



A Twin-Track Approach: Co-Existence of Informal and Formal Dairy Value Chains

A Case Study in Vihiga County, Kenya



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This case study is part of the informal economies trajectory of Wageningen University and Research together with alumni from different countries in Africa, Asia and Latin America (KB-35 programme 2023–2024).

This report can be downloaded for free at <https://doi.org/10.18174/677429>

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Report WCDI-24-379

The large majority of milk in Kenya is marketed through informal channels. The policy of the Kenyan Government is focused on formalising the dairy sector to ensure food safety, productivity and compliance with the market. The demand for raw milk and nearby/informal transactions remains high. The informal part of the value chain provides essential opportunities for women and young people to earn a living and diversify their diets. However, working conditions are often poor, there is little value addition and there are concerns with food safety. What if formalisation of the sector is extended further? What if informality is nurtured? The case calls for the informal trading system to co-exist with formal arrangements in a 'twin-track approach'.

The context

Kenya is experiencing a growing demand for milk and dairy products driven by increasing urbanization and a rise in middle class status (Bebe et al., 2017). The bulk of marketed milk in Kenya is not processed and reaches consumers through informal trading (see box: *Did you know?*). The informal part of the dairy sector makes a huge contribution to Kenya's national economy and employment. Despite the Kenyan Government's efforts to develop formal dairy processing and packaging, small-scale informal dairy markets continue to dominate, with motor-cycle transporters ('*Boda bodas*'), retail shops, open-air market vendors and door-to-door vendors as the main actors.

The Government policy is focused on formalisation – primarily through licensing and pasteurisation by enforcing fines, confiscation of milk, or closing the premises of informal actors legitimized by the Dairy Act, 2021, through the Kenya Dairy Board (KDB). According to (V. Vernooij et al., 2023) formalisation creates a reliable market demand which incentivizes producers to commercialize dairy livelihoods. This implies a drastic transformation of current milk trade, which is largely operated by small enterprises (MALF, 2013) to an organised food system.

Despite campaigns to promote the consumption of packaged, pasteurised milk from the formal sector, the demand for raw milk remains high. This could be due to the readily available local market at the farm gate. The informal market thrives on perceptions that pasteurised milk has chemical additives. In addition, consumers often favour informal arrangements, in which they are allowed to pay for milk on a weekly or monthly basis. This is unlike purchase in the super markets, where purchases can only be made on a cash basis.

Did you know?

- Average milk per capita consumption: 110 litres*
- Milk production per year: 4.6 billion litres*
- Of which processed: 755 million litres*
- 80% of milk is marketed informally**
- Informal part of the dairy sector generates 70% of the 40,000 jobs in marketing and processing**
- The bulk of marketed milk is raw fresh milk***

* Ministry of Agriculture, 2022

** Blackmore et al., 2020

*** Bebe et al., 2017



Figure 1: Milk churns transported by motorcycle at roadside market, Kenya.

Dairy actors in Vihiga County

The Dairy Sector in the Lake Region in the Western parts of Kenya is characterised by small-scale and non-mechanised farming. Approximately 70% of the milk is produced using traditional methods with low technological uptake (Blackmore et al., 2015). Vihiga County is one of the counties in the Lake Region block (LREB) of Kenya, which produces about 31 M litres of milk per year. Around 86% of this milk is consumed through informal channels (Alonso et al., 2023). The county does not have a milk processing plant. However, it has five 'Mini-Dairies' that operate as farmers' cooperatives with the primary purpose of collecting and chilling milk for onwards selling to milk processors. The informal milk market thrives due to consumer perceptions that raw milk is cheaper, has a higher butter fat content, is readily accessible, and comes in variable quantities to meet every consumer's purchasing power. Therefore, dairy remains an attractive business venture for people operating in the informal economy. The informality in the production and trading system offers many opportunities for employment. This calls for an analysis of the informalities along the dairy value chain nodes in the county, such as inputs supply, production, collection, processing, distribution (wholesale and retail), consumption and disposal of dairy waste.

Figure 2 illustrates the dairy value chain informal actors map.

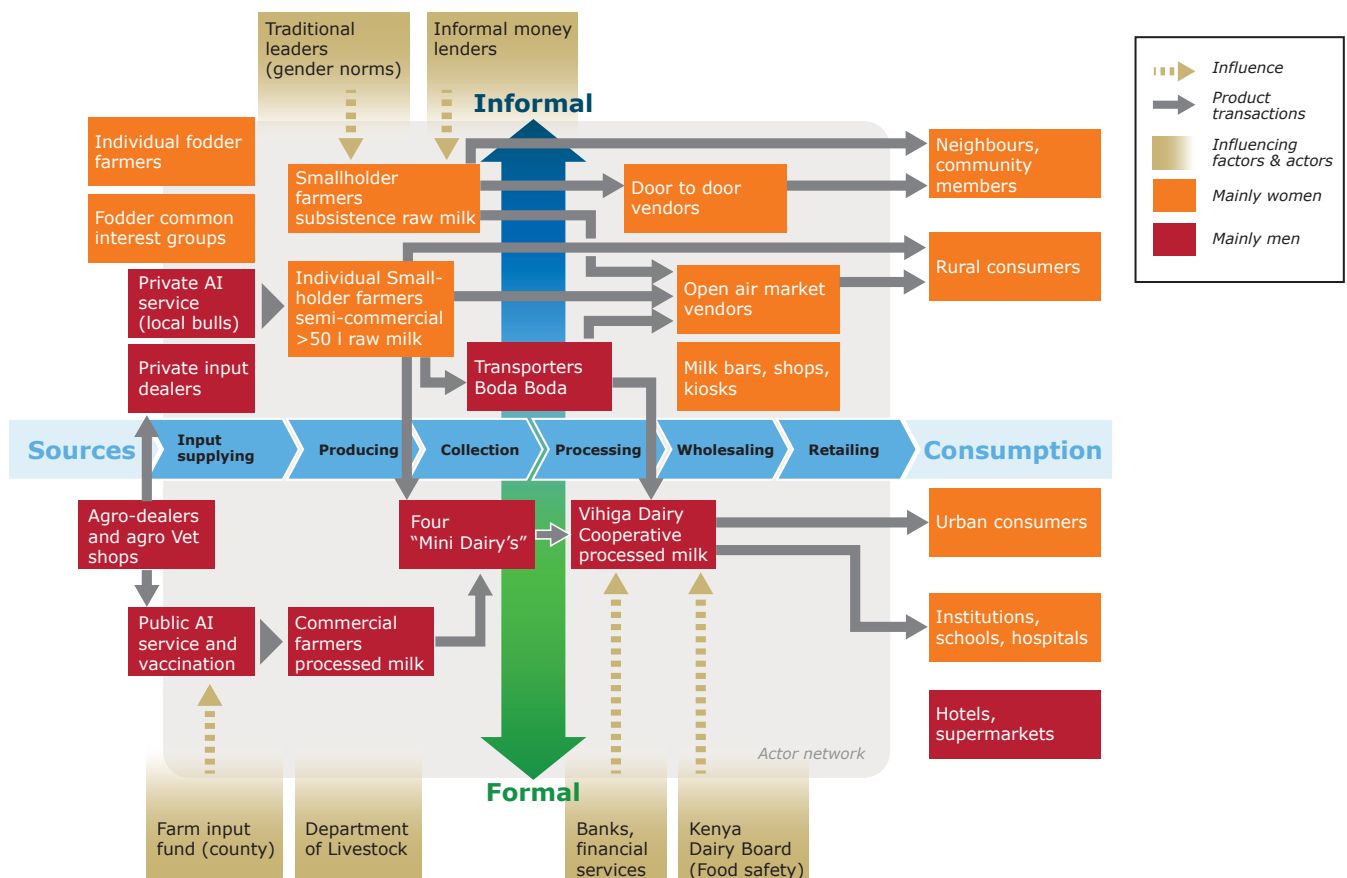


Figure 2: Dairy Actor Map, Vihiga County, Kenya.

From Figure 2, it can be observed that the informal actors are highly active in all the functions of the value chain. The role of women is high at the informal section at all levels (fodder supply, production at farm level, retailing and vending) except transportation as *boda bodas* are mainly operated by young men. This is because few women have embraced motor-cycle riding due to concern about unsafe roads and gender norms. In addition, women and young people have less access to finance which could enable them to invest in milk handling equipment and transportation.

The formal part of the value chain is much less extensive and is dominated by men. In each of the five sub-counties there is a dairy ('mini dairy'), subject to inspection and licencing, which simply performs collection. However, Vihiga Dairy Cooperative has developed leadership structures, technology adoption and adequate equipment. Therefore, it carries out collection, chilling and pressurisation and offers many value-added products. This enables the cooperative to play a central role in collection and chilling when/ if the other 'mini dairies' experience milk glut.

In the cooperative movement, all members are equal and cooperative leadership selection is achieved through elections. Yet, these five dairy cooperatives all are chaired by male members. A gender policy on affirmative action ensures that at least one post among the executives should be held by a woman.

The few commercial dairy farms that are found in the county supply to cooperatives. This poses challenges of safe milk consumption as this milk is not pasteurised. The illustration in Figure 2 shows little value addition in the chain. The main product is raw milk, and the demand is high for this.

The advantage that women and men indicate of selling to the cooperatives are that the market is readily available. It involves education activities for members. It makes access to veterinary services easier through farm health assistants linked to the cooperative. Access to customised financial services are also possible, such as check offs on supplied milk. In addition, there is improved confidence in their product based on safe dairy practices.

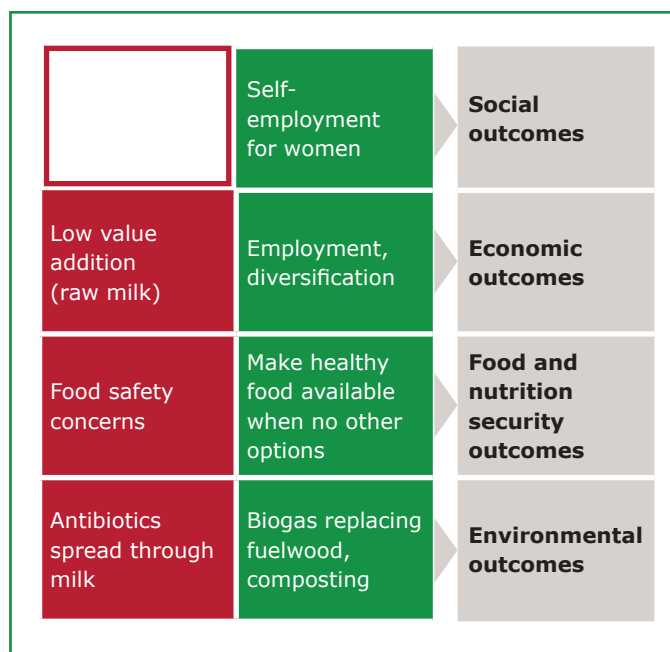


Figure 3: Milk collector in the formal part of the dairy value chain.

Contributions to food system outcomes

The informal part of the dairy sector makes a huge contribution to Kenya's national economy and generates the bulk of jobs in dairy marketing and processing (see box), thus, contributing to **economic outcomes**. Informal markets are essential for low-income household self-employment. In addition, the informal dairy marketing channels promote livelihood diversification for many people who perform functions in an informal manner in the value chain. According to (Lelea et al., 2023), access to food is increased when households that depend on the dairy value chain for their livelihoods, sustain and improve their micro-enterprises and self-employment.

On the other hand, the informal dairy chain is associated with lack of and poor operating conditions in markets, and low value addition because the bulk is raw milk. Low milk production has been a catalyst for the low technology adoption and lack of innovations intended to commercialise the dairy sector.



In terms of **social outcomes**: In a context in which women have less access to resources and opportunities (see Mwambi et al., 2021, and Gallina, 2016) the informal dairy value chain provides a space within which women can start small enterprises and participate in the monetary economy that is largely dominated by men. On the other hand, working conditions are often poor and farm gate prices are often lower compared to the formal dairy chains in which men play a bigger role.

In terms of **food and nutrition security outcomes**: It is the informal actors that mostly enable consumers' easy and affordable access to milk and dairy products. They, therefore, contribute a lot to more diverse diets and nutrition security for low-income consumers. On the negative side, the informal dairy sector is associated with low-quality milk and food safety risks and the transfer of zoonotic diseases, as there is a lack of contact and control from the sanitary and health authorities, little awareness regarding milk safety from both consumers and actors in the milk trade.

The small-scale nature of dairy farming also offers possibilities for improving **environmental outcomes** by using the animal manure for biogas (replacing fuelwood collection) and composting (replacing chemical fertilisers). On the other hand, there is a lack of control on antibiotic content in milk, and there are also several potentially negative environmental impacts, such as soil erosion, water pollution, waste and manure management and greenhouse gas emissions (Lee, J. van der et al., 2016).

What if?

Without the informal sector the access to milk is likely to be much more difficult for low-income households. What if the Government would intensify its focus on formalisation to increase the tax base and reduce food safety issues? Would this mean intensifying confiscation of milk and closing informal businesses? Many low-income households buy milk from informal vendors on credit, in quantities they can afford, and at places they can easily access. Embracing a complete formalisation policy could result in reduced access to adequate food by the low-income households that depend on informal trade. This scenario is likely to further exclude many women and young people who dominate the informal part of the dairy value chain, creating more male-dominated value chains.

What happens in case of conflicts or pandemics? During the Covid-19 pandemic, the access to especially formal milk markets decreased among peri urban households' due to restriction in movement (Alonso et al., 2023). The only milk and milk products available were from neighbours practicing peri-urban dairy farming.

What if informal actors would be brought on board to address issues like food safety, inequality between women and men, and lack of value addition and efficiency? Are there pathways to address these issues while nurturing the positive contributions of the informal dairy value chains, without having to fully switch to formal trading systems?

Challenges and opportunities

There are silent gender and age-related inequalities in the dairy sector. If not addressed the women and young people risk exclusion in the value chain. Women experience limited control of dairy assets (animals are generally owned by men), the headship concept positions men as the "Head of the Household". The unequal decision-making power and labour division between women and men are things to consider in developing the value chain. Young people lack access and control to dairy resources, and this may completely exclude them from the chain. Young people are not equipped with adequate skills socially, economically or aptitude to lead in the dairy value chain. They have been left with roles such as farm-hand assistance, manual fodder production and milk vending (aged 18 years and 27 years). Young male people of age between 30–35 years dominate the milk transportation sector. This is because they can have higher decision-making power, can access credit and are then able to pay for motor-cycles (*Boda boda*) unlike young people who are just out of school. The female youth (age 18–35 years) are left with limited options of working on the farm or milk vending. Formalisation may lead to male domination of the dairy sector in terms of benefits.

For women, it is easier to access the income in the informal trading system because it is cash-based. The formal system involves MPESA payments to bank accounts owned mainly by men, which means women often need to negotiate more to access the income. This is an incentive for women to rely on the informal trading system. Milk is, therefore, mainly sold through informal channels by women and youth: door-to-door, in milk bars, open air markets, shops and kiosks. Actors also choose to remain in the informal channels for fear of the cost of starting and maintaining dairy business in terms of taxes and set standards in the Kenya Dairy Act, 2021.

What can be done in the sector?

1. First of all, the current push for formalising the dairy sector in Kenya needs to be **placed in the context of multiple food system outcomes**. The positive contributions of the current informal system should be considered in terms of nutritional security and the huge workforce existing due to employment of low-income households, women and youth. There is an urgent need to recognise these positive contributions, as well as the risks of losing these due to formalisation efforts, and take these into consideration in policies and interventions in the sector.
2. Therefore, there is a call for the dairy value chain actors and authorities to find ways for the **informal trading system to co-exist with formal arrangements (Twin-track approach)** for implementing the Dairy Act, 2021, with food safety regulations, value addition and dairy enterprises growth. Both the formal and informal sections of the value chain need to be developed. Rather than confiscating informally traded milk and closing down informal dairy enterprises, energies and efforts are needed to support informal actors to embrace food safety, inclusivity and value addition to scale up and commercialise as Micro and Small Medium Enterprises (MSME) providing decent jobs to more young people and women. Practically, this could mean capacity building of the informal actors in the dairy sector, promoting consumption of pasteurised milk and processed dairy products. Allowing small traders to buy pasteurised milk from dairy processing plants, reducing taxes on dairy handling equipment and machinery to promote technology uptake and food safety. Creating milk aggregation centres to reduce the travel distance for delivering milk to the cooperatives. Providing affordable financing to Medium Small and Micro Enterprises (MSMES) in the Dairy Sector and 'agripreneurs'.
3. **Mindsets need to change to address the beliefs of consumers** around raw and processed milk, to boost demand for pasteurised milk and processed dairy products. This would pay back in terms of more job opportunities in the processing plants, transportation to the market and self-employment through licensed milk bars and shops.
4. The perspective on role of **young people and women should be at the forefront** when formalisation efforts are planned and executed. This will reduce the likelihood of formalisation of the Dairy Sector clashing with the Kenya Vision 2030 ambitions of increasing the participation of women in all economic, social and political decision-making processes and address the risk of jeopardising a major workforce in the sector.
5. To boost the sector while still abating greenhouse gas emissions, **climate-smart dairy practices** could be promoted, showing their advantages for more job opportunities, a safe working environment and long-term profitability. Embracing organic manure composting of animal waste would increase soil fertility while reducing carbon dioxide sequestration. And use of Biogas would reduce emission of methane gas, thus, helping to conserve our environment.

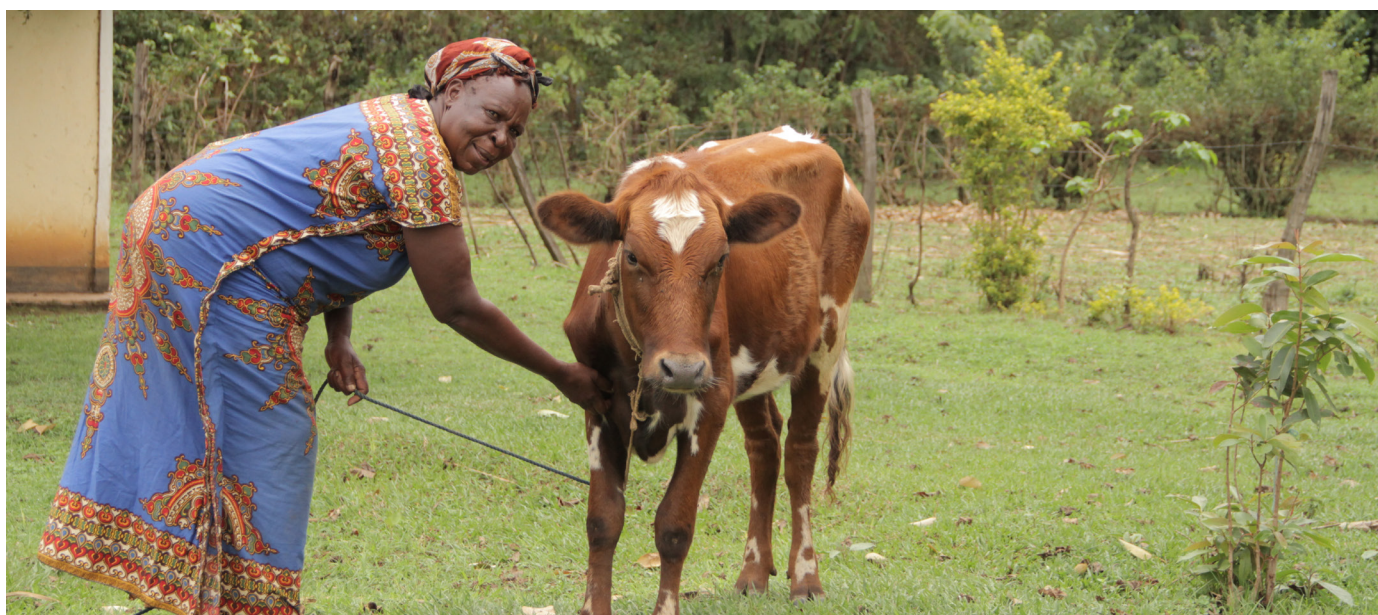


Figure 4: A woman farmer in Kenya rearing dairy cows.

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