AGRICULTURAL PRODUCT RETAIL IN BANGLADESH

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ABSTRACT

Bangladesh is an agrarian country whose 17.3% of the gross domestic product is from agriculture. Although the government is based on agriculture, the country's farmers cannot get proper prices for their production due to improper marketing systems of agricultural products. This survey of four central fruit-producing districts covers three major fruits in Bangladesh and identifies the middlemen who cut down the significant profit. Those middlemen or intermediaries were responsible for the artificial supply to the market shortage, which made the fruits expensive to the consumers and made them pay more. This survey on jackfruit, mango, and banana markets identifies how those fruit farmers are destined to sell their fruits to the middlemen at an improper price and are neglected in the marketing systems. The foundation of the cooperatives and social media, which ensure the involvement of the farmers, can guarantee a proper price and make way for direct contact with the markets.

Keywords: Jackfruit, Mango, Banana, Retail market, Bangladesh.

INTRODUCTION

Retail refers to selling goods and/or services directly from a business to the end users for consumption. It comprises the final step in the supply chain. Retailing is a process of sourcing goods and/or services from producers, suppliers, or distributors and selling them to the end users. Retailing links the customer and the rest of the supply chain (Latif *et al.*, 2015; Palafox *et al.*, 2014).

Bangladesh's retail market and business environment can be separated into organized and unorganized retail. Organized retail is becoming popular with the new generation of convenience-seeking consumers, whereas the local grocery shops are still larger contributors to the turnover of consumer goods. Organized retail in supershops and online markets gradually turns those customers into their value chain and creates new customers. Organized retail is a rapidly growing industry throughout the world. In India, it has been recorded that this sector contributed 10% of the country's gross domestic product (GDP) and 80% of the overall employment. India is positioned as the 5th largest retail destination in the world (Kumar *et al.*, 2018; STATISTICS, 2021).

Agriculture is a prime sector of Bangladesh's economy, contributing 18% to the GDP and 62% to the nation's livelihood (Ramachandran *et al.*, 2017; STATISTICS, 2021). With the government's initiatives, crop production has increased by 2–3 times in the last couple of years. Still, the high production of agricultural products cannot be sustained without an efficient agricultural retailing system. Unfortunately, the producers of farm products are not in good economic condition as they do not get proper value for their products, which may be due to improper retailing systems. Various risk factors are associated with farmers, processors, suppliers, intermediaries, and retailers (Alam, 2018; Onumah *et al.*, 2024).

The study attempts to identify, evaluate, and explore the relationship between the sustainable agricultural industry and financial risk factors that regulate agriculture and agribusiness in Bangladesh. The study focuses on three dominant fruits, mango, jackfruit, and banana, for the retailing system in Bangladesh. According to the Bangladesh Bureau of Statistics, 1214597 metric tons (MT) of mangoes, 826151.76 MT of bananas, and 1097001 MT of jackfruits were produced in 2020–2021 (STATISTICS, 2021). A structured questionnaire was designed to conduct a random sampling survey in some selected areas. The collected data has been screened, decontextualized, re-contextualized, compiled, and presented using appropriate statistical analysis at a 5% significance level.

The purpose was to collect information on the retailing system of agricultural products in Bangladesh. The study is expected to provide a conceptual base for improving agricultural product retail to support the original producers (farmers) at the rural level.

METHODS

This is experimental research described in PubMed (ID: 26740990) where a semi-structured verbal interview was organized to collect data from a small group of fruit farmers (Mango, banana, and jackfruit) in the summer session (June–July) of 2024 (Asaduzzaman, 2022; Rodgers *et al.*, 2016). The data are collected by a structured questionnaire (attached in the supplementary materials), supervised and authorized by the hierarchy of the State University of Bangladesh to identify and evaluate the current situations of the fruit farmers in the targeted regions. The survey was conducted on 300 fruit farmers harvesting the selected fruits. Several types of questions are included in the questionnaire, some of which are dichotomous and others open-ended. The secondary data were collected from research articles using the World Wide Web, which utilized Google's search engine. The research findings did not target qualitative information but rather quantitative data, which was mainly used to conclude the qualitative decision. The quantitative results may not fully represent the broader population due to the small sample size and limited interaction time with respondents. However, these data are essential for exploring this emerging issue at the primary stage. The analysis is based on the primary surveyed data collected from the farmers from the studied locations, where the secondary data are only used to support the emerging problems.

Study areas

The study areas covered four districts: Rajshahi, Chapainawabganj for mango, Tangail for banana, and Gazipur for jackfruit. These regions
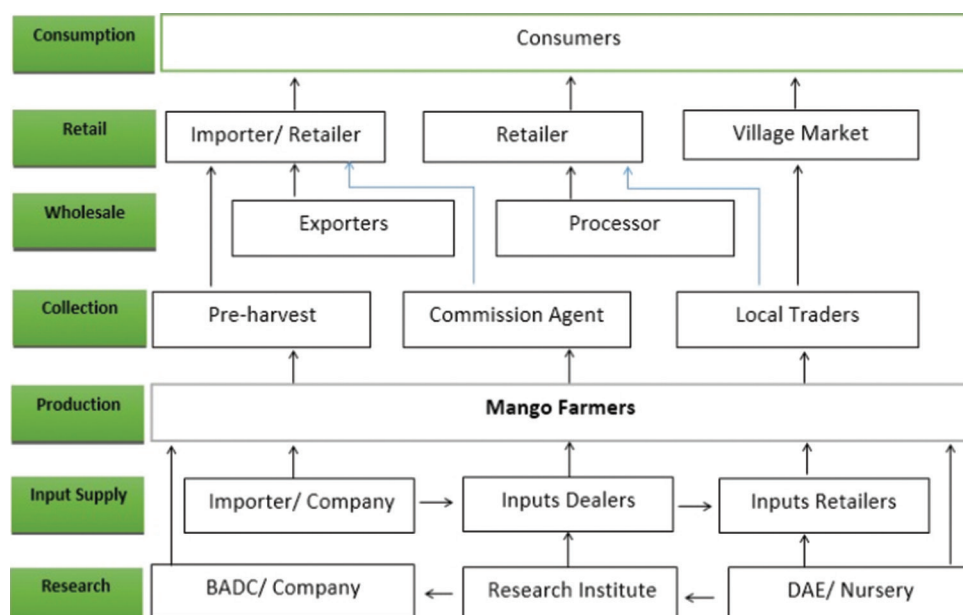
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Fig. 1. Supply chain of agricultural fruits (mango) in Bangladesh (Alam, 2018)

were selected because fruits are intensively grown in these regions compared to other parts of Bangladesh.

Statistical analysis

The collected data were analyzed using Microsoft ® Excel 2021/XLSTATC (Version 2024.3, Addinsoft, Inc., Brooklyn, NY, USA). A single-factor analysis of variance was carried out for this study.

RESULTS AND DISCUSSION

Mango is the most common fruit worldwide, particularly in tropical countries such as Bangladesh. It is harvested in summer. The production of mangoes increases yearly in our country, which was 286823 acres, and the production was 1214597 MT in the session of 2020–2021 (Parvin *et al.*, 2013). There are many systems for retailing mangoes in Bangladesh. A flowchart for the mango supply chain is shown in Fig. 1. It was found that several middlemen, such as manufacturers' agents, commission agents, local traders, village markets, selling agents, purchasing agents, wholesalers, and retailers, cause the increment of mango prices in the retail market.

Most of the mango farmers were from Rajshahi and Chapainawabganj, and their production was found in an organized way in most cases, which is also indicated by different previous research (Fig. 2). This study revealed that 73% of mangoes are produced in an organized way. In comparison, 27% of mangoes are produced in an unorganized way. In the case of retailing, Fig. 3 shows that 55% of mangoes are unorganized, 36% are retailed in the online system, and the remaining 9% are retailed in chain shops. The selling price was reported to be the highest (87.5 Taka/kg) in online selling, whereas the lowest value (40 Taka/kg) was found in the unorganized selling system. Selling prices fall between 40 and 62.5 Taka/kg, 50–87.5 BDT/kg, and 62.5 Taka/kg for unorganized, online, and chain shop selling systems, respectively. Although the online buying price is below 90 Taka/kg, due to peer pressure, the selling price of the mango varies from 120 Taka to 140 Taka. Peer pressures are different in fruit fairs and wholesalers in general cities in Bangladesh. Due to peer pressure, the online marketing of mangoes increases, but the farmers' profit is too low after different kinds of harvesting costs. The previous value chain and supply study characterizes the financial benefit-cost proportions for mango farmers as 1.69: 1. Only 22.35% of added value is taken by mango farmers. In comparison, middle traders and retailer shop owners take 23.29% and 54.36% of the total added value, respectively (SETU, 2010).
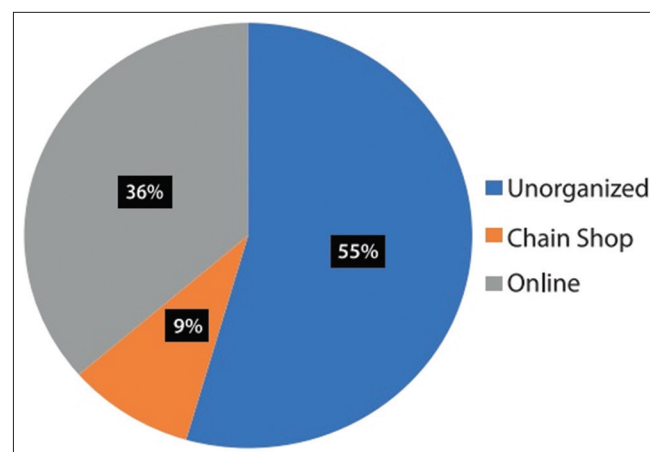

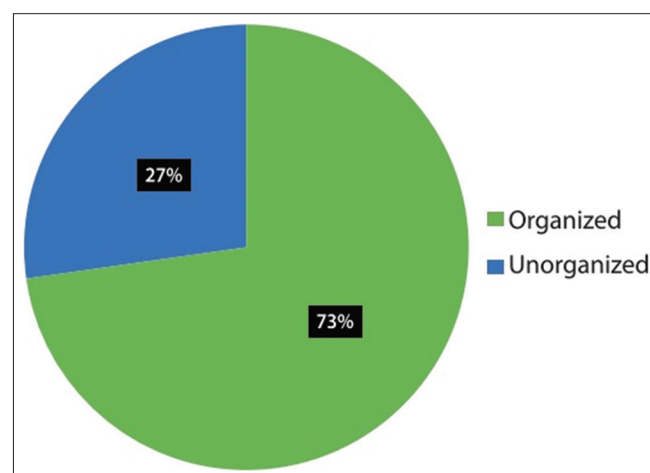**Fig. 2. Production system of mango**

Fig. 3. Selling system of mango

Jackfruit (Artocarpus heterophyllus Lam.) belongs to the family Moraceae, one of the most popular (national fruit of Bangladesh) tropical

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fruits in Bangladesh. Its harvesting period is mainly summer (mid-April to mid-June) sessions, but it is available in Bangladesh from April to September. Typically, 25–28 saplings are harvested in one acre of land. During the 2018–2019 harvesting session, 41014 acres of land were harvested where jackfruit production was more than 1037877 MT, which decreased in 2019–2020 but increased in 2020–2021 (Alam, 2018). However, this study found that most jackfruit production and retail are unorganized, and the farmers harvest the jackfruits surrounding their living houses. Only a few farmers harvest the jackfruits in the garden as organized procedures. In Khulna, the farmer recorded the production as 2.5 MT. It was reported that the jackfruit was sold in two unorganized ways, with the selling price of 2 and 15 Taka/kg for the Jashore and Khulna regions, respectively. From the market analysis and different chain shops in Bangladesh that offer jackfruits to consumers, we found that the selling prices vary from 50 to 60 Taka. There are several reasons for that; at first, we can indicate that there is no industrial utilization of this fruit, though it is one of the most productive fruits in Bangladesh. Second, no online service holders or chain shops show interest in this fruit. These are the main reasons for selling this fruit in an unorganized way. Previous studies indicate that over 18% of jackfruit production is lost during harvesting and post-harvest handling, with an additional 3% wastage occurring in the marketing phase due to inefficient or disorganised distribution practices.

Regarding bananas, the farmers organized production in the Tangail district. The farmer from Khulna reported both organized and unorganized production capacity, which is decreasing in different regions in Bangladesh due to proper post-harvest technology and proper marketing policy (Prodhan *et al.*, 2022). The production was found to be the highest (5200 kg) by the farmer from Khulna, with the reported selling price of 40 Taka/kg. The banana production by the farmers from Tangail was recorded at 3000, 2000, and 2700 kg, reporting the selling price of 400, 370, and 400 Taka/cluster of plantains. Like jackfruits, bananas have no industrial utilization, and there is no organized way for farmers to sell them to consumers, which results in a big difference in the consumers' payment prices per cluster of over 800 Takas. Without proper management, the organized harvesting also demotivated the farmers from farming the bananas.

CONCLUSION

The study exposes that there is an opportunity for farmers to grow not only the stated fruits considered in this study but also others in Bangladesh. In the existing retailing system, different losses, such as post-harvest, transportation, handling, and marketing losses, are very high. As farmers are not organized and are dominated by the middlemen, their incomes are below the standards. This supply chain analysis has identified the limitations and opportunities of high-value crops and fruits. The study has recommendations for governments, policy-makers, researchers, and implementers. Organizing farmers in cluster groups according to varieties and regions to improve their negotiating power and reduce the role of the syndicates. Establishing different backing policies and facilities for the improvement of the farmers. Ensuring the government's agricultural extension program increases production and ensures different noble and modern farming systems. Providing modern training on harvest and post-harvest management systems and practices, transportation systems, and upgrading storage facilities. Linking farmers to the consumer market, utilizing online marketing and chain super shops, and reducing the intermediaries ensures a food safety management system among farmers and consumers. Support an agro-based industry that helps process the fruits and make them available annually. Improving the supply chain management to avoid unofficial tolls. Implementing the recommendations will help farmers,

traders, stakeholders, and consumers minimize problems and facilitate corrective actions and measures for improvement. Policy support from local and national governments is mandatory to minimize these issues and establish more effective supply chain management.

AUTHOR'S CONTRIBUTION

Data curation, formal analysis, investigation, resources, and writing-original draft: Tupura Khatun. Conceptualization, methodology, supervision, visualization, writing-review, and editing: Md. Asaduzzaman.

CONFLICTS OF INTEREST

The authors have declared that no competing interests exist.

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