

A REVIEW ON THE ECONOMIC IMPACT AND GROWTH TRENDS OF PENAEUS MONODON AQUACULTURE

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DOI: 10.63001/tbs.2025.v20.i02.S2.pp534-537

KEYWORDS

Prawn culture,
Penaeus monodon,
Indian economy,
aquaculture,
shrimp marketing.
Received on:

20-03-2025

Accepted on:

25-04-2025

Published on:

30-05-2025

ABSTRACT

Prawns, a group of economically valuable crustaceans commonly referred to as shrimp in trade, are widely consumed around the world and known by various local names such as Chingri, Ghinga, Kolambi, Sungata, Chemen, and Shetli. Celebrated globally for their delicate flavor, prawns are considered a culinary delicacy. They inhabit coastal areas, lakes, estuaries, and creeks, with the majority of production originating from marine environments. India ranks second only to the United States in prawn production, with *Penaeus monodon* (giant tiger prawn) comprising nearly 90% of the country's crustacean yield.

Although prawn farming has been practiced for a long time in India and other Asian countries, it remained a relatively neglected branch of fisheries for many years. Traditionally, most prawn catches came directly from the wild, often involving juvenile specimens. In recent decades, declining wild stocks and growing demand have prompted increased attention from fisheries departments toward scientific and technical advancements in prawn aquaculture. Shrimp farming has since become a significant contributor to India's seafood exports, generating annual foreign exchange revenues estimated between ₹70–₹80 crores. This review explores the economic growth, cultural practices, and market dynamics of *Penaeus monodon* farming in India.

INTRODUCTION

There are huge export opportunities in the maritime industry and thus good profit ratios are being produced [1]. This practise is being undertaken and successfully increased by farmers in the coastal regions. Compared to profit margins, the investment involved is decent and thus has profitable market potential. *Macrobrachium rosenbergii* is generally referred to or "SCAMPI" as giant freshwater crevasse [2]. It is common in south-east Asia and is present in most of Indian's river systems. Its high price, large scale, fast growth, good taste and high demand for exports make it highly valuable. These creeks live in the form of rivers, canals, estuary and tidal waters [3].

In both saline and marginally brackish water it can also be cultivated. In order to support the science of *Macrobrachium rosenbergii*, the ICAR-CIFA has created a kit. It entails a kindergarten period and expands. In terms of production, foreign currency revenue and jobs, the Indian seafood industry is one of the most important sectors for the Indian economy. Commercial prawns in India really began to take root in India in the mid-eighties [2]. There were several issues because most of India's coastal States were new to commercial scale prawn cultivation, generally inorganic good agricultural practises and the absence of proper extension facilities [4]. The report focuses on the topic that Indian black tigers are creeping in export markets with a sustained market share and rising UVR. The objective of the analysis is to reduce the processing costs of creeks with an improved benefit margin [3]. Economic analyses have shown that farmers using BMPs have increased viability, low

production costs and are capable of producing quality and traceable cream without the use of prohibited chemicals [5]. Marketing creams alive produce normally a lower cost, but also higher handling costs. The good marketing of these products relies on their potential for transport and presentation to keep them alive and show stable crevasses in an appealing manner [1].

TYPES OF PRAWN CULTURE

There are several types of creeping trees of various sizes divided into water supplies. The craws are only commercially selected for prawn culture and are decent in size, weight, available in abundance and easy to cultivate [6].

MARINE WATER PRAWN CULTURE

The cultivation of sea creeks is known as marine creeks or shrimp crops. When fully grown, *Penaeus indicus* can reach a maximum length of up to 20 cms [3].

FRESHWATER PRAWN CULTURE

The cultivation of freshwater creeks is referred to as the freshwater creeks [7]. When fully grown, *Macrobrachium rosenbergii* and *Macrobrachium malcomsonii* can reach a maximum length of 20 and 15 cms respectively. Crawns are one of India's most economical shell fish reserves. They consist of freshwater, salt water, estuaries, backwaters and fine waters of temperate and tropical countries. These are crustaceans. Both locally and internationally, they have strong demand. They are a delicious delicacy to use as food, because of their great flavour [8].

Given its success and marketing prospects abroad, advanced technology must be developed and prawn culture intensified in India. In the past 25 years, the exportation earnings from crevices and crevices have greatly improved [9].

Objectives of the Study

1. The aim of this analysis is to find a growth in India's prawn culture.
2. Analysis of the issue of prawn culture farmer party.
3. the role and stakeholders play in creeping culture of the financial institution.

Methodology

This is a case type mainly derived from multiple data from different sources such as newspapers and articles.

Factors Influence the Prawn Culture in India

The construction of more industrial hatcheries in combination with commercial and financial support credit facilities. Today in India the coastal aquaculture is associated with creeks and is primarily performed by small farmers [10]. The Indian prawn farming includes three groups of farmers/businessmen, i.e.

Table 1: Economics of grow-cut production of prawn

Sl. No.	Item	Amount (in Rs.)
I.	Expenditure	10,000
A.	Variable Cost	
1.	Pond lease value	36,000
2.	Prawn seed @ 60,000/ha (@ Rs.600/1000 Nos. including transportations cost	6,000
3.	Fertilizers and lime	60,000
4.	Supplementary feed (pellet form @ 3 t/crop @ Rs.20/kg)	18,000
5.	Wages (One @ Rs.2000/months for 9 months)	3,000
6.	Electricity and fuel	5,000
7.	Harvesting charges	3,000
8.	Miscellaneous expenditure	1,41,000
B.	Total Cost	1,41,000
1.	Variable Cost	10,725
2.	Interest on variable cost (@ 15% per annum for 6 months)	1,51,725
II	Grand Total	1,75,000
	Gross Income	35,000
	Scale of big size prawn (@ Rs.175/kg for 1000 kg)	2,10,000
	Sale of small size prawn (@ Rs.70/- kg for 500 kg)	
III	Net Income (Gross income - Total Cost)	58,275

Socio-Economic Aspects

Prawn agriculture provides substantial job opportunities that can contribute to poverty alleviation in many parts of the local coastal community [14]. Large creek farms occupy much more surface area and frequently are found in areas where little use of agricultural land is possible, though not always. Furthermore, it should not be forgotten to support sectors such as feed processing or the transportation, management and commercial enterprises, although not all of them are exclusive to crawling [15]. The workers on a prawn farm are able to earn higher salaries than most jobs. Aquaculture / communities achieve economic survival by

Risks of disease reduced, manufacturing costs reduced and sales raised, enhanced customer provision [16].

MARKETING

Around Rs 520 was received as a benefit in the demonstration ponds for each Rs 1,000 that a farmer invests. In comparison with non-demonstration farmers' Rs. 250 benefit during the same time, that was considerably higher. Acknowledge the concern of the farmer. The government is also helping the infrastructure construction organisations [17]. Better Management Prawn (BMP) incorporated farms are the key reasons responsible for increased profit:

- Efficient use of resources (feed)
- Reduced chemical use
- Sharing of expenses (deepening of canals, seed testing, transport of inputs, laboratory analysis, electricity, etc.)
- Social accountability The social consequences of community farming include reducing living threats and improving understanding among cluster farmers of

SMEs, middle and large businesses. Small farmers are both creative and profitable but are exposed to the myriad challenges and dangers that affect their livelihoods, farm sustainability and competition because of insufficient organisation, lack of experience, limited information or knowledge base [11].

Empowering Small Scale Farmers

One of the most important tools to promote farmers' empowerment are farmer associations. They have the capacity for cooperative activity, which can shift the farmer's stance about opportunities systems and thereby affect the farmers' market climate. Furthermore, the benefits in accessing facilities and markets, that are otherwise restricted to major commercial farms, can mostly be derived from the economical dimension of the organisation [12]. Groups of farmers also boost the exchange of knowledge and share with member of the party. India's small-scale creeks are now in a great place to earn these rewards [13].

ECONOMICS

Below is a comprehensive economic study of freshwater crewed in India.

biosecurity and the climate. Cluster farmers are the main markers for expanded social responsibility:

- Regular 10mg farmers exchanging knowledge at weekly meetings.
- Cooperation in the selection / testing and seed purchase through contract breeding systems.
- All farmers locked in clusters at the same time and thereby avoided continued harvesting and storage.
- Reduced contamination due to exchange of awareness between the Carers clusters following subsequent media actions in the event of disease outbreak.
- Increased collaboration in the sharing of the inlets, drains, etc.

The black tiger creek is spread from south-east Africa across much of the Indian Ocean, across the Red Sea and Arab Gulf, the Indian subcontinent and through the Malay Archipelago and from south to north of Australia in the western Pacific [4]. This species accounts for less than 5 percent of the native crevice population over much of its range. Although it accounts for just 5 to 6% of all creek landings in the world, it is the dominant single wild animal [18].

It is very obvious from the table above that the Indian Marine Tiger crevasses are highly demanded. His key explanation is because of the organic, big, hygienic, new, and better taste of the Indian marine tiger creams than of the others [8]. Like other prawn varieties, it also had vitamins, minerals and omega 3 fatty acids. As the global scampi market is growing at competitive levels, scampi production and export have a great opportunity to do so [13].

OPPORTUNITIES TO COMPLY WITH MARKET REQUIREMENTS

Farmer societies provide an excellent opportunity to connect with suppliers following existing controls, ensuring that the

minimum consumer conditions, including environmental and food safety, are in place [12]. Company manufactured crew is healthy - no use of anti-story farming in society. Current societies organised by the Indian Government model and regulated by government officials with a high level of respect for the democratic and transparent standards of fair trade. Company members know the export specifications [15].

INCREASED STAKEHOLDERS' INTERACTIONS AND INVOLVEMENT

Other local, national, regional and international institutions, organisations and agencies have had the opportunity to participate in these projects through Indian government. In India, the MPEDA, the State Fisheries Department, ICAR and its relevant institutions, especially the Brackishwater Aquaculture Central Institute (CIBA). The Prawn Hatchery Association of all of India [13]. The farmers associations, the Indian Seafood Exporters' Association, academic bodies such as the College Fisheries all had different positions to play. As farmers are the main ingredients, they have to connect them both back and forth with all other stakeholders in the industry. Farmers, input sources, manufacturers, scientists, are included. Institutes of Research. Institutes of government, banks, etc [17]. Banking loans for working capital, which I do not currently have for most small farmers, are most likely provided when the companies are connected to the market. Corporate organisations are interested in adopting companies for further growth of infrastructure. The effectiveness of this strategy depends largely on a traceable, high quality brand reputation and on better management generated in Prawn safely and ethically without damaging the ecosystem [10]. We are working to achieve this objective with the assistance of all involved, making the formation of community an enticing offer that can inspire all farmers to get organised into communities. Increased institutional cooperation, capacities and assistance in the management of communities would be a significant boost to smallholder farmers [11]. They would also benefit from the broader implementation, in order to reverse setbacks and enhance livelier living conditions, of technical, societal, economic and governance advances.

SELF PROPAGATING NATURE OF THE MODEL

Indeed, the trust that farmers have in participatory community farming and the idea are now mainstreaming are showing the emergence of multiple farming companies throughout India. Cluster organisation is making very good strides, largely because of the farmers' conviction that prawnfarmers have to organise themselves if they are to survive [18]. "As a group, we are solid, we can fix the problems that affect us, but we can't particularly progress with crawling in the process." In the following regions, farmer organisations as associations strengthen the individual producers:

Increased revenue, self-respect and industry negotiating ability [16]. Clusters provide economies of scale, inputs for purchase and consumer leverage for producers and retail sales. Ability to make demands and to engage with business, other political and social players. Access to and opportunity to handle financial services [17]. Knowledge and tools for the use of business, operation, technology and rights material. The connections to government and other social players are self confidence, social actors [18].

The Key Indicators of the Growth of Prawn Culture

This research would highlight a broader understanding of the value chain of the process in order to identify the socioeconomics of the various stakeholders engaged in manufacturing, distribution and selling of creep [19]. The research focuses on the primary indicators such as the physical environment, ownership, development, the processing systems, sanitation, the fund, transport, labour, wage, schooling, etc., of the main socio-economic features of stakeholderclasses [20].

CONCLUSION

Prawn producers, small-scale farmers, coastal communities, and entrepreneurs involved in seed processing, forestry, and auxiliary activities continue to benefit significantly from sustainable aquaculture practices. The responsible use of available areas and infrastructure contributes to unlocking underutilized resources, generating employment, and delivering substantial social and economic gains to coastal regions. By

integrating key disciplines such as human and animal health, nutrition, food safety, and sound farm management, farmer societies are better equipped to operate sustainable prawn farms. Notably, the adoption of Best Management Practices (BMP) through cluster-based farming models has empowered smallholder farmers by fostering collaboration, resource sharing, and collective service delivery. This approach has positively impacted agriculture, the environment, and local livelihoods, demonstrating a holistic model for sustainable aquaculture development.

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