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Research Article

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Exploring the constraints of jute cultivation and analysis of market value: A case study in Bhugroil, Paba Upazilla, Rajshahi

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ABSTRACT

As one of Bangladesh's main cash crops, jute was known by many as the golden fiber. It has an important role in the economy. However, the existing conditions of the producer and trader of this cash crop are facing various problems and future advancement and economic growth are at risk. The study was conducted at Bhugroil in Paba Upazila of Rajshahi district. The researchers used both primary and secondary sources for data collection. The whole field survey was conducted using the PRA method and for primary data collection, different PRA tools were used. They selected some people for focus group discussion and collected information from key informants. In the study area, the researchers found out that the main problems of jute cultivation were less market value of jute fibers, water scarcity and insufficient rotten place, high production cost, lack of technological knowledge, plastic overtaking jute market, lack of subsidies and training, closing jute industries, pest attack, etc. The market analysis revealed that the market faced problems such as market syndicate, market price fluctuation, high transport cost, plastic overtaking jute market, closing of jute industries, low-quality jute fiber, unskilled labor force, less variety of jute products, no local market incentives for jute products, lack of market information, exporting only raw fiber and few products, etc. Considering the current situation, the researchers identified a few solutions and provided some recommendations like creating a government purchase center, price-determining policy, using modern technology and machinery, providing training and knowledge, discouraging plastic, creating new jute mills, credit facilities, skilled labor, improved transportation, versatile jute products, etc. The mentioned solution and recommendation can solve the problem of jute farmers and trades in selected areas and can be applied in areas facing similar problems.

KEYWORDS: PRA tools, Focus group discussion, Key informants, Low market value, Market syndicate

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INTRODUCTION

The "Golden Fiber," jute, has played a significant role in Bangladesh's history, economy, and agriculture. It is more than just a crop; it is a representation of rural wealth and sustainability (Pal & Chakraborti, 2011). Jute cultivation in Bangladesh demonstrates the adaptability and resiliency of rural communities while fusing cultural heritage with economic value.

The Tale Unfolds in Bhugroil, Paba, Rajshahi

Jute farming is a major source of income in the agriculturally rich area of Bhugroil, which is located in Rajshahi's Paba Upazilla. The area is well-known for producing silk, mangoes, and jute due to its lush soils and tropical monsoon environment. Bhugroil is the subject of this study in order to comprehend its jute farming difficulties, market conditions, and unrealized potential (Wikipedia Contributors, 2025). The farming spirit is embodied by rolling green jute fields that combine traditional practices with the socioeconomic structure of the community (Islam *et al.*, 2009).

The quality of the seed, agricultural methods, and weather all has a significant impact on jute production in Bhugroil. As farmers negotiate selling alternatives between local marketplaces, middlemen, and larger cities like Rajshahi, market dynamics

also have an impact on their revenue. Due to the city's close vicinity, trade and the local economy are enhanced by improved access to larger markets (Rahman *et al.*, 2017). Rajshahi has long been a center for the manufacturing of jute due to its lush fields and temperate environment; this tradition continued even after independence. The crop's economic significance has changed in tandem with the state of the world market, demonstrating the local farmers' adaptability (Moniruzzaman *et al.*, 2008).

In a capitalist economy, where market preferences, trade regulations, and technological improvements determine viability, the jute industry's demise is indicative of larger problems. Jute has mostly been displaced by plastic in international markets because of its affordability, ease of use, and durability. Jute goods' competitiveness is further hampered by trade tariffs, subsidies, and competition (Alam, 1994; Bhaskar & Khan, 1995). In Bhugroil, drought continues to be a problem. Jute needs a lot of water, and inadequate irrigation results in lower yields and lower-quality fibers. This deters farmers from growing jute, as does its vulnerability to pests and the rising expenses of labor and fertilizer. Sustainability is challenging due to these issues being made worse by declining market value and insufficient subsidies (Thompson *et al.*, 2009). In order to demonstrate Bhugroil's tenacity and prospects in the changing jute sector, this paper examines these complex issues.

Jute cultivation in Bhugroil, Paba Upazila of Rajshahi district, faces threats to sustainability due to rising costs of labor, seeds, and pesticides, alongside transportation challenges. Environmental issues such as declining rainfall and water scarcity further exacerbate the situation. Economic obstacles, including unmet price demands, inadequate subsidies, and a shrinking market, discourage production. The shift to plastic as a substitute poses risks to both the jute industry's viability and the environment. The study aims to integrate community participation and continuous analysis of jute production to address its challenges and opportunities, ultimately promoting environmentally friendly jute products and sustainable production practices. Objectives of this study are 1) to assess the current conditions and challenges of jute production and 2) to evaluate the market status of jute fibers.

The article covers jute farming by examining seasonal variations, productivity limitations, and the goals of those who maintain the "Golden Fiber." It highlights farmers' tenacity by looking at market developments, farming methods, economic difficulties, laws, and climatic concerns. Farmers found problems and suggested fixes using the PRA method. The study describes the limitations of jute production, but because of time and budget constraints, it does not provide a thorough investigation of the procedures, practices, and marketing strategies of the jute business.

MATERIALS & METHODS

Study Area

The study area for our project is Bhugroil and Ward - 07, Nawhata, Paba Upazilla, Rajshahi Division. The geographic coordinate of this area is latitude- 24.419461 °N and longitude- 88.609367 °E (Figure 1). The elevation of Nawhata is 23 m (75 feet) above sea level (Wikipedia Contributors, 2025). In this area, most of the people are directly or indirectly attached to agricultural work. Most of the villagers cultivate their land for living. This site is located on the west side of Baya Bazar and beside the Naogaon Rajshahi highway. This area's northern part is located in Nawhata Bazar. And the western part of that area has a vast agricultural land. There are a small number of ponds available. The roads are not in good condition. Some of the roads are Kuccha and some of the roads are Pacca but broken. Due to narrow roads large vehicles like small trucks and large trucks are not getting proper access to agricultural land in that area.

Considering related socioeconomic, cultural, and environmental significance, it is essential to research the difficulties associated with jute growing and its market value in Bhugroil, Paba Upazila of Rajshahi district. Jute cultivation is an integral aspect of the resident's identity and fosters a connection with the natural world. However, its sustainability is threatened by shrinking water bodies, decreased rainfall, and economic pressures including growing costs and low pricing. As noted in the study by Lasker *et al.* (2019), many environmental changes are having significant socio-cultural and economic impacts on rural communities in Bangladesh, which may also affect agricultural practices like jute cultivation in the form of shrinking water bodies and decreased rainfall (Lasker *et al.*, 2019). The need to discover environmentally friendly alternatives is made more urgent by the expanding usage of plastics. In order to address problems like processing costs and lack of support, technological and financial initiatives are needed. Coordinated efforts are necessary to revive jute farming since, in the absence of alternatives, the community and the country run the risk of losing a crucial economic sector and export revenue.

Methodology

The study uses a methodical approach that combines field-based observations and analytical procedures to examine the difficulties and market opportunities of jute growing in Bhugroil, Paba Upazila of Rajshahi district. The first step in the process is choosing a topic, with an emphasis on the notable drop in jute production and its effects on the environment, the economy, and culture. One important issue that needs to be addressed

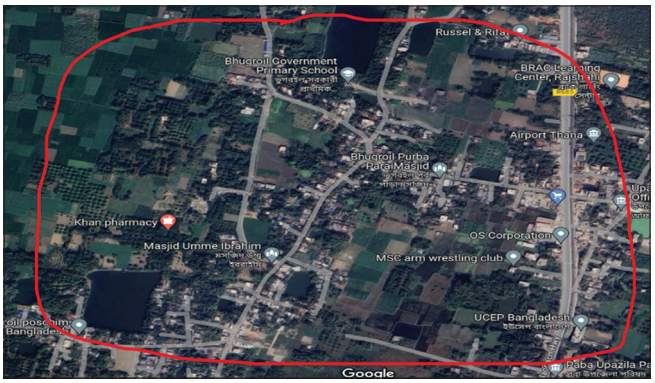

Figure 1: Study area map

is farmers' unwillingness to pursue jute cultivation because of its low profitability, high production costs, and environmental difficulties including decreased rainfall. The study's main objectives are to evaluate the current difficulties faced by jute producers, examine the state of the market, and suggest changes to boost output and profitability. These goals served as a roadmap for the investigation, guaranteeing a focused strategy to tackle the urgent problems within the jute sector. A thorough literature study was carried out, incorporating knowledge from pertinent papers, journal articles, and earlier studies. The review assisted in determining the causes of the drop in jute production, such as the difficulties facing the worldwide market and the effects on the environment. The assessment also emphasized how urgent it is to revive the jute industry given the dwindling demand for its goods and its declining GDP contribution. Because of its historical importance in the production of jute as well as its present production difficulties, the research area, Bhugroil, Ward 07 of Nawhata Municipality in Paba Upazila of Rajshahi, was selected. This region was historically known for its extensive jute farming, but it currently confronts several challenges, including high production costs and water scarcity, which makes it a good place to conduct the study. Both primary and secondary sources were used in the data collection process. Field surveys and Participatory Rural Appraisal (PRA) procedures were used to collect primary data, actively including farmers, seed suppliers, and community members. Journals, reports, and other pertinent research pieces were the sources of secondary data. To guarantee a thorough grasp of the prospects and difficulties in jute farming, a number of PRA tools were used. Among these tools were:

Social Maps: Used to understand the infrastructure and community facilities, including roads, schools, marketplaces, and medical centers.

Resource Maps: Focused on identifying natural and agricultural resources, such as water bodies and agricultural land.

Service and Opportunity Maps: Highlighted essential services and opportunities, such as seed suppliers, jute mills, and irrigation facilities.

Seasonal Diagrams: Tracked crop patterns and livelihood changes throughout the year.

Trend Analysis: Observed changes in jute cultivation over time, including the impact of climate variations.

Process Maps: Detailed the various stages of jute cultivation, from planting to processing.

Cause-Effect Diagrams: Analyzed the challenges in jute production and their broader impacts on the community and the environment.

Pairwise Ranking: Prioritized constraints faced by farmers and identified community-preferred solutions.

Microsoft Excel was used to carefully examine the gathered data in order to find trends and patterns. PowerPoint and Microsoft Word were used to construct visual representations, such as maps and diagrams that effectively communicated the findings. Key issues such as high production costs, low profitability, water shortages, and the diminishing market value of jute were brought to light by this analytical method. The study's conclusions were combined to create a final report that included helpful suggestions and a summary of the findings. In order to overcome the difficulties in jute cultivation, the paper underlined the necessity of contemporary agricultural methods, financial assistance for farmers, and improved market integration. Insights from the community were integrated to suggest long-term fixes for reviving the jute industry. This methodology offers a comprehensive approach to comprehending and resolving the fall in jute output by combining community involvement, comprehensive data collecting, and analytical tools. The results are intended to solve regional and national economic and environmental issues while supporting the jute industry's sustainable growth.

RESULTS AND DISCUSSION

Focus Group Discussion

Focus group discussions (FGDs) were conducted with farmers in Bhugroil, Paba Upazila of Rajshahi district, to gain insights into the challenges and solutions related to jute cultivation. Participants included eight key farmers led by authors, the discussion explored issues faced by farmers and their suggestions for improving jute farming. The session also encouraged new ideas, providing valuable input for future interventions.

Key Informant

Key informant interviews were conducted with three experts where they emphasized the need for government subsidies and a pricing policy based on jute quality, along with improved farmer knowledge of fiber grading; highlighted the loss of government-owned jute rotting sites and suggested preserving them or using jute retting machines; and stressed the importance of creating a local jute market, diversifying jute products, and restricting plastic use. They also noted that jute mill decline is due to delayed bank loans, political issues, and a shortage of skilled labor.

Socio Infrastructural Conditions

The map created by the villagers shows the socio-infrastructural conditions of Bhugroil (Figure 2). It is strategically located near the Rajshahi-Naogaon highway, providing easy access to transportation for agricultural products. The area has primary schools, a nearby Baya Bazaar, and mosques, with most residents being religious Muslims. However, local roads are in poor condition, making it difficult to transport goods. Exposed drainage lines cause unpleasant odors. Agriculture dominates the area, with many people engaged in cattle production and poultry farming, which contributes organic fertilizer for jute cultivation. Most houses are built on agricultural land, and the community is largely agricultural, with a mix of Pacca and Kaccha homes.

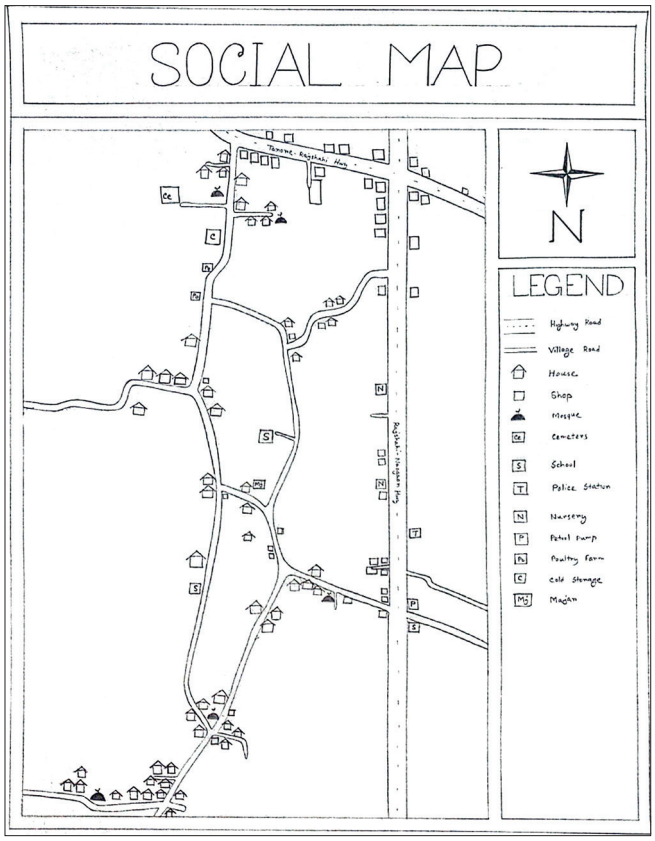

Figure 2: Social map

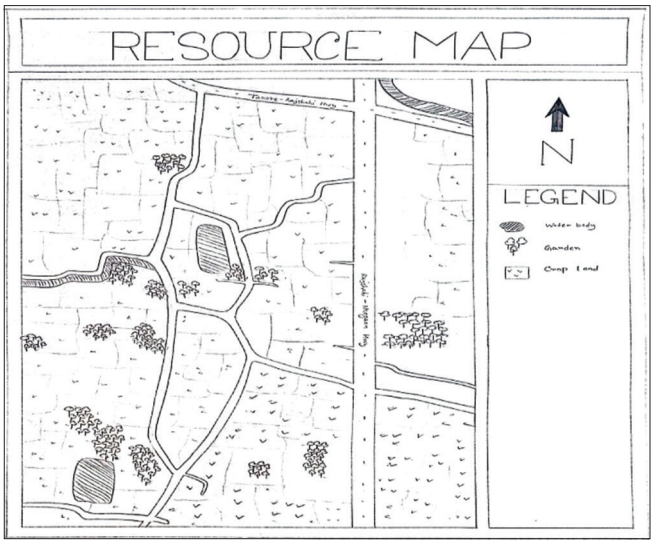

Figure 3: Resource map

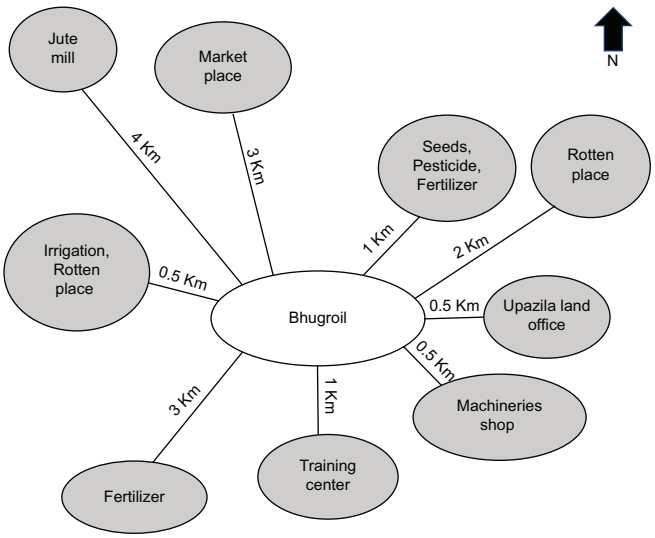

Figure 4: Service and opportunity map

Identifying the Natural Resources

The resource map of Bhugroil highlights the area's agricultural resources and challenges (Figure 3). The western part is dominated by agricultural fields, and farmers use urban drains for irrigation and jute rotting. However, the water in these drains is insufficient and unsafe for agricultural use. The area lacks artificial irrigation methods like deep tube wells, and water scarcity is a significant issue, especially during summer. While the soil is fertile and supports diverse crops, including jute, the decreasing availability of water is reducing jute production. The region also has a canal, called "gang," which is becoming narrower due to waste dumping, further exacerbating the water shortage.

Service & Opportunities Map

The service and opportunity map of Bhugroil village highlights key services and their distances (Figure 4). Baya Bazar, 1 km away, is crucial for purchasing seeds and fertilizers, while Nowdapara Bazar, 3 km away, is less frequently used. The small canal, 0.5 km from Bhugroil Mor, is mainly used for jute rotting but is narrow and often dry. Nowhata Bazar, 3 km away, is vital for selling jute, and the nearby jute mill, 4 km away, offers manufacturing opportunities. Repair shops, half a kilometer away, support cultivation, and a training center provide limited services. The Upazila Land office, also half a kilometer away, handles land-related services.

- Accessibility is proportional to distance from the center.
- Less distance equals greater accessibility.
- A big circle means more dependable; a small circle means less dependable.

Seasonal Diagram

The seasonal diagram reveals the crop pattern in Bhugroil (Table 1). Jute is planted in March (Choitro), with land preparation starting in January or February (Magh/Falgun). Weeding occurs in April and May (Boishakh/Jyoishtho), and harvesting takes place in July or August (Asharh/Shrabon), with the entire process lasting 4-5 months. After jute, potato cultivation begins in September, with planting in October and harvesting in February or March. Wheat follows a similar timeline. Carrots are harvested in January, while corn is planted in October or November and harvested in March. Aman rice is grown, with land preparation starting in June or July

(Ashar/Shrabon), fertilized during planting, and harvested in November or December (Kartik/Ograhayon).

Production of Jute in Different Year in Paba Upazilas

For the economic years 2018-19 to 2022-23, data on Desi and Tosa jute production, production areas in acres, and total jute production in metric tons. Desi jute covered 286.64 acres in 2018-19, while Tosa jute covered 4356.46 acres. This meant that there were a total of 4650.52 acres of production area and 4516.8 metric tons of jute produced. There were variations in the following years, with a consistent production of Desi jute but changing Tosa jute-producing areas. The production areas of Desi jute (111.19 acres) and Tosa jute (3471.831 acres) decreased significantly in 2020–21, with a combined production of 3480 metric tons. Specific information about the Desi jute production area is not available for 2021–2022, however, the Tosa jute production area climbed to 1981.

Table 1: Crop pattern in a year

Products	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Jute	LP F	LP	PS	W1 F	W2		HV	HV				
Potato		HV	HV						LP	PS	W1 F	
Wheat		HV	HV						LP F	PS	W1	
Carrot	HV								LP F	PS W1	W2	
Corn			HV						LP	PS	PS F	W1 W2
Aman rice						LP	LP F	PS	W1 F	W2	HV	HV

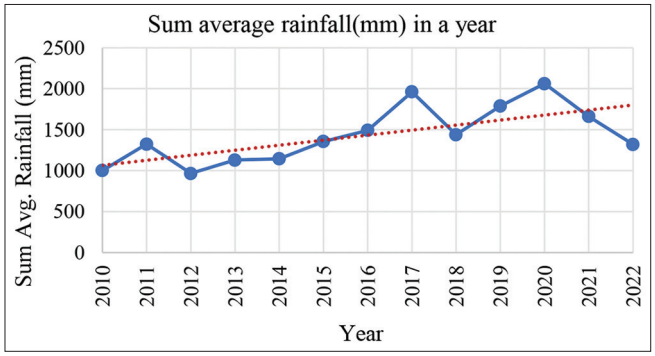

Figure 5: Average rainfall in a year

Sum of Average Rainfall Data

The total annual average rainfall in Paba Upazila has been declining over the years (Figure 5). The rainfall decreased from around 1000 mm in 2010 to 1300 mm in 2022. The graph indicates a declining trend in total rainfall over the years, which may be influenced by factors like urbanization, deforestation, and climate change.

Jute Fiber Production Process

Jute cultivation starts with clearing the land, selecting quality seeds, and ensuring proper irrigation and fertilization. After sowing, weed and pest control are vital. Harvesting occurs after 120–150 days, followed by retting, stripping, washing, drying, and packaging for distribution. A Process diagram is shown in Figure 6.

Challenges and Effects of Jute Production

The cause-and-effect graphic highlights the main causes of Bhugroil's declining jute production, including high labor expenses, a shortage of water, inadequate decaying space, subpar seed, and growing fertilizer costs (Figure 7). Farmers suffer financial losses and higher production expenses as a result of these problems. Farmers are growing other crops like paddy and potatoes as a result of the falling market value of jute and the move to plastic items, which further reduce demand. Jute mills experience supply difficulties as a result, which forces them to close. Furthermore, the usage of plastic is harming the environment by reducing the fertility of the soil.

Identifying the Highest Problems

During a participatory survey in Paba Upazila of Rajshahi district, farmers identified key constraints in jute production, and ranked using a pair-wise method. The most significant issue was low market value, ranked first with a frequency level of 8 (Table 2). Water scarcity ranked second, is a major concern due to inadequate rainfall and small canals for irrigation and rotting. High labor costs came in third, followed by the rising

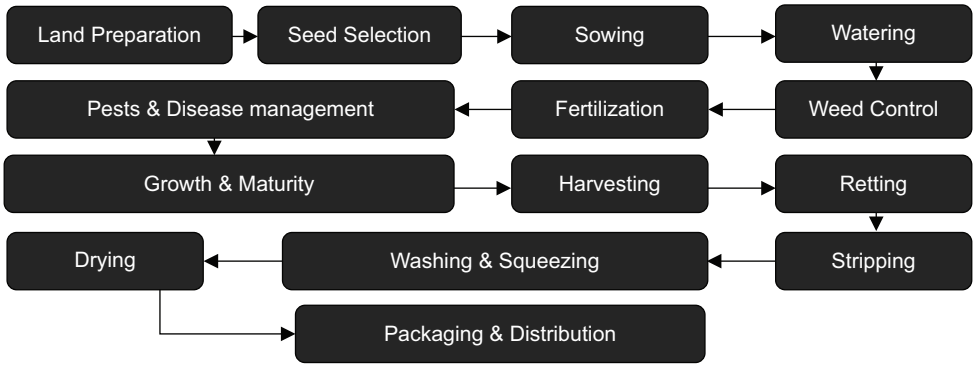

Figure 6: Jute fiber production process

Table 2: Pair-wise ranking of the problems faced farmers

Challenges of jute production	1. Insufficient rotton place	2. Labour cost	3. Transportation cost	4. Fertilizer cost	5. Pest attack	6. Poor seed quality	7. Less market value	8. Water scarcity	9. Increase use of plastic	Frequency	Ranking
1. Insufficient rotton place	-	1	1	1	1	1	7	8	1	6	3rd
2. Labour cost	-	-	2	2	2	2	7	8	2	5	4th
3. Transportation cost	-	-	-	4	3	3	7	8	3	3	6th
4. Fertilizer cost	-	-	-	-	4	4	7	8	4	4	5th
5. Pest attack	-	-	-	-	-	6	7	8	9	0	9th
6. Poor seed quality	-	-	-	-	-	-	7	8	9	1	8th
7. Less market value	-	-	-	-	-	-	-	7	7	8	1st
8. Water scarcity	-	-	-	-	-	-	-	-	8	7	2th
9. Increase use of plastic	-	-	-	-	-	-	-	-	-	2	7th

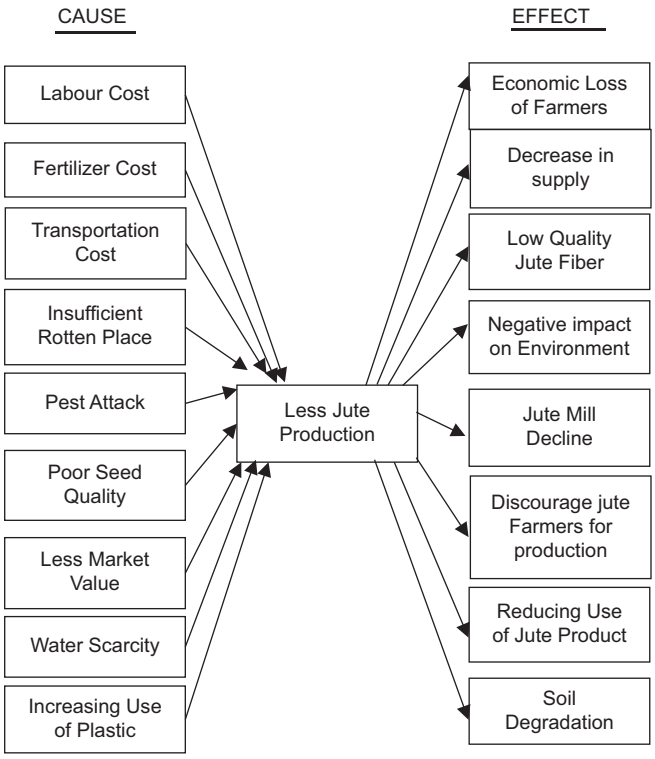

Figure 7: Cause and Effect Diagram

expense of fertilizers which ranked forth. Insufficient space for jute rotting ranked fifth leading to reduced fiber quality. Transportation costs and the increasing use of plastic products were ranked sixth and seventh. Minor issues included poor seed quality and occasional pest attacks, which can harm fiber quality despite pesticide use.

Demands of the Farmers

The PRA survey in Paba Upazila of Rajshahi district, highlighted farmers' key demands to address challenges in jute production (Table 3). The highest-ranked demand is increasing the market price of raw jute (ranked 1st), ensuring fair prices by breaking syndicates exploiting farmers.

Improving canals (ranked 2nd) for better water flow and providing submersible tube wells to address water scarcity were also prioritized. Farmers face high labor costs (ranked 4th) due to scarcity, with demands for stable wages and monitoring. Rising costs of fertilizers and pesticides are another concern, with farmers requesting government subsidies and reduced prices. They also emphasized the need for modern machinery to ease jute fiber processing and cultivation, which could reduce production costs. Subsidies, including free seeds, low-cost loans, and machinery, were proposed to encourage jute farming. A less prioritized demand (ranked 8th) was establishing training centers to educate farmers on better practices, organic alternatives, and market demand for jute. These centers could boost production and quality while fostering community awareness.

Jute Supply Chain Mechanism

The journey of raw jute fiber, depicted in this chart, unfolds as a complex network from agricultural fields to the final export zone. Commencing with farmers who sell their produce in local markets like Nawhata, Natore, Pabna, Naogaon, Chapainawabgonj, and Khulna, a notable exception is Nawhata, where farmers directly engage with industries. Other areas are controlled by middlemen integral to transferring raw materials to industries. These intermediaries facilitate the transition, guiding raw jute to processing plants for refinement. Industries, having acquired the raw jute, undergo diverse production stages before culminating in the exportation of finished goods. The strategic land ports of Benapole and Sona-mosque play a pivotal role in this international distribution.

Market Analysis of Jute Fibers

A difficult economic situation for farmers is revealed by the cost and revenue analysis of jute cultivation, which is made worse by the power of syndicate-controlled marketplaces (Figure 8). The entire cost of producing jute for farmers is 104$ (approximately) per 0.33 acre (approximately), which includes costs for labor, seeds, fertilizer, pesticides, irrigation, and shipping. Despite these high prices, farmers sell their raw jute to middlemen for 92.22$ (approximately) per

Table 3: Pair-wise ranking of demands of farmers

Demand of farmers	Reduce fertilizer cost	Reduce labour cost	Increase market value	Provide subsidies	Provide modern machineries	Establish training canter	Canal improvement	Provide irrigation	Frequency	Ranking
Reduce fertilizer cost	-	2	3	1	1	1	7	8	3	5th
Reduce labour cost	-	-	3	2	2	2	7	8	4	4th
Increase market value	-	-		3	3	3	3	3	7	1th
Provide subsidies	-	-	-	-	5	4	7	8	1	7th
Provide modern machineries	-	-	-	-	-	5	7	8	2	6th
Establish training canter	-	-	-	-	-	-	7	8	0	8th
Canal improvement	-	-	-	-	-	-	-	7	6	2nd
Provide irrigation	-	-	-	-	-	-	-	-	5	3rd

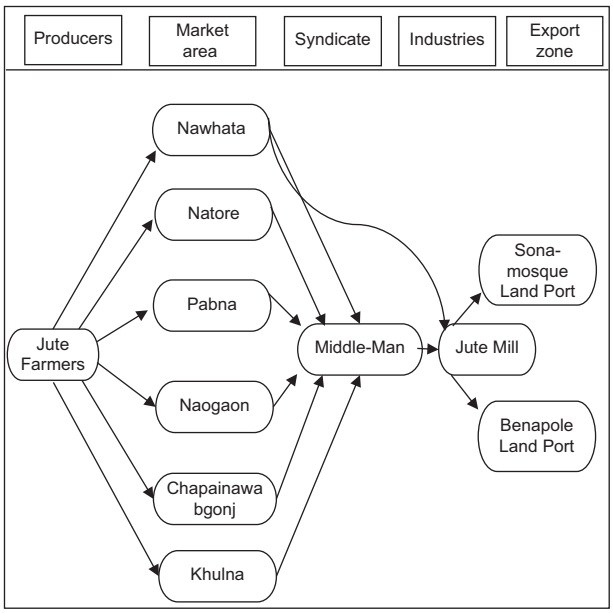

Figure 8: Supply Diagram of Jute

0.33 acre (approximately), resulting in a net loss of 11.72$ (approximately) per 0.33 acre (approximately). This loss is a reflection of the little compensation that farmers receive for their labor and capital. However, middlemen pay additional charges of 16.39$ (approximately), making their total spending 108.61$ (approximately), after purchasing jute from farmers at 92.22$ (approximately) per 0.33 acre (approximately). But they make an acceptable profit of 45.08$ (approximately) when they sell the raw jute to industries for 153.69$ (approximately) per 0.33 acre (approximately). At this increased price, industries buy jute to be processed further and then sold as completed goods. This analysis demonstrates the glaring inequality in profit distribution, as farmers are financially burdened by low selling prices and high cultivation costs, while intermediaries and industries benefit greatly. This problem is made worse by syndicates' role in setting pricing, which creates an unfair playing field that significantly disadvantages farmers.

Key Insights

Less Market Value of Jute Fibers: As jute mills are only exporting raw jute products which always lacks of jute products demand in local market as plastic industry increases their market area in such consequences.

High Production Cost: Field-level farmers cannot make profits as middle-man cuts nuts in terms of servicing to jute industry.

Water Scarcity and Insufficient Rotten Places: Low rainfall in recent years and Farakka Barrage-related weak foreign diplomacy are disturbing in natural flow of sufficient water features, land fragmentation also decreasing rotting places.

Plastic Overtaking Jute Market: Plastic's market dominance over jute in a capitalistic economy stems from its cost-effectiveness, durability, and versatility. Driven by constant innovation and consumer preferences for affordability, plastic's widespread use persists despite environmental concerns. Market competition, global trade dynamics, and established infrastructure further contribute to its economic advantage, maintaining plastic's stronghold in the market.

Lack of Subsidies: The absence of government subsidies hampers jute production by imposing financial burdens on farmers. Without support for cultivation costs, including seeds and fertilizers, farmers may reduce jute acreage or switch to more profitable crops. This lack of incentives undermines the competitiveness of jute, impacting both farmers and the industry.

Replacing Govt. Jute Industries into Private: The privatization of government jute industries in Bangladesh may disrupt jute production due to potential focus on profit over sustainability. Job insecurity, neglect of social welfare, and environmental concerns could arise. A careful balance is needed to ensure privatization benefits without compromising the jute industry's overall conditions.

Famers are an Exploited Group; they are the Worst Sufferer: Farmers often endure exploitation, being among the most vulnerable groups. The absence of effective farmer unions, such as Krisok Samiti, and corruption within exacerbate their plight. These issues contribute to farmers facing economic hardships, limited access to resources, and a lack of representation, highlighting the urgent need for transparent and accountable agricultural organizations.

Proposed Solutions

Create Govt. Led Jute Purchase Center: Create government purchase centers in every Upazila to reserve jute fiber so that

the farmers and traders can buy and sell at a fair price. The jute mills can purchase jute fiber from it at a fair price without any influence of intermediaries group.

Price Determining Policy: Bangladesh Jute Mills Corporation (BJMC) and Bangladesh Jute Mills Association (BJMA) should adopt active pricing and marketing strategies to decrease the costs associated with producing jute goods, ensuring that buyers receive higher-quality jute products through the application of strictly enforced quality control procedures, and managing personnel, equipment, materials particularly raw jute and finances in an effective and efficient manner with the goal of minimizing costs.

Provide Technological Knowledge and Training: Scientific education and training can improve farmers' knowledge of improved jute production methods. In farmers' fields, the use of various technologies and the scientific application of chemicals should be ensured. Government and non-government organizations should take the required steps to provide farmers with scientific education and training. Use of High Yielding Variety (HYV) seed can improve the fiber quality.

Increase Jute Demand: Strategies against the closures of jute mills and establishment of new jute mills. Create diverse jute products like items for decorating walls (wall decoration, embroidered paintings, framed products, framed photographs, tapestries, framed mirrors, wall decals, wall hangings, hacking pockets storage, key holders, etc.), jute bags (handbags, shopping bags, beach bags, Christmas bags, sling bags, promotional bags, sacking bags, bottle bags, hessian cloth bags, hydrocarbon free bags, food grade bags, etc.), jute for craftworks (sketchbook, pen keeper, cards of salutation, frame for a picture, a folder for containing document, gift container, tissue box, wall hangings, slip pad holder, coasters, table mats, hammocks, lampshades, stationery), jute textile (hessian cloth or burlap, geotextiles, yarn, carpet cloth (CBC)), jute apparel (jacket, footwear, other fashion accessories), jute mats and durries, jute cushion covers, jute fabrics, jute blinds, jute rugs, jute carpets etc. Also, use of polythene and plastic products should be banned.

Use of Ribbon Retting and Microbial Formulation: There are both mechanical and manual jute that can be used according to the demand for unbroken sticks. These techniques use less water and need less time for retting than traditional retting method and the quality of jute fiber is better.

Create Pond, Canal in Govt. Owned Land and Use of Retting Tank: The government may arrange for additional water supply, pond digging, canal and so on at the appropriate time. Technology can be developed so that retting can be done with very little water.

Use of Modern Techniques and Machinery: Use of modern mercenaries and techniques can reduce labor dependence.

Provide Loans and Input Incentives: The government may implement a new banking law to allow farmers to obtain credit from any government or commercial bank at a low interest rate and on simple terms and conditions. Also, public and private organizations should provide high-quality seed, fertilizer-free or at low cost.

Improved Transportation and Communication Network: Improved transportation infrastructure is required not only for the jute sector but also for the country's overall economic development. Means of transportation and roads should be built, which will help to reduce total production costs while also allowing farmers to earn a higher jute price.

Create Versatile Jute Products: The jute mills only create bells, yarn, sacks, etc., and export them to a few countries but they should create different types of products made of jute according to demand. Create diverse jute products like decorative items, shopping bags, promotional bags, craft items, clothes, mats, etc.

Strategies against the Closures of Jute Mills and Establishment of New Jute Mills: The lack of opportunities and potential in Bangladesh's jute business renders any mill closure unnecessary. The global demand isn't rising quickly, though. A medium-term and solid plan is needed in order to build reasonable, balanced, stable, and directed equipment for growth. The establishment of new jute factories is a possibility. However, under these conditions, idle machinery in the public and commercial sectors may be positioned in the process of making jute products. The least amount of money needs to be spent on maintaining, replacing, and repairing idle or underutilized machinery and equipment in order to build new mills and factories. Entrepreneurs must be encouraged and advised to set up factories producing goods with the potential for future growth.

Create Local and International Markets Place: Provide incentives and remove tax on selling jute products on local markets and the Ministry of Commerce should try to create international markets in different countries.

Encourage Collaboration between the Private Sector and the Government: An effective collaboration between the public and business sectors is necessary to increase jute output. The government ought to set aside money for cooperative research and development initiatives, give farmers financial incentives, and work with the commercial sector to encourage the adoption of new technologies. Public-private partnerships have the potential to boost market accessibility, encourage sustainable practices, and accelerate the development of jute industries. Policies that encourage the expansion of the jute sector and its cultivation should be developed together. It is advisable to collaborate on skill development projects for industry workers and training programs for farmers. The partnership seeks to guarantee the general prosperity of the jute sector, encourage innovation, and increase jute production through collaborative efforts.

CONCLUSION

This study tried to find out the current situation of jute farmers and analyzed the jute market of selected study areas to

identify the problems and solve them. The study collected data from primary and secondary sources and recommended some solutions combining the information gathered from the field survey, key informants, reviewing literature and the researcher's perspective. The identified solutions like creating a government purchase center, price-determining policy, use of modern technology and machinery, providing training and knowledge, discouraging plastic, creating new jute mills, credit facilities, skilled labor, improved transportation, versatile jute products, etc. The suggested solutions and policy recommendations have been given to solve the existing problem of farmers and jute market of the study area. The findings are expected to be useful for other areas facing similar problems and for other researchers, and policy makers to address the problems and to take proper initiative for the overall development of jute farmers and jute industry for the better economy of Bangladesh.

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