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BRAZIL FEEDING THE WORLD

WITH TECHNOLOGY, ENGAGED PEOPLE AND SUSTAINABILITY, BRAZIL SETS THE EXAMPLE IN PRODUCTION AND CONSERVATION, BEING A REFERENCE IN THE FIGHT AGAINST HUNGER AND SHOWING THE PATH TO OTHER NATIONS



TRENDS FOR BRAZILIAN SHRIMP FARMING

ITAMAR ROCHA

The importance of farmed marine shrimp in the context of global supply can be better evaluated when the evolving numbers of farmed and captured productions from 1975 to 2015 are analyzed. In the last 40 years, according to the FAO (2017), farmed shrimp production increased by 21,872.0%, going from 22,292 t (1.67%) to 4,875,793 t (58.63%) of the worldwide production of marine shrimp. On the other hand, there was only a 261.34% increase in captured shrimp in the same period (Figure 1), a historical fact in relation to other captured fish, putting an end to the false accusations that shrimp farming is an activity that degrades the environment surrounding the farm.

Actually, seafood already stands out as the most important commodity in the world, with values three-fold higher than the other animal protein sources. With a 4.87 million tons production and US\$21 billion exports, productive performance of farmed marine shrimp already represents 58.63% of each kilo of marine

shrimp consumed worldwide (FAO, 2017)

On the other hand, even with immense natural characteristics and highly competitive ecological advantages concerning soil, water, and climate, as well as a significant production of soybean meal, a reasonable basic network infrastructure (highways, electricity, and communications), and the proximity to the European Union and the United States markets, Brazil is not fully aware of this sea of opportunities.

In this sense, the Brazilian Northeast region concentrates 98% of the explored areas and contributes with 99.7% of the national farmed marine shrimp production in 2016 (60,000 t). It has more than 1,000,000 hectares that are appropriate for this activity and is using only 30,000 ha (0.3%) of this huge potential. Even so, the share of the international market was only 526 t / US\$3.1 million.

This scenario should change in the coming years. When we consider that under the leadership of ABCC (Brazilian Shrimp Farmers Association) the shrimp farming industry celebrated significant advances in 2017, as the unanimous vote revoking the

antidumping duty order on shrimp imports from Brazil, during the second five-year review by the US International Trade Commission (ITC). One of the reasons for this victory was the winning strategy of ABCC, hiring an individual defense and not associated with the other countries, India, Thailand, and Vietnam. The antidumping orders on imports from these countries remain in place. Brazil's main argument was that 100% of the farmed shrimp production is directed for internal consumption.

Without the antidumping tariffs against the Brazilian shrimp, producers can now focus their attention on the North American market and don't have to worry about customs barriers. To better evaluate the importance of this victory, one should take into account that the United States are the largest shrimp import market of the world, and the imports of marine shrimp are increasing year after year and it is the main fishery product consumed by Americans.

Most people can include shrimp in a balanced diet. A study carried out two decades ago by the Harvard School of Public Health



and the Rockefeller University, in New York, showed that a low-fat diet, including steamed shrimp, does not raise blood cholesterol levels, satisfying a concern of consumers in relation to cholesterol content of food. Several studies have already shown that the high percentage of HDL (good) cholesterol in shrimps reduces the impact of LDL (bad) cholesterol.

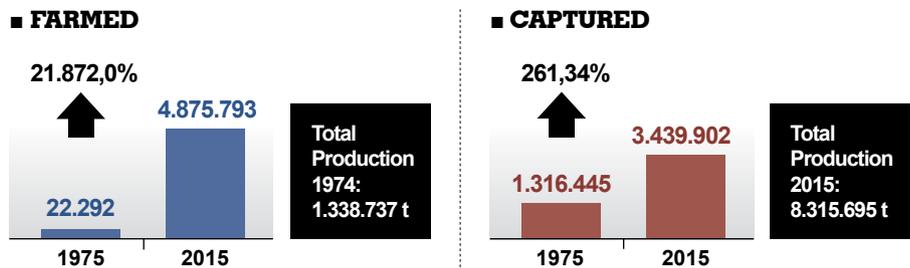
A recent study developed by the Australian Shrimp Farmers Association concluded that shrimp is an excellent source of protein, with low levels of saturated fats, contains iron, zinc, and vitamin E, and is a good source of polyunsaturated fatty acids omega-3. In the same way, studies carried out by The World's Healthiest Foods showed that consumption of shrimp benefits human health due to the high levels of selenium, an essential element for the body's good functioning.

Thus, important facts and opportunities can be found when evaluating the future of Brazilian farmed shrimp production and exports. The first one is that being the world's largest fish and shrimp producer and exporter, China already stands out as the third largest fish importer the third shrimp importer. The second fact is that the market share of small-sized shrimp increased from 27% to 52% between 2010 and 2016. This change in trade coincides with the increase of lower social class consumers in several Asian countries, as well as the spreading of information about the benefits of shrimp consumption.

Brazil stands out in the market as having natural conditions that favor the production and trading of small and medium size

Figure 1

PROFILE AND EVOLUTION OF WORLD MARINE SHRIMP PRODUCTION: FARMED X CAPTURED (1975 TO 2015)



shrimps, the type Chinese and European consumers prefer to buy. During the period with highest level of Brazilian shrimp exports (1999 to 2005), the product became well-known for its quality and also for the favorable environmental condition, and production can be maintained during the whole year, providing consumers with shrimps of all sizes, differently from other countries where production is seasonal. And the demand for small and medium size shrimps are still very high, not only due to the market's preference but also to the strategy to lower prices, catering to the base of the consumers pyramid, and also reducing the risk for diseases.

Although the Brazilian shrimp farming industry made the correct decision when it concentrated all attention and effort to supply to the internal market, the consensus

today is that it is time to go back to the external market, and this will occur naturally with the increase in production estimated for the coming years. We will have to reestablish the balance between the two markets, showing the whole productive chain how important it is to do your homework, the commitment to environmental, social and sensorial quality of products, whether for the internal or the external market.

Our production should increase and reach 90,000 ton already in 2018, mainly due to the financial support that the Northern Bank of Brazil (BNB) is providing again for the shrimp farming industry. We plan to reach 120 thousand ton until 2020. This will demand twice as much effort to organize the productive chain, considering the professional training and adoption of Good ▶

Management Practices and Biosecurity Measures, important tools that are essential for the sustainable growth of the industry, especially for the protection against or living with viral and bacterial diseases that have devastated the production of marine shrimp farming in Asia and the Americas.

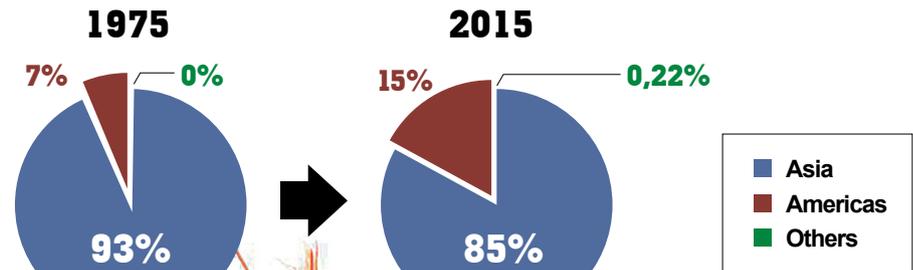
Following the evolution and performance of the world's marine shrimp farming, one can easily determine that the industry faced dozens of diseases in the last 25 years, which significantly affected the production of shrimp and crustaceans (crabs, shrimps, and lobsters). The spreading of these pathogens was more intensive from Asia to the Americas and vice versa, the vectors being the imports from the producing / exporting regions to the importing / consuming regions. From the viewpoint of economic losses in the last 25 years, viral diseases or their strains, as well as vibriosis, caused losses above US\$20 billion to the marine shrimp farming industry.

The World Organization for Animal Health (OIE) has a list with 34 viral diseases or caused by Vibrio strains that are mandatory notifiable or have high epidemiological risk. Thirty of these diseases do not occur in Brazil but are present in countries that produce shrimp as Ecuador, China, Thailand, Vietnam, Malaysia, India, Indonesia, The Philippines, Panama, Colombia, Honduras, and Mexico, among others that are less important.

Although it does not represent any hazard for human health, frozen shrimp for human consumption has been the portal of entry for new viral or bacterial diseases being introduced in different world regions. When arriving in the importing country, shrimps undergo several forms of handling before reaching their final destinations. In Brazil and most countries producing shrimp, there are no control mechanisms and treatment of solids and wastewater generated by imported shrimp processing. If the wastewater is drained to rivers, the sea and other bodies of water, local fauna can be contaminated. Birds can also transport the virus if they get in contact with contaminated material.

To avoid the risk of contamination, the safest recommendation is to perform a strict import risk analysis process prepared by a specialist in disease detection of this aquatic species. Thus, the authorization to import farmed shrimp from Ecuador, Thailand or any other country with records of diseases that do not occur in Brazil represents a great risk for the natural biodiversity of Brazilian crustaceans, responsible for generating income for 150 thousand families. It is also a risk for the business activity, affecting 100,000 jobs directly

ORIGIN OF WORLD PRODUCTION OF MARINE FARMED SHRIMP



Source: FAO, June, 2017



and 3,000 micro (55%), small (20%), medium (20%) and large (5%) shrimp farmers.

This is why ABCC is fighting in Federal Court against the decision of the Brazilian Ministry of Agriculture, Livestock and Supply to authorize the importation of marine shrimp farmed in Ecuador that has 10 diseases that do not occur in Brazil. And at the same time, they have banned any importation of Brazilian crustaceans and there is only one disease in Brazil that does not occur in Ecuador.

As part of this effort to promote and protect the farmed shrimp industry, the Special Secretariat for Aquaculture and Fisheries attached to the Presidency of the Republic (SEAP-PR) was created. In reality, this secretariat restores the prior Ministry status of the Brazilian fishery and aquaculture sector. On the other hand, SEAP-PR is now responsible for controlling the authorization to import, one of its most import-

ant aspects, and is also responsible for the Import Risk Analysis and for the Brazilian aquaculture and fishery sanitation control.

In this way, the Brazilian marine shrimp farming industry is committed to increase production, based on the consolidation of new technologies already operating in dozens of new enterprises. Thus, it is possible to increase productivity even when "white spots" are present in intensive productions. In this system, producers are obtaining shrimps with average weight of 10 g in high stocking density (700 PL's / m²), reaching up to 220 t / ha in five production cycles per year, as well as shrimps weighing 18 g to 25 g in 165 to 200 juveniles / m² obtaining 100 to 150 t / ha in four cycles per year. ■

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