Why Does This Model Exist?

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Companies, NGOs, impact investor, foundations and other entities may have either or both of the following challenges:

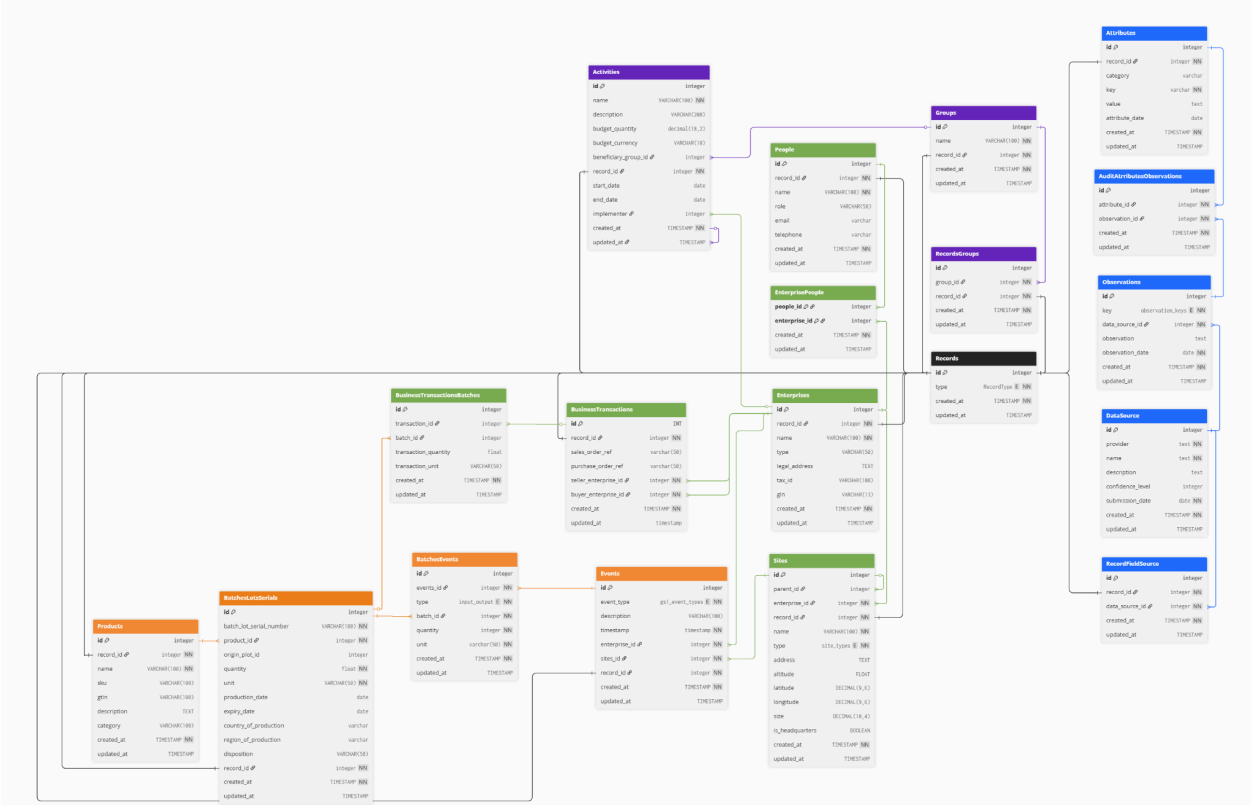
- They need to understand who is in their supply chain, where products are coming from and ensure that they comply with legal and responsible sourcing standards.
- They want to identify opportunities for improving sustainability, track sustainability investments and engagements and ultimately understand which ones have the highest ROI.

A data model is essentially a blueprint that organizes different pieces of information and defines how they relate to each other. It creates a standard structure so that data can be stored, accessed, and used consistently. This specific data model acts as a digital organizing system that provides a shared language to tackle both of these challenges. By standardizing how information about suppliers, products, and sustainability efforts is structured, it allows different partners in a supply chain to communicate and share data effectively.

Model Design: Start Small and Scale Up with "Metro Lines"

A key feature of this data model is its modularity. You can roll out one functional "line" at a time, similar to extending a city's metro network. This allows organizations to start with a basic setup and add more complex components as their needs evolve, avoiding a large-scale initial implementation.

The “Metro Map” at a Glance



Line	What it stores	Why it matters
🟢 **Green — Core Traceability: Who & What**	Who (enterprises & people) and where (sites) plus what (products)	Know every player and every plot from the start.
🟠 **Orange — Product Traceability**	Batches/lots, events, and business transactions	Follow each shipment from farm to final product—vital for recalls and origin claims.
🔵 **Blue — Data Sources, Audit, and Verification**	External data sources, observations, and compliance details	Attach independent proof (e.g., satellite alerts, audit reports) to any site or batch using Attributes.
🟣 **Purple — Custom sustainability tracking**	Groups, activities, and performance metrics	Run and measure programs by attaching custom Performance Attributes to any record.

You can roll out one line at a time—just like extending a metro network.

Line-by-Line, in Plain Language

🟢 Green Line | “Core Traceability: Who & What”
This is your foundation. It identifies the fundamental actors and assets, with each one linked to the others.

- **Enterprises**: Every company or co-op in your chain.
- **People**: Key contacts, like the agronomist at a co-op, linked to their enterprise.
- **Sites**: Farms, factories, and warehouses, each linked to its owning enterprise and mapped to precise GPS boundaries.
- **Products**: The items you trade, each with a unique code (GTIN, SKU).

🟠 Orange Line | “Traceability”
This line tracks how and when goods move, connecting the journey to the players from the Green Line.

- **Batches/Lots**: Harvest lots or manufacturing runs that you can trace backward.
- **Events**: Time-stamped actions like Harvested, Shipped, or Received. Each event connects a batch to a specific site and enterprise at an exact moment in time.
- **Business Transactions**: Who sold what to whom, and when.

🔵 Blue Line | “Data Sources, Audit, and Verification”
This line adds independent verification to your data by attaching custom Attributes to your core records.

- **Data Sources**: Certifiers, auditors, or satellite providers you trust.
- **Observations**: Concrete evidence from a Data Source. For example: "Satellite imagery shows zero deforestation at Site #5678 between Jan-Dec 2024."
- **Compliance Attributes**: Attach flexible data fields to any record to store details like certification_ID: 'ORG-2024-789' or risk_score: 'Low'.

🟣 Purple Line | “Custom sustainability tracking”
This is for running programs that actively change things for the better using Groups and Activities.

- **Groups**: Any cluster you want to treat together (e.g., "The Ghana Cocoa Initiative," a group of 50 farms).
- **Activities**: Funded projects with specific goals, budgets, and timelines, assigned to benefit a specific Group.
- **Performance Attributes**: Attach custom metrics to any record to track progress, such as trees_planted: 500 or annual_income: 6100.

How a Company Might “Ride the Lines”

1. **Start with Green + Orange**: A coffee roaster maps all its suppliers (Green) and tracks every batch from farm to factory (Orange). *Traceability is achieved.*
2. **Add Blue**: New EU regulations kick in. The roaster connects satellite alerts (Blue)

to its farm sites. Now, a deforestation alert on a specific farm can automatically flag all batches (Orange) that originated from that site (Green). *Compliance is met and automated*.

3. **Layer on Purple**: A major brand funds a farmer-income program. The roaster uses the Purple Line to create an Activity, link it to a Group of 50 farms, and record annual_income data as Performance Attributes. This data flows up: from individual farms → to the Group → to the Activity report, giving the brand a clear view of their investment's impact.

The result is one coherent system—built incrementally—that delivers automated compliance, deep traceability, and measurable impact.

The Engine of Flexibility: Records & Attributes

Now that we've explored the "metro map," it's crucial to understand the engine that makes the model both simple and infinitely adaptable. Instead of crowding core tables (like Sites or Products) with dozens of fields that only a few users need, the model uses a clever, two-part system:

- **The Universal Connector (Records)**: Every piece of information in the system—every farm, every batch, every audit—gets a unique record_id. Think of it as a universal tracking number.
- **The Custom Sticky Notes (Attributes)**: This is where the flexibility comes in. You can attach any number of custom Attributes to any record_id. This lets you add any information you need, for any use case, without changing the core structure of the model.

This design is what allows a general data model to fit highly specific needs.