

# Sustainable Sourcing

*Development of Traceability in the Kenyan avocado value chain for small- and medium scale farmers*

Extensive Summary  
FORQLAB project 2023

FORQLAB = Food Waste  
Reduction and Food Quality  
Living Lab in Kenya

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## Introduction

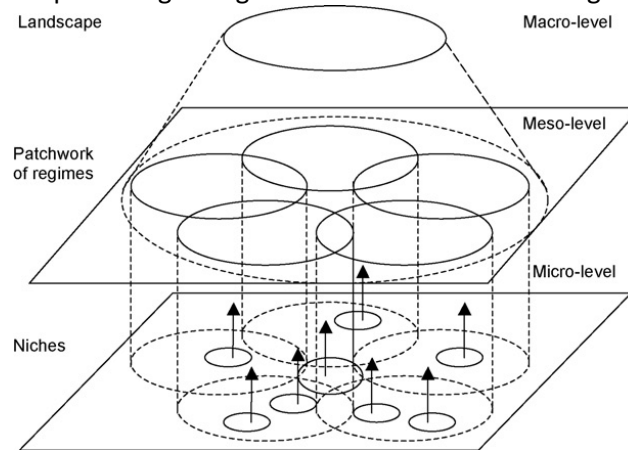
In Kenya, avocados constitute a significant part of the country's agricultural exports. Even though the avocado plantations thrive, many small-scale producers still face difficulties adhering to strict procedures. These challenges range from consistently producing quality avocados, navigating through financial hurdles, to encountering numerous obstacles in forming robust relationships within the supply chain. This report aims to dig deep into these challenges and identify potential interventions that could improve traceability and transparency within the Kenyan avocado supply chain.

The focus of this project resides in enhancing traceability within the supply chain. Traceability serves as a crucial cornerstone in the path towards a sustainable supply chain, as it offers a comprehensive view of the product journey, from the farm to the final consumer. A well-implemented traceability system can ensure quality, prevent fraud, reduce waste, and ultimately, instil confidence among stakeholders, contributing significantly to the overarching goal of achieving a sustainable supply chain. Thus, it is the reason why this project places significant emphasis on traceability, recognizing its fundamental importance in carving a sustainable and prosperous path forward for Kenya's avocado supply chain.

The research question defined for this project is: How can the sustainable sourcing of avocados from Kenyan small- and medium-scale farmers be enhanced through interventions that improve traceability and transparency? To address this question, the research is organized into a multi-level perspective including three levels: landscape, regime, and niche.

## Methodologies

The Multi-Level Perspective (MLP) is a tool used to understand how changes happen at different levels in complex systems like supply chains. It shows how various stages, stakeholders, and societal elements influence each other. The MLP splits the system into three parts: landscape, regime, and niche. The landscape looks at the big picture - global events and demands that shape the system. The regime represents the established rules and practices within the supply chain. The niche explores smaller, experimental areas where new ideas and technologies can challenge the current system. This structure helps to clarify the interactions between these components. It also lets the reader focus on specific areas, like promising changes in the niche or overarching trends in the landscape.



*Figure 1: Multi Level Perspective model*

The research employed a multi-faceted approach to explore sustainability and traceability in the Kenyan avocado industry. Guided by the Multi-Level-Perspective (MLP), the methodologies included literature reviews, interviews, stakeholder consultations, and visual evidence collection. The research focused on three primary levels:

- **Landscape:** Exploring global factors and demands, affecting the Kenyan avocado industry.
- **Regime:** Current state of the Kenyan avocado supply chain, including sustainable challenges.
- **Niche:** Feasible and applicable improvements for sustainability through traceability and transparency.

## Results

### Landscape: What are important global factors affecting sustainability and traceability in the avocado industry?

Avocado farming significantly contributes to Kenya's economy, which mainly relies on agriculture and tourism. While the industry has experienced growth, challenges around quality consistency, environmental impact, and worker welfare persist. Key global factors influencing the industry's sustainability include fair labour practices, improving rural livelihoods, and environmentally friendly farming. Traceability has emerged as a critical tool in ensuring product quality, fair work conditions, and ecological responsibility. In essence, traceability is the key to maintaining and demonstrating the standards that contribute to a sustainable avocado industry in Kenya, balancing economic growth with social and environmental considerations.

Sustainable supply chains are essential for businesses, incorporating social, economic and environmental sustainability into their operations. Sustainability means different things to different people involved in the avocado supply chain. For consumers, it means knowing where their avocados come from and how they impact society and the environment. Retailers focus on selling high-quality, certified avocados that come from places with good work conditions. Importers of fruit in Europe aim to have high-quality, reliable supplies while also using resources efficiently. Avocado exporters in Kenya see sustainability as using farming methods that are good for the environment, educating their farmers, treating their workers well, and working well with other people in the business. Brokers focus on selling a lot of high-quality avocados for profit, without much focus on the environment or social benefits. For the Nandi farmer cooperative, sustainability means economic growth and using farming methods that are good for the environment. By understanding these different views, we can better manage the avocado supply chain in a sustainable way.

Understanding Dutch market's traceability demand is key for Kenyan avocado farmers hoping to export. This demand, driven by consumers wanting sustainable, ethically sourced products, is high among importers like "Anonymus" and EOSTA. For them, traceability ensures food safety and quality, reducing waste and supporting economic growth. It's also vital for retailers like Jumbo, who need to verify sustainable practices and avoid issues like child labour. Compliance with traceability requirements, such as those in Jumbo's Corporate Social Responsibility report, is mandatory. Partnerships with initiatives like SIFAV further emphasize the need for sustainable, traceable produce to meet ESG reporting requirements.

**Regime: What is the current state of the (domestic stages) Kenyan avocado supply chain, and how are various stakeholders including small-and medium scale farmers participating in sustainable solutions regarding traceability and transparency?**

The Kenyan avocado business is a complex network involving various key stakeholders. These include:

1. **Suppliers:** These entities provide essential resources for avocado production, such as seeds, fertilizers, and tools.
2. **Farmers:** At the heart of this network are the farmers, who cultivate the avocados. One noteworthy group is the Nandi Avocado Cooperative, an assembly of thousands of farmers in Nandi County who've pivoted from traditional crops to avocados. They work together to boost production, manage costs, and navigate market demands.
3. **Exporters:** Major exporters like Sunripe Kenya and Keitt Exporters Ltd. purchase avocados from the farmers, grade them for quality, and ship them internationally. Keitt, known for its organic-certified avocados, handles a large volume of exports and also processes rejected avocados into oil. Sunripe, a competitor to Keitt, has a longstanding relationship with farmers and also exports a considerable volume of avocados weekly.
4. **Brokers:** Acting as intermediaries, brokers collect, grade, and distribute avocados from farmers to markets, contributing to the avocado supply chain's efficiency.
5. **Retailers:** The end-point of the supply chain, retailers sell the avocados to consumers in both local and international markets.
6. **Ministry of Agriculture:** This government body oversees the avocado supply chain, providing resources and support to farmers, and implementing structures like sub-counties and cooperatives to optimize productivity.

All these stakeholders, despite their unique roles, work towards a common goal - bolstering the Kenyan avocado industry, while managing challenges and maximizing sustainability and profitability.

Despite complexities in the supply chain, there's a strong drive for transparency and traceability. While some brokers resist these changes, fearing reduced profits, farmers and exporters are eager to improve. Certifications like EU Organics and Global GAP are seen as important for global competitiveness. Nandi Cooperative is ready to invest in a more traceable supply chain, which includes building their own packhouse to control product quality and gain market insights. This commitment indicates a positive shift towards a more sustainable avocado industry.

The complexity of the supply chain including the negative role of brokers is depicted in the figure below:

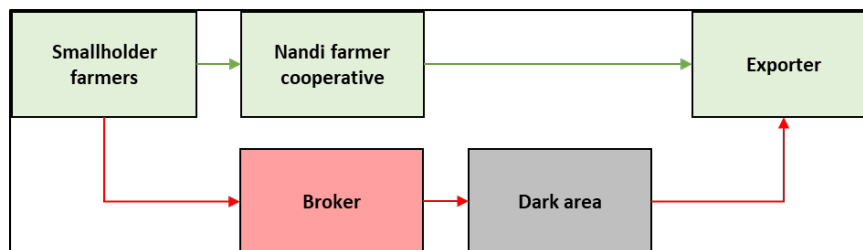


Figure 2: Supply chain complexity

## Niche: How can traceability and transparency play a feasible role in improving sustainability (for small and medium scale farmers) in the Kenyan avocado supply chain?

Addressing supply chain complexity in the Kenyan avocado industry, contract farming establishes secure agreements between the cooperative and farmers, ensuring direct supply and full traceability. It provides farmers with price security and access to support services, fostering cooperative growth. The cooperative can also implement farmer clustering for knowledge sharing, improved quality, and efficient logistics. The adoption of ICT traceability solutions can enhance transparency and reduce costs. The Tanzanian "Eat Fresh" project offers a benchmark for connecting smallholder farmers to export markets through collaboration, capacity building, and innovative financing, demonstrating potential pathways for agricultural growth in Kenya.

Promoting awareness and willingness among stakeholders in the Nandi avocado industry requires a culturally sensitive approach. Appreciating Nandi County's cultural dimensions like power distance, collectivism, masculinity, short-term orientation, and restraint can enable the development of tailored interventions addressing gender inequality, poverty, and quality variation among small farms. To effectively engage the community, traditional practices and beliefs should be considered, utilizing the theory of change to overcome potential barriers. Collaborating with local students, who understand community language and culture, can facilitate clearer communication. Implementing visual aids and relatable storytelling can foster shared purpose and inclusivity, aiding the growth of the Nandi avocado industry while respecting its unique cultural heritage.

Improving traceability and transparency in the Kenyan avocado supply chain can be achieved through incentive-based solutions. These involve rewarding good practices and fostering changes. Utilization of technology, such as digitizing data, can streamline the process of tracking avocados from farm to market. Collaboration among stakeholders plays a vital role in ensuring smooth operations. Training programs enable farmers to adopt better farming and selling practices, and establishing direct connections with buyers assures fair prices. Introducing changes gradually, with consideration to local culture, is essential. The theory of change provides a useful framework for understanding problems, implementing effective solutions, and continuously refining strategies. Such an approach helps all parties understand the benefits of the changes and contributes to a more robust and transparent avocado supply chain.

## Conclusion and Recommendations:

### Conclusions

This research aimed to identify the issues that smallholder avocado farmers in Kenya face, especially inequities within the supply chain. The goal was to enhance traceability, transparency, and overall sustainability within the avocado supply chain. Using the multi-level perspective, it was found that European consumers, retailers, and importers demand traceable avocados due to international sustainability pressures. Given Kenya's reliance on agricultural exports, it's expected that the country will gradually adapt to these changing market needs.

However, field studies showed the complexities within the Kenyan avocado industry, including ingrained norms, farming practices, and power dynamics, which significantly impact product traceability. Transitioning towards a more sustainable supply chain may face resistance to change. Field studies suggested that farming contracts and enhancing stakeholder collaboration could boost traceability more efficiently than relying solely on technology.

This research predominantly focused on traceability within the Kenyan avocado supply chain, but it is important to recognize that there are other aspects, like socio-economic conditions and infrastructure, which also influence the sustainability and equity of the supply chain. However, these weren't extensively examined due to time constraints and a defined scope of research. Moreover, certain key stakeholders weren't included in the interview process, which could have provided a more comprehensive understanding of the industry's dynamics. Despite its limitations, this research provides a steppingstone towards understanding the complexities of the Kenyan avocado supply chain and potentially achieving sustainable improvements for all stakeholders.

### Recommendations

Based on a thorough study of the Kenyan avocado supply chain, the following recommendations aim to assist “Anonymus” and FOQRLAB in enhancing the traceability and sustainability of the supply chain, considering their distinct roles and influence levels. The suggestions encompass potential collaborations, operational improvements, and emphasize the significance of sustainability and traceability.

The research advises “Anonymus” to explore collaborations with experienced Kenyan exporters like Keitt and Sunripe, who understand local supply chain dynamics and offer a reliable chain, unique product advantages, and a unique harvesting period, promising continuous avocado supply. Leveraging the Port of Mombasa for export provides cost and time efficiencies, while investing in traceability can streamline costs, enhance marketing, and enable stronger relationships with certified cooperatives striving for sustainable practices, thereby ensuring high-quality avocados and a resilient, traceable supply chain.

In the short term, FORQLAB is advised to enhance the foundation of cooperatives by encouraging member participation and collaboration, including establishing contract farming. For the mid-term, as cooperatives stabilize, the focus should be on digitalization, enhancing bankability, and transparency, leading to better financial trust and improved process investment. In the long term, obtaining organic certifications, aligning with global trends, should be prioritized to increase market value and appeal; this process also emphasizes the importance of traceability and technology utilization for transparency and broader sustainability.