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Productivity of Food and Self-Sufficiency in Rice Production in Bangladesh

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Bangladesh's principal grain, rice, is essential to the nation's agricultural economy and food security. In light of the obstacles and possibilities for increasing domestic output, this study looks at Bangladesh's food productivity and degree of self-sufficiency in rice production. Even though the nation has made significant progress in rice production, problems including population growth, land degradation, climate change, and poor infrastructure still have an impact on total productivity. To examine the trajectory of Bangladesh's agricultural sector from 1973 to 2023 through the following economic lenses: agricultural input use, GDP contribution, employment rate, trade trends, critical development indicators, and domestic rice demand and production. The data were chosen based on their accessibility, geographical context, relevance to the study's aims, and time constraints. According to this study, rice production increased from 9.9 million tons in 1973 to 39.1 million tons in 2023, demonstrating the nation's continuous efforts to increase agricultural output to satisfy rising market demand.

Keyword: productivity, self-sufficiency, rice, production

Introduction

Bangladesh is part of the group of developing countries in which the rate of population growth is higher than the rate at which food production is increasing (Parvin, & Sarker, 2021). A large proportion of people in Bangladesh are employed in agriculture, which is heavily impacted by changes in the environment (Akter, & Sarker, 2021). Agriculture is highly dependent on natural resources, seasonal patterns and biological processes and these made it different from other distinct. Disparate from industry and services, agriculture depends on uncontrollable factors such as—weather, quality of soil and availability of water and these directly affect the level of productivity. Dependency on natural resources, introduce complexity and unpredictability, require practical knowledge from the field level workers. Moreover, agriculture should develop a balance between economic growth and environmental sustainability. As it requires to manage the resources for short-term growth of productivity and long-term ecological issues. Agriculture is highly vulnerable to natural components such as—climate, weather, soil and water supply in contrast of manufacturing and services. Fluctuations in temperature, heavy rainfall and other natural calamities might affect the agricultural production in A broader sense. For example, crop production can significantly differ with the fluctuation in weather patterns, especially in the areas

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which are dependent on rainfall for irrigation service (Lobell et al., 2011). Production cycles of agriculture, deeply tied with planting and harvesting time which makes agricultural activities seasonal. This affects labor demand, distribution of income and the supply chain which lead to more vulnerable fluctuations in contrast of industrial sector. For instance, farmers might only can earn in a specific time of the season, specifically in the planting and harvesting time of crops but they have to spend on household throughout the year (Schultz, 1964). Agricultural produce include fruits, vegetables, and dairy products are putrescent and have a short period time to sell after harvesting. This putrescence reflects the need for marketing, processing and transporting, often results in losses due to improper management system. For example, post-harvest loss is frequent due to inadequate storage system and limited transportation facilities in most of the developing countries (Kader, 2005). Increase in supply does not upraise the demand notably which makes the demand for food inelastic. Food security is a measure of a person's overall welfare (Sarker et al., 2022). As food is a basic need so demand for food does no increase further after reaching a certain threshold level of income. For instance, demand for food does not show any sudden increase even if the price of food gets reduced substantially (Timmer, 1998). In developing countries, agriculture is labor abundant, so it requires substantial human capital to prepare the land for cultivation, plant, weed and harvest. These countries are also land abundant by using large areas for cultivation and cattle grazing. For instance, majority of the labor force of Sub-Saharan Africa is employed in agriculture as there is lack of machinery uses (Pingali, 2007). Agriculture has a vital role in ensuring food security, rural economy development and political stability, so agricultural is highly regulated and incentivized industry in many countries. Policies by the government including price support, subsidies on inputs and control on import and export play an important role to shape up the agricultural productivity and market dynamics. Agricultural production differs in large due to factors include climate, geographical location, quality of soil and irrigation systems. This difference depicts that agricultural policy which is suitable for one region might not be suit with anther region. In many societies of South Asia and Africa agriculture is a fundamental part of culture and society. This is deeply connected to cultural traditions, land inheritance system and structure of the community. All these components drive agricultural growth. Agriculture not only focuses in food production but also it serves some other functions including biodiversity preservation, soil conservation, rural employment creation and maintaining cultural heritage. These services differentiate agriculture with other sectors that only focus on economic output. Agriculture remains subsistence level in most of the countries of the world, where farmers produce on subsistence basis to sustain their families rather than producing for the market. In contrast, the goal of industrial productivity is to meet business goals. In South Asian nations like Bangladesh, India, Nepal, and Sri Lanka, the agricultural sector has a long history and is highly significant in terms of GDP contribution and job creation (Sarker et al., 2025).

Trade and agricultural policies of Bangladesh experienced substantial changes due to combined socio-economic and environmental factors. Agricultural policies of the country prioritize on food security, promotion of export, and safeguarding local farmers. Government is a substantial source of support for the agricultural sector of the country through subsidies, climate resilient strategies and protection of trade. To protect the local farmers, trade policies for agriculture of Bangladesh apply some import restrictions and tariffs on some specific agricultural products. As example, it might be said that restrictions are applied on rice import to ensure fair price for the local farmers. The tariff rate on agricultural goods such as—wheat, sugar, and dairy fluctuate over the period of time depending on the demand and supply in the local market (World Trade Organization, 2019). The government of Bangladesh provides some subsidies on some agricultural products to keep up the competition in

the global market. Incentivized products include jute and tea. Bangladesh bank provides subsidies and low-interest loans to support the export oriented agricultural products (Ministry of Commerce, 2021-2024). Bangladesh has membership in various regional trade organizations including South Asian Association for Regional Co-Operation (SAARC) and South Asian Free Trade Area (SAFTA). These trade organizations offer trade promotion in agricultural products and better access to market (SAARC Secretariat, 2006).

There are insufficient infrastructures in Bangladesh including poor storage system, poor transportation facilities abrupt the supply chain of agricultural products. This limitation reduces the potentiality and efficiency of agricultural markets, and competitiveness (World Bank, 2020).

Due to excessive existence of intermediaries' farmers of Bangladesh experience a hassle in accessing market. Moreover, there is lack of logistic support for the farmers which disallow them to get the fair price and affect their level of income. This limitation hinders the farmers to get the higher market prices of their products (International Food Policy Research Institute, 2019). Though the government of Bangladesh efforts a lot to increase the local production of agricultural goods but Bangladesh has to significantly depend on excessive import of agricultural goods such as—wheat, pulses, edible oils. Limitations like natural calamities, climate change effects and shortage of land hindering the growth of Bangladesh's agriculture to achieve self-sufficiency. These limitations make it hard to reduce the dependency on external sources for agricultural products (World Trade Organization, 2019).

Methodology

The study deploys quantitative methodology with secondary datasets from various renowned organizations such as—Bangladesh Bureau of Statistics (BBS), Food and Agriculture Organization (FAO), and World Bank. This study objects to analyze agricultural development trends in Bangladesh from various aspects of the economy such as—Agricultural productivity, use of inputs in agriculture, GDP contribution, employment rate, trade trends, crucial development indicators and rice production & domestic need of Bangladesh from 1973 to 2023. These data were selected by their relevance with the objectives of the study, accessibility, geographical context and time limitation. These data were symmetrically collected from the database and websites of these institutions with proper statement of year of publication, sources and fundamental definition to enhance data reliability. This methodology offers a well-structured and reliable framework to address and understand the agricultural transformation, technological progress, and challenges in self-sufficiency in Bangladesh.

Results and Discussion

Productivity Indices in Bangladesh

Over the years, Bangladesh has achieved notable progress in enhancing productivity across different sub-sectors, such as crops, livestock, and fisheries.

In the crop sector, Bangladesh has prioritized boosting yields by adopting high-yielding varieties, improving irrigation systems, and enhancing fertilizer use. The livestock sector, although traditionally smaller, has experienced growth in productivity through advancements in animal care, veterinary services, and feed quality. Likewise, the fisheries sector has become an important contributor to the economy. Table 1 shows the productivity indices in Bangladesh.

The graph presents about productivity index of Bangladesh from 1973 to 2023. This graph remarks the significant improvement in agricultural sector's productivity include agriculture, crops, livestock and fish.

Productivity indices of agricultural products in the Table 1 present a continued upward shift. In 1973, the baseline was at 100 while in 2023 it increased to 250. This rapid uplift represents the impacts of agricultural policies and reform of Bangladesh. These policies are focused to enhance the productivity and food security. Moreover, the crop index also experiences a steady growth, starting from 100 in 1973 to 245 in 2023. The increase in crop production index indicates the adaption of high-yield crop varieties, sustainable farming practices and developed irrigation systems. The growth rate of crop production is high, specifically the production of crops such as rice.

Table 1

Productivity Indices in Bangladesh (Agriculture, Crop, Livestock, and Fish)

Year	Index			
	Agriculture	Crop	Livestock	Fish
1973	100	100	100	100
2000	165	160	150	130
2008	190	185	170	150
2018	225	220	215	195
2019	230	225	220	200
2020	235	230	225	205
2021	240	235	230	210
2022	245	240	235	215
2023	250	245	240	220

Source: Bangladesh Bureau of Statistics (2023).

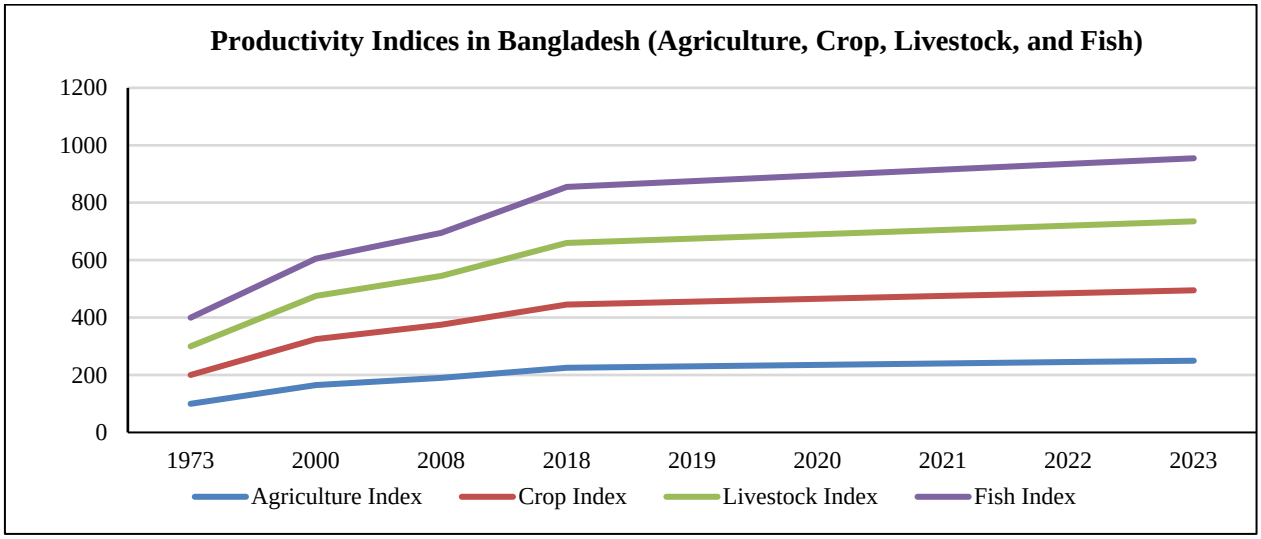

Figure 1. Productivity indices in Bangladesh (Agriculture, Crop, Livestock, and Fish).

Livestock Index also followed a significant growing manner. In 1973, livestock index was 100 and in 2023 it raised to 240. This increase indicates the development in animal husbandry, veterinary services. This is another result of increasing demand for meat and dairy outputs. But the growth rate of livestock sector is comparatively slower than the growth rate of crop or fish index but the rise is significant and this uplift indicates the continuous efforts to make a progress in the livestock sector.

In the case of Fisheries, in 1973, Fish index was 100 and in 2023 it raised to 220. This rise in fish index

refers to significant developments in fisheries sector with modern fish cultivation practices. Although, fisheries sector has experienced a slower rate of growth in contrast of crops and livestock but it continues its approach to get further developed. Fisheries sector is contributing a much to ensure economic growth, food security and nutrition.

In addition, the Figure 1 presents about the Bangladesh's remarkable development in agricultural production over the last five decades. Every agricultural sector has experienced a rapid growth reflecting the effects of government policies, strategies and programs.

Input Use in Agriculture in Bangladesh

Effective use of inputs in agriculture of Bangladesh has become important than previous times. Key agricultural inputs such as—seeds, pesticides, fertilizers and machineries are important to boost up crop yields and improve overall productivity. Table 2 represents the input use in the agriculture of Bangladesh.

Table 2

Input Use in Agriculture in Bangladesh (1973-2023)

Year	Inputs (kg/ha)		
	Fertilizer	Seed	Pesticide
1973	25	50	.001
2000	140	85	.5
2008	175	95	1.35
2016	210	110	1.9
2017	215	112	1.95
2018	220	115	2.05
2019	225	117	2.15
2020	230	120	2
2021	235	122	2.22
2022	240	125	2.3
2023	245	130	2.4

Source: Bangladesh Bureau of Statistics (2023).

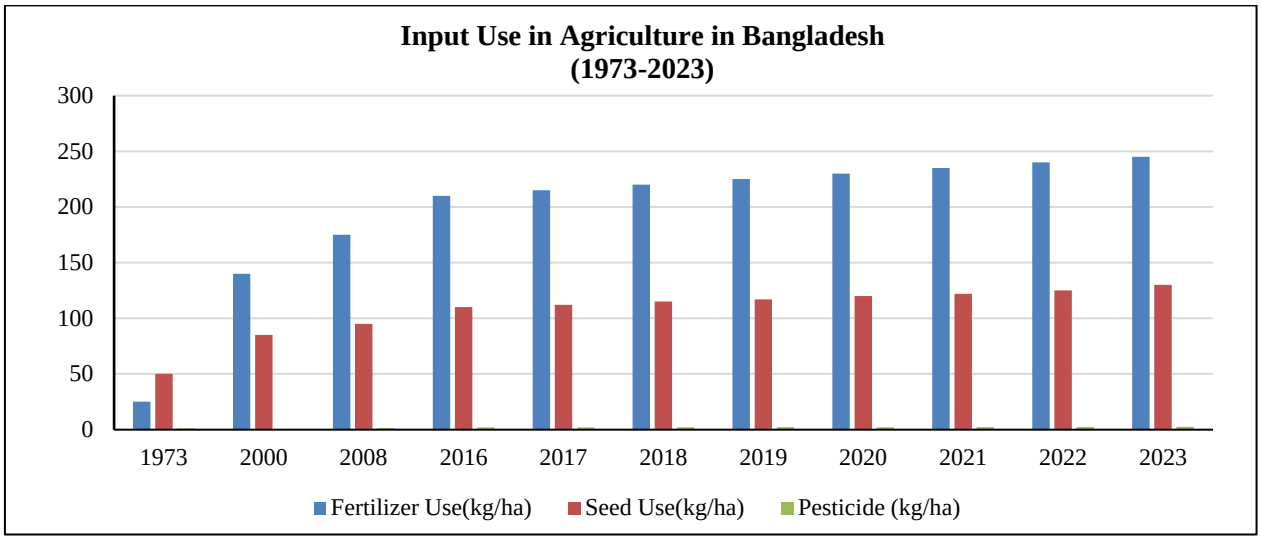

Figure 2. Input use in agriculture in Bangladesh (1973-2023).

Figure 2 presenting input use in agriculture of Bangladesh from the year 1973 to 2023. This figure represents a notable change in the use of inputs in agriculture over the period of time.

The table shows that input use in agriculture of Bangladesh has a significant increase. Use of fertilizers has uplifted from 1973 to 2023. While in 1973 application of fertilizer was 25kg/ha in 2023, it shifted to 245kg/ha. The increased use of fertilizers indicates a shift towards more intensive farming whereas fertilizers play a pivotal role in boosting up crop yields. Moreover, seed usage also follows an increasing trend from 1973 to 2023. In 1973 seed usage was 50kg/ha while in 2023 it increased to 130kg/ha. Increased usage of seed reflects a movement towards high-yielding and improved seed diversifications which are more suited to cope up with pest pressures and weather fluctuations.

Use of pesticides have increased significantly from 1973 to 2023. In 1973, pesticides usage was only 0.001kg/ha and in 2023 it alarmingly increased to 2.4kg/ha. This high rise in pesticide usage indicates growing pest control problems and high dependence on chemical pest control methods, which are resulting in environmental issues and health issues.

Though these inputs have significantly boosted up agricultural productivity but they also are responsible for bad soil-health, environmental imbalance and the farmers safety. The data highlights the urgency for feasible farming practices that can preserve the productivity with a capacity to reduce the negative impacts of excessive input usage.

Production of Major Agricultural Products in Bangladesh

Bangladesh is a key producer of various agricultural goods such as—Rice, Jute, Tea, Vegetables, and Fruits. Rice is the main agricultural product of the country, which makes the country one of the highest producers in contrast of other high rice producing countries of the world.

The production of these major agricultural goods presents the trends, challenges and limitations, prospects and opportunities in this sector, which are necessary to improve food security and to support the livelihoods of the farmers of the country. Table 3 represents the production figures for these agricultural goods within the country.

Table 3

Production of Major Agricultural Products in Bangladesh (1973-2023)

Year	Production (million tons)			
	Rice	Wheat	Jute	Maize
1973	9.9	0.11	1.5	0.01
2000	23.1	1.8	0.9	0.7
2020	38.6	1.2	0.85	3.4
2023	39.1	0.98	0.8	3.8

Source: Bangladesh Bureau of Statistics (2023).

The graph illustrates the production figures of key agricultural products of Bangladesh from 1973 to 2023. This graph highlights notable changes in the production of rice, wheat, jute and maize, measured in million tons.

The graph illustrating the production of key agricultural products in Bangladesh (1973-2023) highlights notable trends in the cultivation of rice, wheat, jute, and maize, measured in million tons.

The table shows that production of rice faces a significant increase. In 1973, production of rice was 9.9 million tons while in 2023 it increased to 39.1 million tons. But some fluctuations are there in the production of

wheat. In 1973, production of wheat was 0.11 million tons and it reached its peak in 2000, while the production was 1.8 million tons. Wheat production got declined in 2023 with a production of 0.98 million tons.

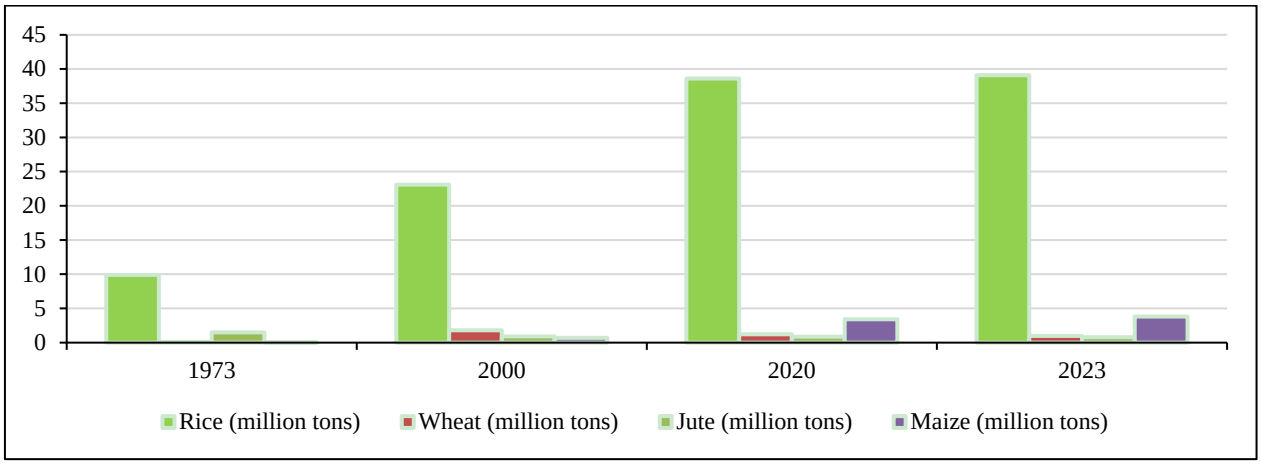

Figure 3. Production of major agricultural products in Bangladesh (1973-2023).

Jute, referred as "Golden Fiber" has a negative shift in its production. In 1973, production of Jute was 1.5 million tons and in 2023 it declined and stood at only 0.8 million tons. On the other hand, Maize production has a significant positive raise in its production. In 1973, total Maize production was only 0.01 million tons but in 2023 this production goes to 3.8 million tons with a positive trend of production.

Overall, the data presents about the country's continuous efforts to improve the productivity of agricultural sector and to meet up the growing market demand. With a sharp rise in the production of rice and maize signifies the importance of the crops in the country's agriculture.

Agriculture, Industry, and Services' Contributions in GDP and Employment of Bangladesh

The economy of Bangladesh is divided into three key sectors. The sectors are—Agriculture, Industry and Services. All of the sectors are crucial for the country's GDP growth and employment trends. In recent years, the country has a significant transformation from agriculture-based economy towards an increasing industry and service

Table 4

GDP Contributions (1973-2023)

Year	GDP Contribution (%)		
	Agriculture	Industry	Services
1973	50.0	15.5	34.5
2000	25.9	25.0	49.1
2008	20.5	28.6	50.9
2016	15.5	31.3	53.2
2017	14.7	31.9	53.4
2018	13.9	32.3	53.8
2019	13.5	32.5	54.0
2020	13.0	33.2	53.8
2021	12.6	34.0	53.4
2022	12.1	34.5	53.4
2023	11.8	35.0	53.2

Source: Bangladesh Bureau of Statistics (2023).

sector-based economy.

Table 4 represents the contributions of these three sectors in GDP and employment.

Figure 4 illustrates the contributions of GDP towards a remarkable economic change over the last 50 years from 1973 to 2023. This figure also illustrates an upward shift from traditional agro based economy to industry and service sector-based economy whereas industry and service sector hold the place of primary contributor to the country's GDP.

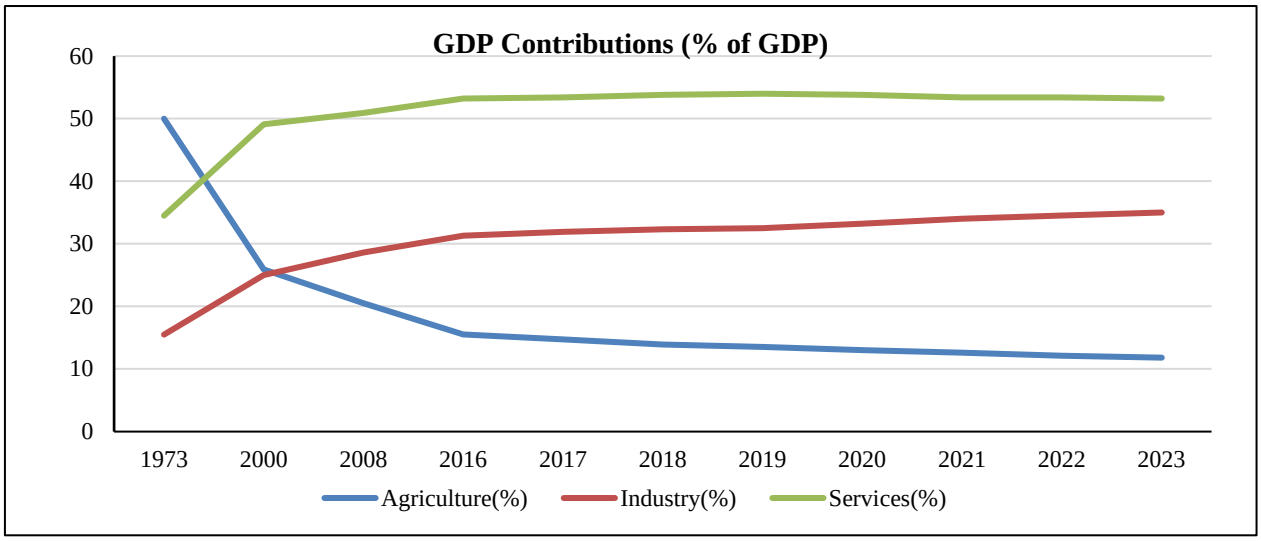

Figure 4. DP contributions (% of GDP).

Table 4 shows that, in 1973 agriculture contributed 50% in the country's GDP. But the share of GDP contribution of agriculture got reduced over time, while it got a drop to 11.8% in 2023. This reduction in GDP contribution represents the structural changes in the economy, where the country focuses to shift from traditional agriculture-based economy to greater industrialized economy.

The industrial sector experienced a remarkable growth from 1973 to 2023. In 1973, industrial sector contributed only 15.5% of the GDP while in 2023 it contributed 35%. Moreover, the service sector experiences most inclusive growth over the last five decades. In 1973, the contribution of service sector in GDP was 34.5% while in 2023 it increased to 53.2%. This rise makes the service sector most significant contributor of the economy.

Overall, the above table presents an effective shift in the Bangladesh's economy which was heavily dependent on its traditional agricultural sector. The growth of industrial and service sector signifies a movement towards more diversified and matured economic landscape.

Figure 5 depicts about the total employment in Bangladesh from 1973 to 2023. The figure highlights that employment is increasing gradually due to the structural changes in the economy.

Table 5 depicts about the workforce distribution over the last 45 decades. In 1973, agriculture was the main source of employment by employing 80% of the national labor force. But the share of agriculture in employment creation has significantly dropped by 2023, while it holds the share of 34.3% of total employment.

At the same time, industrial sector's growth was remarkable and significant in increasing its share in employment. In 1973, only 5% of the total employment was made by the industrial sector while in 2023 it contributed 24.2%. Most remarkable change was in service sector. It grew from 15% to 41.5% from 1973 to 2023.

Table 5

Total Employment (1973-2023)

Year	Employment (%)		
	Agriculture	Industry	Services
1973	80.0	5.0	15.0
2000	63.2	10.5	26.3
2008	48.1	14.7	37.2
2016	41.0	20.4	38.6
2017	40.6	21.1	38.3
2018	39.7	21.5	38.8
2019	38.3	22.0	39.7
2020	37.4	22.3	40.3
2021	36.2	23.1	40.7
2022	35.0	23.8	41.2
2023	34.3	24.2	41.5

Source: Bangladesh Bureau of Statistics (2023).

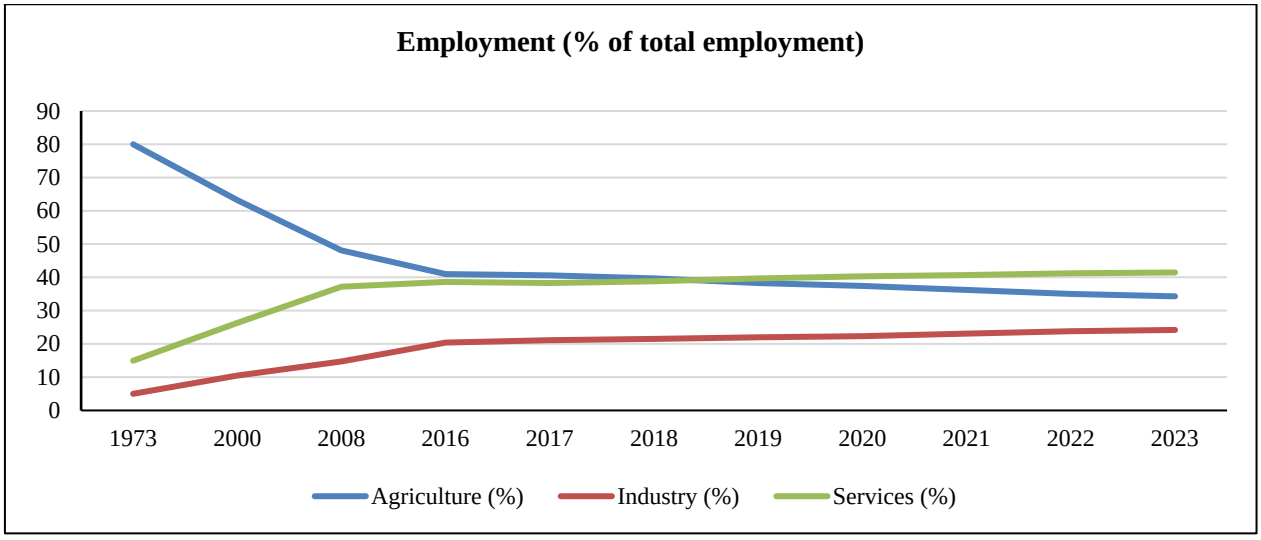

Figure 5. Employment (% of total employment).

This transition from a traditional agriculture-based economy towards industry and service sector-based economy indicates the Bangladesh's economy is gradually shifting towards a diverse and complex employment structure. This gradual change not only reflects country's economic transition but also the potential for sustainable and developed life standard.

Bangladesh Food Import/ Export and Total import/Export

Bangladesh has experienced a significant growth in trade over the last few decades, whereas food import and export is a crucial role player. This country often imports the items including—wheat, edible oils, sugar, and pulses to support the local production to meet up the domestic demand. On the other hand, Bangladesh traditionally export some agricultural goods such as—rice, jute, tea and fish.

Trade balance of Bangladesh has consistently dependent manner on higher imports. Demand for imports created by the demand of raw materials, machineries, and fuel to support the industrial growth and increasing

infrastructural needs. On the other hand, Bangladesh's export is highly dependent on garment industry, it contributes significantly in the case of country's foreign earning. The ready-made garments (RMG) sector of Bangladesh is one of the global leaders of apparel exports and also playing a pivotal role in the reduction of poverty level and economic development. The following table (Table 6) presents Bangladesh's import and export trends.

This graph illustrates Bangladesh's food import, export, and overall trade trends over the last five decades. It signifies that there has been a notable rise in the country's trade activity, which showcases rapid economic development.

Table 6

Food Import/ Export, and Total Import/Export in Bangladesh (1973-2023)

Year	Import/ Export (in USD million)			
	Food		Total	
	Food Import	Export	Import	Export
1973	500	100	1,200	300
2000	1,500	400	9,000	5,000
2008	3,200	800	27,000	13,000
2018	5,470	1,340	55,671	36,671
2019	5,300	1,200	57,920	38,420
2020	6,200	1,350	56,325	38,199
2021	6,800	1,500	63,500	39,400
2022	7,500	1,650	69,000	40,000
2023	8,200	1,700	72,000	42,000

Source: Food and Agriculture Organization (2023).

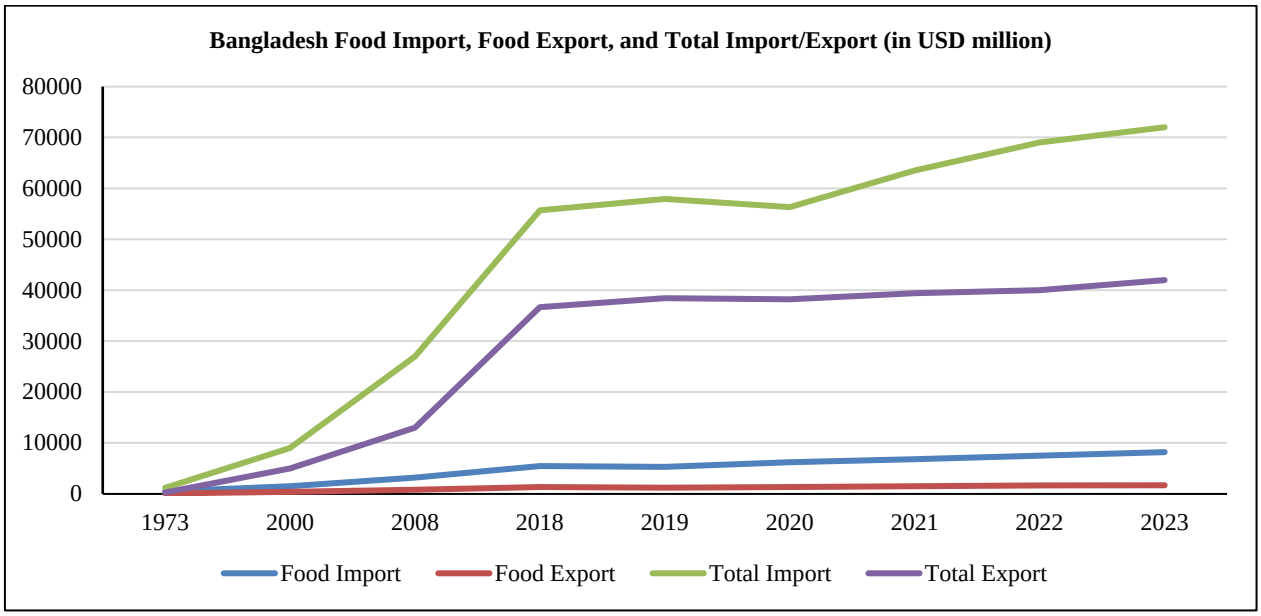

Figure 6. Bangladesh food import, food export, and total import / export (in USD million).

Table 6 shows that food imports significantly increased from 1973 to 2023. In 1973, food imports were $500 million, while in 2023, they increased to $8.2 billion. At the same time, food exports also experienced a growing trend. In 1973, food exports were $100 million, while in 2023, they significantly increased to $1.7 billion.

There is remarkable increase in Bangladesh's overall import. While in 1973 import was $1.2 billion in 2023 it increased to $72 billion. Similarly, overall export also experiences a substantial growth from $300 million in 1973 to $42 billion in 2023.

Development Indicators in Bangladesh

Analysing the development indicators of Bangladesh might depict about the country's approach to develop its human capital over the period of time. A key indicator is per capita income, which present the income of individuals in a given region. It is an important measure of economic growth and stability. As Bangladesh shows a steady increase in per capita income so it indicates about the country's economic growth.

Other vital development indicators include life expectancy, literacy rate, and the Human Development Index (HDI). These indicators provide a complete view of the country's development progress. Say for, increased life expectancy indicates about the development in healthcare and overall quality of life. Similarly, increase in literacy rates indicates progress in education and skill development sector.

Human Development Index (HDI) combines these indicators together. HDI provide a comprehensive and clearer picture about the development indicators beyond the measurement of economic growth. The following table (Table 7) presents about the development indicators of Bangladesh.

Table 7

Development Indicators of Bangladesh (1970-2023)

Indicator	1970s	2000	2010	2020	2023
Per Capita Income (USD)	~120	385	748	2,064	2,765
Life Expectancy (years)	47	64	69	72.6	73.6
Literacy Rate (%)	26.8	45.3	58.8	74.7	75.6
Poverty Rate (%)	82	48.9	31.5	20.5	18.7
Infant Mortality Rate (per 1,000 live births)	150+	55	43	24.1	24.1
Access to Electricity (%)	3	31.2	47.6	97.0	99.9
Access to Clean Water (%)	37.0	75.6	80.5	98.5	98.0
Gross Enrolment Rate (Primary, %)	~52	94.6	96.7	98.5	97.5
Under-5 Mortality (per 1,000 live births)	239	83.0	53.5	28.2	30.6
Maternal Mortality Ratio (per 100,000 live births)	700+	320	194	165	153

Source: Bangladesh Bureau of Statistics (2023).

The table presents the development indicators in Bangladesh from 1973 to 2023. It highlights the progress along with the achievements and challenges.

Major area of progression is growth in per capita income. Per capita income followed a substantial increasing manner from 1973 to 2023. Health indicator also made progress, while in 1970 life expectancy was 47 years and it increased to 73.2 years in 2023. Reduction in infant mortality rate was significant from 1973 to 2023. In 1973, infant mortality rate was 150 per 1,000 live births whereas in 2023 in declined to 23 per 1,000 live births. It indicates the development and progress in the healthcare system. At the same time, the maternal mortality rate also reduced. In 1973, the maternal mortality rate was 700 while in 2023 it declined to 162 reflecting better healthcare during the time of pregnancy.

In the case of education, the literacy rate has significantly increased from 26.8% in 1973 to 76.2% in 2023. Similarly, poverty has also significantly reduced. In 1970, the poverty rate was 82% and reduced to 18.7% in 2023. Access to Electricity has also increased, from only 3% to 98.5%. Access to clean water has also increased

from 37% to 98.7% over the same years.

Child health issues also showed remarkable development and progress. The under-5 mortality rate declined from 239 to 25.5 per 1,000 live births, which indicates better healthcare and nutrition for children.

Bangladesh has made numerous steps to improve economic, health and education outcomes. However, challenges including—inequality of income, disparities among the regions, and sustainability of the environment still exist.

Rice Production and Domestic Needs in Bangladesh

Bangladesh has made significant progress in agricultural sector including self-sufficiency in agriculture production due to notable changes in farming practices. These developments and transitions have made the country able to meet the food demand specifically the demand for rice. Moreover, it is also leading towards the development of the farmers' livelihoods. Rice is the main food in Bangladesh, and the country has achieved near self-sufficiency in rice production. In 2023, the country's rice production was 39.1 million tons, sufficient to meet almost all domestic demand. A study in 2021, the farmer-consumer alliance was severely strained by travel restrictions and economic shutdowns, which led to an imbalance between the supply and demand for food, and respondents reported higher-than-normal costs for essential items, which caused food insecurity (Sarker, & Fagun, 2021).

Table 8

Rice Production and Domestic Need in Bangladesh (1973-2023)

Year	Rice (million tons)		Fish (million tons)		Meat (million tons)	
	Production	Domestic need	Production	Domestic need	Production	Domestic need
1973	9.9	10.5	0.54	0.6	0.3	0.4-06
2000	23.1	22.0	1.55	1.6	1.15	1.5
2010	33.4	32.0	2.95	3.0	2.4	3.0
2020	38.6	38.0	4.5	4.3	7.67	7.0-7.5
2023	39.1	38.6	4.9	4.5	8.71	8.0

Source: World Bank (2023).

Conclusion

Agricultural development in Bangladesh has gone through perseverance, adaptation, and invention. Primarily, the country's economy was highly dependent on the agricultural sector. While agriculture was the major source of employment, livelihoods and food security. Over time, this sector has developed significantly through modernization and mechanization of agriculture. Moreover, policy reforms have boosted the productivity of agriculture. Bangladesh's agriculture has both opportunities and challenges but it has shown significant progress in food security, remarkably in achieving self-sufficiency in production of rice and reduced malnutrition rates. The agriculture sector holds around 14% of the GDP share and creates employment for 40% of the total workforce of the country. The achievements represent the improvement made by the country in food security and strengthening the growing economy. Adoption with climate change will be a significant challenge for agricultural sector of Bangladesh. As sea level is rising and weather patterns threatening agricultural productivity. Moreover, to ensure inclusive growth ensuring access to resources and support for marginalized groups is necessary to achieve a long-term development in Bangladesh.

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