

# National Federation of Coffee Growers traceability tool



## Case study 3: Coffee, Colombia

### What does the first mile of Colombia's coffee sector look like?

Colombia's coffee sector is dominated by independent smallholders, who often have direct access to primary processors and exporters, unlike many other coffee-producing countries. Cooperative membership is also more prevalent, providing additional support for aggregation, quality control and market access.

The first mile begins with the harvesting of coffee cherries on smallholder farms, followed by on-farm processing such as pulping, fermenting and drying. Beans are then sold either directly to mills and exporters or through local intermediaries, such as collectors, or through cooperatives, depending on proximity, scale and farmer preference.

Because farmers can sell directly to mills more often than in other countries, the first mile in Colombia presents opportunities for producer-led traceability initiatives. Intermediaries are less dominant compared to other sectors like rubber or cocoa, but they still play a role in aggregation, transport, and providing logistical support for farmers with smaller volumes.

Transactions within the first mile are generally formalised through cooperatives or the National Federation of Coffee Growers of Colombia (FNC), which provides a central structure for sales, quality verification and traceability. Traceability challenges are concentrated in the most remote regions, where farmers may be harder to reach and digital adoption may be lower.

### What challenges exist in Colombia's first mile?

Although Colombia's system is comparatively formal and well-organised, several barriers remain. Reaching the most isolated farmers with digital traceability systems is difficult,



in terms of both technical adoption and verification. While many farmers sell directly to mills, local intermediaries still manage smaller volumes, and their integration into traceability systems is not yet fully clear.

Digital infrastructure and capacity gaps also pose challenges, as farmers and small cooperatives may lack the resources or digital literacy to engage with geo-mapping or traceability tools. In addition, discrepancies in land tenure documentation complicate traceability, particularly in regions where proof of farm ownership is required to register plots digitally.

Despite these issues, Colombia's strong cooperative networks and frequent direct links between farmers and mills allow for more decentralised and producer-led traceability initiatives compared with other countries.

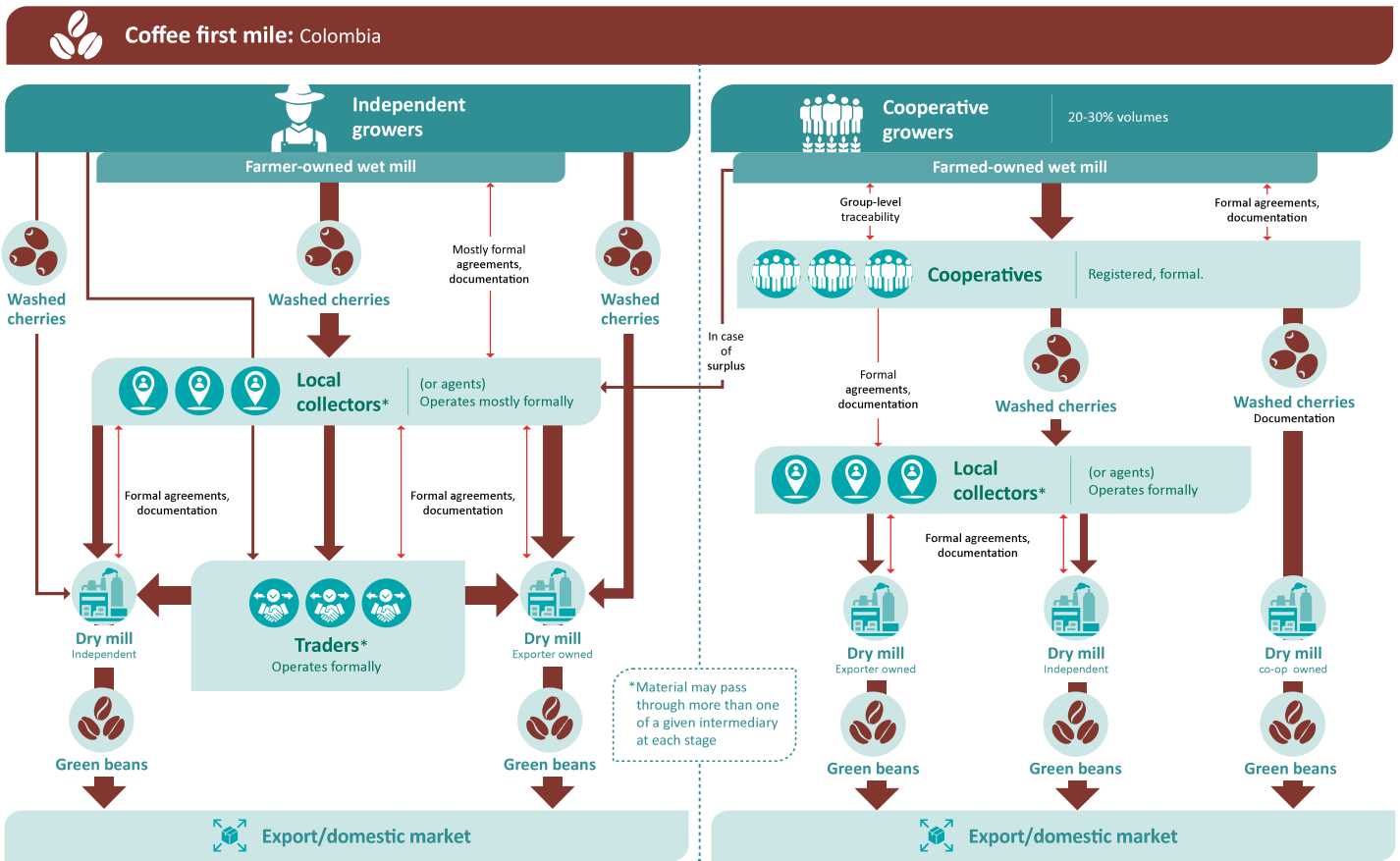


Figure 3: Mapping of the first mile of a typical Colombian coffee supply chain, from smallholder growers - via both independent and cooperative routes - to primary processing facilities.

### What is the FNC’s traceability tool?

The FNC has developed systems to enhance transparency, traceability and compliance with sustainability regulations, including the EU Deforestation Regulation (EUDR). A key component is the Sistema de Información Cafetera (SICA), a database logging farmer details, farm geolocation and production data. To date, an estimated 93% of FNC-affiliated farmers have had their farms digitally logged on SICA (FNC, 2024).

FNC has also piloted digital tools in partnership with international partners such as 4C Services, including mobile mapping apps and risk assessment databases. Farmers can use these tools to demonstrate traceability, document good agricultural practices and show climate-smart practices. Buyers can use the same tools to map farms, assess deforestation risks and verify deforestation-free status, improving transparency and compliance across supply chains.

These initiatives complement wider FNC programmes such as the Environmental Axia and the Plan 100-100, which focus on sustainability, climate resilience and disease management, including geo-mapping crops to detect and isolate affected areas.



## What progress has been made, and what challenges remain?



### *Key successes so far:*

- **High coverage:** Approximately 93% of FNC-affiliated farmers are digitally logged in SICA, creating a strong foundation for traceability.
- **Digital traceability pilots:** Mobile mapping apps and risk assessment tools are being used to verify farm-level compliance and assess environmental risks.
- **Integration with sustainability programmes:** Traceability tools are linked with initiatives promoting climate-smart practices and disease management.
- **Producer-led model:** Farmers retain direct access to mills, enabling traceability tools to have practical market impact, particularly for specialty coffee.



### *Challenges and potential next steps:*

- **Remote inclusion:** Ensuring farmers in isolated regions can access and use digital tools effectively.
- **Intermediary engagement:** Developing mechanisms to integrate collectors and smaller intermediaries into traceability systems.
- **Digital literacy and infrastructure:** Providing training, devices and connectivity to support widespread adoption.
- **Land tenure verification:** Addressing discrepancies in farm ownership documentation to ensure credible traceability.
- **Market adoption:** Extending the tool beyond specialty coffee to mainstream buyers and evaluating the impact on supply chain actors.

## What lessons can be drawn for scaling and replication?

Colombia demonstrates how strong producer organisations and cooperative networks can facilitate traceability initiatives. Centralised producer networks can support both traceability and market access, while digital farm mapping and mobile tools complement cooperative structures by providing actionable insights for sustainability and risk management. Integration with existing sustainability programmes further strengthens the ability of cooperatives to monitor environmental compliance and reduce risks, creating a model that can be replicated in other countries with similar structures, such as Ethiopia.

Direct farmer-to-mill relationships in Colombia reduce dependency on intermediaries and enhance opportunities for producer-led traceability. High levels of farmer registration and the use of mobile mapping tools allow cooperatives to track production, verify origin and ensure that traceability systems are integrated with broader sustainability objectives.

However, full replication may be more challenging in contexts where first-mile structures are fragmented, cooperative membership is low or informal trade dominates, such as in Indonesia. Intermediary integration, remote locations and land tenure verification remain ongoing challenges even within well-resourced systems like Colombia.

The Colombian coffee first mile illustrates that farmer-focused approaches can effectively complement government-led or export-oriented traceability initiatives. By leveraging strong cooperative networks, digital tools and sustainability programmes, Colombia has enhanced transparency, environmental compliance and market access. This model offers valuable lessons for other producing countries with well-organised cooperatives and direct farmer-to-mill relationships, showing that producer-led traceability can be both practical and scalable.





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