

The Effect of Sustainability of Vannamei Shrimp Cultivation on Exports of Shrimp Commodity in the Bangka Belitung Island

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Abstract. Vannamei shrimp cultivation in Indonesia is currently the mainstay of the Aquaculture region and a concern for aquaculture improvement in Indonesia to enhance the country wide economy. The contribution of the export price of shrimp commodities to the price of Indonesian fishery exports has a completely great position withinside the export overall performance of Indonesian fishery commodities. The Bangka Belitung Islands province has the potential to develop vanaamei shrimp cultivation in order to move the wheels of the economy of the people in the area. The research method used is data panel regression with a research period from 2019 to 2022. The results show that sustainability of vannamei shrimp cultivation and massive and high-quality impact on exports of shrimp commodity in the Bangka Belitung Island province

Keywords: sustainability; vannamei shrimp; cultivation export

1 Introduction

The future growth of aquaculture is key in providing fish supplies in fisheries systems for national, regional and world food. To ensure that growth remains economically and ecologically sustainable, it is necessary to understand the pattern of growth and the opportunities and challenges faced by this trend. The number of aquaculture will surpass capture fisheries as the main source of fish in Indonesia before 2030. Investment in this sector will be vital to maintain fish supply and consumption. In addition, investment is also important so that fish prices remain affordable for consumers and the role of fisheries in Indonesia's food and nutrition security is maintained [1].

Vannamei shrimp cultivation in Indonesia is currently the mainstay of the aquaculture quarter and a priority for aquaculture development in Indonesia to improve the country wide economy. inside the 2012-2018 length, the contribution of shrimp export fee to the fee of Indonesian fishery exports reached a mean of 36.27%. this means that shrimp commodities have a very widespread function inside the export overall performance of Indonesian fishery commodities. In 2018 the volume of shrimp exports was recorded at 197.43 thousand tons with a value of USD 1,742.12 million. In the 2019 period, shrimp production reached 517,397 tons and is targeted to increase by 250% in 2024 to 1,290,000 tons with a production value of 36.22 trillion in 2019 to 90.30 trillion in 2024 [2].

Vannamei shrimp cultivation is also developing in the Bangka Belitung Islands. The Province of the Bangka Belitung Islands is an archipelago with a land location of 16,424.15 Km² and an ocean of eighty one,725.15 Km². The duration of the shoreline is two,375.ninety five km because the belt that surrounds the coastal location may be very capacity for the improvement of vannamei shrimp culture. The situation of the waters inside the Province of the Bangka Belitung Islands which continues to be desirable because there may be no commercial pollution and has 35 Coastal Districts is the carrying ability for the development of Vannamei shrimp within the Province of the Bangka Belitung Islands. The coastal location of Belitung Regency, Bangka Belitung Islands Province, has the potential to develop vanaamei shrimp cultivation to drive the economy of the people in the area. Some of the coastal areas of Belitung are included in the protected forest area and included in the Regional Spatial Plan (RTRW) for the tourism area. However, coastal areas outside the area can be used for vannamei shrimp farming activities. The economic value of vannamei shrimp cultivation is quite high and promising where the selling price of vannamei shrimp reaches Rp. 90 thousand per kilogram [3].

Primarily based at the extent of non-dwelling commodities of vannamei shrimp within the Province of the Bangka Belitung Islands in 2018 until. In 2020 there was an increase from 1,931 tons to 11,333 tons with a Commodity Value of 77,214 M to 588,283 M (with an increase in production of 318%). Vannamei shrimp cultivation in the Bangka Belitung Islands Province has increased significantly. Many of the entrepreneurs who were previously involved in the tin smelting or other fields have started to look at the vannamei shrimp farming business [4].

Meanwhile, the impact of vannamei shrimp cultivation is on export activities. Based on data from the Fish Quarantine, Quality Control, and Safety of Class I Fishery Products, Pangkalpinang, Bangka Belitung Islands Province, the export value of vannamei shrimp from Babel farmers during 2019 reached IDR 1 trillion, an growth of eighty two percent in comparison to the previous 12 months. The export of vannamei shrimp carried out by 11 companies in Bangka Belitung during 2019 reached 3,600 tons with a value of Rp. 1 trillion, which includes Vietnam, Singapore and Australia [5].

However, even though the export value of vannamei shrimp is high, it is unfortunate that entrepreneurs cannot directly export shrimp from Bangka Belitung to the destination country, due to inadequate port facilities to dock large-scale ships. The vannamei shrimp shipments are still being accommodated by entrepreneurs in Jakarta, Lampung, or Surabaya, so that the export of this shrimp does not have an impact on increasing regional income. In the future, the ports on the islands of Bangka and Belitung will be more adequate to dock large ships, so that these fishery business actors can export directly to destination countries [6].

Therefore, the Provincial Government of the Bangka Belitung Islands will issue a policy for shrimp farming companies to export shrimp at the port of Babel, in order to increase local revenue and the welfare of the people of the area. Exports through other regional ports are certainly not having a good impact on regional income and the value of Babylon's exports is also small, which should be bigger than other regions [7].

The same effort was also made by entrepreneurs who are members of the Indonesian Pond Farmers Alliance (APTIN) to build Cold Storage in the Pangkalpinang industrial area. This is to facilitate and provide maximum service for countries that are consumers of vannamei shrimp. It is targeted that by 2022 it has been established so that vannamei shrimp can be directly exported to America, Singapore, Japan and Korea [8].

2 Literature Review

Vannamei Shrimp Cultivation

Vannamei shrimp (*Litopenaeus vannamei*) has specific characteristics, such as being able to live in a wide salinity range, being able to adapt to low-temperature environments, having a high survival rate, and having good resistance to disease, making it suitable for cultivation in ponds. The Decree of the Minister of Maritime Affairs and Fisheries Number: KEP.41/MEN/2001 concerning the Release of Vaname Shrimp Varieties as Superior Varieties, shows that vaname shrimp is one of the leading types of shrimp in Indonesia since 2001 [9]

Vannamei shrimp are shrimp originating from the subtropical regions of the west coast of the us, from the Gulf of California in northern Mexico to the west coast of Guatemala, El Salvador, Nicaragua, Costa Rica in principal america to Peru in South america [10]

Morphologically, white vaname shrimp has a corrugated body and the activity of changing the outer shell (exoskeleton) periodically (moulting). Body parts are used for eating, moving, burrowing, supporting gills, and sensory organs such as antennae and antennae. The vaname shrimp has a body wrapped in a thin, hard skin made of yellowish white chitin with white legs. For its own body size when compared to tiger shrimp or jrebug shrimp, vaname shrimp has a smaller size. Vannamei shrimp head consists of antennae, antennae, mandible (decrease jaw bone), and pairs of maxillae (higher jaw bone). Vannamei shrimp heads are also equipped with 3 pairs of maxilliped for feeding and five pairs of legs for strolling (periopods). The abdomen (stomach) includes 6 segments. at the abdomen there are 5 pairs (pleopods) of swimming legs and 2 uropods (fan tails) that shape a fan together with telson (tail) [11]

Export

Export is casting off items from flow in the network and sending them overseas in step with government guidelines and awaiting price in overseas currency [12].

Export is change by using putting off items from internal to outdoor the Indonesian customs territory by means of complying with the relevant provisions [13].

Export is the interest of sending items out of the Indonesian customs area into the customs place of another country with sure rules regarding items and their transportation gadget [14].

3 Research Methods

The statistics analysis strategies used on this take a look at have been inferential facts and panel data regression evaluation. The studies approach consistent with the level of clarification of this research is associative studies. Associative studies is studies that objectives to determine the relationship between two or extra variables. in step with the kind of information and analysis the usage of quantitative statistics kinds [15].

4 Analysis and Discussion

Hypothesis check outcomes

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Table 1 Fixed Effect Model Results

Dependent Variable: **Ln_EXPORT?**
 Method: Pooled Least Squares
 Date: 10/17/22 Time: 11:18
 Sample: 2019 2022
 Included observations: 8
 Cross-sections included: 5
 Total pool (balanced) observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7,505617	1,281173	5,858395	0,0000
Ln_VANNAMEI?	1,457524	0,172554	8,446790	0,0000
Fixed Effects (Cross)				
_BANGKA--C	0,430776			
_BANGKABRT--C	-0,924118			
_BANGKATENGAH--C	-0,153016			
_BANGKASLTN--C	-1,016938			
_PANGKALPINANG--C	0,609035			
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0,824615	Mean dependent var	18,32545	
Adjusted R-squared	0,809095	S,D, dependent var	0,524902	
S.E. of regression	0,158260	Akaike info criterion	-0,679506	
Sum squared resid	0,851577	Schwarz criterion	-0,348521	
Log likelihood	22,26963	Hannan-Quinn criter,	-0,558187	
F-statistic	59,57414	Durbin-Watson stat	1,886734	
Prob(F-statistic)	0,000000			

Source: Data processed Eviews 10

Based on desk 1, the statistical t price of the sustainability of vannamei shrimp cultivation is 8.446790 with a probability value (P-value) of **0,0000**. This value is smaller than the required significance degree, that is 0.05, so H_0 (not significant effect) is rejected, and H_1 (significant effect) is accepted. A positive statistical t value indicates a unidirectional relationship. Thus, it is proven that the sustainability of vannamei shrimp cultivation has a considerable and positive impact on exports of shrimp commodity in Bangka Belitung Islands Province.

The magnitude of the effect of sustainability of vannamei shrimp cultivation on exports of shrimp commodity In The Bangka Belitung Island is shown by the value of R-Squared = 0.824615, meaning that the importance of the sustainability of vannamei shrimp cultivation on exports of shrimp commodity In The Bangka Belitung Island is **82.46** percent, the closing 17.54 percent is motivated through different elements outdoor the version beneath observe.

5 Conclusion

The results showed that the sustainability of vannamei shrimp cultivation had a considerable and positive impact on exports of shrimp commodity in The Bangka Belitung Island. This proves that vannamei shrimp cultivation has a very potential future to be developed and empowered to become the province's leading export commodity.

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