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FOUNDATION FOR AQUACULTURE INNOVATIONS & TECHNOLOGY TRANSFER

It is with great enthusiasm that I welcome you to the latest issue of *Aquafocus*, which continues to reflect the dynamic evolution and progressive vision of the aquaculture sector. This edition showcases the remarkable strides being made toward sustainability, productivity, and ecological stewardship through interdisciplinary innovation.

We explore varied and revolutionary aquaculture approaches in this issue. A new era of precision farming begins with aquaculture systems that use AI and IoT. These devices improve feed efficiency, water quality monitoring, labor, and environmental impact. Global and regional case studies show that smart aquaculture is becoming essential to robust and scalable fish production.

The revival of bacteriophage therapy as an antibiotic option in aquatic disease management is equally intriguing. Phages are a natural, highly targeted, and ecologically friendly way to fight bacterial infections like *Vibrio* spp., which could improve shrimp and fish farmed biosecurity as antibiotic resistance rises. The edition also examines seaweed aquaculture, a climate change option often overlooked. Seaweeds are effective in blue carbon sequestration, water purification, and methane mitigation. National institutes like ICAR-CMFRI and CSIR-CSMCRI have strategically promoted seaweed farming in India, highlighting its potential to enhance coastal livelihoods, bioproduct development, and ecological resilience.

This feature demonstrates how rainwater collection ponds can be used for small-scale aquaculture in Madhya Pradesh's Agri-Aqua Food System. This grassroots idea combines fish farming and water conservation to boost rural incomes and food security. It targets socio-cultural, educational, and infrastructural constraints through community participation, capacity building, and policy suggestions. Experimental research on live feed production, such as *Moina* culture on different feed substrates, gives practical insights. The findings help optimize live food supplies during early aquaculture species development..

This *Aquafocus* issue affirms our research, innovation, and community cooperation commitment to sustainable aquaculture. Smart sensors, phage therapy, and seaweed farming demonstrate the industry's endurance and adaptation in an uncertain environmental and economic climate.

Together, we can build an aquaculture future that is inclusive, sustainable, and poised to meet the nutritional needs of generations to come.

Warm regards,
Dr. A Jesu Arockiaraj
Editor-in-Chief
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