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ANALYSIS

DATA AND PROJECTIONS FOR
2023 FOR GREEN AND
YELLOW AGRIBUSINESS



COMMITMENT TO SUSTAINABLE PRODUCTION

BY COMBINING ENTREPRENEURSHIP, INNOVATION AND
POLITICAL EFFORTS, BRAZIL PROVES THAT IT IS POSSIBLE TO FEED
THE WORLD AND **TAKE CARE OF PEOPLE AND THE ENVIRONMENT**

BRAZILIAN MARINE SHRIMP FARMING EVOLVES IN HARMONY WITH THE ENVIRONMENT

EVEN WITH SETBACKS, BRAZILIAN LIVESTOCK CLOSES 2022 WITH RECORD EXPORTS. CHALLENGES FACED REQUIRE PRECISE MARKET STRATEGY FOR THIS YEAR

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The Brazilian marine shrimp farming has been resuming, in an expressive and continuous manner, a healthy growth - in five years (2016-2021) it reached 100%, including, at the peak of Covid-19 (2020/112 thousand ton to 2021/120 thousand ton), it grew 33.3% over 2019/90 thousand ton) (see chart). This was the result of producing, editing and spreading Good Management Practices (BPM) and Biosafety Measures Manuals, followed by training courses (micro, small and medium producers) run by the Brazilian Shrimp Farm Association (ABCC), allied to the competitive prices paid by the domestic market.

With the continued growth of the Brazilian production of farmed shrimp, projections point to 150 thousand tons in 2022 and 180 thousand tons in 2023, it is quite evident that it will be necessary, already from 2023 on, to make an urgent change in the presentation and sale of its products, both in terms of the expansion of its processing and in adding value to shrimp marketed domestically; both to regulate prices and to increase the shelf life and also to enable sales

and consumption internalization.

This is because at least 60% of the Brazilian population does not have access to shrimp from national producers, notably because 60% of this production is offered as a fresh product, with a shelf life of 4-7 days, precluding its internalization in the vast majority of Brazilian cities (5,300) that have 100 million inhabitants.

On the other hand, to ensure the sustainability of the activity, shrimp exports need to be prioritized, notably in the small-medium classifications, headless (51-60, 61-70, and 71-90) for the USA, or with head (70-80, 80-100, and 100-120) to the European Union. The Brazilian product has always been competitive, due to the fact that the demand for these shrimps to meet the bottom of the world's consumer pyramid, on one hand will be continuously growing and, on the other, none of the current leading exporters (Ecuador, India, Vietnam, and Thailand) are interested in participating or competing with Brazil.

An accelerated growth is observed when the evolution of the marine shrimp farming in the state of Ceará is analyzed, based on data from the cen-

sus carried out by ABCC (veja na tabela). This has turned on "warning lights", on one hand, for the vigorous growth of the activity, and, on the other hand, for the structural deficiencies, which requires specific support, both in processing and outflow of production.

This is due to the fact that, in a five-year period - 2016 2021 - there was an increase of 155% of active farms, mostly composed of 1,351 micro (75.64%), 224 small (12.54%), 172 medium (9.63%), and 39 large (2.18%) producers. Compared to the 2016 production (34,000 ton), the 2021 production (55,600 ton) was increased by 63.53%, even though 86% of micro and small producers did not have environmental licenses and therefore did not have access to any type of financing.

On the other hand, besides the number of producers, the most prominent aspect in the expressive marine shrimp farming growth in Ceará was undoubtedly the number of municipalities (62) that began to explore this activity, an increase of 121.4% compared to 2016 (28). The highlight was the internalization of *L. vannamei* cultivation in oligohaline waters



which until a few years ago was unthinkable. But it has already established a new economic order in 40 (22%) of the 184 Ceará municipalities.

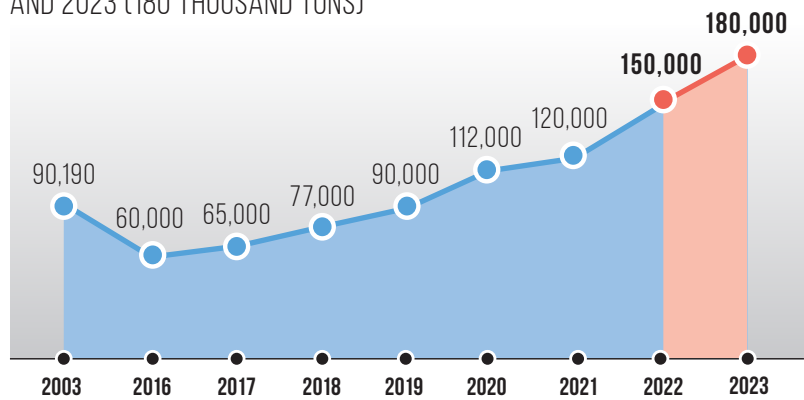
In relation to the census of shrimp farming in the state of Rio Grande do Norte, the second largest Brazilian producer, carried out by ABCC in 2021, we identified 452 shrimp farms located in 36 municipalities and their 26,000 ton production represented a 33.3% increase in the number of municipalities, 25.2% in the number of shrimp farms, and 45.87% in the 2021 production volume (26,000 ton) compared to 2016 (17,824 ton). Opposite to Ceará and Paraíba, the differential of the shrimp farming in Rio Grande do Norte is the use of estuarine and ocean waters, whose potential for exploration is superior to 60 thousand hectares. This, associated to the outstanding basic infrastructure (energy, roads, etc.) and the wide granting of environmental licenses, whose expressive percentage of 79% are licensed, is a differential to attract large investors.

In fact, in recent decades, shrimp farming has gained worldwide prominence, expanding rapidly, mainly in tropical and subtropical regions of Asia and the Americas, driven by the high international demand and attractive prices. It is quite different from its beginnings, when it was implemented in deactivated salt flats and in mangrove areas, using wild post-larvae, utilizing only the natural food present in both tidal waters and soil (polychaetes). In recent years, with the extraordinary technological evolution, marine shrimp farming has become a highly professional activity, even greener, sustainable and environmentally responsible.

That is why, given the increasing emission of greenhouse gases (GHG) – carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) – responsible for global warming, the role of shrimp farming as an ally in actions to control this phenomenon has come to deserve special attention, since part of this carbon can be sequestered by marine shrimp farming, carried out in estuarine, marine and oligohaline nurseries. The growing and sustainable intensification process induces the flourishing of microalgae in the water columns which, in turn, thanks to the photosynthesis

RECOVERY OF THE BRAZILIAN PRODUCTION OF MARINE SHRIMP FARMING

FROM 2016 (60 THOUSAND TONS) TO 2021 (120 THOUSAND TONS), WITH PROJECTIONS FOR 2022 (150 THOUSAND TONS) AND 2023 (180 THOUSAND TONS)



Source: ABCC

GROWTH OF MARINE SHRIMP FARMING IN CEARÁ

2003	25,915 TONS	191 FARMS	13 MUNICIPALITIES
2011	31,982 TONS	325 FARMS	21 MUNICIPALITIES
2016	34,000 TONS	700 FARMS	28 MUNICIPALITIES
2021	55.6 THOUSAND TONS	1,865 FARMS	62 MUNICIPALITIES

Source: ABCC

process, contributes to the fixation of carbon dioxide from the atmosphere.

In this context, the current management practices adopted in Brazil by shrimp farming have contributed to raise the Brazilian sector to a condition of low carbon emissions. Some of them are:

- 1 Integral preservation of mangroves;
- 2 Prioritization of microalgae flourishing, as a food base for farmed shrimps;
- 3 Use of solar and wind energy;
- 4 Reduction of fish by products in shrimp feed;
- 5 Use of additives to improve nutrient utilization, reducing residues;
- 6 Genetic improvement to increase growth and resistance to viral disease, reducing FCR;

7 Use of sedimentation basins and reuse of wastewater;

8 Use of multitrophic systems.

It should also be noted that the carbon sequestration capacity of shrimp farms has an average rate of 1.5 ton/ha/year, which, according to Boyd (2010), is higher than that of natural lakes (0.136 ton/ha/year). Likewise, the absorption of CO₂ both by phytoplankton and by the sedimentation process results in large amounts of carbon from outside the aquatic environment, mainly from the atmosphere, whose recycling causes these ecosystems to act as sinks; even the deposit of organic carbon in the sediment of continental waters can be greater than in the oceans. ■

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