

Evaluating Market Access and Food Consumption Trends in Rural Communities

Insights from a high-frequency
integrated market survey in
Bangladesh

Research note 63
December 2024

ABOUT THIS NOTE

This research note provides a comprehensive analysis of food consumption and dietary patterns, utilizing high-frequency data from consumers and various markets. It underscores TAFSSA's (Transforming Agri-Food Systems in South Asia) commitment to the food production-to-consumption continuum, emphasizing equitable access to sustainable and healthy diets. The study delves into the dynamics of food systems and market trends in Northern Bangladesh, focusing on four districts—Rajshahi, Chapai Nawabganj, Rangpur, and Dinajpur. The research examines price fluctuations when locally produced diversified foods, enter the market. These findings highlight the benefits of crop diversification for farmers and its impact on local and regional market dynamics. Data for this research note is derived from a biweekly high-frequency survey conducted over a year, starting in August 2023. It provides preliminary insights into consumer food consumption and dietary patterns, the production of diversified crops, price trends over time, and their impact on local food systems.

KEY STUDY FINDINGS

1. Seasonal patterns significantly influence sales distribution, with higher or lower sales of food products sold by farmers in different months. Variability in sales for categories like "pulses, legumes, and beans" and "fruits and vegetables" suggests potential seasonality or irregular market demand.
2. The predominant sales channel is "Bepari (local traders)" with other buyer categories showing fluctuating but smaller contributions. The data indicates that the dominant sales channel is shifting increasingly towards direct farmgate sales.
3. The foods with the highest frequency of daily intake are staples like wheat and rice. Vegetables and proteins like fish, eggs, and poultry show more variation in the frequency of consumption, indicating that they are eaten often but not every day.

BACKGROUND

Food consumption patterns and market dynamics substantially affect dietary habits, economic stability, and food security in both rural and urban communities. The relationship is most apparent in emerging economies, where affordability and availability of foods are influenced by market trends, seasonal fluctuations, and socio-economic scenarios. In agricultural-based economies, staple foods such as rice, wheat, and pulses are crucial for daily nutrition, while fruits, vegetables, and animal-sourced foods are often consumed less frequently due to higher costs or limited availability (Popkin et al., 2020). Limited consumption of diverse food groups can result in nutritional deficiencies, emphasizing the need for policies that enhance access to a variety of foods (IIED, 2013). The availability of food is directly linked to seasonal harvests. During peak harvest times, staple food prices often decline due to higher supply. Conversely, in lean seasons, when crops are not yet ripe for harvest, prices may soar owing to shortage as illustrated by the Monga periods in Bangladesh where rural subsistence farmers face severe food scarcity (Stevens et al., 2017).

Marketing channels also play a critical role in determining the accessibility and cost of food products. Local haats, outdoor markets, mobile vendors, and retail outlets provide diverse options, with direct sales at farm gate or manufacturers or local sales through weekly markets offering lower costs due to fewer intermediaries. In contrast, larger markets, such as Zilla markets, tend to exhibit higher prices due to factors like enhanced logistics,

quality assurance, and brand positioning. However, Conversely, insufficient information or access to other channels such as wholesale markets and subsidized stores, may prevent certain populations from benefiting from potentially reduced prices.

This study emphasizes that availability and market prices are integral to shaping the food supply chain, directly influencing the food purchase and consumption behaviors. Understanding the relationship between price mechanisms, farmers' behavior, and crop production decisions is crucial for evaluating the economic sustainability of smallholder agriculture and its implications for food security and nutrition (Molitor et al., 2017; Woodhill et al., 2022). The goal of this research is to enhance market efficiency, ensure fair pay for farmers, and promote healthy food consumption by studying local food consumption and purchasing habits, with a particular focus on improving the local food availability through diversified production.

OBJECTIVES

This study analyses agricultural and consumer market price dynamics and food consumption patterns by investigating the temporal distribution of food prices from farmgate to other markets, identifying high-price zones or areas where production and cropping strategies align with the marketing system, and examining local food consumption and purchasing habits to inform strategies for improving market efficiency, food availability and food accessibility.

DATA AND METHODS

Study Area

Our study area covers Rajshahi, Chapai Nawabganj, Rangpur, and Dinajpur districts in Northern Bangladesh, where [TAFSSA's participatory research where farmers test varied agronomic, market, and nutrition innovation bundles through structured multi-year studies](#).

Market Integrated Household Survey

Households are connected to markets in two ways: by selling their produce and purchasing products. The TAFSSA integrated household (HH) survey captures responses from 100 farmers across 12 villages in the four specified districts. In the eight villages where

on-farm diversification trials are conducted, five trial farmers and five non-trial farmers were selected per village. In the four control villages, where no diversification trials are conducted, five farmers were selected from each village. Recognizing the non-separability of production and consumption, HH respondents were administered both production and consumption modules.

Market Survey

Nearby these 12 villages, 26 markets were surveyed, with 6–7 vendors per market representing 25 sentinel food items, including cereals, pulses, vegetables, and fruits. In total, 168 vendors participated in the survey.

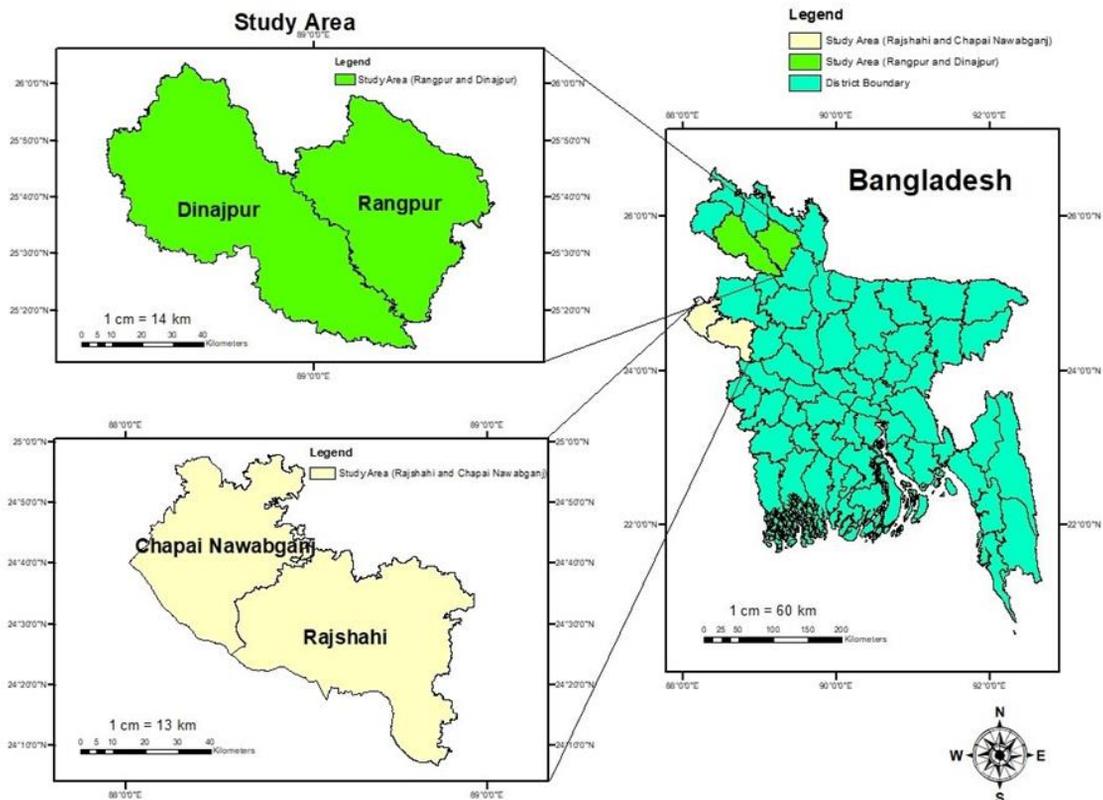


Figure 1: Map of the study area

Sample

This brief draws on one year of high-frequency survey data collected from households (farmers/consumers) and vendors. Table 1 provides an overview of the market types, respondent categories, and sample sizes included

in the survey. Data collection was conducted using the CAPI tool, ([Kobo Toolbox link](#)). High-frequency data collection began on August 6, 2023, and has been conducted biweekly since then.

Table 1. Sample and respondent types

Location	Respondent type	Key modules	Sample size
Household (HH)	Farmer	Produce sale, Food shopping, Food consumption	100
Village market	Vendor		31
Haats	Vendor	Vendor characteristics, food sourcing, Price	59
Upzilla market	Vendor		50
Zilla market	Vendor		28

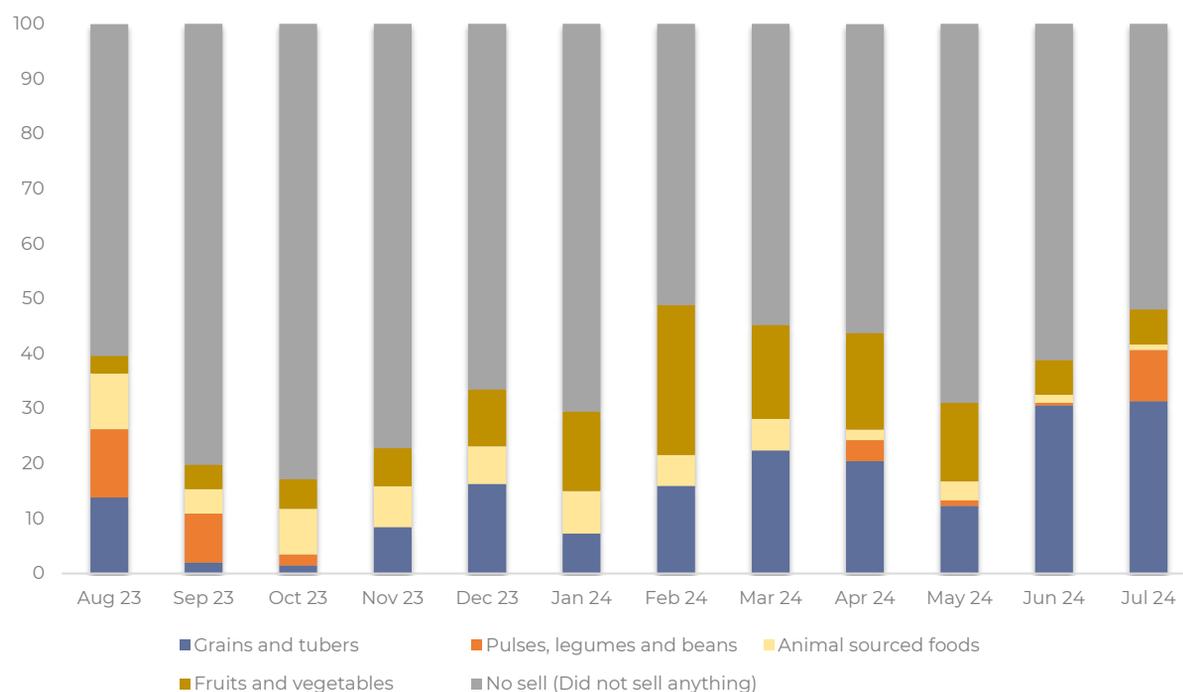


Figure 2: Food sales by farmers over the last year (August 2023 to July 2024)

STUDY FINDINGS

Figure 2 illustrates the sale of different food types by farmers. The No Sell category (farmers not selling any produce) consistently accounts for the largest proportion across all months, highlighting a significant number of farmers not participating in market activities at a given time. Two peak sales periods are observed: February–April and June–August, coinciding with the harvesting seasons.

Grains and Tubers sales begin to rise in March, peak in June and July. In contrast, fruits and vegetables show higher sales in the first half of the year, peaking in

through March and April 2024 before declining in subsequent months.

Pulses, legumes, and beans exhibit no sales during several months, specifically from November 2023 to February 2024 and May 2024. Sales increase in April 2024 and July 2024, indicating variability in market performance.

The animal-sourced foods category (poultry, fish, milk, eggs, etc.) shows monthly fluctuations, with a noticeably smaller share in June and July 2024. This reflects the dynamic nature of sales across different food categories throughout the year.

February and remaining substantial

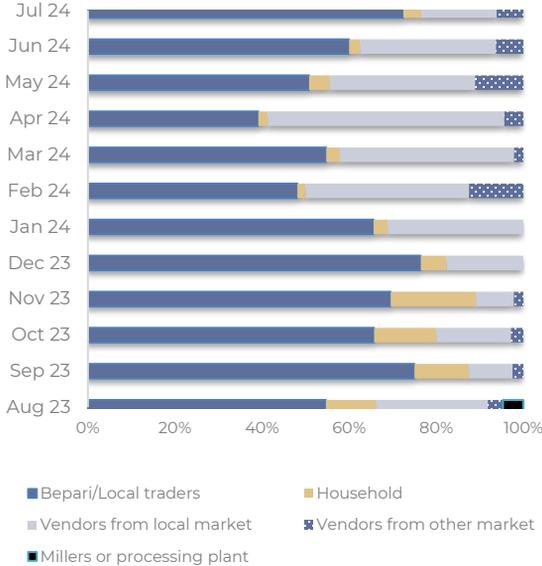


Figure 3: Buyers of farmers' products

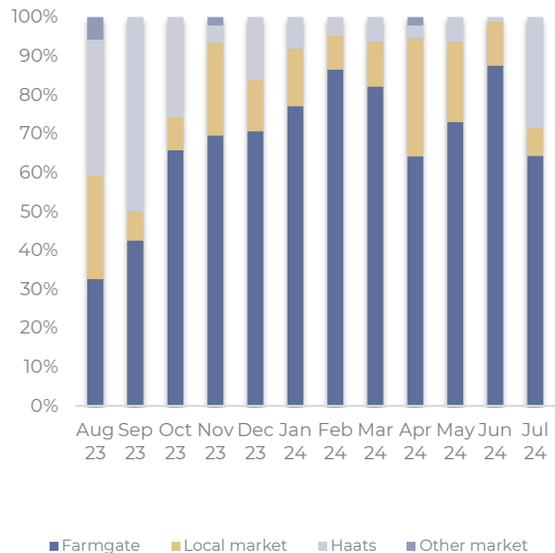


Figure 4: Selling places of farmers' products

Bepari, or local traders, consistently account for the largest share across most months, highlighting their role as the primary sales channel during the period (Fig 3). Local vendors emerge as the second most significant buyer group after Bepari.

Farmers primarily sell their produce at the farmgate (Fig 4). Local markets and haats also serve as important sales channels, with their contributions fluctuating over time, likely influenced by seasonal factors or changes in market accessibility.

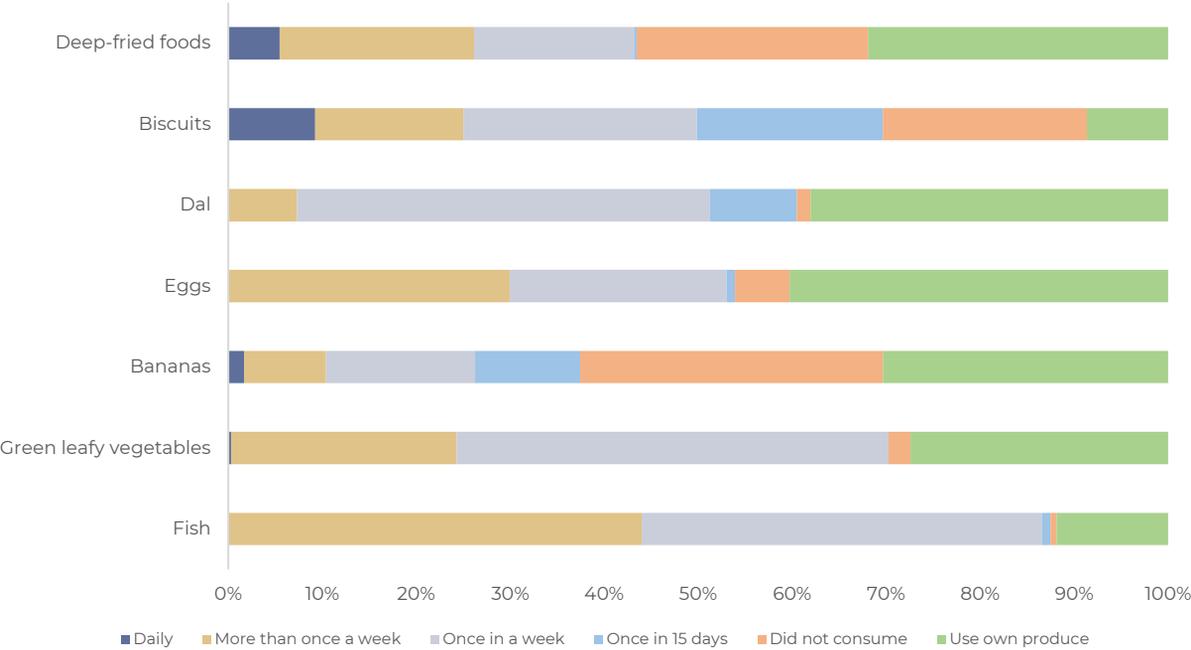


Figure 5: Consumers food purchasing patterns (% of the total sample). Note: “Used own produce” also includes the use of gifted produce.

The shopping patterns of consumers (Fig 5) revealed that a significant portion of their food purchases occurred on a weekly basis, with a large amount of food also coming from homegrown or gifted sources. Items such as fish, green leafy vegetables, eggs, and dal were predominantly purchased weekly.

For items like deep-fried foods, biscuits, and bananas, daily shopping accounted for a smaller but notable share. On average, consumers purchased deep-fried foods, biscuits, and bananas in relatively smaller quantities compared to other food items.

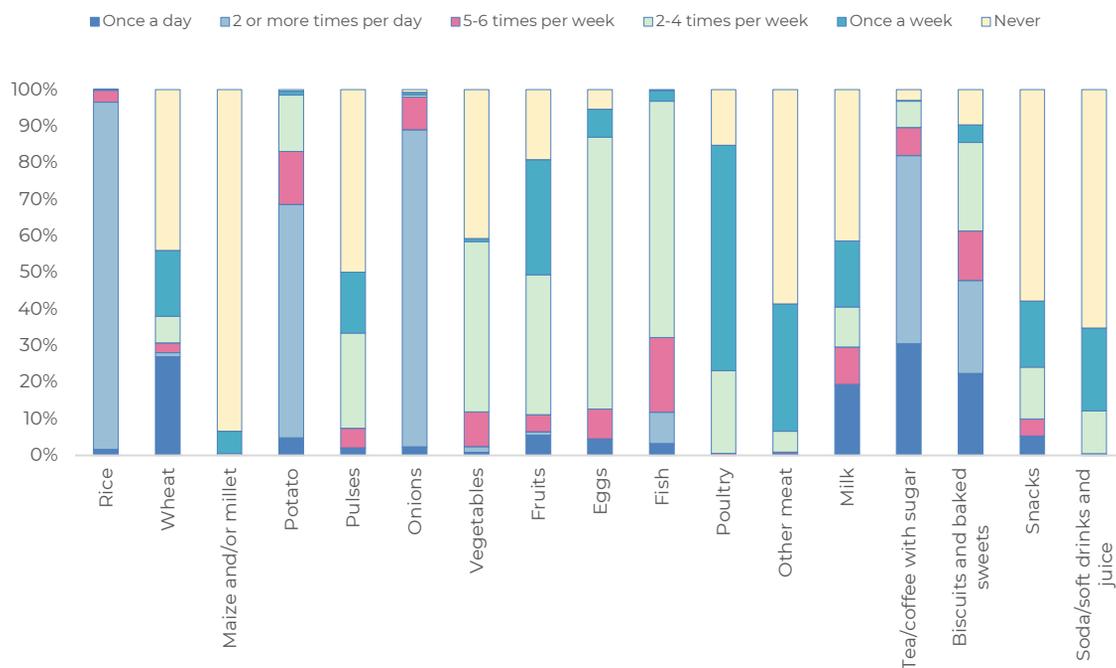


Figure 6: Average percent food consumption frequency for different foods (seven days recall period). *Note: in the category “vegetables” tomato, orange fleshed vegetables and green leafy vegetables are included. The category “snacks” includes deep fried foods, instant noodles and chips.*

From Figure 6, we observe that rice is consumed regularly, with a significant portion of consumers falling into the "two or more times per day" category. For wheat, most consumers fall into the "once a day" or "2–4 times per week" groups, though over 40% of respondents reported not consuming wheat at all. Maize and millet show a broader range of consumption frequencies, with noticeable portions falling under "2–4 times per week" and "once a week." However, more than 90% of consumers reported never consuming maize or millet. Potatoes, on the other hand, are consumed frequently, with most respondents reporting intake either "once a day" or "2–4 times per day."

The frequency of vegetable and pulse consumption is relatively dispersed, with a significant share falling into the "2–4 times per week" and "5–6 times per week" categories. In contrast,

onions are consumed more frequently, with most people reporting intake either "once a day" or "2–4 times per day."

Eggs and fish are consumed fairly regularly, primarily on a weekly basis, with the majority of people consuming them "2–4 times per week" or "once a week." While poultry and other meats are consumed less frequently, a notable proportion of respondents reported consuming them "once a week" or "2–4 times per week."

Tea or coffee with sugar is consumed often, with a significant number of people drinking it "once a day." Baked sweets and biscuits show a wider variation in consumption, ranging from "once a week" to "2–4 times per week." However, snacks, sodas, soft drinks, and juice are consumed less frequently, with the majority either consuming them on a weekly basis or not at all.

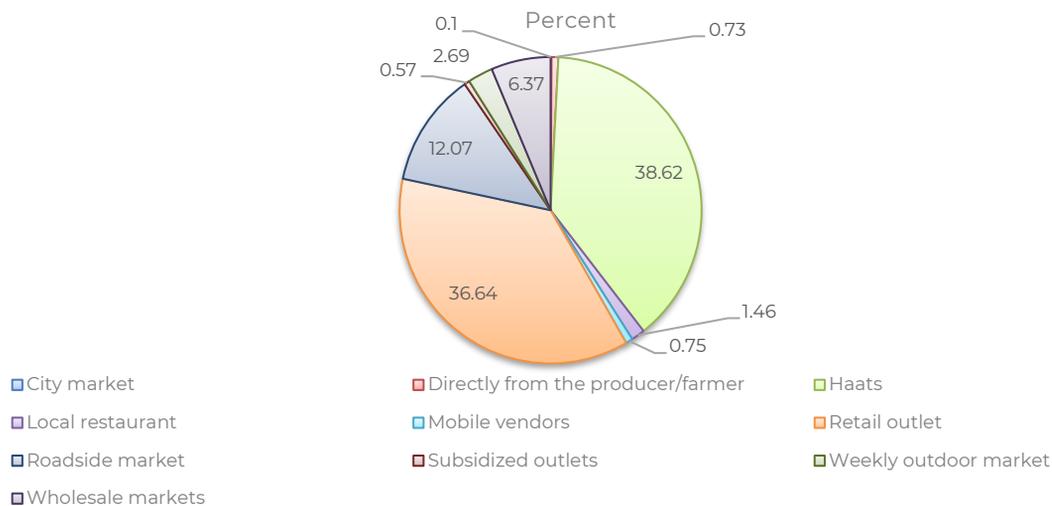


Figure 7: Purchasing sources of the consumers

The most important markets for consumers (Fig 7) to purchase food are **haats** and retail outlets. Roadside markets account for a smaller yet significant share. Other marketplaces,

including mobile vendors, local restaurants, and subsidized shops, play a smaller but notable role in consumers' shopping patterns.

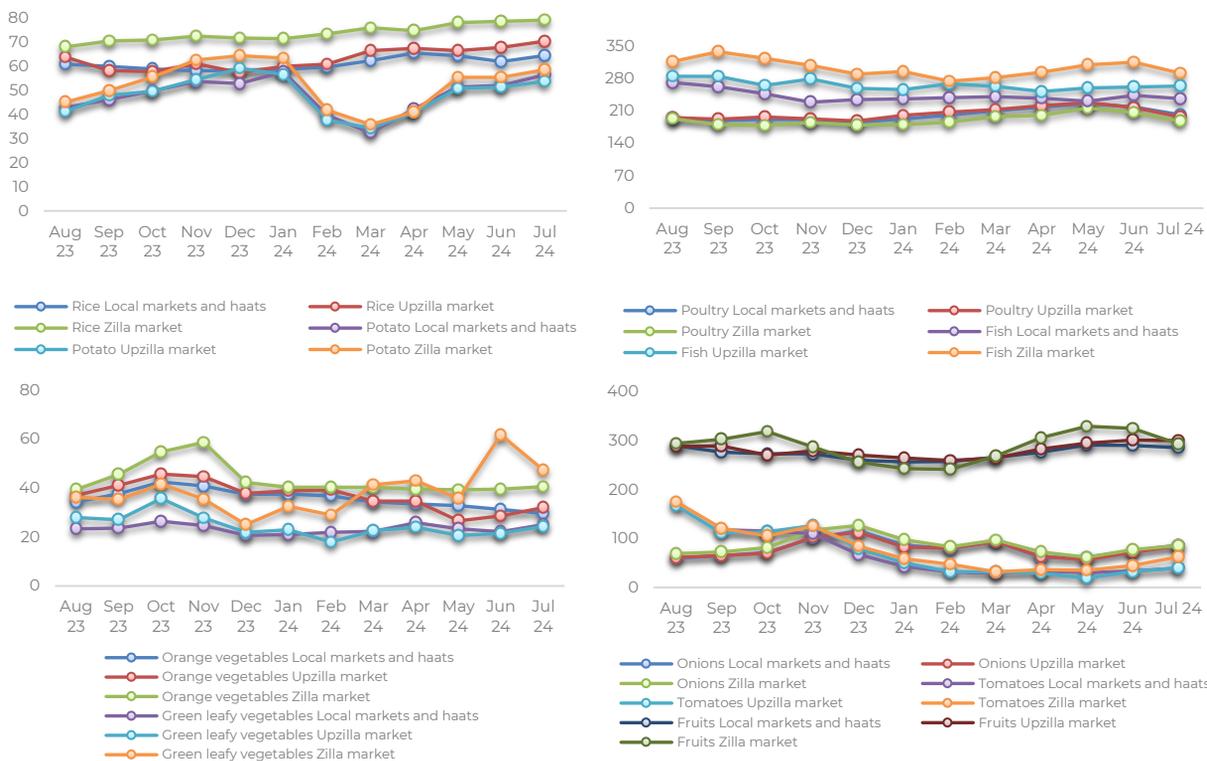


Figure 8: Temporal and spatial price variations of key commodities (price in BDT in different food markets)

Figure 8 (top left panel) shows a consistent upward trend in rice prices across markets, with Zilla markets reporting the highest prices, followed by slightly lower prices in Upzilla markets. Local markets and haats consistently offer the lowest rice prices. Potato prices exhibit greater fluctuations, with significant declines in February and March 2024, but Zilla markets again report the highest prices, while local markets and haats remain the cheapest.

Upzilla markets consistently report the highest poultry prices, while Zilla markets often have the lowest (Fig 8, top right panel). Fish prices are more volatile, with notable fluctuations throughout the year. Zilla markets typically offer higher-priced, premium-quality fish, whereas local markets and haats have the lowest fish prices.

Orange vegetable prices generally rise from August to October 2023, peaking in October and November across all markets (Fig 8, bottom left panel). A steady decline begins in November 2023, continuing until around July 2024. Zilla markets consistently have the highest prices, while local markets and haats offer lower prices

compared to Upzilla and Zilla markets. Green leafy vegetables show a similar price trend as that of orange vegetables, but a higher price in June in zilla market.

From Fig. 8 (bottom right panel), onion prices rise significantly from August to December 2023, peaking in December, with Zilla markets consistently reporting the highest prices. Local markets and haats tend to have the lowest prices, indicating more competitive pricing. The sharp price increase in November and December suggests seasonal factors affecting supply. Tomato prices are more volatile, with notable fluctuations. Prices peak in August 2023, followed by a sharp decline from October to February, reaching their lowest point in February 2024, likely due to seasonal variations in availability. Compared to onions, tomato prices are relatively more stable but still exhibit fewer significant fluctuations. Zilla markets consistently show higher prices, likely due to increased demand, superior quality, or higher transportation costs, indicating potential quality or accessibility challenges in these areas.

CONCLUSIONS

A significant proportion of farmers did not sell their produce for several months, highlighting the lack of storage or processing facilities, which limits their ability to market their crops beyond the immediate post-harvest period.

Price variations are noticeable across different market types (local markets, subdistrict, and district markets). Contrary to expectations, district markets generally have higher prices, likely due to factors such as better

quality, branding, or greater demand. Meanwhile, local markets and haats typically offer lower prices, making them more accessible to lower-income households.

Across seasons, staples such as rice, wheat, and potatoes are consumed frequently, while protein-rich foods like meat, fish, and poultry are consumed infrequently by most households, reflecting a diet dominated by starchy foods.

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Above: A little girl eats a freshly-made roti while the women of her family prepare more, at her home in the village of Chapor, in the district of Dinajpur, Bangladesh; photo: S. Majumder



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ABOUT TAFSSA

TAFSSA (*Transforming Agrifood Systems in South Asia*) is a CGIAR Regional Integrated Initiative to support actions that improve equitable access to sustainable healthy diets, improve farmers' livelihoods and resilience, and conserve land, air, and water resources in South Asia.

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