Pineapple Production and Its Marketing Channels in Bangladesh: Present Status, Prospects and Challenges

ABSTRACT

Pineapple production offers a unique opportunity for the farmers due to the favorable climatic conditions in Bangladesh. Consequently, pineapple cultivation in Bangladesh round the year, has picked up on quite a large scale. The nutritional condition of Bangladeshi individuals who are severely malnourished may be improved by pineapple. The cultivation of pineapples is trending upward. Producing pineapples on the same site benefits farmers significantly more than growing other crops. Also, high return in comparison to other existing crops, easy cultivation process, possibility of intercropping, favorable weather condition are the main reasons behind its increasing production. Growing demand for chemical-free farm fresh pineapples among consumers has led farmers to pursue balanced use of pesticides and ripening agents. However, the demand for fertilizers and other chemicals has been increasing. Despite the fact that farming has grown highly lucrative, there are apparently many marketing and production related challenges that farmers must overcome. It is necessary to enhance Bangladesh's pineapple production and marketing system for the benefit of both producers and consumers, as it is ineffective and disorganized. Policymakers, extension agents, researchersand other actively involved marketing professionals should provide feedback to enhance their approach for raising future fair pricing by increasing production and marketing effectiveness. Infrastructure and technological investments, marketing channel diversification, farmer capacity building, supportive legislative reforms, and enhanced market intelligence systems to boost competitiveness should all be included in sustainable pineapple farming methods, which can make pineapple farming more profitable.

Keywords: *Bangladesh, Challenges, Marketing Channels, Opportunity, Pineapple Production, Status.*

1. INTRODUCTION

The pineapple (*Ananas comosus*), a tasty fruit from the tropics that is high in nutrients and has an excellent flavor, is a member of the Bromeliaceae family[1]. It is among the world's most significant commercial fruit crops [2]. As in several other parts of the world, pineapples are widely available in Bangladesh. It has a great flavor, high nutritional content, and an extremely pleasant texture. Every year Bangladesh is producing a growing number of fruits, including pineapple [3]. Following bananas and oranges, it ranks as the third most popular fruit consumed globally [4]. It is edible like fresh fruit or after processing, transformed into a more appetizing drink or juice [5, 6]. As pointed out byHasan et al.[7] andKader et al.,[8] pineapple offers considerable nutritional and therapeutic benefits. Pineapple is low in fat and sodium, and high in vitamins. The nutrients A, B, and C found in pineapples are abundant [9]. It also includes the unique enzyme "bromelin," which aids in the digestion of protein [10, 11]. Among all the fruits cultivated in the whole nation, pineapples come in fourth place in terms of production and total area. During 2020-21 the total cultivated land of pineapple was 35 thousand acres where the total production was 2.08 lakh tons [12]. The phrase "queen of fruits" is occasionally used to describe pineapple [4].The three primary pineapple cultivars cultivated in Bangladesh are Honey Queen, Giant Kew and Ghurasal; from a business perspective, Honey Queen and Giant Kew are the most significant. Although the climate in Bangladesh is perfect for growing pineapples, the best places to grow them are in districts like Bandarban, Moulvibazar, Sylhet, Dhaka, Gazipur, Khagrachari, Tangail, Rangamati, Mymensingh and Chattogram [7]. Pineapple growing has a bright future in this nation. Exporting these pineapples is expected to bring in a significant quantity of foreign exchange.

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In spite of this, pineapple growers have a number of challenges when trying to sell the fruit they grow. Here, moneylenders and intermediaries are snagging the farmers and preventing them from realizing their full profit. Because of this, producer level price fluctuation has decreased and their share has also become more moderate [13]. This is because pineapple production and marketing lack comprehensive planning [14]. A marketing channel is an association of affiliated businesses that collaborate to provide a good or service intended for use or absorption. According toJengka [15], inadequate market information, market distance, restricted personal mobility and poor infrastructure all hinder smallholder farmers' ability to market their products. Yet, seasonal gluts and inadequate marketing channel management methods result in the annual loss of a significant proportion of gathered produce. Many pineapples are ruined annually as a result of inadequate storage and transportation facility. In the pineapple supply network, to increase profit, producers must choose high-value markets such as exporting and processing-focused channels of marketing.Arinloye et al.,[16] state that there are four main channels for marketing: markets focused on processing, export fresh pineapple, urban, and rural areas. The most common of them are sales made directly to consumers, direct-to-institution channels, and intermediated outlets [17]. If government and other concerned agencies pay more attention in creating enough processing centers or building facilities for marketing and exporting pineapples these problems will be resolved. Based onHasan et al.,[7] analysis in an effort to gain control of the market and make additional money, some dishonest traders inject pineapples with high levels of formalin, carbides, and hormones. However, the consumer starts consuming less pineapple after a while. This significantly affects pineapple production. However, since COVID-19, people's demand for pineapples has increased again [18]. Hopefully, pineapple production in the nation is on the rise despite all of these issues. Therefore, pineapple growing will become a profitable business if effective management is implemented by accurately identifying all the concerns. This review article explores the dynamics of pineapple production and its marketing channels within the context of Bangladesh's agricultural landscape. It provides a thorough examination of the sector's current state, future prospects, and obstacles. By analyzing the literature already in circulation, it offers insightful information about the opportunities and challenges influencing the development of pineapple cultivation and trade in the nation.

2. METHODOLOGY

In order to construct this review paper, studies on the current state, future potential, and difficulties associated with pineapple production were reviewed. Particular attention was paid to the pineapple sector's marketing channels in Bangladesh. So, with an emphasis on commercial pineapple production, the authors carried out an interactive review. The authors maintained fifteen years of research material, worth of research papers, reviews, book chapters, thesis, research short communications, online sites, and industrial short communications about the state of pineapple production, profitability and marketing systems, as well as their distribution, abundance, and recent prospects. Following the collection of all pertinent data, each item was examined, evaluated, and considered in light of the main goal. The conclusion suggested more research to establish the groundwork for Bangladesh's sustainable pineapple production.

3. RESULTS AND DISCUSSION

3.1 Garden area under fruits in Bangladesh, 2015-2016

Bangladesh grows a lot of fruits that are high in nutrients. The most common fruit crops in Bangladesh, measured by area covered are jackfruit, guava, litchi, banana, mango, watermelon, pineapple and jackfruit. When it comes to area coverage, bananas (32%) are in first position. Pineapple (9%) is at fourth place in this instance (Fig. 1). However, pineapple production and cultivated area have both increased since COVID-19 [7].Because the nutritional and medicinal properties of pineapple are now more widely known.

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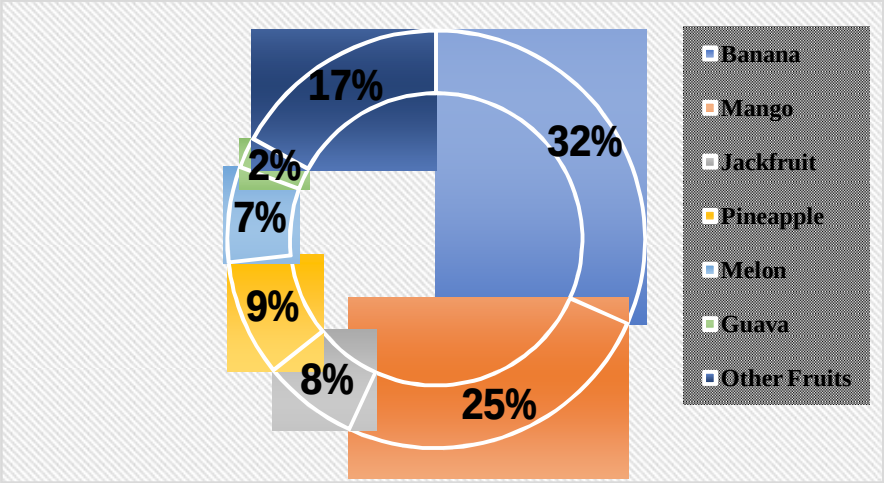

Fig 1. Distribution of fruits based on garden area coverage in Bangladesh

Source: BBS [12]

According toBBS [12], pineapple ranks second only to bananas in terms of yield per acre (Fig. 2). Due to its improved food value pineapple is commercially cultivated round the year and also treated as high value crop for its luxury type cotton leaf fiber [19]. Pineapple may be used to make a wide range of value-added products, such as jam, jellies mixed jam as well as other products, which ensures fair prices for the community of farmers and creates jobs for people living in the countryside [13]. That's why farmers are turning towards pineapple cultivation day by day.

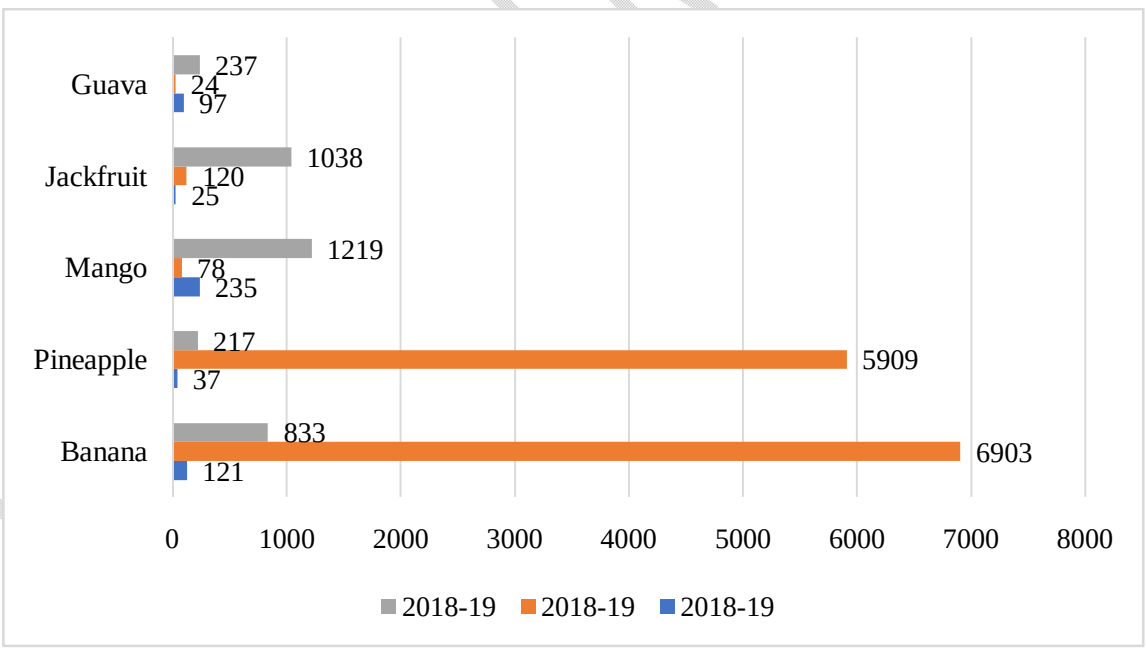

Fig 2. Area, yield rate and production of fruits in Bangladesh

Source: BBS[12]

3.2 Area, production and yield of pineapple

The districts of Tangail, Gazipur, Mymensingh, Sylhet, Moulvibazar, Chattogram, Bandarban, Khagrachari and Rangamati are among those with significant pineapple plantations[18]. In 2018-19 total area covered by pineapple production in Bangladesh was 36800 acres where the production was 217439 ton. In the same year, the yields in Dhaka Division (138488 ton) and Rajshahi Division (120 ton) were found to be the highest and lowest respectively (Table 1). The data pertaining to pineapple production in Bangladesh has been trending upward. In the years 2016–2017 and 2018–2019, respectively, a total of 35483 acres and 36800 acres of land were used for pineapple cultivation, yielding an overall yield of 211833 ton and 217439 ton (Table 1), 21341 acres in Dhaka division (Table 1), of which 18107 acres are in Tangail district (Table 2), were planted to pineapples in 2018–2019[12].

Table 1. Area and production of pineapple by division during 2016-17 to 2018-19

Division	2016-17		2017-18		2018-19	
	Area (acres)	Production (ton)	Area (acres)	Production (ton)	Area (acres)	Production (ton)
Barishal	314	575	339	603	315	542
Chattogram	9883	51638	9991	51544	10040	52009
Dhaka	20281	133291	19778	129375	21341	138488
Khulna	216	651	241	731	228	675
Mymensingh	2633	15807	2641	16072	2673	15837
Rajshahi	59	189	54	179	60	120
Rangpur	134	365	164	504	158	470
Sylhet	1963	9317	2029	9393	1985	9298
Bangladesh	**35483**	**211833**	**35237**	**208401**	**36800**	**217439**

Source: BBS [12]

In Chattogram Division, around 10040 acres of farmland were used for pineapple production, which comprises hilly area consists of Khagrachari, Rangamati and Bandarban. The third highest growing area was Sylhet Division where pineapples were cultivated in 2673 acres including Habiganj and Moulvibazar districts (Table 2).

Table 2. Area and production of pineapple by district during 2016-17 to 2018-19

Districts	2016-17		2017-18		2018-19	
	Area (acres)	Production (ton)	Area (acres)	Production (ton)	Area (acres)	Production (ton)
Bandarban	1507	6316	1526	6204	1529	6215
Chattogram	2532	11080	2616	10415	2623	10457
Cox's Bazar	327	2117	332	2152	327	2136
Khagrachari	1976	6645	2000	7290	2054	7596
Rangamati	3317	25027	3304	25044	3328	25235
Gazipur	2897	11322	2880	10873	2858	10449
Narsingdi	300	1357	307	1283	335	1332
Tangail	17007	120352	16535	117011	18107	126538
Mymensingh	2495	15305	2497	15636	2495	15304
Habiganj	536	1949	540	1950	513	1855
Maulvibazar	1031	6089	1092	6200	1110	6308
Sylhet	372	1241	370	1207	362	1135

Source: BBS [12]

Bangladesh has a climate and weather that are ideal for producing pineapples. However, hilly regions such as Moulvibazar, Sylhet, Chattogram, Khagrachari, Bandarban, Rangamati as well as Tangail,

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Gazipur and Mymensingh, are excellent places for growing it. Among these, pineapple is widely grown in the Madhupur tract, particularly in the Tangail District's Madhupur Upazila. Table 3 revealed that Tangail district ranked first in pineapple cultivation. Tangail district contributed to 49% of all pineapple farmed area and 58.19% of the overall production in 2018–19[1].

Table 3. Percent area and production of pineapple by district during 2017-18 to 2018-19

Districts	Area (% of total pineapple cultivated area)		Production (% of total pineapple Production)		Rank
	2017-18	2018-19	2017-18	2018-19	
Tangail	46.93	49.20	56.15	58.19	1st
Rangamati	9.37	9.04	12.02	11.60	2nd
Gazipur	8.17	7.77	5.22	4.81	3rd
Chattogram	7.42	7.13	5.00	4.81	4th
Mymensingh	7.09	6.78	7.50	7.03	5th
Khagrachari	5.68	5.58	3.50	3.49	6th
Bandarban	4.33	4.15	2.97	2.86	7th
Maulvibazar	3.10	3.02	2.98	2.90	8th
Habiganj	1.5	1.39	0.94	0.85	9th
Sylhet	1.05	0.98	0.58	0.52	10th

Source: BBS [12]; Hossain & Islam [1]

The Tangail, Khagrachari, Bandarban and Rangamati districts have more ideal soil qualities, particularly with regard to acidity for pineapple growth. That explains why pineapple from those areas had a higher yield and was of higher quality. However, the lack of sufficient soil fertility, climate, topography, drought and salinity became the main factors restricting pineapple production in the other portion of the country specially Rajshahi and Barisal.

3.3 Reasons for cultivating pineapple

Pineapple production is a profitable business.Balogun et al.,[20] also asserted in their study that pineapple cultivation is a lucrative business that enhances the standard of living for smallholder farmers. That's why many farmers produce pineapple rather than other crops.Hasan et al.,[18] found in his study that, the primary reason for growing pineapple was its larger profit margin (82.0%) when compared to other crops (Fig. 3). Because pineapples are versatile fruits, growing them is a profitable business that provides farmers with a reliable source of revenue[21]. This findings are also in line withAlam et al., [22].

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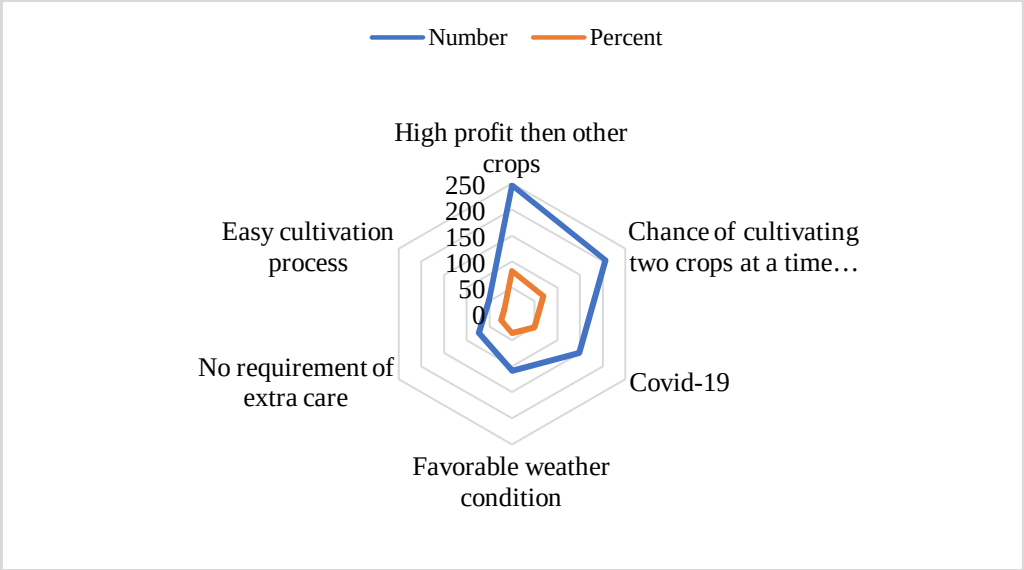

Fig 3. Reason behind pineapple cultivation

Source: Hasan et al.,[18]

The possibility of intercropping (growing two crops at once) was cited by almost 69.0% of farmers as a key component of pineapple cultivation. Covid-19 (49.0%) was cited as the third cause. Pineapple demand surged during COVID-19. During lockdown, while all export imports have been blocked due to the government's goodwill, growers of pineapples have been able to sell their produce at a premium price. 36% farmers stated that having good weather encouraged them to grow pineapples. Easy cultivation method (17.0%) favored pineapple cultivation and lack of need for extra care (24.0%) were also opined by the farmer.

3.4 Profitability of pineapple production

Though pineapple growers face different challenges but its production is profitable. Uddin et al., [23] found pineapple production as a profitable business in their value chain analysis in Tangail district. In Tangail district the average BCR of pineapple production was 1.70 but though farmers face various problems like lack of capital, processing industry or factory storage of pineapple marketing, natural calamities etc. [24]. But in case of Sreemangal, Moulovibazar the Benefit-Cost Ratio (BCR) was 1.48, indicating that pineapple farming was profitable for the farmers [25]. In a study of Suhaimi and Fatah, [26], the result showed that the pineapple production business is profitable and returning more to the farmer than the original investment in terms of purchased inputs as indicated by benefit cost ratio of 1.72.Sultan et al.,[27] found in their study that about 80% of pineapple growers grow papaya, banana, zinger, turmeric and aroids as intercrops with pineapple, because pineapple mono-crop and pineapple inter-crops production are profitable among them pineapple-inter crops cropping pattern is more profitable than pineapple-mono crop. Another study was conducted byHoque et al., [28]. Where they found that pineapple-papaya cultivation was relatively more profitable than sole pineapple and pineapple-banana-arum cultivation. The profitability become higher when pineapple growers adopt chemical free pineapple production and their profit increases to a BCR of 2.45. But there is still an opportunity for pineapple farmers to improve the profitability by minimizing the cost without compromising yield with present technologies available [29].

3.5 Present status of pineapple cultivation

In Bangladesh, pineapple production is trending significantly. The need for seedlings, fertilizers, insecticides and hormones in pineapple cultivation has expanded along with its growth.

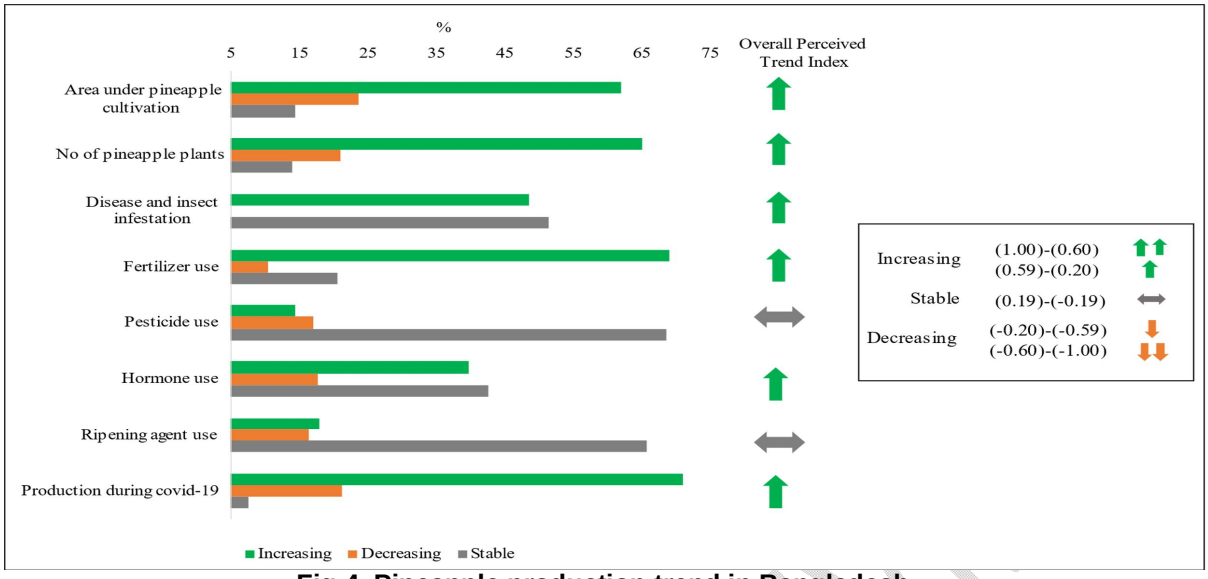

Fig 4. Pineapple production trend in Bangladesh

Source: Hasan et al.,[18]

Which is clearly stated by Hasan et al.,[18] as a trend index in their study. Fig. 4 shows the total observed trend index for pineapple production. The usage of ripening agents and pesticides is evident in every issue, indicating a scenario that remained constant or stable.Issues including the area used for pineapple production, the quantity of pineapple plants, disease and infestations of insects, use of fertilizer and hormones and yield during COVID-19 also reflect an increasing tendency. Similar findings were also found byHossian & Abdullah, [30].Results contained in Fig. 4 also shows that ripening agents and pesticides should be used in moderation. The reason for this is the rising demand from consumers for fresh pineapple grown without the use of chemicals.

3.6 Agrochemicals use index (AUI) of the pineapple farmers

To increase productivity, pineapple growers employ a variety of agrochemicals. Additionally, they employ growth-boosting chemicals to produce large fruit, and they treat immature fruit with hormones to facilitate early harvesting. An index was constructed byAlam et al.,[22] to provide a clear picture of the respondent pineapple producers' use of individual agro-chemicals. Fig. 5 displays the results of the respondent farmers' agrochemical use index. Farmers use Urea, TSP, MoP, Gypsum, Zinc, Sulfur and Boron for better yield.

Among the agrochemicals utilized, urea placed first based on its AUI score.Uddin et al.,[23] also discovered in their study a similar outcome. However, MoP and TSP placed third and second, accordingly. While boron came in last. Conversely, out of all the agrochemicals, the hormone suprfix placed second and the ripening agent calcium carbide ranked third. Ethylene, sevin, gibberellic acid and formalin came in at positions four, five, six, and seven, respectively. Fig. 5 also shows that ripening agents and hormones are often utilized agrochemicals in pineapple production in Bangladesh, in addition to fertilizers.

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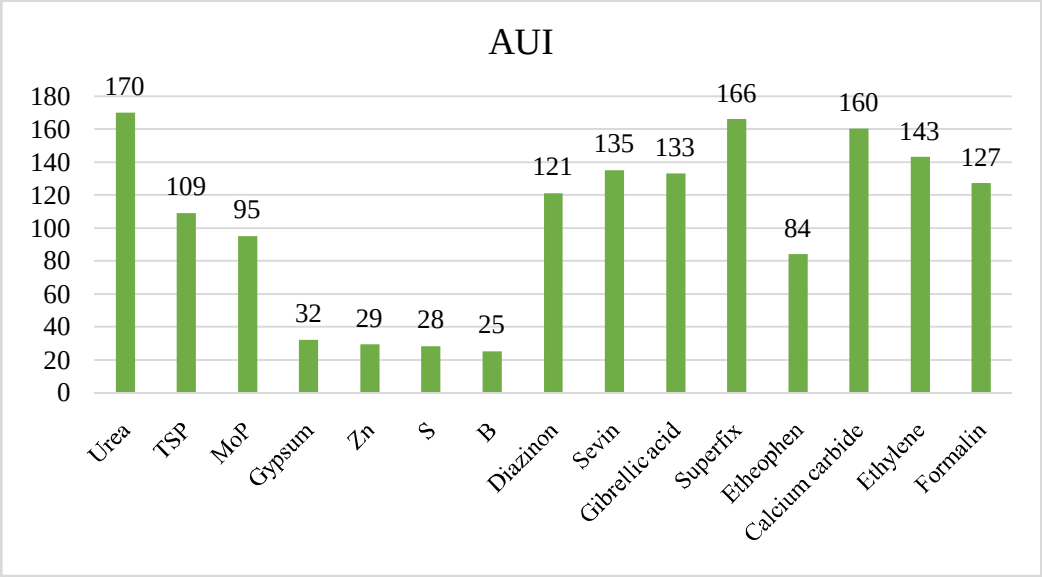

Fig 5. Rank order of the agro-chemicals based on their use index

Source: Alam et al., [22]

According to Joy et al.,[31] , respondents utilized the organophosphate and carbaryl groups of pesticides to eradicate pest insects such as termites, mites, thrips, fruit borer, beetles, fruit flies, and white grubs. Farmers also used higher doses of formalin to prolong the shelf life of their produced fruits.Proshad et al.,[32]; Sarker & Itohara, [33] obtained identical results in the study they conducted.

3.7 Pineapple marketing channels and different value chain actor

Pineapple growers use different marketing channels according to their demand. The routes that pineapple takes from the point of initial manufacturing to the moment of sale are known as marketing channels. Pineapple passes through various tiers of actors in the marketing process. Retailer, *Bepari*, *Aratdar* and *Faria* were among the entities involved in the marketing system as pineapple dealers. Jahan, [34] carried out an investigation in Tangail to identify the pineapple sector's current marketing channel. The investigation's outcome is stated below.
Channel 1: Farmer→ Consumer
Channel 2: Farmer→ Retailer→ Consumer
Channel 3: Farmer→ *Faria*→ Retailer→ Consumer
Channel 4: Farmer→ *Faria*→ *Bepari*→ Retailer→ Consumer
Channel 5: Farmer→ *Faria*→ *Bepari*→ *Aratdar*→ Retailer→ Consumer

Pineapple marketing channel is not like other fruits such as mango and litchi due to the absence of processing industries. According to a study of Uddin et al.,[23], farmers primarily grew pineapple in their production field, on their own and sold it to different intermediaries like *Faria, Bepari*and*Aratder* or directly to the consumers also. Here, each actor carried out a value-adding task of some kind, such as cleaning, sorting, preserving and so on. The final users of value-added pineapple goods were the consumers. So "Farmer- *Bepari- Aratdar*- Wholesaler- Retailer- Consumers" is the most used marketing channel found by the investigator.

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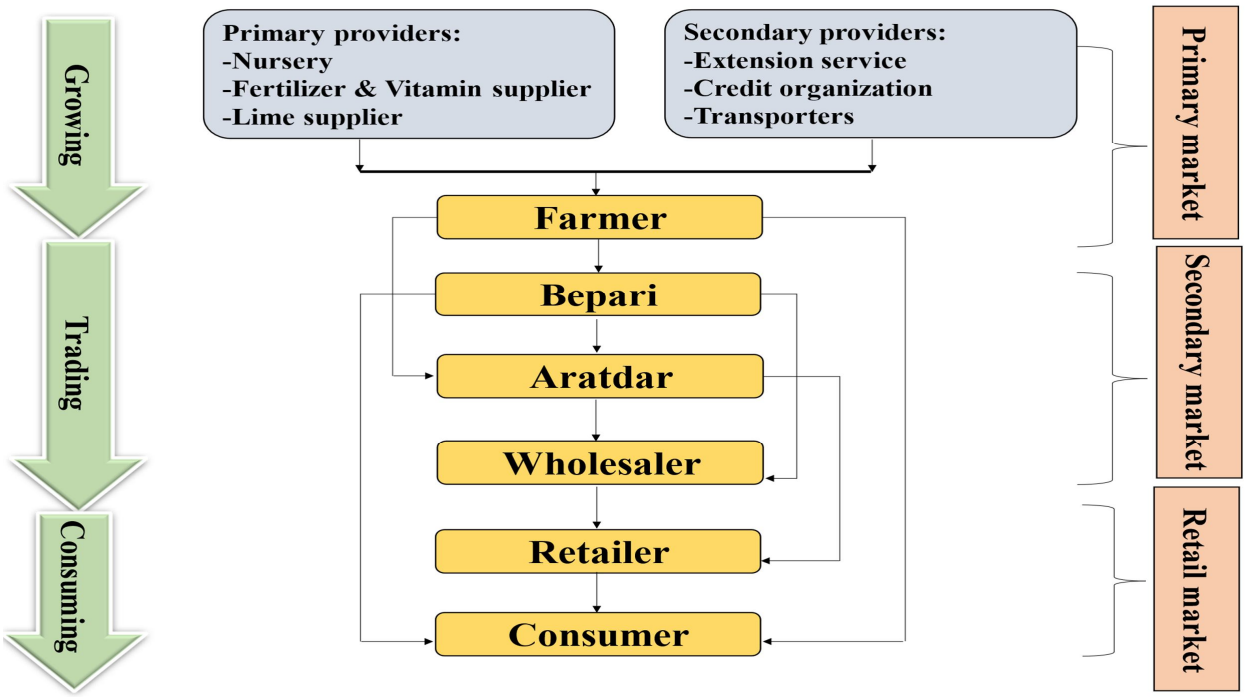

Fig 6. Marketing channel of pineapple with different value chain actor

Source: Uddin et al.,[23]

Though other researcher found different findings in their study (Table 4). Based onHasan et al.,[18] findings, farmers use the marketing channel "Grower- *Faria*- Bepari- *Aratdar*- Wholesaler- Retailer- Consumers" most to sell their produce. Despite the fact that employing this channel reduces their earnings. Nevertheless, they use this route more frequently to save time and stay out of trouble. Because of the pineapples' short shelf life, growers are forced to market their goods and depend on the middleman[35].

Table 4. Distribution of the pineapple farmers based on marketing channel use

Sl#	Marketing channels	Number (n=300)	Percent	Rank
1	Grower- *Faria- Bepari- Aratdar*- Wholesaler- Retailer- Consumers	80	26.67	1st
2	Grower- *Faria- Aratdar*- Wholesaler- Retailer- Consumers	61	20.34	2nd
3	Grower- *Aratdar*- Wholesaler- Retailer- Consumers	58	19.33	3rd
4	Grower- *Aratdar*- Retailer- Consumers	43	14.33	4th
5	Grower- *Bepari*- Consumers	31	10.33	5th
6	Grower- Consumers	27	09	6th

(Source: Hasan et al., [18]

3.8 Prospects for producing pineapples

There is a huge scope of pineapple production due to the climate and soil condition of Bangladesh which might lead to the creation of numerous job possibilities and ultimately boost the economy of the nation. In Bangladesh, pineapple production might present a number of opportunities and prospects. The potential for pineapple production in Bangladesh is categorically demonstrated in Table 5. In accordance with a

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research conducted in Tangail, byHasan et al.,[3] noticed that pineapple cultivation had a favorable impact on pineapple growers' increased income. Growers of pineapples have the potential to provide jobs, which can act as a source of income particularly in rural areas where agriculture is the primary livelihood[25]. By offering its people a healthy and advantageous fruit option such as pineapple, Bangladesh has the ability to improve public health outcomes. Overall health and disease prevention initiatives can be benefitted from encouraging the inclusion of pineapples in diets and raising public knowledge of their health advantages. Promoting processed pineapple goods can increase export revenue for the nation, provide value to agricultural products, and open up job opportunities[18]. Bangladesh has the potential to become a major supplier in the world pineapple market, which will boost employment, the economy and rural development. At the end Bangladesh has the potential to optimize the sustainability and worth of pineapple farming, reduce waste production, and generate fresh revenue opportunities in several fields. Promoting the use of pineapple byproducts also helps with environmental conservation and aligns with the ideals of the circular economy[19].

Table 5. Prospects of pineapple production

Categories	Potentials	References
Related to Income	➢ Income source. ➢ Employment opportunity.	Hasan et al.,[3]; Dennis & Okpeke [36]
Related to Health	➢ Encourage farmers to consume in order to be healthy. ➢ Pineapples are nutritionally and medicinally enriched.	Hossain & Abdulla [30]; Hossain [37]; Dennis & Okpeke [36]; Sultan et al., [27]
Related to Production	➢ The soils and environment are ideal for growing pineapples. ➢ High profitability in pineapple-intercrops cropping pattern.	Sultan et al.,[27]; Deb et al. [38] ; Datta et al.,[25].
Related to Processed food	➢ Production of various processed food like juice, jam, jelly, squash, syrup, pickles, vinegar, alcohol, citric acid calcium citrate.	Das et al. (2016); Uddin et al. (2022) ; Hasan et al. (2022) [13], [23], [7]
Related to Export	➢ Increasing trend of total consumption and export potential	Hossain [37] ; Biswas & Nishat [19]
Related to Byproduct	➢ Pineapple leaves produce a silky, white, robust fiber that is used to manufacture thread. ➢ Ruminant farmers are using pineapple leaves and other waste materials as animal feed.	Hossain [37] ; Biswas & Nishat [19] Hasan et al.,[18]

3.9 Challenges in pineapple production

Pineapple is less susceptible to pest damage than other crops. As a result, they used fewer intercultural techniques when growing pineapples. Which eventually causes them some issues. Those issues can be categorized into four aspects.Hasan et al.,[7] reported that the most frequently mentioned obstacles that farmers encounter in pineapple farming are those relating to production and marketing. Pineapple is still considered a minor fruit in Bangladesh. Unlike other important crops, DAE and other research institutes are not focusing on pineapple. For this reason, no new modern pineapple varieties are being released. Thus, growers of pineapples are frequently denied access to appropriate extension assistance. Baruwa [4] also find identical challenges in their study. High price and inadequate supply of seedlings, fertilizer, pesticide and labor are also some of the major production related challenges which causes failure to farmers profitability[28].

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Table 6. Challenges of pineapple production

Categories	Challenges	Reference
Related to Production	➢ Inadequate extension services. ➢ High cost or non-accessibility of agrochemicals. ➢ Bengal Monitor infestation in ripe fruit. ➢ Unavailability of labor.	Singh & Sharma, [39]; Hasan et al.[7]; Datta et al. [25]
Related to Marketing	➢ Unpaved and small roads that are not accessible to cars. ➢ Loss of production as a result of inadequate processing. ➢ Direct pineapple selling become risky as a result of inexperience of market conditions. ➢ The presence of middlemen was caused by inadequate market knowledge and access to transportation. ➢ Price volatility. ➢ Perishability of pineapple.	Okal [40]; Akter et al.,[28];Nahar et al.,[35]; Hasan et al.,[7]
Related to Farmers	➢ Lack of improved planting materials. ➢ Inability to obtain official credits. ➢ Insufficient storage facilities. ➢ Low price due to chemical addition.	Baruwa [4]; Hossain & Islam [1]; Akter et al.,[29]; Datta et al.,[25]
Related to Consumer	➢ Use of unauthorized hormones or without recommended dose by both the grower / wholesaler to get attractive and larger pineapple throughout the year round. ➢ Farmers and distributors used formalin to preserve and carbide for ripening pineapple without following authorized dosages.	Baruwa [4]; Hossain & Islam [1]; Singh & Sharma [39]

Marketing issues such as inadequate processing industries, poor transportation infrastructure and price volatility have a greater impact on farmers. Because pineapple is perishable in nature. The price decreases significantly during peak season, when a large number of pineapples ripen simultaneously. Some of them unable to sell it and forced to use it as cow feed.Amao et al., [41] andBaruwa [4] also claimed that growers in the pineapple sector encounter many challenges such as a scarcity of contemporary varieties and difficulty obtaining official finance, which causes them to fall behind in the global market. A study by Hasan et al.,[7] reveals that many farmers do not apply hormones at the right moment or in the appropriate quantity. Additionally, some dishonest and greedy farmers used excessive amounts of hormones and formalin in the hopes of making more money quickly.

4. Conclusion

In Bangladesh, pineapple is ranked fourth in terms of area, but it ranks second in terms of yield per acre, only behind bananas. But the country has not yet completely exploited its pineapple-growing potential. Despite the production of pineapples in Bangladesh is increasing, people's daily fruit consumption is still low in comparison to other nations. Bangladesh has a disorganized and ineffective marketing structure. Sufficient infrastructure, transportation in production locations and cold storage facilities are necessary before the fresh perishable pineapple business can grow. In order to boost farmers' profit margins, it is also necessary to strengthen the ability of farmers' cooperatives and unions to do away with market middlemen and give cooperatives significantly better chances to integrate smallholders into the pineapple marketing channel. The cultivation of pineapples is trending upward. The development of pineapples in Bangladesh has enormous potential. But the number of improved pineapple variety should be enhanced by importing material from developed pineapple-producing nations or via research. The violent behavior of extremely profitable moneylenders, dealers, and traders who, when required form syndicates and use formalin and excessive hormones to disrupt market demand should be minimized through the ongoing oversight of relevant monitoring organizations. The limitations of the review; it might not address every

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issue, including the effects of climate change, obstacles posed by regulations, and future prospects for Bangladesh's pineapple industry. The opinions and experiences of all pertinent parties engaged in the production of pineapples may not have been sufficiently represented.

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