Report).

Brand Role Configuration

A Brand role is assigned to downstream representatives using the platform to manage their suppliers and map or trace products throughout their supply chain.

Step 3: Mapping the Supply Chain

Creating illustrative Tier Maps of a supply chain helps users define sale and purchase relationships between Producers in the platform. Each node in the map contains a Role, a from-Role, and an output product. This information indicates that a Role can buy from the from-Role and can sell an output product to the Role of its next node. The output product that a Role can buy is determined by its previous node.

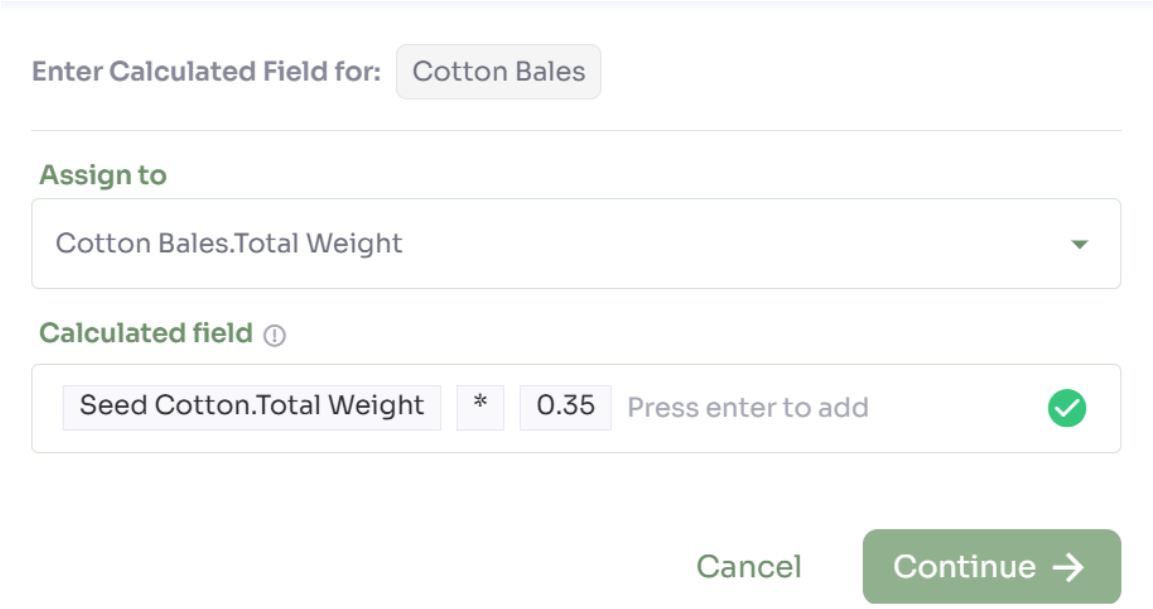


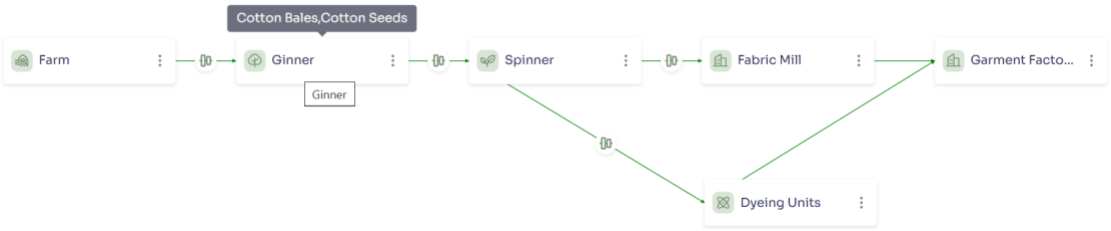
The map can also show that the two roles of two linked nodes can trade with each other through intermediaries (brokers). A double vertical bar will be displayed to indicate that trading via intermediaries is possible if permission has been set accordingly in the Producer Role configuration.

Additional raw material extractors

Super Administrator can add multiple raw material extractors to one supply chain, enabling each Producer to transform multiple types of output products and purchase multiple types of input products. Raw material extractors can be added by clicking on “Add Another Flow.” The Super Administrator can also set calculated field thresholds for each output product.

Example: This map illustrates a chain of six producers: Farm, Ginner, Spinner, Fabric Mill, Garment Factories, and Dyeing Units. Ginners can sell their cotton bales and cotton seeds to Spinners, and Spinners can buy cotton bales and cotton seeds from Ginners. The double vertical bar between two nodes indicates producers that can not only buy and sell directly with each other but can also buy and sell through intermediaries. The Ginner may sell the cotton bales to an intermediary, and the Spinner can buy this cotton bales. Garment Factories can buy products from both the Fabric Mill and Dyeing units.





Step 4: Risk Indicators

A List of Indicators is used to define the relative severities of all indicators of exploitation within an instance of Global Trace. Each indicator of exploitation is composed of:

- Category
- Indicator
- Sub-indicator
- Severity: Numeric scale: 1 (minimum) to 5 (maximum)

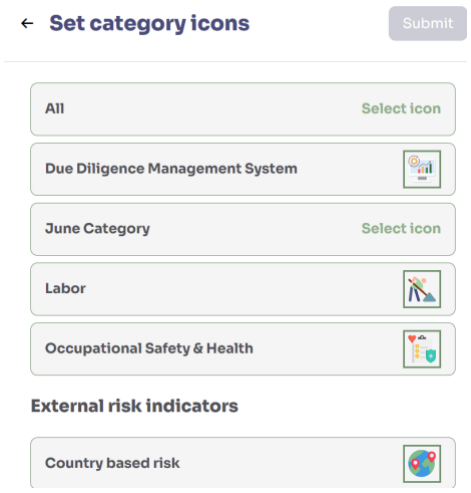
These triples provide a mechanism to combine reports that are received from different assessors and external risk indicators.

Consider the example List of Indicators in the table below:

When Incident Reports are received from Assessors, the numerical risk associated with the reported incident (no weight=0; low=1; medium=2; high=3) is multiplied by the severity indicated in the List of Indicators above to indicate an overall risk calculated from different reports and different sources.

The List of Indicators is uploaded by the Super Administrator during system configuration using an Excel template. Once the upload is successful, the Super Administrator can download the List of Indicators translation template, complete it, and then upload the translated version of the list.

Once the List of Indicators has been uploaded, an icon can be assigned to each Category to be displayed on the supplier dashboard, in both the General Information and Compliance History pages.



Step 5: Assessment configuration

During role definition, the Super Administrator determines which roles will require the completion of a Risk Assessment or Self-Assessment Questionnaire (SAQ) during onboarding. All roles that are assigned access to this feature will appear in a table like the one pictured below. Assessments should align with industry practices wherever possible

Role	Status	SAQ	SAQ translation
Fabric Mill	✓ SAQ × SAQ translation	Manage attachments	Upload SAQ translation
Spinner	✓ SAQ × SAQ translation	Manage attachments	Upload SAQ translation
Ginner	✓ SAQ × SAQ translation	Manage attachments	Upload SAQ translation
Farm	✓ SAQ × SAQ translation	Manage attachments	Upload SAQ translation

An Excel document is used to define an assessment for each role. Templates can be downloaded using the “Manage attachments” button in the table.

Assessment Definition Template

The excel template contains two tabs: Labor and Product. The GitHub provides links to the template.

Columns I, J, and K contribute to the overall risk for the supplier and are optional. If a risk, indicator, or sub-indicator is provided, all three items will be completed.

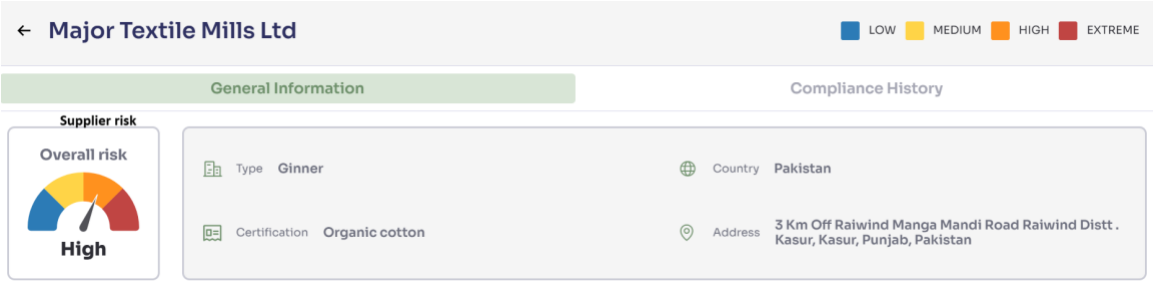
Once an SAQ has been uploaded, an Upload SAQ translation link is enabled on the Super Administrator flow. When a role is configured to have an Administrator undertake an assessment on their behalf, an additional template is required. The Facility Group Template hosted on Global Trace should be downloaded by the Administrator, completed offline, and uploaded back onto the platform.

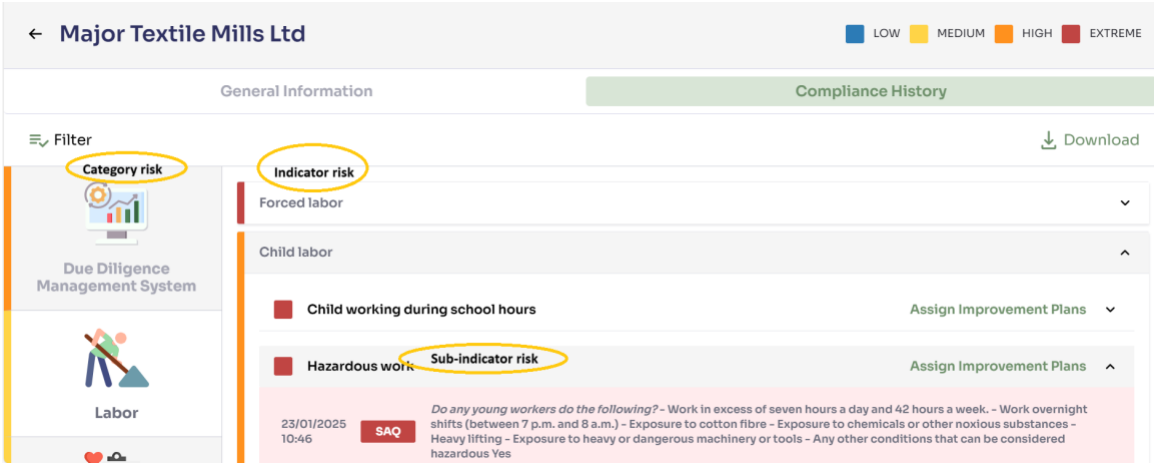
The template must match the Assessment Definition Template. Basic row formatting can be applied to help the end user to understand which columns represent optional questions.

Step 6: Risk Assessment

Risk assessment

Multiple risk assessment calculations are undertaken and displayed on the dashboard, showing the assessed risk at suppliers: Sub-indicator level; Indicator level; Category level; and Supplier level





As described in List of Indicators page, for each report received, an overall score is calculated as:

Weight = Risk of reported case (no weight=0; low=1; medium=2; high=3) X Severity from List of Indicators (1 to 5)

This means that each report will result in a score being calculated between 0 to 15 (0 indicating no risk, 15 indicating extreme risk), signifying the severity of the reported incidence.

Once a complete list of weights for each report is calculated, they are combined using the methodology that is selected in this step.

Three different methodologies are currently supported:

- Highest risk: When multiple reports are received for one sub-indicator, the overall risk for the sub-indicator should be the highest risk that it has received in the reports. For example, if a sub-indicator receives a low risk weighting in one report and a high risk weighting in another report, then the sub-indicator should have a risk level of high. The methodology is applied similarly at the indicator, category, and supplier levels.
- Average risk: When multiple reports are received for one sub-indicator, the overall risk for the sub-indicator should be the average of the risk scores for the sub-indicator given in each of the reports. For example, if a sub-indicator in one report was given a risk weighting of low, and the same sub-indicator in another report was given a risk weighting of high; then the sub-indicator should have a risk level of medium. This methodology is applied similarly at the indicator, category, and supplier levels.
- Weighted average: A weighted average is calculated by assigning different weights to the different types of assessment reports based on their importance / credibility. For example, if Hotline Operator inputs are considered more credible than self-reported responses to SAQ questions, then higher weights can be given to reports from Hotline Operators.

If weighted average is selected, the Super Administrator must enter weights for all types of assessment reports that can be submitted to Global Trace. This includes:

- Geography: Composite risk index, comprised of input from Global Slavery Index and US Department of State's Trafficking in Person's Report that is built in to the Global Trace platform.
- Product risk listing: Geography / commodity risk index based on US DOL Bureau of International Labor Affairs List of Goods produced with child labor or forced labor.
- Improvement Plan: Weighting for the updated risk after an improvement plan has been completed.
- DNA test results: If Global Trace has been configured for users to submit DNA test results, a separate weighting can be applied for cases where a DNA test fails.
- Assessor weighting: Each Assessor role assigned the ability to submit reports will appear separately in the list. This allows the Super Administrator to assign more weight to reports created by some assessors over others.

For example, a report created by an Auditor after a full audit could be assigned more weighting than a report to a Hotline Operator.

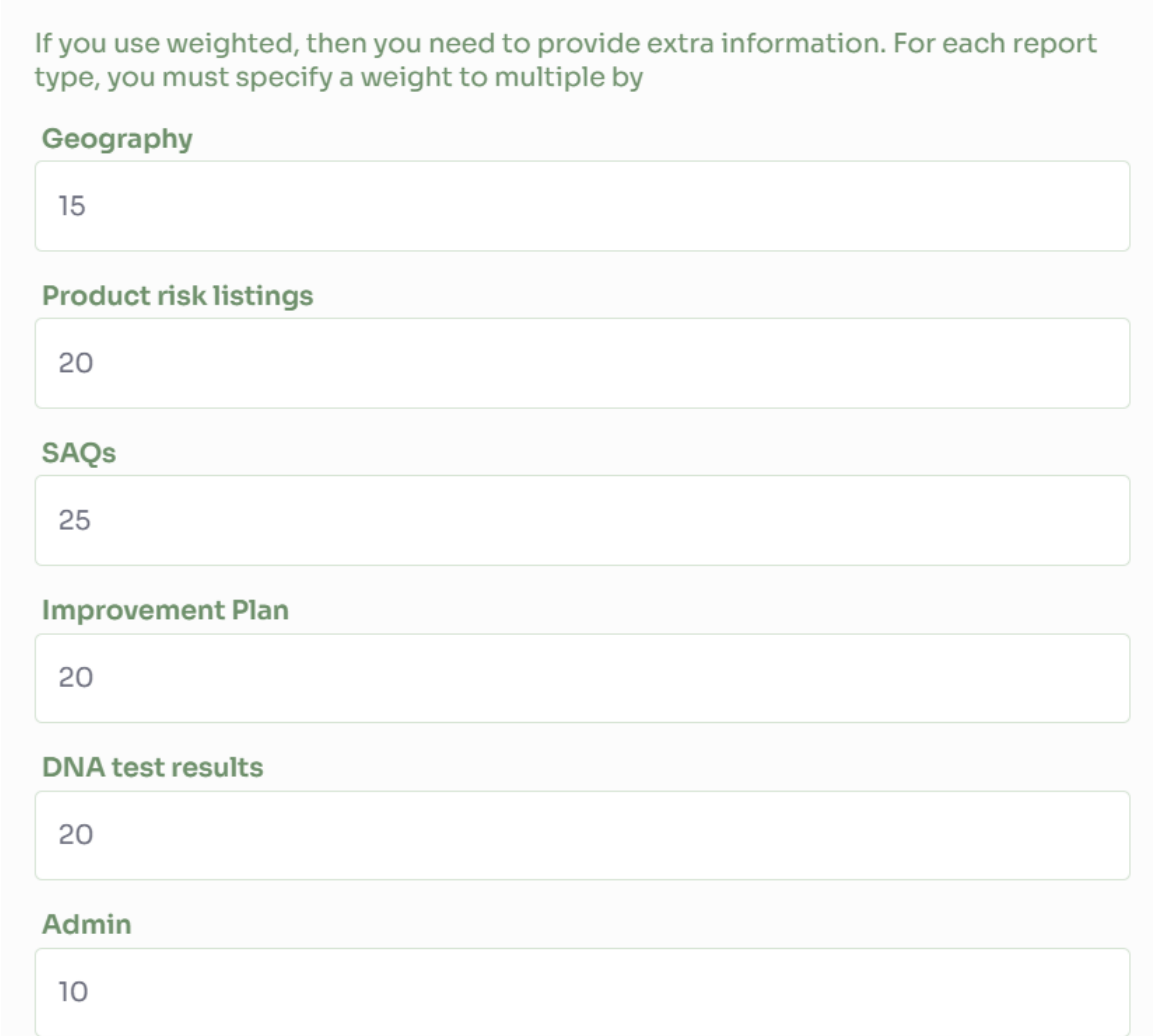
External risk scores for countries and commodities can be assigned and uploaded into Global Trace using the Excel template:src/risk-assessments/constants/goods-risk.json

Country risk

The first tab in the Excel template enables the Super Administrator to input country risk values. In the example below, risk is defined by averaging the Global Slavery Index ratings with a weighting for each of the US State Department's Trafficking in Persons Report's four tiers (Tier 1: 0; Tier 2: 33; Tier 2 Watch List: 66; Tier 3: 100).

The Excel template lists each country and provides a risk rating on a scale of 0 to 100 (0 is low risk, 100 is extreme risk).

The second tab provides a country / commodity risk rating. Each Category, Indicator, and Sub-indicator must appear in the List of Indicators, enabling the rating data to be combined in the overall supplier risk. In the example below, we use the Sub-indicator field to show the source of the rating. As with ESG assessment reports, the severity is marked on a 3-point scale (1: low, 2: high, 3: extreme)



Section III: Product Tracing and Purchase and Sale

Orders are traced from downstream suppliers to upstream suppliers, including through intermediaries, if the Producer Roles and supply chain are configured to support them.

The order of priority for tracing when multiple parameters are given is Purchase Order Number, Invoice Number, Packing List Number, Purchase Date.

The tracing function only requires one input to trace (although multiple inputs can be provided, if known).

Trace Product using Purchase Order Number

The methodology used when a Purchase Order Number is supplied is:

- Find all purchase transactions where the Purchase Order Number matches the one provided.
- From this purchase transaction, find the list of all products that were included in the transaction.
- For each product, identify the transformation process that was used to combine input products together.
- For each input product, look up details of business partners or entities they purchased from.
- Continue this tracing process until you reach the most upstream supplier in the supply chain.

Invoice Number or Packing List Number

Tracing from an Invoice number follows the same algorithm as above, but instead of beginning the trace at a sale transaction, it begins the trace at a purchase transaction. Follow the algorithm as specified above.

Purchase Date

When a purchase date is provided instead of a document number, Global Trace will trace all purchases made by the selected supplier within a two-week time frame of the date provided. This trace will continue to the most upstream supplier.

Purchases and Sales

Only users assigned a Producer Role can register sales and purchases in Global Trace. Logging purchases and sales is essential for ensuring comprehensive product traceability throughout the supply chain.

Purchase and sale transactions can only be logged based on the supply chain map that is configured by the Super Administrator, so it is essential that the map reflects all potential business transactions. In some cases, producers transact through intermediaries (e.g. brokers) and do not know who their product will eventually be sold to. In these cases, the Super Administrator must assign permission to register sales through intermediaries in the Producer Role configuration.

After the Super Administrator has created the supply chain map, and a user is invited to a Producer Role, the Producer must onboard and then add their business partners in order to register transactions among them.

Purchase

The user Role must have permission to log purchases and appear in the supply chain map to use this feature.

- A producer will only be able to add upstream suppliers according to the supply chain map configured by the Super Administrator.
- A user may be able to purchase products from a broker or intermediary. To log this transaction, the user must first add the broker as their business partner and select them from the list when making the purchase.

After selecting the seller, the user must select the products that are associated with the purchase. Based on the list of permissions assigned to the Producer Role, users can: type the Product ID or scan its QR code. When products have not already been captured on Global Trace, they need to be input manually into the system. This represents scenarios where a Producer has imported products that were not captured on Global Trace at the point of raw material extraction.

To ensure the integrity of data collected on Global Trace, transactions are validated as:

- A product listed on a sale must currently belong to that supplier; and
- A product listed on a sale must not have already been sold to another supplier.

After the transaction is logged, the purchased products are assigned to the buyer's facility.

Sale

The user Role must have permission to log sales and appear in the supply chain map to use this feature.

- A producer will only be able to add downstream suppliers according to the supply chain map configured by the Super Administrator.
- A user may be able to sell products to a broker or intermediary. To facilitate this transaction, the user must first add the broker as their business partner and select them from the list when logging the sale.

References and Resources

The protocol draws upon reports and guidance from multiple sources, including the U.S. Department of Labor (DOL), United Nations Economic Commission for Europe (UNECE), UN Centre for Trade Facilitation and Electronic Business (UN/CEFACT), GS1, U.S. Agency for International Development (USAID), Food and Agriculture Organization (FAO), U.S. Customs and Border Protection (CBP), U.S. Forest Service (USFS), International Labour Organization (ILO), Organisation for Economic Co-operation and Development (OECD), and the European Union (EU). It drew from EU-specific frameworks like the EU Battery Regulations, the EU Timber Regulation, and the EU Conflict Minerals Regulation.

The protocol drew on work from leading organizations and initiatives such as GS1, FishWise, the Fair Labor Association, the Global Reporting Initiative (GRI), Business for Social Responsibility (BSR), International Organization for Standardization (ISO). The protocol also took into account the work of certification and initiatives such as the Responsible Minerals Initiative (RMI), London Bullion Market Association (LBMA), Rainforest Alliance, Responsible Jewelry Council (RJC), Marine Stewardship Council (MSC), Roundtable on Sustainable Palm Oil (RSPO), International Tin Supply Chain Initiative (ITSCI), Better Cotton Initiative (BCI), Global Organic Textile Standard (GOTS), Responsible Mica Initiative, Forest Stewardship Council (FSC), and Fairtrade International. It also incorporates insights from new and proposed standards, such as the SSI Supply Chain Traceability Standard and GS1 guidance on deforestation traceability.

Field-based guidance was drawn from interviews and consultations with over 20 traceability solution providers, alongside reports such as ELEVATE's "Supply Chain Tracing Project Context Analysis" and U.S. Department of Labor's "2024 RST Base Tool." The protocol also explores technological solutions for enhancing supply chain transparency, including blockchain for traceability, electronic data interchange (EDI) systems, and remote sensing tools. Together, these sources underpin the protocol's comprehensive approach to addressing labor risks, environmental concerns, and sustainability within global supply chains.

The protocol especially drew on the following sources, worth reviewing in their own regard:

- 21 C.F.R. Part 1, Subpart S - Additional Traceability Records for Certain Foods. (2024). eCFR: The Electronic Code of Federal Regulations. Retrieved October 31, 2024, fromhttps://www.ecfr.gov/current/title-21/chapter-I/subchapter-A/part-1/subpart-SC-Lever.Org. (n.d.). Step-by-Step Guide for Successful Traceability.
- CBP. (n.d.). UFLPA Operational Guidance for Importers.
- Data Solutions for Social Change. (n.d.). Vera Solutions. Retrieved October 31, 2024, fromhttps://www.verasolutions.org/
- EU Battery Regulations. (2023). Official Journal of the European Union. Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R1115&from=EN
- EU Commission. (n.d.). EU-TRACES-NT-eCert-Fact-Sheet.
- EU Commission. (n.d.). TARIC data created for Regulation (EU) 2023/1115 on deforestation and forest degradation. Retrieved October 31, 2024, fromhttps://ec.europa.eu/taxation_customs/system/files/2023-07/eu-dr-id-requirements_en.pdf
- EU DR ID Requirements. (n.d.). Retrieved October 31, 2024, fromhttps://ec.europa.eu/taxation_customs/system/files/2023-07/eu-dr-id-requirements_en.pdf
- Global Battery Track and Trace Guidelines for GHG Data Exchange. (n.d.).
- GS1 in Europe Deforestation White Paper. (n.d.). Retrieved October 31, 2024, fromhttps://www.gs1.org/docs/gsmp/epc/GS1-in-Europe-Deforestation-White-Paper.pdf
- Preferred by Nature. (n.d.). Traceability Framework for Natural Rubber from Smallholder Plantations Mills.
- Protocol 10.13. (n.d.). Retrieved October 31, 2024, fromhttps://www.bettercotton.org/wp-content/uploads/2022/09/Protocol-10.13.pdf
- Rainforest Alliance. (n.d.). Guide - Traceability Guidance V1.
- SSI Supply Chain Traceability Standard Public Consultation Draft Version. (n.d.). Retrieved October 31, 2024, fromhttps://www.solarindustry.org/wp-content/uploads/2024/10/SSI-Supply-Chain-Traceability-Standard-Public-Consultation-Draft-Version.pdf
- U.S. Department of Labor. (2024). 2024-RST-Base-Tool-6-Supply_Chain_Mapping_2024-01-11-LL2. Retrieved fromhttps://www.dol.gov/agencies/ilab/tools/responsiblesourcingtool

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