भारत सरकार
GOVERNMENT OF INDIA
मत्स्यपालन विभाग
Department of Fisheries

# Fisheries Fortnightly Friday (F3) Webinar No: 11

## *"Innovations in Shrimp Farming: Business & Startup Opportunities"*

**02-01-2026**

**11 A.M - 12. 30 P.M IST**

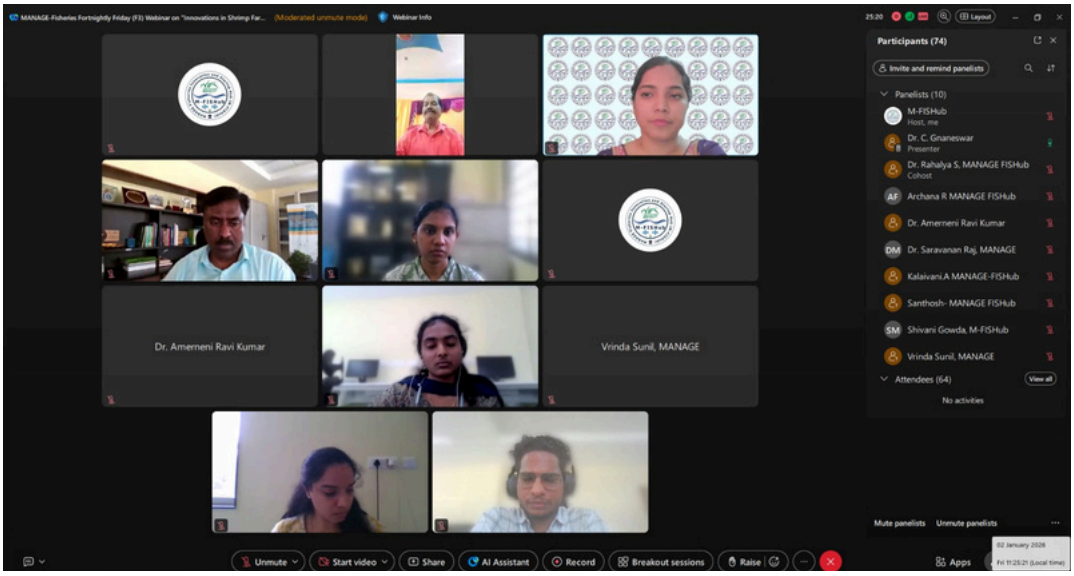
**MANAGE Fisheries Innovation and Startup Hub (MANAGE - FISHub)**
(A National Fisheries Incubation Centre Supported by the Ministry of Fisheries, Animal Husbandry and Dairying, Govt. of India)
**National Institute of Agricultural Extension Management (MANAGE)**
(An Autonomous Organization of Ministry of Agriculture and Farmers Welfare, Govt. of India)
**Rajendranagar, Hyderabad – 500 030, Telangana, India**
https://www.manage.gov.in/managefishub/

## About the Webinar

The MANAGE-FISHub F3 Webinars, introduced in August 2025 by the MANAGE – Fisheries Innovation and Startup Hub (MANAGE- FISHub), Hyderabad, mark a pioneering step in digital learning for fisheries entrepreneurship. Designed as a vibrant knowledge-sharing arena, the series empowers aspiring aquapreneurs with expert insights, inspiring success stories, and actionable strategies to navigate entrepreneurial hurdles. Beyond sparking collaboration among fisheries stakeholders, it ensures that cutting-edge updates and sustainable aquaculture practices reach learners everywhere, creating a dynamic platform where innovation and opportunity in the fisheries sector truly flourish.

## Inaugural Session

The eleventh session of the MANAGE–FISHub Fortnightly Friday (F3) Webinar Series was formally inaugurated by Dr. Rahalya, Innovation Scaling Specialist, who welcomed the participants and opened the session on behalf of MANAGE-FISHub. In her address, she outlined the mandate of the MANAGE Fisheries Innovation and Startup Hub (MANAGE-FISHub) as a national-level incubation center supported by the Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India, under the Pradhan Mantri Matsya Sampada Yojana (PMMSY). She highlighted the hub's role in promoting technology-led entrepreneurship through incubation, mentoring, and capacity-building initiatives, and shared its achievements in conducting national programs with wide participation during 2025. She also emphasized the hub's vision for 2026 to strengthen linkages among innovators, startups, academia, investors, and policymakers



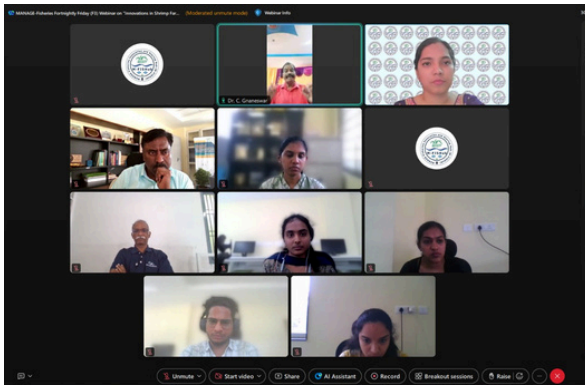
## Speaker 1

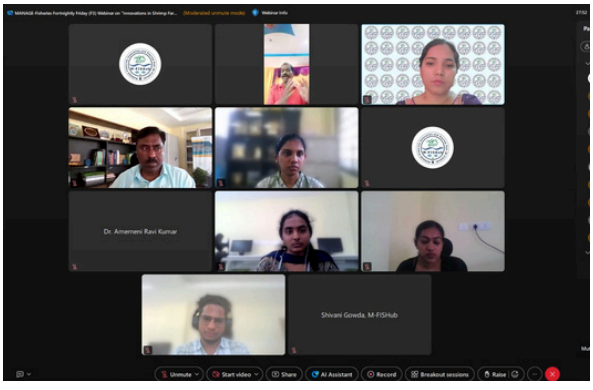
**Dr. C. Gnaneswar**
**Aquaculture Consultant**
dr.chippagiri@gmail.com

Dr. Gnaneshwar is a distinguished veteran of the fisheries sector with over 40 years of experience in fisheries administration, policy formulation, institutional development, and capacity building. He has played a pivotal role in strengthening sustainable fisheries, shrimp farming, and aquapreneurship in Andhra Pradesh. Widely respected for his visionary leadership and deep domain expertise, his contributions have earned him the title of "Walking Library in Aquaculture." Dr. Gnaneshwar continues to inspire fisheries professionals and aquapreneurs through his guidance and lasting impact on the sector.

# Highlights of the Session

- He highlighted shrimp farming as a high-demand global and domestic commodity, India contributes nearly 40% of the shrimp consumed in the USA.
- Shrimp culture was presented as resource-efficient and profitable, requiring only ~250 litres of water per kg and enabling high returns even from quarter-acre through continuous culture.
- Innovative production systems such as tank-based and rooftop shrimp farming were discussed, along with the adaptability of shrimp culture to freshwater, brackish, saline, and drought-prone conditions.
- Emphasis was placed on calendar-based stocking and feeding practices, recommending stocking during January–July, avoidance of October–December, and evening feeding aligned with shrimp behavior.





# Speaker 2

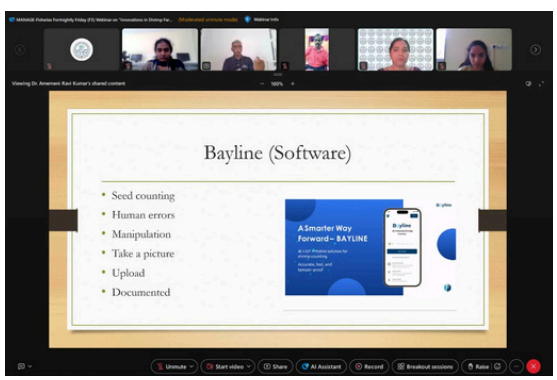
**Dr. Amerneni Ravi Kumar**
**Director**
**Blue Star Marines**
raviaqua@gmail.com

Dr. Amerneni Ravi Kumar is a seasoned Aquaculture Consultant and Shrimp Pathologist with over 26 years of experience and has developed strong expertise in shrimp disease diagnosis, water quality analysis, biofloc shrimp nursery practices, and hatchery management. He operates an independent shrimp disease diagnostic laboratory and is actively associated as a partner with Alpha Biologicals, focusing on health product formulation, and Blue Star Marines Shrimp Hatchery, contributing directly to improving shrimp health and farm productivity. In addition to consultancy, He regularly conducts training and capacity-building programs for farmers, entrepreneurs, and industry stakeholders.

## Highlights of the Session

- He identified key innovation verticals in shrimp aquaculture: production (broodstock, hatcheries, nurseries, grow-out farms), support services (feed, health products, diagnostics), and post-harvest (pre-processing, processing, export).
- He showcased innovative solutions across biological, chemical, mechanical, and digital domains, including bacteriophages and ready-to-feed Artemia, peptobiotics, acoustic auto-feeders, and AI-based seed counting apps.
- He highlighted emerging problems with high startup potential, such as hatchery needs (SPF polychaetes, temperature control, freeze-dried algae), farm-level biosecurity and stress-reduction tools, and ecosystem solutions like traceability, marketing platforms, and species diversification training.

***"Every problem in our industry is an opportunity for a startup. Bigger the problem you solve, bigger the returns you get"***

**1. What innovative strategies are being adopted to control EMS, WSSV, and EHP effectively?**

- **Enterocytozoon hepatopenaei (EHP):** Controlled using "Spore Shooting" (raising pond pH to trigger spore germination), hot liming (CaO 6 tons/ha), 0.1-micron hatchery ultrafiltration, and freezing polychaete feed (-20°C, 48h) to prevent vertical transmission.
- **Early Mortality Syndrome (EMS/AHPND):** Managed via central drainage ("Shrimp Toilet") to remove Vibrio-rich sludge, bacteriophage therapy targeting pathogenic Vibrio, and quorum quenching probiotics that suppress toxin production.
- **White Spot Syndrome Virus (WSSV):** Mitigated through hyperthermia management (>32°C), phytobiotics/mangrove extracts in feed to boost immunity, and functional immunostimulant feeds (β-glucans, peptidoglycans).

**2. What new technologies or innovations are currently transforming shrimp farming in India**

- **Precision Aquaculture:** AI-powered feeding (acoustic sensors, computer vision) and IoT-based water monitoring enable real-time decision-making and optimized resource use.
- **Advanced Culture Systems:** Biofloc (BFT) and RAS allow efficient nutrient recycling, reduced water use, year-round farming, and higher stocking densities.
- **Next-Gen Disease Control:** Bacteriophage therapy, phytobiotics, microbiome management, and pond-side LAMP diagnostics provide rapid, targeted pathogen management for EHP, EMS, and WSSV.
- **Digital Traceability & Smart Infrastructure:** Blockchain-based farm-to-fork tracking ensures export compliance, while central drainage systems and nanobubblers improve pond hygiene, oxygenation, and productivity.

**3. How to overcome the salinization issue caused by intensive shrimp farming?**

- **Structural Containment:** Use of HDPE liners, concrete buffers, dykes, and buffer vegetation zones prevent saline seepage into the surrounding soil and groundwater.
- **Zero-Exchange Systems:** Adoption of Biofloc Technology (BFT) and Recirculating Aquaculture Systems (RAS) minimizes water discharge, keeping salinity contained within farms.

- **Soil Remediation:** Techniques such as freshwater leaching, gypsum application, and halophyte farming restores already salinized lands.
- **Effluent & Drainage Management:** Treated effluent is passed through sedimentation ponds or Integrated Multi-Trophic Aquaculture (IMTA) systems (e.g., oysters, seaweed, tilapia) to remove salts and nutrients before environmental release.
- **Digital Monitoring & Regulation:** IoT salinity sensors enable early detection of leaks, and zoning regulations restrict intensive shrimp farming to suitable coastal areas.

**4.What are the differences between shrimp and prawns in terms of size, taste, and other characteristics?**

- **Size and Appearance:** Prawns are generally larger than shrimp. Shrimp have a distinct "hooked" body due to overlapping shell segments (second over first and third), whereas prawns have straighter bodies with shell segments overlapping like tiles. Prawns have three pairs of claw-like legs, with the second pair being the longest; shrimp have two pairs, with the front pair largest.
- **Taste and Texture:** Shrimp, mostly saltwater species, are briny, delicate, and slightly firm. Prawns, mostly freshwater species, are sweeter, meatier, and more tender. Despite subtle differences, they are fully interchangeable in recipes; the choice usually depends on size requirements rather than flavor.
- **Habitat and Origin**: About 75% of shrimp species live in saltwater globally, while prawns are mostly freshwater or brackish water dwellers, thriving in tropical regions.

**5.Recently, many farmers are reporting that viral diseases are affecting their shrimp at the early seed stage. Is there a specific reason for this trend?**

Viral outbreaks during the early days of culture (Day 1–35), often called the "Critical Window," are a major concern for shrimp farmers. These early mortalities result from a combination of seed quality issues, environmental stress, pond management, and biosecurity lapses.

- **Seed Quality & Vertical Transmission:**

Post-larvae (PL) may carry low viral loads of WSSV or AHPND even when appearing healthy. Lack of formal stress testing (e.g., salinity or formalin shock) can allow weak PL to succumb immediately upon stocking.

- **Incomplete Pond Preparation:**

Residual pathogens persist in pond soil, tissues of carrier organisms, or water. Short drying periods between crops prevent effective elimination of viruses, leaving ponds as reservoirs for infection.

- **Environmental Stress at Stocking:**

Fluctuations in temperature, pH, or salinity between hatchery and pond, coupled with climatic instability (rainfall or heatwaves), trigger latent viral infections. The first 48 hours post-stocking are the most critical.

- **Biosecurity Lapses:**

Vectors such as crabs, birds, or infected live feed (e.g., wild polychaetes, artemia) introduce pathogens if fencing or feed screening is inadequate.

- **Secondary Triggers – Vibrio:**

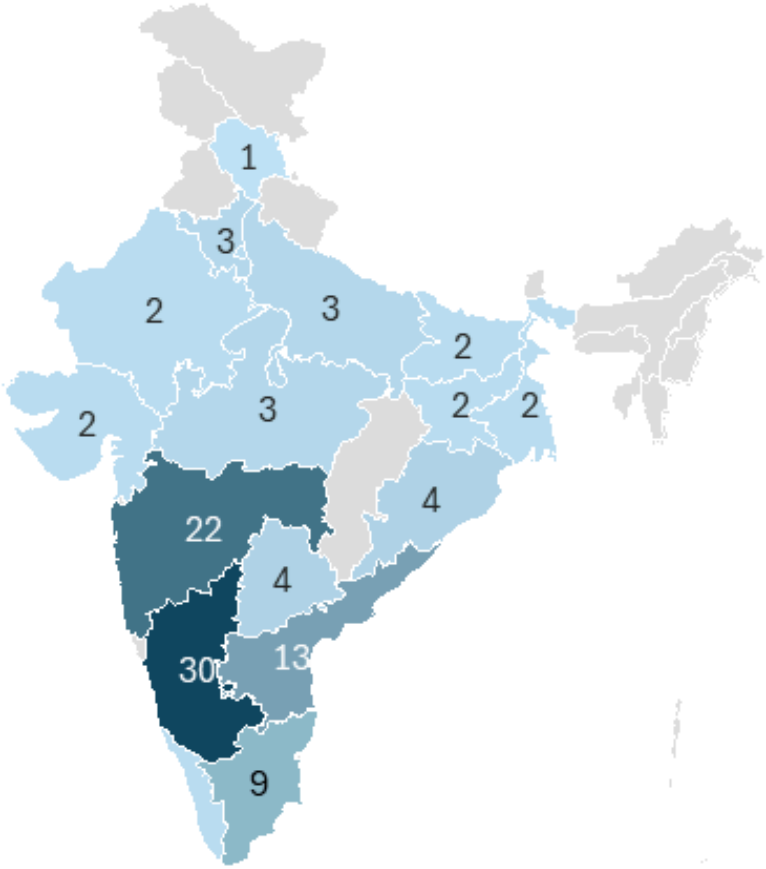
High organic loads can promote Vibrio proliferation, weakening shrimp and making them more susceptible to viral infections.

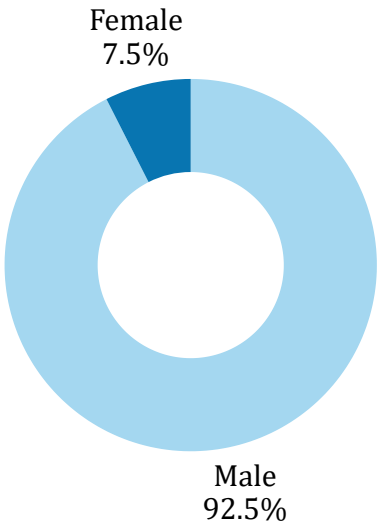
**Mitigation Strategies:**

- PCR Testing: Conduct triple-PCR screening (WSSV, EHP, AHPND) before stocking.
- Nursery Phase: Use controlled Phase-2 nurseries for the first 20 days to improve survival.
- Pond Preparation: Implement ≥3 weeks of sun-drying and use chain drags to eliminate residual pathogens.
- Probiotics: Apply soil and water probiotics pre-stocking to establish a protective microbial communities.

Watch on YouTube:https://www.youtube.com/watch?v=aqXfFBpE1S0

# Participants




**Total Number of Participants: 107**

**Prepared by**
**Ms. Archana R**
**MANAGE - FISHub Intern**

**Contact Us:**
**Dr. Saravanan Raj**
**Director (Agricultural Extension), MANAGE &**
**CEO, MANAGE-FISHub**
**Rajendranagar, Hyderabad**
**ceomfishub@gmail.com**

**MANAGE Fisheries Innovation and Startup Hub (MANAGE - FISHub)**
(A National Fisheries Incubation Centre Supported by the Ministry of Fisheries, Animal Husbandry and Dairying, Govt. of India)
**National Institute of Agricultural Extension Management (MANAGE)**
(An Autonomous Organization of Ministry of Agriculture and Farmers Welfare, Govt. of India)
**Rajendranagar, Hyderabad – 500 030, Telangana, India**
https://www.manage.gov.in/managefishub/