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CURRENT CHALLENGES AND FUTURE OUTLOOK: TRENDS AND FORECASTS IN THE MARICULTURE SECTOR

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Abstract – Aquaculture, defined by the United Nations Food and Agriculture Organization (FAO), encompasses the farming of aquatic organisms for food production, offering a promising solution to global food security challenges. Over the past three decades, global aquaculture production has consistently grown at approximately 8 % annually, outpacing other major animal food production sectors. Mariculture, a subset of aquaculture focusing on marine organisms, has emerged as a critical component, accounting for a third of global aquaculture production.

However, mariculture faces numerous challenges, including environmental impacts, reliance on wild inputs, and concerns about genetic interactions with wild populations. Biotechnological advancements offer potential solutions but must be balanced with considerations of ecosystem health and societal impacts.

Integrated mariculture techniques and bioremediation approaches present opportunities to mitigate environmental impacts, but legislative frameworks and monitoring procedures are essential for ensuring compliance and minimizing adverse effects. Collaborative efforts between the public and private sectors are crucial for advancing sustainable practices and unlocking the full potential of the mariculture sector.

In conclusion, addressing the challenges facing mariculture requires a comprehensive approach that prioritizes environmental sustainability, regulatory compliance. By embracing sustainable practices and fostering collaboration, the mariculture sector can navigate its challenges and contribute to global food security in a responsible and resilient manner.

Keywords – Aquaculture; mariculture; sustainable practices; environmental impacts; biotechnological advancements; food security; global trends