International Journal of Multidisciplinary Research and Growth Evaluation.

Economic Potential of *Vannamei* Shrimp Farming in Bangladesh

Anowara Rully [1*], Roshifa Mamun Prethu [2], Mohammad Salim Miah [3]
[1] Lecturer, Department of Economics, Phultala Mozam Moholdar College, Khulna, Bangladesh
[2] Discipline of Development Studies, Khulna University, Khulna 9208, Bangladesh
[3] Discipline of Human Resource Management (HRM), Stamford University Bangladesh, Dhaka 1217, Bangladesh

* Corresponding Author: **Anowara Rully**

Article Info

ISSN (Online): 2582-7138
Volume: 07
Issue: 05
Received: 04-08-2026
Accepted: 05-09-2026
Published: 03-10-2026
Page No: 639-645

Abstract
If Bangladesh is to regain its lost glory of "Bengalis living on fish and rice," expanding fish farming in the country is very important. Due to rapid growth, strong international demand, higher productivity, and other factors, Bangladesh needs to take prompt measures to promote Vannamei shrimp farming alongside Bagda (Black Tiger) and Golda (Freshwater Giant River) shrimp farming. This study analyzes the economic potential, production costs, profitability, employment generation, and export prospects of Vannamei shrimp farming in Bangladesh. A survey was conducted using a structured questionnaire administered from November 2018 to June 2019 with 50 farmers in the selected Paikgacha Upazila of Khulna district, southwest Bangladesh. The study's findings indicate that, with modern technology and effective management, Vannamei shrimp farming can contribute significantly to Bangladesh's economy.

DOI: https://doi.org/10.54660/.IJMRGE.2026.7.5.639-645

Keywords: Pacific white shrimp, Potential, Economic, Vannamei Shrimp, Farm

1. Introduction

Shrimp aquaculture is a billion-dollar food-producing industry that contributes substantially to global food security, employment, trade, and rural livelihoods (Shekhar *et al*., 2021) [18]. Shrimp is highly valued in domestic and international markets because of its desirable taste, nutritional quality, and high economic value. Major cultured species include whiteleg shrimp (*Litopenaeus vannamei*), giant tiger shrimp (*Penaeus monodon*), oriental river prawn (*Macrobrachium nipponense*), and giant river prawn (*Macrobrachium rosenbergii*) (FAO, 2020). Among these species, *L. vannamei* is the most widely cultured marine shrimp because of its favourable biological and farming characteristics. Originally distributed along the Pacific coast from northern Mexico to northern Peru, it performs best at approximately 28–32°C and is therefore suitable for tropical, subtropical, and some temperate aquaculture systems (Krummenauer *et al*., 2011) [11]. However, low temperatures can substantially reduce growth and survival, limiting production periods in colder regions. Compared with *P. monodon*, *L. vannamei* offers several advantages. It breeds successfully in captivity, accepts relatively low-protein feeds, grows rapidly, adapts to diverse culture conditions, and generally achieves higher hatchery survival (Jory & Cabrera, 2012) [9]. Its moulting cycle is also shorter than that of *P. monodon*, supporting faster growth (Corteel *et al*., 2012) [4]. Furthermore, *L. vannamei* can achieve considerably higher production per unit area. Studies from Thailand, Vietnam, and India have reported greater productivity, lower land and water requirements, and reduced dependence on wild fish for feed compared with *P. monodon* (Boyd *et al*., 2017, 2018) [3]. Higher profitability has likewise been reported for *L. vannamei* farming in India (Nisar *et al*., 2021) [16]. Beyond production efficiency, *L. vannamei* provides high-quality animal protein with relatively low levels of fat and cholesterol, as well as essential fatty acids, vitamins, and minerals (David, 2019) [5]. Global production has expanded rapidly, generating substantial export revenues and employment throughout farming, hatchery production, feed manufacturing, health management, processing, transportation, and marketing (FAO, 2020; Jory & Darryl, 2018) [10]. India, in particular, has experienced rapid expansion of *L. vannamei* farming, supporting numerous livelihoods (Kumaran *et al*., 2021) [12]. In Bangladesh, *L. vannamei* culture remains at the pilot stage but has

considerable potential in suitable coastal brackish and marine environments. Development should emphasize disease prevention, high-quality seed, environmental monitoring, biosecurity, efficient feed management, and appropriate nursery and grow-out technologies, including biofloc and recirculating systems (Wang *et al*., 2022) [23]. Consequently, systematic research and evidence-based management are essential for developing a productive, economically viable, and environmentally responsible *L. vannamei* industry in Bangladesh.



Fig 1: Partially harvested Litopenaeus vannamei

In recent years, cultivating king shrimp (L. vannamei) in Bangladesh has become an important issue in the shrimp industry. Currently, the Department of Fisheries (DoF), Bangladesh Fisheries Research Institute (BFRI), and non-government organizations, including policymakers, academicians, researchers, and experts from shrimp processing agencies, are working together on culture strategies, sites, and feasibility for sustainable development. In 2019, the Bangladesh government allowed trial-scale production of *L. vannamei*, as the authority considered switching from the native tiger prawn, *P. monodon* (The Fish Site, 2019) [20]. The DoF permitted the first trial to take place in ponds covering up to 20 acres in the Cox's Bazar and Khulna districts under the DoF guidelines, using imported specific pathogen-free (SPF) shrimp. FAO (2020) reported that the government has approved another pilot scale of *L. vannamei* culture for Agri Business Enterprise in Chattogram. The first consignment of one million *L. vannamei* postlarvae was bought by air from Thailand; these were released in four ponds at BFRI, Paikgachha, Khulna (Roy, 2021) [17]. This was a joint venture with MU Seafoods and Sushilan, a local non-government organization (Haque, 2022; Roy, 2021) [7, 17]. In this trial, the average production of *L.* vannamei was 6.761 MT/ha (Haque, 2022) [7]. Furthermore, Ali (2022) [1] reported that MU Seafood has cultivated *L. vannamei* in 1.56 hectares of pond area with a controlled environment in Paikgachha, Khulna. The shrimp production was 8.901 MT/ha after 90 days of culture period. Figure 1 shows Whiteleg shrimp grow-out production in a pond in Bangladesh. NEWAGE (2022) [15] quoted the BTTC (Bangladesh Trade and Tariff Commission) *L. vannamei* production report; it ranged from 5.0 to 8.62 MT in pilot-scale culture. BTTC has been seeking commercial cultivation approval for this shrimp. Currently, four companies in the Chattogram region (MK Hatchery in Ukhia of Cox's Bazar, Dafa Feed and Agro Products Ltd under Karnaphuli in Chattogram, Niribili Hatchery in the Kalatali area of Cox's Bazar, and Midway Scientific Fisheries Ltd in Khurushkul of Cox's Bazar) and eight companies in Khulna, including MU Sea Foods, have been permitted for *L. vannamei* culture (Islam, 2022; The Business Post, 2022) [8]. In addition, eight private entrepreneurs are awaiting permission (Islam, 2022; The Business Post, 2022) [8]. Therefore, it is perceived that *L. vannamei* culture will be permitted for many aquaculture entrepreneurs in the coming years. Thus, it is suggested that the culture system for this shrimp be standardized to suit the Bangladeshi shrimp-culture environment and perspectives. This study analyzes the economic potential, production costs, profitability, employment generation, and export prospects of Vannamei shrimp farming in Bangladesh.

2. Materials and Methods

2.1. Study Area

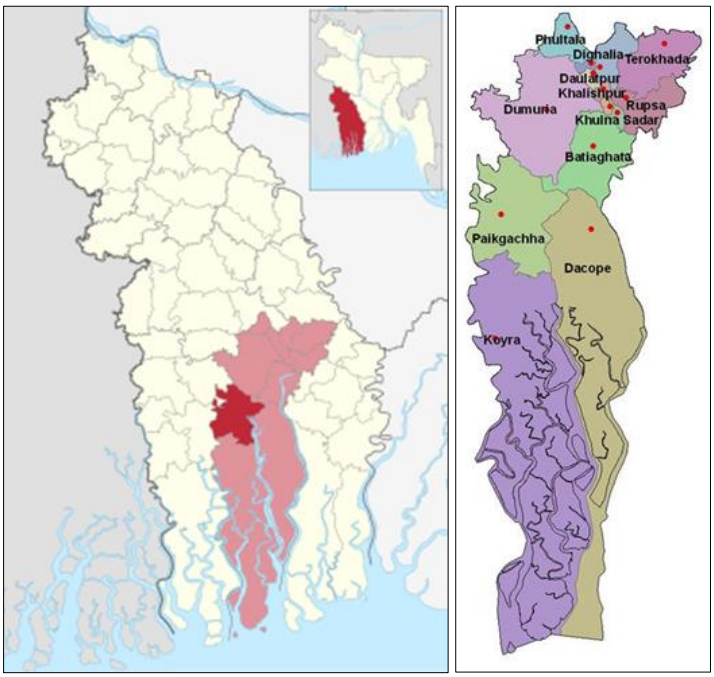


Fig 2: Geographical Location of the study area in Bangladesh

The study area was Paikgacha, a prominent shrimp-farming Upazila in Khulna district, southwestern part of Bangladesh (Fig. 2). This upazila is bordered to the north by Dumuria upazila in Khulna district and Tala upazila in Satkhira district; to the east by Dacope upazila; to the west by Ashasuni and Shyamnagar upazilas in Satkhira district; and to the south by Koyra upazila and the Sundarbans. Paikgacha Upazila was chosen for the study because it has the highest concentration of shrimp farmers and is famous for shrimp production because of the availability of wild post-larvae (PL), favorable resources, and climatic conditions.

2.2. Study periods

The study was conducted from November 2018 to June 2019.

2.3. Data collection

Data were collected by interviewing 50 farms (12 owners, 15 managers, and 23 farmers) out of 72 shrimp farmers in the selected Paikgacha Upazila of Khulna district. Farmers were chosen for questionnaire interviews through random sampling and Participatory Rural Appraisal (PRA) tools like Large Group Discussion (LGD), Focus Group Discussion (FGD), and Cross-Check interviews with Key Informants (KI). In addition to primary data, secondary data were collected from the Department of Fisheries (DOF), Export Promotion Bureau (EPB), relevant journals, theses, reports, and official records.

2.4. Data analysis

The information obtained from the survey was compiled, categorized, and analyzed according to the objectives and parameters. Some data contained numeric and narrative facts. The collected data were then coded, summarized, processed, tabulated using simple statistical tools like averages and percentages, and analyzed using Microsoft Excel.

3. Discussion

Identity of Vannamei Shrimp

Its English name is “White Leg Shrimp,” or white-legged shrimp. Although it is called white-legged shrimp, its body appears somewhat whitish. It has considerable similarity to the Harina variety of shrimp cultivated in Bangladesh. Vannamei shrimp is primarily a species of the Pacific Ocean region. Its original habitat is the Pacific coast of Central and South America, especially the regions of Mexico, Ecuador, Peru, and Colombia. Commercial Vannamei shrimp farming first began in Latin America in the 1970s. In the 1980s and 1990s, Vannamei shrimp farming began in various Asian countries, such as China, Thailand, Vietnam, Indonesia, and India. Due to rapid growth, high productivity, and the ability to adapt to various environments, Vannamei shrimp farming has become popular worldwide.

Water Quality

The optimal levels of different water quality parameters for *L. vannamei* aquaculture are presented in Table 1.

Table 1: The optimal water quality parameters of *Litopenaeus vannamei* in different culture systems

Parameters	References			
	Mohanty et al. (2018) [14]	**Mendoza-Lopez et al. (2017)** *	**Venkateswarlu (2019)** [22]	**Towers (2016)** [21]
Water temperature (^{O}C)	25-30	25-33		24-32
Salinity (%)	15-25	7-35	12-25	5-35
pH	6-9	7-8	7.5-8.5	7.4-9.4
Dissolved oxygen (mg L-1)	> 5	6-8	> 4	3.6-6.5
Ammonia-N (mg L-1)	< 1	1.0	< 1.0	0.1-2.4
Nitrite-N (mg L-1)	< 1	0.6	< 0.5	
Nitrate-N (mg L-1)	< 0.8	3.0		
Total suspended solids (mg L-1)	500	200-600		
Transparency (cm)	35-45			
Total alkalinity (mg L-1)	< 140	200	> 120	
Total hardness (mg L-1)			> 1000	
Hydrogen sulfide (mg L-1)	< 0.1		< 0.01	
PO4 (mg L-1)		2.0		

Superscript (*) work has described the ideal water quality level for the Biofloc Technology BFT system

Current Status of Shrimp Farming in Bangladesh

Shrimp farming is one of the major foreign-currency-earning sectors of Bangladesh. However, the sector is currently going through various challenges and changes. In Bangladesh, mainly two types of shrimp are farmed for export abroad: Bagda shrimp and Golda shrimp.

Bagda Shrimp

Bagda shrimp live in saline or brackish water. Bagda shrimp is farmed on approximately 140,000 hectares of land in the coastal areas of Bangladesh, which accounts for about 80% of total production. Among these, 110,000 hectares are in the south-western region, and 30,000 hectares are in the south-eastern region. In addition, Golda shrimp is being farmed on approximately 12,000 hectares of land in 16 districts of the country.

Golda Shrimp

By shrimp, people throughout the world mainly understand Golda shrimp. Golda shrimp ***are*** farmed in freshwater. Approximately 24 varieties of Golda shrimp have been discovered. For commercial fish farming, this shrimp is found throughout the year at river estuaries and, in November and December, in wetlands, rivers, canals, and other water bodies. Golda shrimp is delicious and rich in protein. Approximately 50 percent of the animal protein in our daily diet is supplied by Golda and shrimp. According to the Food and Agriculture Organization of the United Nations' The State of World Fisheries and Aquaculture 2022 report, Bangladesh ranks third in fish production in the world (open water bodies) and fifth in fish production in closed water bodies. Bangladesh produces 2.5 percent of the world's total shrimp production. After the ready-made garment industry, the shrimp sector has become the second-largest export sector. Although 36 species of marine shrimp and 24 species of freshwater shrimp are available in sufficient quantities in Bangladesh, Bagda and Golda shrimp are being commercially produced, and a large portion of exports comes from this sector. At present, approximately 8.33 lakh people are involved in shrimp fry collection. Between 1.5 and 2.0 lakh people are involved in production and processing. In the 2021/22 fiscal year, Bangladesh earned approximately US$407.25 million by exporting Bagda and Golda shrimp, of which US$253 million came from Bagda shrimp exports. This fisheries sector contributes 2.51 percent of the country's GDP and 1.20 percent of total export earnings. In addition, approximately 10 percent of the total population is directly or indirectly involved in this industry for their livelihood. Between 2 and 5 lakh people are directly involved in fry collection. In the 2023/24 fiscal year, registration of 2.62 lakh shrimp farms and 9,651 commercial farms was completed. In this fiscal year, 3 lakh 16 thousand metric tons of shrimp were produced in 2 lakh 62 thousand hectares of water bodies. At present, 143 government hatcheries and 1,190 private hatcheries are being operated in the country. There are currently 105 shrimp processing and exporting establishments in the country, of which only 28 remain operational. Due to a shortage of raw materials, production capacity has fallen to 10–15 percent, which is not favorable for keeping factories operational.

Vannamei Shrimp

Due to the decline in the production of domestic shrimp, namely Bagda and Golda shrimp, the "Bangladesh Frozen Foods Association" had been discussing approval for Vannamei shrimp farming for 12 years. Finally, in September 2019, the government experimentally permitted farming of this species. However, Vannamei shrimp is commercially farmed in 67 countries around the world and holds 80% of the total demand for shrimp in the world market. In our neighboring country, India, commercial Vannamei farming began in 2008. Experimental Vannamei shrimp farming has been successful in Paikgacha Upazila of Khulna. The producing organization exported Vannamei shrimp to Dubai, United Arab Emirates, in the Middle East and also earned good profits. In 2021, the Bangladesh Fisheries Research Institute experimentally farmed Vannamei shrimp in four ponds in Paikgacha, Khulna. The production cost was Tk. 5,376,161. The selling price was Tk. 6,948,000. The profit was Tk. 1,571,839. However, farmers estimate that the profit would be higher if farming could be carried out on their own land. Vannamei shrimp can be farmed at a higher density, and the crop can be obtained within 90 to 120 days. If more farmers become interested in farming, PL, feed, and equipment will become readily available. As a result, production costs will gradually decrease, and the level of profit will increase further.

Due to climate change, traditional methods, viral diseases, low-quality fry, increased production costs, weak market management, and competition in the international market,

Bagda and Golda shrimp farming has become risky at present. We will not be able to survive in competition in the world market based on this shrimp farming. If the government opens Vannamei farming, the shrimp industry will stand up again, and closed establishments will reopen through Vannamei shrimp farming. Bagda shrimp is currently covered by a G.I. certificate. With the G.I. certificate, the exclusive ownership of Bagda shrimp now belongs only to Bangladesh. Having obtained the G.I. certificate, it will receive a higher value in the world market as our own product, and foreign investment in this sector will increase from now on. Our traditional Bagda and Golda shrimp varieties must be conserved, but varieties such as Vannamei must be brought under cultivation. Vannamei shrimp has higher production but lower cost and greater disease resistance. On the other hand, Bagda and Golda have lower production, higher cost, and lower disease resistance. Therefore, considering various aspects, if we start Vannamei shrimp farming now, we will be able to capture the global market. However, it will not be enough if only two or four farmers farm it; an initiative must be taken at the highest policy-making level of the government. If necessary, government policy support, research and training, supply of quality fry and technology, and financial inclusion of small farmers must be ensured. If farmers receive various forms of cooperation from the government, it is possible for export earnings from this sector to exceed 10 billion dollars within the next 5 years. Moreover, since our population is large and the amount of land is small, there is no alternative to such high-yielding shrimp farming. The rest of the world is also moving in that direction.

Reasons for the Potential of Vannamei Shrimp Farming in Bangladesh

There is great potential for Vannamei shrimp farming in Bangladesh for the following reasons:

- There is broad potential for shrimp farming because of the favorable environment of the soil and water of this country.
- Fry can be easily obtained through various natural sources and hatcheries.
- The amount of capital investment required for Vannamei shrimp farming is not high.
- Small-scale shrimp farms can be established at low cost.
- As there is high demand for Bangladesh's shrimp in the world market, a large amount of foreign currency can be earned through exports.
- There is an expectation of improving the standard of living of the unemployed population—uneducated, less educated, and educated—through self-employment.
- Labor for shrimp farming can be obtained cheaply and easily.

Production

According to farmers, in an ordinary pond, 300 to 400 kilograms of Bagda are produced per hectare. On the other hand, 7 to 8 thousand Vannamei shrimp are produced on the same amount of land. Bagda shrimp matures in 110 to 150 days, whereas Vannamei shrimp becomes suitable for marketing within 90–120 days. Vannamei shrimp farming is somewhat like broiler chicken farming or high-yielding rice cultivation. In the traditional method, 5 shrimp can be farmed per square meter, whereas 300 shrimp can be farmed using the super-intensive method. The amount of growth that Vannamei shrimp achieves in the first 60 days increases threefold during the following 60 days. Bagda and Golda shrimp can be farmed once a year on the land where they are farmed, whereas Vannamei shrimp can be farmed three times a year on the same land. Businesspeople and farmers believe that if Vannamei shrimp is farmed properly, up to 30 percent profit can be made after costs, and export earnings from this sector can be doubled within the next 2 to 3 years.

Production Cost

Considering the production cost per hectare, it is seen that, including fry purchase, feed and medicine management, workers' wages, and electricity costs, the cost of Bagda and Golda shrimp farming using traditional methods is approximately Tk. 1.5 to 2 lakh. This produces only 300 to 400 kg of shrimp. In contrast, the production cost of Vannamei shrimp using the semi-intensive method is approximately Tk. 30 to 35 lakh per hectare, from which 7 to 8 thousand kg of shrimp can be produced. From this perspective, Vannamei shrimp farming is found to be very profitable.

Interest of Educated People in Farming Will Increase

Most of the farmers involved in the survey work are between 30 and 40 years of age; after completing their education, they have chosen shrimp farming to create self-employment because they have not been able to obtain jobs in the market. Forty percent of farmers in the young and middle-aged entrepreneur category are more interested in Vannamei shrimp farming than in Bagda and Golda shrimp farming. In general, the number of farmers who have passed secondary and higher-secondary education is greater. Some farmers also have bachelor's or master's degrees. If the educated population becomes more interested in this farming, interest in modern technologies such as intensive or semi-intensive methods will increase, and as a result, production will increase further.

Employment Creation

When a farmer farms on his own initiative to create self-employment, he also creates employment opportunities for more people on his farm. Permanent laborers, seasonal laborers, transport workers, and many other people work directly and indirectly in connection with marketing and transportation on a farm. In each of the 50 farms involved in the survey, approximately 5 laborers worked. Accordingly, about 250 workers in 50 farms were directly and indirectly involved in earning their livelihoods. This contributes to employment creation.

Major Problems of Farmers

Shortage of fry, diseases, high feed prices, lack of technological knowledge, etc. have been identified as the major problems of farmers. Thirty-four to thirty-five percent of farmers believe that various diseases are the main problem in Vannamei shrimp farming. To solve this problem, farmers emphasize ensuring disease-free fry and improved management. In addition, coastal farmers have expressed their views on farming using cluster and biofloc methods.

Profitability Analysis

Because the demand for Vannamei shrimp is high throughout the world, farming this shrimp is economically profitable.

Eighty percent of shrimp farming in the world is of the Vannamei variety. Farmers believe that if Tk. 1 is invested, it is possible to earn Tk. 1.80 to 2.00. The production cost of Bagda and Golda shrimp using the semi-intensive method is Tk. 4 to 5 lakh. The production quantity is 1.5 to 2 tons, and the market price is Tk. 700 to 800 per kg. In comparison, under the semi-intensive method, the production cost of Vannamei is Tk. 30 to 35 lakh, the production quantity is 8 to 10 tons, and the market price is Tk. 600–700 per kg. From this perspective, we will be able to meet our own demand and earn foreign currency by exporting large quantities of Vannamei shrimp. Farmers believe that, after deducting costs, up to 30 percent profit on investment is possible from Vannamei shrimp.

Overall Results

- The research shows that 80% of farmers consider Vannamei shrimp farming alongside Bagda and Golda farming to be standard and profitable.
- This sector plays an important role in creating employment. At present, 1.5 crore people are engaged in this profession.
- There is greater potential for increasing exports from this sector than from Bagda and Golda.
- The quantity of Vannamei production is higher than that of conventional shrimp. In the world market, it is currently the highest-yielding species.
- With training, the quantity of production from this shrimp farming will increase further.
- If the government provides the necessary loans and other support, income from this sector will increase further.
- If Vannamei farming is opened up and the cluster method is applied, production will increase.

Recommendations for the Development of Bangladesh's Shrimp Industry

In the current competition of a free-market economy, the development of the shrimp industry is very important along with the development and advancement of other industries. Local producers, businesspeople, farmers, and relevant institutions of Khulna, Bagerhat, Satkhira, and Cox's Bazar expressed their opinions in favor of adopting the following recommendations for the rapid development of this industry, and coastal farmers expressed their views on farming using cluster and biofloc methods.

Recommendations for Development and Implementation

Proposals and recommendations from the outcome of the study have been noted below:

- They consider it necessary to adopt a plan for intensive methods for scientifically increasing the production of domestic shrimp and implementing Vannamei shrimp farming.
- Approval for commercial farming of the more productive Vannamei species of shrimp must be given, and closed fish-processing factories must be made operational.
- Quality and virus-free fry must be produced and imported.
- Cluster or group farming methods must be introduced in shrimp farming.
- Farmers who have the capacity for Vannamei shrimp farming must be permitted simple policies.
- Zero tax must be imposed on machinery related to shrimp farming and on the inputs that have to be imported.
- Farmers must be provided with sufficient loans on easy terms and at low interest.
- To ensure shrimp quality control, a pollution-free environment must be maintained from shrimp harvesting through marketing.
- Arrangements must be made for advanced training of farmers.
- Arrangements must be made to produce Vannamei shrimp fry and feed in the country, and permission must be given to farm Vannamei shrimp in open water bodies, ponds, and ghers, and the banks of ghers or ponds must be raised.
- The government must help develop the shrimp industry by reducing frequent power interruptions or load-shedding.
- The social conditions and environment of shrimp-farming areas must be improved.
- The dominance of intermediaries from the farm-gate stage through export abroad must be reduced.
- Alongside government investment, private investment must be encouraged to increase Vannamei shrimp production and expand exports.
- Farmers who are financially affected must be identified and assisted through the relevant ministry to restore their capacity.
- Farmers must refrain from using unauthorized antibiotics, chemicals, or pesticides.

Conclusion

The shrimp industry is an important sector of Bangladesh's economy. The role of the shrimp industry is extremely important in earning foreign currency, creating employment, and developing the country's rural economy. This is now the appropriate time to farm the profitable and disease-resistant Vannamei variety of shrimp at lower production costs alongside Bagda and Golda shrimp. If proper policies are formulated, advanced technology and quality fry are provided, government support and approval are opened up, and arrangements are made for coastal farmers to adopt modern intensive and semi-intensive methods as well as cluster or group farming of Vannamei shrimp in open water bodies, this sector will expand further in the future, and Bangladesh's fisheries export sector will become broader. Therefore, the government must consider the expansion of Vannamei shrimp farming as important for sustainable economic development. The government must now take steps to open Vannamei shrimp farming commercially through a simple policy and increase the volume of exports.

References

1. Ali S. No greenlight for Vannamei shrimp production hurting exports. Business Standard. 2022:1-7.
2. Boyd CE, McNevin AA, Davis RP, Godumala R, Mohan ABC. Production methods and resource use at Litopenaeus vannamei and Penaeus monodon farms in India compared with previous findings from Thailand and Vietnam. J World Aquac Soc. 2018;49:551-569.
3. Boyd CE, McNevin AA, Racine P, Tinh HQ, Minh HN, Viriyatam R, et al. Resource use assessment of shrimp (Litopenaeus vannamei and Penaeus monodon)

production in Thailand and Vietnam. J World Aquac Soc. 2017;48:201-226.
4. Corteel M, Dantas-Lima JJ, Wille M, Alday-Sanz V, Pensaert MB, Sorgeloos P, et al. Moult cycle of laboratory-raised Penaeus (Litopenaeus) vannamei and P. monodon. Aquac Int. 2012;20:13-18.
5. David F. A worldwide reliable indicator to differentiate wild vs. farmed penaeid shrimps based on 207 fatty acid profiles. Food Chem. 2019;292:247-252.
6. Food and Agriculture Organization of the United Nations. The state of world fisheries and aquaculture 2020: sustainability in action. Rome: FAO; 2020. doi:10.4060/ca9229en.
7. Haque A. White leg shrimp cultivation sees success in Khulna. The Business Standard. 2022. Available from: https://www.tbsnews.net/economy/Whiteleg-shrimp-cu
8. Islam MN. Trial farming of vannamei shrimp to begin in Chattogram. The Daily Star. 2022 May 22. Available from: https://www.thedailystar.net/business/economy/news/trial-vannamei-shrimp-farming-begin-ctg-3029651. Accessed 2022 Jun 10.
9. Jory D, Cabrera T. Marine shrimp. In: Lucas JS, Southgate PC, editors. Aquaculture: farming aquatic animals and plants. Oxford: Blackwell Publishing Ltd; 2012. p. 476-513.
10. Jory DE. Current production, challenges and the future of shrimp farming. Global Aquaculture Alliance. 2018. p. 1-8.
11. Krummenauer D, Peixoto S, Cavalli RO, Poersch LH, Wasielesky W. Super intensive culture of white shrimp, Litopenaeus vannamei, in a biofloc technology system in Southern Brazil at different stocking densities. J World Aquac Soc. 2011;42:726-733.
12. Kumaran M, Sundaram M, Mathew S, Anand PR, Ghoshal TK, Kumararaja P, et al. Is Pacific white shrimp (Penaeus vannamei) farming in India sustainable? A multidimensional indicators-based assessment. Environ Dev Sustain. 2021;23:6466-6480.
13. Mendoza-López DG, Castañeda-Chávez MR, Lango-Reynoso F, Galaviz-Villa I, Montoya-Mendoza J, Ponce-Palafox JT, et al. The effect of biofloc technology (BFT) on water quality in white shrimp Litopenaeus vannamei culture: a review. Rev Bio Ciencias. 2017;4:1-15.
14. Mohanty RK, Ambast SK, Panigrahi P, Mandal KG. Water quality suitability and water use indices: useful management tools in coastal aquaculture of Litopenaeus vannamei. Aquaculture. 2018;485:210-219.
15. New Age. BTTC seeks commercial production approval for Vannamei shrimps. New Age. 2022:1-5.
16. Nisar U, Zhang H, Navghan M, Zhu Y, Mu Y. Comparative analysis of profitability and resource use efficiency between Penaeus monodon and Litopenaeus vannamei in India. PLoS One. 2021;16:1-19.
17. Roy D. Experimental vannamei shrimp cultivation underway; producers aim to revive exports. The Daily Star. 2021.
18. Shekhar MS, Katneni VK, Jangam AK, Krishnan K, Kaikkolante N, Vijayan KK. The genomics of farmed shrimp: current status and application. Rev Fish Sci Aquac. 2021;29:654-665.
19. The Business Post. Vannamei shrimp trial farming gets permission again. The Business Post. 2022. Available from: https://businesspostbd.com/news/vannamei-shrimp-tr
20. The Fish Site. Bangladesh considers switching shrimp species. The Fish Site. 2019. Available from: https://thefishsite.com/articles/bangladesh-consid
21. Towers L. Management of intensive Vannamei shrimp ponds. The Fish Site. 2016:1-11.
22. Venkateswarlu V, PSPA, PB. A study on water quality parameters in shrimp L. vannamei semi-intensive grow-out culture farms in coastal districts of Andhra Pradesh, India. Int J Fish Aquat Stud. 2019;7:394-399.
23. Wang H, Teng M, Liu P, Zhao M, Wang S, Hu J, et al. Selection signatures of Pacific white shrimp Litopenaeus vannamei revealed by whole-genome resequencing analysis. Front Mar Sci. 2022;9:1-9.

How to Cite This
Rully A, Prethu RM, Miah MS. Economic potential of Vannamei shrimp farming in Bangladesh. Int J Multidiscip Res Growth Eval. 2026;7(5):639-645. doi:10.54660/.IJMRGE.2026.7.5.639-645.

Creative Commons (CC) License
This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution NonCommercialShareAlike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work noncommercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.