

FEED THE FUTURE INNOVATION LAB FOR LIVESTOCK SYSTEMS

IMPROVING THE EVIDENCE AND POLICIES FOR BETTER PERFORMING LIVESTOCK SYSTEMS IN ETHIOPIA

Background

This project was led by the International Food Policy Research Institute in collaboration with the Ethiopian Development Research Institute, and the Ethiopian Institute for Agricultural Research with the aims of understanding the dairy value chain as well as the consumption and markets for animal-source foods (ASF). Market and demand issues that might inhibit the adoption of livestock innovations are frequently ignored. Research on national market and consumption issues and dynamics is crucial for evidence-based decision making to improve livestock sector performance in Ethiopia. Understanding market and demand issues related to ASF can shift the policy framework and attitudes, thus increasing demand for and consumption of safe, quality ASF and ultimately improving human nutrition in Ethiopia.

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Project area: Oromia (West Shewa, North Shewa) and Addis Ababa (Addis Ababa) regions for the dairy value chain; for consumption and price analysis the country of Ethiopia as a whole.

Approach

Primary data from each level of the value chain (from rural producers to urban consumers) were collected in order to better understand the dairy value chain in Ethiopia. To understand ASF consumption and markets at the national level, representative household consumption surveys were analyzed with respect to levels, changes, and drivers for change in ASF consumption and expenditures. Additionally, ASF price behavior in Ethiopia was examined using large national price datasets to enhance our understanding of how high prices reduce ASF consumption, particularly among poor and vulnerable households.

Results

Animal-Source Food Consumption and Prices: Using unique, nationally representative household consumption expenditure data sets that extend from 1995/96 to 2010/11, this study assessed ASF consumption patterns and changes over time. A number of stylized facts appear from this analysis:

1. While ASF consumption in Ethiopia is low overall, real expenditures on ASF have increased by 50% over the 15-year period;
2. Per capita ASF consumption increased, but significantly less than ASF expenditures because of relative price increases of ASF over this period;
3. Expenses on dairy products make up almost half of all ASF expenditures;
4. The share of ASF expenditures in the total food budget for the richest one-fifth is three times higher than for the poorest one-fifth;
5. Residents in urban areas spend twice as much on ASF per capita than do rural residents; and
6. There is significant variation in ASF consumption over the year, seemingly associated with religious customs.

We further find strong effects of prices and incomes on ASF consumption levels. For example, we find that a doubling of prices reduces dairy consumption by about half. The price hikes of dairy products in recent years could have contributed to a decrease in consumption, but this seems to have been offset by increases in average incomes in the country, leading to no decline in the (average) consumption of dairy products. These findings suggest overall that keeping prices low and stimulating further income increases are important factors to improve ASF consumption in Ethiopia. Using reasonable assumptions on income growth, urbanization, prices, and marketization, we estimate that national ASF consumption and commercial markets will increase by 165% and 192%, respectively, by 2030, and that the size of urban commercial markets will quadruple by 2030. The goat and mutton markets especially are expected to grow faster than other ASF markets. This rapid growth will have enormous implications for the activities of agents involved in these markets, such as input and output traders, transporters, wholesalers, retailers, butchers, and slaughterhouses.

ASF Price Increases²: Diverse, nutritionally-rich diets are important in their own right, but particularly so to combat chronic undernutrition. This awareness is especially relevant for Ethiopia where young children consume one of the least diverse diets in sub-Saharan Africa. To better understand the affordability of nutritious foods in Ethiopia, we analyzed consumer price patterns of different food groups—often used together to proxy for dietary quality. Using a large-scale price dataset collected monthly in 116 urban retail markets across the country, we find that real prices (inflation adjusted) of all nutritionally-rich food groups increased by between 21 and 74% over a recent 14 year time period (see Figure 1 below). This contrasts with staple crops (grains, roots, and tubers), which did not show any price increase, and with oils, fats, and sugar, the prices of which decreased substantially in real terms. Similar price trends are seen in rural areas. Given the large influence of prices on consumer choices in countries like Ethiopia, more investments and attention to the production of nutritious foods—combined with behavioral change messaging—is needed to keep the prices of such foods at affordable levels for consumers.

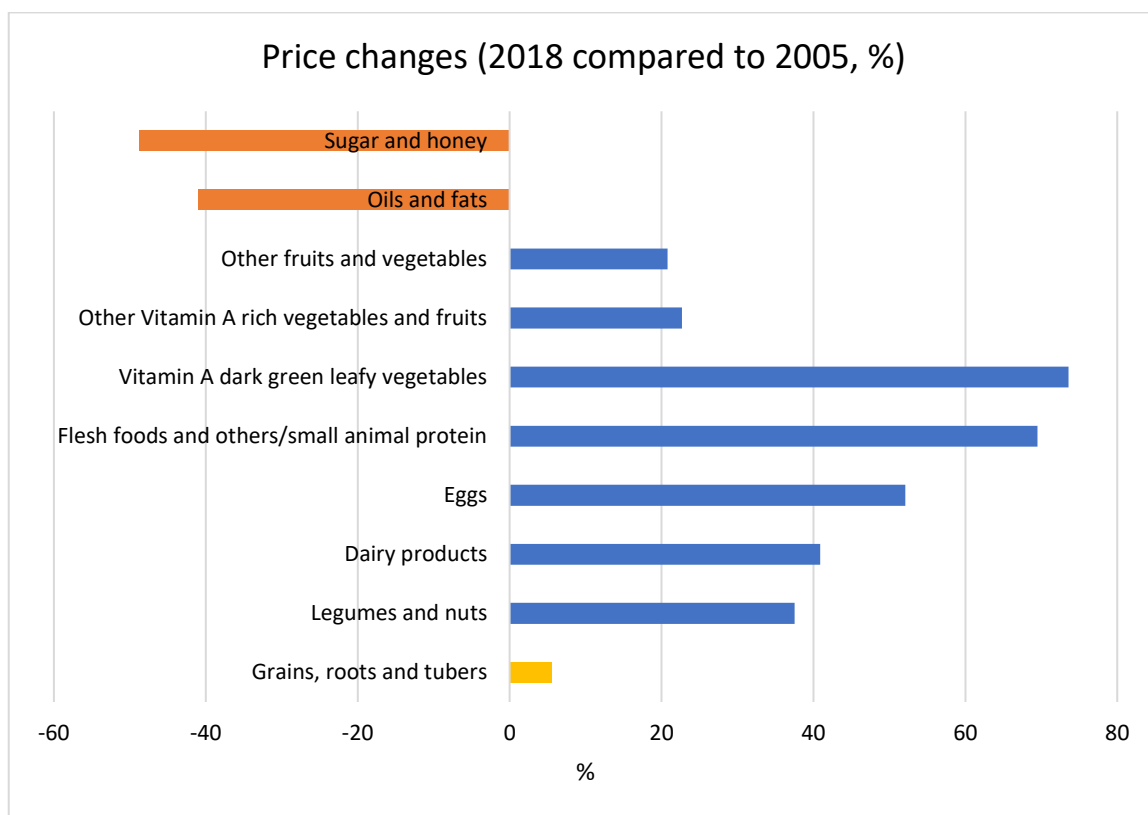


Figure 1: Increases in real prices of nutritionally-rich food groups over fourteen year time period

Productivity of the Livestock Sector³: Livestock is important in Ethiopia’s agricultural economy, as almost all farmers own some livestock. Livestock assets are valued at \$720 USD per farm on average. Overall livestock output has grown rapidly over the last decade, estimated at almost 6% per year, but about 80% of that growth came from increases in the number of livestock. Between 2005 and 2015, the total stock across different species grew by 50%, while modern input use and improvements in production methods contributed little growth. Since the mid-2000s, the adoption of improved breeds and improved feeding practices has expanded, due to greater access to extension and markets, but such adoption patterns started from a very low base. Within the livestock sector, cattle are dominant, making up an estimated three-quarters of the value of livestock. However, the share of cattle in total livestock output is declining, and that of small ruminants is on the rise, especially in pastoralist areas. In the face of the rapid growth in livestock numbers and the increasing livestock density per unit of land, feeding practices are changing. Grazing land is declining in availability, so reliance on commercial feed markets is increasing. Access to vaccinations and veterinary service provisions has improved, and livestock death rates declined slightly over the last decade. However, the number of livestock lost to deaths is still more than twice the number sold for meat production, indicating important challenges remain for the development of the livestock sector in Ethiopia.

Dairy value chain⁴: We find important changes over time. Upstream, we note an expansion in the regions supplying liquid milk. In the regions with better market access, we see higher adoption of cross-bred cows and commercial feeds and better access to animal health and dairy-related extension services, contributing to higher milk yields per dairy cow (see Figure 2 below). Output markets in well-connected areas are shifting away from butter to sales of liquid milk. In more remote areas, we see stagnation—or even a decline—in milk yields. Midstream, the number of processing firms has tripled over the last 10 years, while downstream, an increase in the consumption of liquid milk, especially by the wealthier population, is noted. We also see rapid increases in the number of traders involved in dairy as well as more competition between them. We further document a process of upscaling with larger dairy farms becoming more prevalent. These larger farms are characterized by much higher productivity per cow and per unit of labor. This productivity will likely give further incentives for these types of farms to grow in the future. We also note the large importance of urban farms, mostly focusing on raw liquid milk market sales. Overall, we see important changes, fostered by a rising urban demand, which is increasingly providing incentives for transformation of the dairy sector and, more broadly, for the lagging livestock sector in Ethiopia overall.

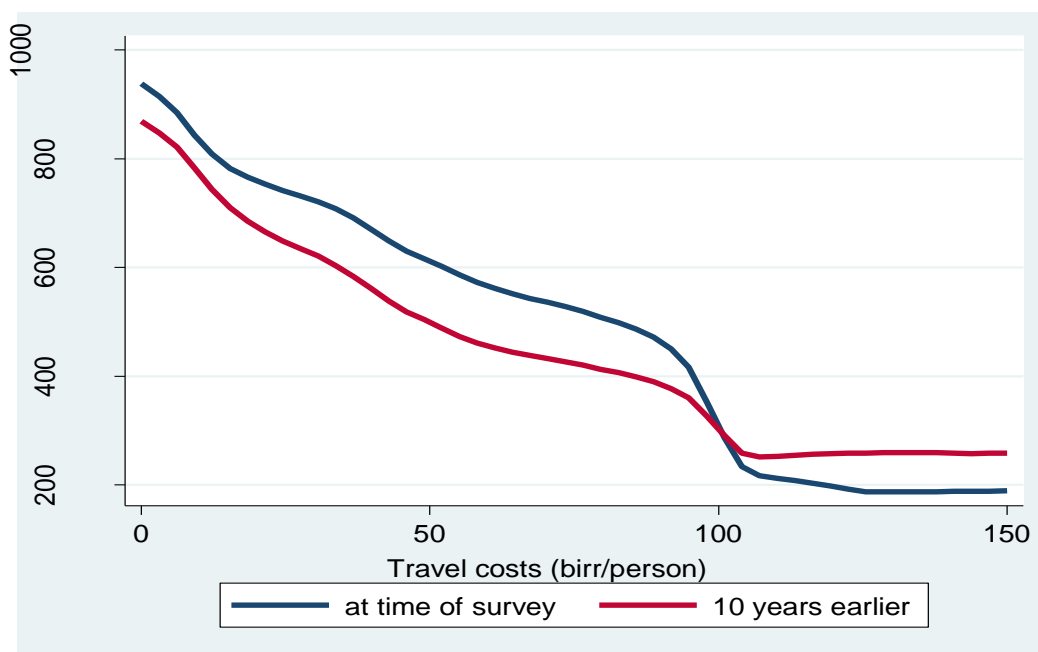


Figure 2: Milk yield in relation to market access, as indicated by travel costs

Recommendations

- **Increased livestock investment for increased productivity:** The expected expansion of ASF consumption is likely to lead to improved health and nutritional outcomes in Ethiopia. However, to ensure that this increased local demand can be met by local supply and not by imports, more attention will need to be paid to livestock-related investments, including improved animal husbandry practices, such as the adoption of cross-bred cows, appropriate veterinary health practices, and improved feeding. An enabling environment needs to be promoted to allow for efficient livestock markets and to foster adoption of such practices.
- **Prices and education are important for improved nutrition:** To reduce ASF price levels, improve dietary quality, and ultimately impact nutritional and health outcomes in the country, greater investments and attention to the high-value agricultural and livestock sector production systems are needed. This attention is important because other efforts to achieve improvements in nutritional outcomes in Ethiopia have focused on improving nutritional knowledge (dietary culture) through behavioral change communication. While the latter is certainly crucial, improving access to, and achieving low prices for, nutritious foods also have an important role to play as a part of multidimensional efforts to improve nutritional outcomes.
- **Growth in livestock productivity is needed to hit policy targets:** The growth by livestock numbers but not in productivity has important implications on feed market use. The growth path in the livestock sector is contrary to what was projected in the Climate Resilient Green Economy⁵ strategy, which envisioned that productivity per animal would grow and the number of animals would decline. To achieve that vision, more effort is needed to stimulate productivity growth through improved input use leading to higher productivity levels in the sector. As shown in our adoption analysis, this could possibly be achieved through better livestock extension and service delivery systems, better access to input and output markets for livestock producers, and improved education and awareness levels among livestock farmers.

References

- 1 Abegaz, G., Hassen, I. and Minten, B. 2018. Consumption of animal-source foods in Ethiopia: Patterns, changes and determinants. Working Paper. IFPRI. www.ifpri.org/publication/consumption-animal-source-foods-ethiopia-patterns-changes-and-determinants
- 2 Bachewe, F., Hirvonen, K., Minten, B., Yimer, F. 2017. The rising costs of nutritious foods in Ethiopia. ESSP Research Note 67. https://livestocklab.ifas.ufl.edu/media/livestocklabifasufledu/pdf/-pdfs-by-country-pre2019/ESSP_RN67_rising_costs_nutritious_foods.pdf
- 3 Bachewe, F., Minten, B., Tadesse, F., Alemayehu, T. 2018. The Evolving Livestock Sector in Ethiopia: Growth by heads, not productivity. Working paper. <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/132771/filename/132980.pdf>
- 4 Minten, B., Habte, Y., Tamru., Tesfaye. A. 2018. Transforming agri-food systems in Ethiopia: Evidence from the dairy sector. Working paper 129. <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/133020/filename/133230.pdf>
- 5 Federal Democratic Republic of Ethiopia. 2015. Ethiopia's Climate Resilient Green Economy. Climate resilience strategy - agriculture and forestry. <http://gggi.org/site/assets/uploads/2017/11/2015-08-Sectoral-Climate-Resilience-Strategies-for-Ethiopia-1-Agriculture-and-Forestry-Climate-Resilience-Strategy.pdf>

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