

INSTALLATION OF SOLAR POWERED CHILLER PLANT ONBOARD A FISHING TRAWLER

- Mr. Larson D'Sa



Mr. Larson D'Sa, an ex-Merchant Navy Marine Chief Engineer with 18 years of sailing experience, transitioned ashore in 2016. He spent 7 years as Tech Superintendent with Casino Pride before founding M/s. Goa Solar Power House, specializing in solar installations for homes, industries, and agriculture, including on-grid/off-grid, hybrid systems, and solar water heaters.

Under his leadership, the company pioneered Goa's first solar-powered chiller plant on a fishing trawler and launched the state's first solar ferry. Mr. Larson holds a Class 1 MEO certification from the UK and currently serves as Chairman of IMEI Goa Branch, Hon. Secretary of the Solar Power Association of Goa, and the Goa Maritime Officers Association.



Solar panel installed on the roof of Deck

1. Introduction

The fishing industry is increasingly adopting sustainable practices to reduce environmental impacts and improve economic efficiency. One promising innovation is the integration of solar power technology to enhance the energy efficiency of on-board operations. This concept note proposes the installation of a solar power chiller plant for Fishold, a fishing trawler, to address the challenges associated with refrigeration and energy consumption at sea.

2. Background

Fishing trawlers often rely on diesel-powered generators for refrigeration, which can be costly and environmentally harmful. The need for reliable and energy-efficient cooling solutions is critical for preserving fish quality and reducing operational costs. Solar power offers a renewable energy source that can mitigate fuel dependency, lower emissions, and enhance the sustainability of fishing operations.

3. Project Objectives

- **Reduce Fuel Consumption:** Decrease reliance on diesel generators by utilizing solar energy for chiller operations.

- **Lower Operational Costs:** Cut down on fuel expenses and maintenance costs associated with traditional cooling systems.
- **Enhance Sustainability:** Minimize the carbon footprint of the fishing trawler by using clean, renewable energy.
- **Improve Fish Preservation:** Ensure better quality of fish through consistent and reliable refrigeration.

4. Proposed Solution

4.1. Solar Power System:

- **Solar Panels:** Install high-efficiency photovoltaic (PV) panels on the trawler's deck or roof. These panels will capture sunlight and convert it into electricity.
- **Inverters:** Use inverters to convert the DC power generated by the solar panels into AC power suitable for the chiller system.
- **Battery Storage:** Incorporate a battery storage system to store excess solar energy for use during periods of low sunlight or high energy demand.

4.2. Chiller System:

- **Solar-Powered Chiller:** Install a solar-powered chiller unit designed for marine applications. This system will operate primarily using solar-generated electricity.
- **Energy Efficiency:** Choose a chiller with high energy efficiency ratings to maximize the benefits of the solar power system.

4.3. Integration and Control:

- **Energy Management System:** Implement an energy management system to optimize the use of solar power and manage energy storage effectively.
- **Monitoring and Control:** Equip the system with monitoring tools to track energy production, consumption, and chiller performance, ensuring efficient operation.

5. Benefits

- **Economic Savings:** Reduction in fuel costs can lead to significant financial savings over time.
- **Environmental Impact:** Lower greenhouse gas emissions and reduced environmental footprint.
- **Operational Efficiency:** Enhanced reliability and performance of refrigeration systems, leading to better fish preservation.
- **Compliance:** Aligns with global sustainability trends and regulations in the fishing industry.

6. Implementation Plan

6.1. Feasibility Study:

- Conduct a detailed feasibility study to assess the trawler's structural capacity, solar potential, and system requirements.

6.2. Design and Engineering:

- Develop a detailed design for the solar power system and chiller plant, including specifications and integration plans.

6.3. Installation:

- Procure and install solar panels, inverters, battery storage, and chiller units.
- Perform necessary modifications to the trawler to accommodate the new equipment.

6.4. Testing and Commissioning:

- Test the system to ensure all components are functioning correctly and efficiently.
- Train crew members on the operation and maintenance of the new system.

6.5. Monitoring and Maintenance:

- Implement a monitoring system to track performance and conduct regular maintenance to ensure optimal operation.

7. Budget and Funding

7.1. Cost Estimates:

- Provide a detailed budget covering equipment, installation, and maintenance costs.

7.2. Funding Sources:

- Explore potential funding sources, including government grants, environmental subsidies, and private investments.

8. Conclusion

The installation of a solar power chiller plant on the Fishold fishing trawler represents a forward-thinking approach to sustainable fishing practices. By leveraging solar energy, Fishold can achieve significant cost savings, reduce its environmental impact, and enhance the quality of its catch. This initiative aligns with broader industry trends towards sustainability and innovation, positioning Fishold as a leader in environmentally responsible fishing operations.

For more information

Mr. Larson D'Sa

Proprietor

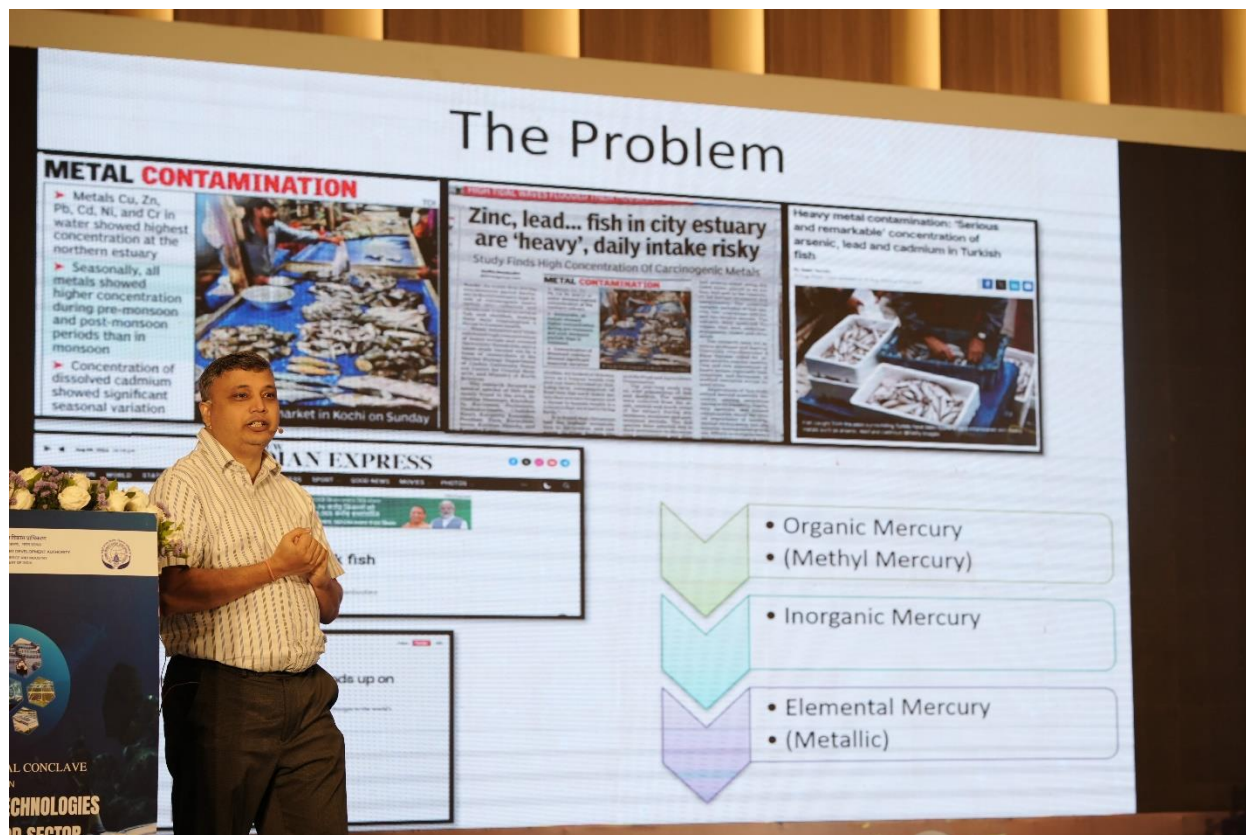
M/s. Goa Solar Powe House,

infogoasolarpowerhouse@yahoo.com

9145343795

NANOSOLUTIONS FOR MERCURY SENSING; HANDHELD MERCURY SENSOR

- Prof. Sumit Saxena, PhD, FRSC, FNESEA, FIMMM



Prof. Sumit Saxena is Professor at the Department of Metallurgical Engineering and Materials Science at IIT Bombay. He is a fellow of the Royal Society of Chemistry (RSC), UK, Institute of Materials, Minerals and Mining (IOM3), UK and National Environmental Science Academy (NESAI), India. He has published papers in various high impact journals and holds several patents to his credit. He obtained his PhD from New Jersey Institute of Technology, USA. Subsequently he pursued his postdoctoral research at University of Illinois at Urbana Champaign, USA and Harvard University, USA. His current research interests include water remediation, sensors and energy storage.

Fish and seafood not only forms staple food for a large number of human population but also finds place in form of delicacies across humanity. Mercury contamination in water and seafood is a serious health concern. Fish and shellfish concentrate mercury in their bodies, often in the form of methylmercury, a highly toxic organomercury compound. Mercury is known to bioaccumulate in humans, thus bioaccumulation in seafood carries over to humans, resulting in mercury poisoning.



Handheld mercury sensor

Nanomaterials show unique properties such as high surface area, enhanced reactivity along with tunable physical and chemical characteristics and have shown great potential in detection of heavy metals. Specifically functionalized quantum dots which binds to a particular analyte. The specific binding ability induces changes in the electronic properties and hence the chemiresistive response of the sensor matrix. In this perspective a sensor matrix was developed to bind with mercury ions. This sensor matrix was then printed on a strip to be able to measure the change in resistivity of the strip when exposed to the analyte (methyl mercury). The change in resistivity could be measured using a palmtop device which displays the level of mercury contamination in the water samples. The contamination levels were tested in real water samples spiked with methyl mercury as well as on fish blood samples.

For more information

Prof. Sumit Saxena, PhD, FRSC, FNESA, FIMMM

Professor

Indian Institute of Technology Bombay

sumit.saxena@iitb.ac.in

9930027615

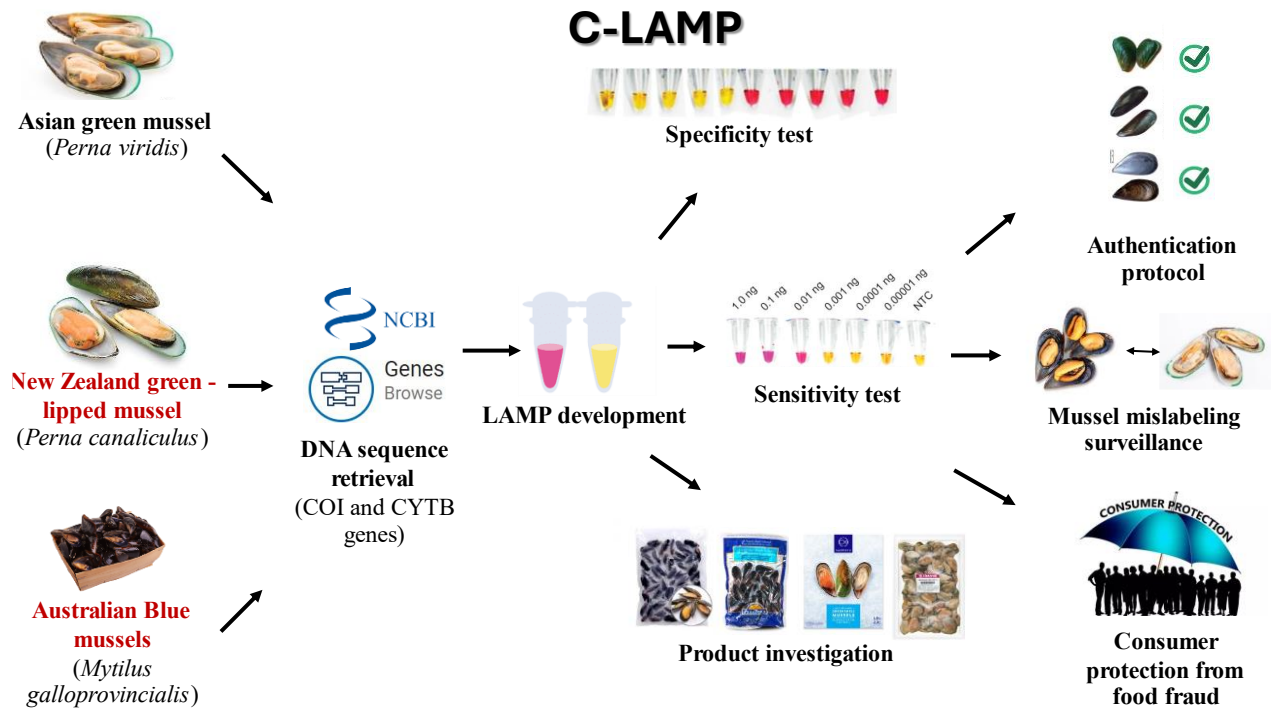
A NOVEL MOLECULAR APPROACH FOR COMBATTING SEAFOOD FRAUD IN CRUSTACEANS

- Mr. Gururaj Moorthy



Mr. Gururaj Moorthy is a researcher specializing in seafood science and technology. With a strong background in fisheries science from TNFU, India, he is currently pursuing a Ph.D. at the International Centre of Excellence in Seafood Science and Innovation (ICE-SSI) at Prince of Songkla University, Thailand. His research focuses on developing rapid and novel molecular approaches for shellfish food safety, including species substitutions, allergens, and seafood-related pathogens, while ensuring compliance with food safety standards. His work significantly contributes to the global food industry by maintaining the quality and integrity of seafood products and supporting sustainable aquaculture.

Seafood fraud, including species substitution and adulteration, poses a significant threat to public health and consumer confidence. Crustaceans, particularly in processed formats, are vulnerable to fraudulent activities due to their similar appearances, high consumer demand, and market value. To address this issue, we have developed novel molecular techniques to accurately and rapidly authenticate crustacean species, including mussels and crabs.



Pictorial representation of the technology

Colorimetric Loop-mediated isothermal amplification (C-LAMP) is a nucleic acid amplification technique that can be operated under isothermal conditions. This technique has significant use in the field of food authenticity, with a relatively short operation time and no need for costly instruments. The developed C-LAMP assays can be designed for portable equipment, making them suitable for testing at many points along the supply chain, such as processing facilities and border control. It provides a quick, reliable, low-hands-on-time, and cost-effective method of identifying the mussel species.

Multiplex PCR combined with lateral flow dipstick assay (mPCR-LFD) is a high throughput method that amplifies DNA sequences of numerous target species within a short period of time. This considerably increases efficiency and enables the detection of several species in a single test with easy result interpretation. There have been limited studies on the development of mPCR-LFD assay for identifying different species of fish products. PCR amplifies target DNA sequences, which are then detected by LFD strips for rapid and on-site results. The LFD dipstick allows staff to do simple on-site tests within a short time period. This approach would be effective even with processed seafood samples (boiled, steamed, etc.), making it useful in real-world circumstances. The combined strategy provides results quickly, allowing for prompt action against fraudulent practices.

In conclusion, these novel technologies present a promising solution to the issue of seafood fraud. The speed, precision, user-friendliness, and environmental benefits of this molecular tech position them as valuable tools for assuring the integrity and safety of the seafood supply chain. These technologies are a promising alternative for routine fishery examination that enables a wide range of stakeholders, from regulatory authorities to industry people, to contribute to the safety of the seafood industry. By implementing these innovative molecular approaches, we can significantly reduce the prevalence of seafood fraud in crustaceans, protect consumers from health risks, safeguard the reputation of the seafood industry, and promote fair trade practices.

For more information

Mr. Gururaj Moorthy

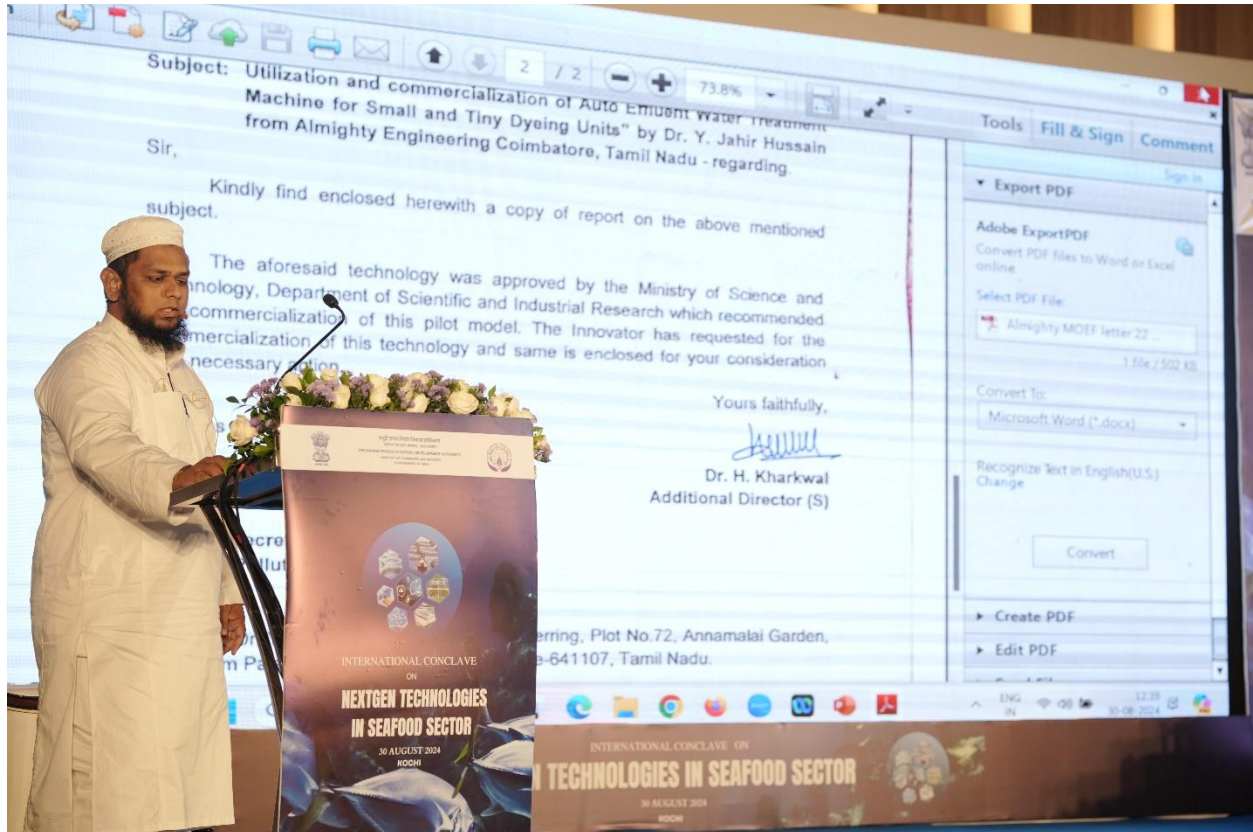
Ph.D. Student, Faculty of Agro-Industry,
Prince of Songkla University, Thailand

gururajrani2015@gmail.com

7305332214

FULLY AUTOMATED PATENTED OFF-GROUND WASTE-WATER TREATMENT TECHNOLOGY

- Mr. Assalam



Mr. Assalam having 10 years of experience in wastewater treatment industry having BE Mechanical Engineering with knowledge of Plant Design, Manufacturing and Automation.

Almighty Engineering, with over 15 years of expertise in wastewater technology, has introduced a groundbreaking, patented system that promises to transform the way wastewater is treated. Their cutting-edge technology, approved by the Department of Scientific and Industrial Research (DSIR) and developed in collaboration with the Ministry of Environment, Forestry and Climate Science, positions them as a leader in sustainable solutions.

At the heart of their innovation is the Almighty Effluent Treatment Machine (AETM), a fully automated vehicle designed for efficient wastewater treatment. The process begins with the selection of the treatment type via an HMI screen. It proceeds with the neutralization of the water's pH level, followed by the removal of colour and odour through the Colour Odour Parameters Removal (COPR) system. Advanced contaminants are then filtered using sand and carbon filters, and the process culminates in ultra-filtration, delivering clean, treated water.



Almighty – Effluent Treatment & Recycling Machine (Aetm)

Compared to conventional Effluent Treatment Plants (ETP), Almighty Engineering's technology requires significantly less space, operates quietly, and is free from unpleasant odours. This advanced system is highly efficient, requiring minimal manpower and offering a lifetime warranty—a testament to its durability and reliability.

With nearly 100 successful installations across industries like textiles, dairy, and silk, Almighty Engineering is setting a new standard for wastewater management. Their commitment to sustainability and innovation makes them a trusted partner for industries seeking eco-friendly, efficient wastewater treatment solutions.

For more information

Mr. Assalam,
Chief Technical Officer cum Partner
M/s. Almighty Engineering
info@almightyengineering.com
9944786096

INNOVATIONS FOR TRACEABILITY; SAFER PRODUCTS FOR PEOPLE & THE PLANET

- Mr. Jayan Nallacherry



With over 28 years of expertise in digital and AI transformation, Jayan Nallacherry, Founder and CEO of TRALEXHO, is pioneering AI-driven solutions to revolutionize food safety, sustainability, and authenticity in the supply chain. Prior to founding TRALEXHO, Jayan spent 15+ years at IBM, where he held senior leadership roles and led cutting-edge interdisciplinary research in AI, cloud computing, and data science, earning him numerous patents and prestigious awards, including the Lou Gerstner Award and IBM Outstanding Technical Achievement Award.

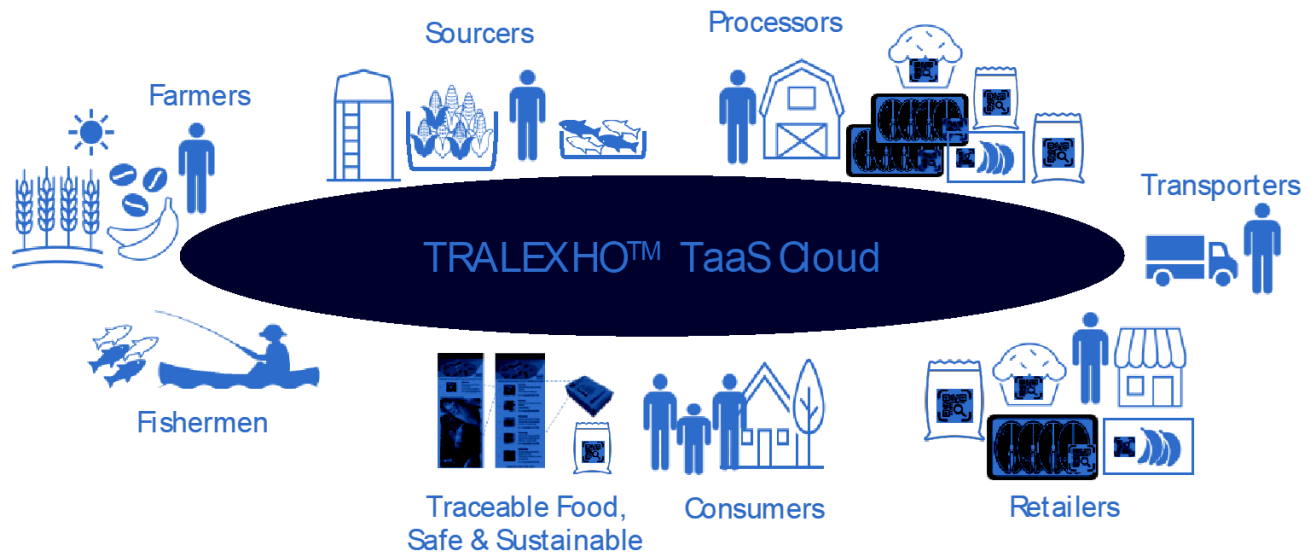
Jayan's academic credentials include a master's in quality management and a bachelor's in information systems from BITS Pilani, along with an Executive Management Program in "Leadership with AI" from ISB, Hyderabad. His career, marked by a blend of strategic foresight and operational excellence, positions him as a leading innovator in the digital and AI landscape.

TRALEXHO, founded in 2021, is a trailblazing company dedicated to revolutionizing food safety and sustainability through advanced AI-driven digital solutions. Established by a team of seasoned technologists and innovators with deep expertise in food safety, traceability and regulatory standards, TRALEXHO is committed to developing practical,

affordable, and accessible technologies that empower producers to achieve safe and sustainable food production. The company's flagship offering, the Traceability as a Service (TaaS) platform, is meticulously designed to enhance transparency across the entire food supply chain, while meeting and exceeding global regulatory compliance standards.

Traceability as a Service (TaaS) Platform

TRALEXHO'S patented, award winning (from DPIIT & Startup India) TaaS platform is a highly flexible, self-orchestratable, cloud-based solution that provides comprehensive item-level traceability. It is built based on GS1 framework to meet and exceed various regulatory standards, including the USFDA FSMA, EUFCR and EUDR, making it ideal for businesses of all sizes, from small enterprises to large-scale operations be it domestic or export oriented. The platform integrates seamlessly with external systems through its robust APIs, supporting IoT devices, blockchain, ERP systems, and more. This adaptability ensures that enterprises can easily implement the platform to meet compliance requirements while optimizing business processes and productivity improvements.



Key Features and Innovations

TRALEXHO'S TaaS platform stands out due to its innovative features:

- **QR Code-Based Traceability:** Enables detailed item level tracing at both in-process and end-consumer. It allows Capture Once, Share as needed with enhanced data sharing controls.

- **Designed in India, designed for the World:** The platform is designed for easy use, requiring minimal technical knowledge, making it accessible to producers in both rural and urban settings world-wide using simple smart phones.
- **Self-Orchestratable:** The platform simplifies the complexities of GS1 and various regulatory standards, offering an admin module that adapts to dynamic business processes across various product categories and compliance requirements and interoperability.
- **Patented AI Technologies:** The platform utilizes AI/ML technologies for enhanced food safety and sustainability, ensuring that products are not only traceable but also meet ethical and legal standards apart from data driven productivity improvements
- **Enhanced Consumer Trust:** By ensuring transparency and authenticity, the platform helps build trust with consumers, which can lead to increased sales and customer retention.
- **Easy to implement, use and adopt** - Can be implemented in couple of weeks
- **It's a cloud-based service**, at a price point that won't be a burden for the business

TRALEXHO'S TaaS platform is more than just a digital traceability solution; it's a comprehensive tool for ensuring the safety, sustainability, and transparency of the food we consume. By empowering stakeholders across the supply chain, TRALEXHO is driving a transformative movement towards a more trustworthy and sustainable food future.

TRALEXHO is eager to collaborate with the seafood export community and its stakeholders to initiate adoption pilots that will help businesses to progressively build necessary capabilities to meet upcoming regulatory requirements. With the mandatory compliance deadlines coming up in January 2026 (such as USFDA FSMA and EUFCR), TRALEXHO'S Traceability as a Service (TaaS) platform offers an ideal solution for ensuring your operations are fully compliant and ahead of the curve.

For more information

Mr. Jayan Nallacherry

Founder & CEO

M/s. TRALEXHO

jayan.nallacherry@tralexho.com

9008955889

API BASED BLOCKCHAIN SYSTEM FOR TRACEABILITY AND DATA STORAGE IN SEAFOOD SUPPLY CHAIN

- Mr. Stafan Alex Alexander



Stafan holds a degree in Electronics and Communication Engineering from Kerala University, earned in 2011. Although he is an electronics engineer by education, he acquired skills in software development over the years and evolved as an engineer with both software and hardware skills. In 2013 he also completed his PGDM, specializing in marketing. He started his entrepreneurial journey in 2013 right after he completed his education. Like many other Indian entrepreneurs, he dreamt and pursued the journey with grit and eventually found his home at Nextler Innovations Private Limited, which he co-founded with his younger brother, Jeswin Alex in 2018. Nextler Innovations offers software and IoT solutions to clients in India and abroad, both private and government. Currently, Nextler is building Nextler GSN - A blockchain-based traceability platform for the seafood supply chain.

The ever-evolving seafood export market qualifies seafood exports based on different parameters. Among those parameters, traceability data is becoming important that some importing countries such as the US have made it part of their import mandate. Moreover, countries that can export seafood with reliable traceability data will get a competitive edge in the global market and can thus attract more importers. India as a seafood exporter can boost its brand image in global market thus increasing demand for seafood overtime,

helping us to achieve the targets set for 2030.

What are we offering?

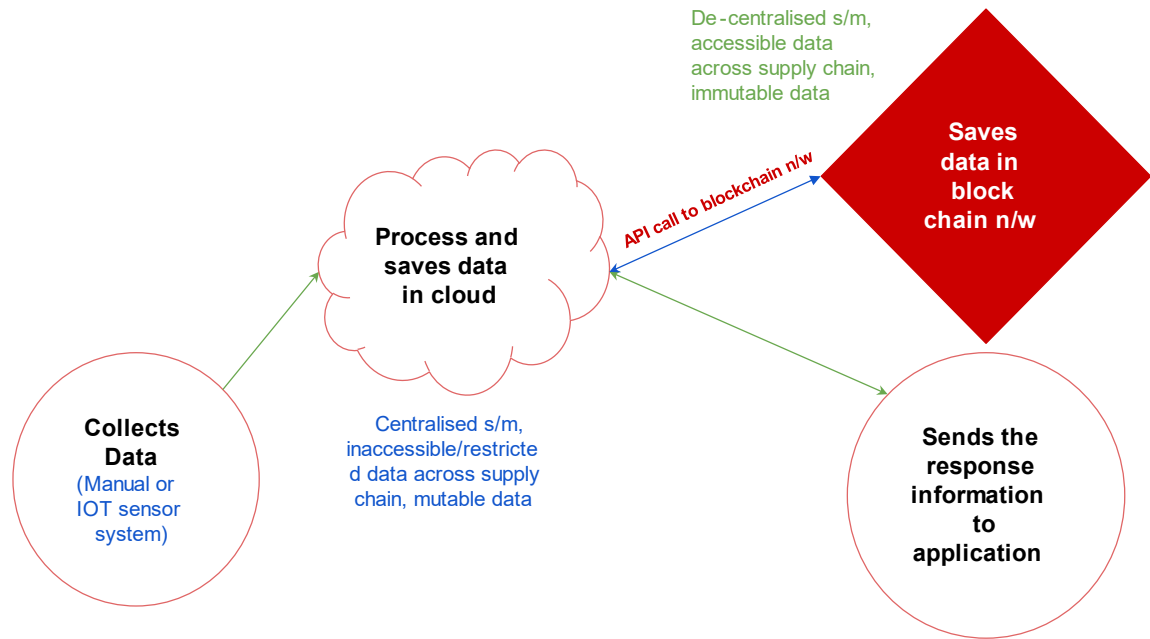
We offer APIs for different participants in seafood supply chain to easily integrate blockchain technology into their existing systems, so that they can start publishing their data to block chain network. This blockchain data can be accessed by relevant participants of seafood supply chain as required using a web-based application.

Relevance of proposed technology

- Different participants in the supply chain use different software, vendors, agreements to take care of important data. While the data is lost over time, it is also to be noted that the centralized method makes data unreliable as they can be manipulated if required. In addition to this more and more IOT based sensors come into market, making the data more centralized, inaccessible and mutable if required. This is where blockchain technology-based traceability systems come into play.
- But the challenge to adopt blockchain technology is that its difficult for these participants to switch from their existing systems, vendors etc. to a new platform.
- The solution - API based blockchain system will help the adoption better as participants need not to switch but only integrate the proposed technology to existing system for which technology support will be provided.

Use-case Scenarios / Examples

1. MPEDA issues catch certificates and post-harvest testing certificates for exporters. While issuing the certificates using the current system, MPEDA can integrate the proposed technology to make a post request using the API to store the certificates in blockchain network. This certificate in block chain network can be accessed by exporter, MPEDA, importer and any other relevant stakeholder as required. On successful completion of this step, all exporters in India will be automatically onboarded to the blockchain platform.
2. While transporting the seafood for export, the transport vehicles use temperature sensors to record temperature and save it locally in storage device that can be later accessed for documentation purpose. An IOT based temperature sensor system can use the proposed technology to save the data to blockchain network so that the data is more secure, immutable and more credible for importer.



How will technology evolve over time?

The immediate objective is to onboard most critical participants (such as the regulatory bodies) in the supply chain to make use of the proposed technology. With more and more participants using the technology, a unified web platform is possible, that covers all areas of supply chain. It will enable stakeholders to garner insights from data and make more informed decisions that will help to increase production, quality, ensure food safety, prevent fraud, etc. among many other use cases.

For more information

Mr. Stafan Alex Alexander

Co-founder, CEO

M/s. Nextler Innovations Private Limited

stafan@nextlerinnoations.com

9633155270

AQUASCOPE: KNOWLEDGE GRAPH BASED HUMAN CENTRIC GENERATIVE AI TOOLS FOR AQUACULTURE

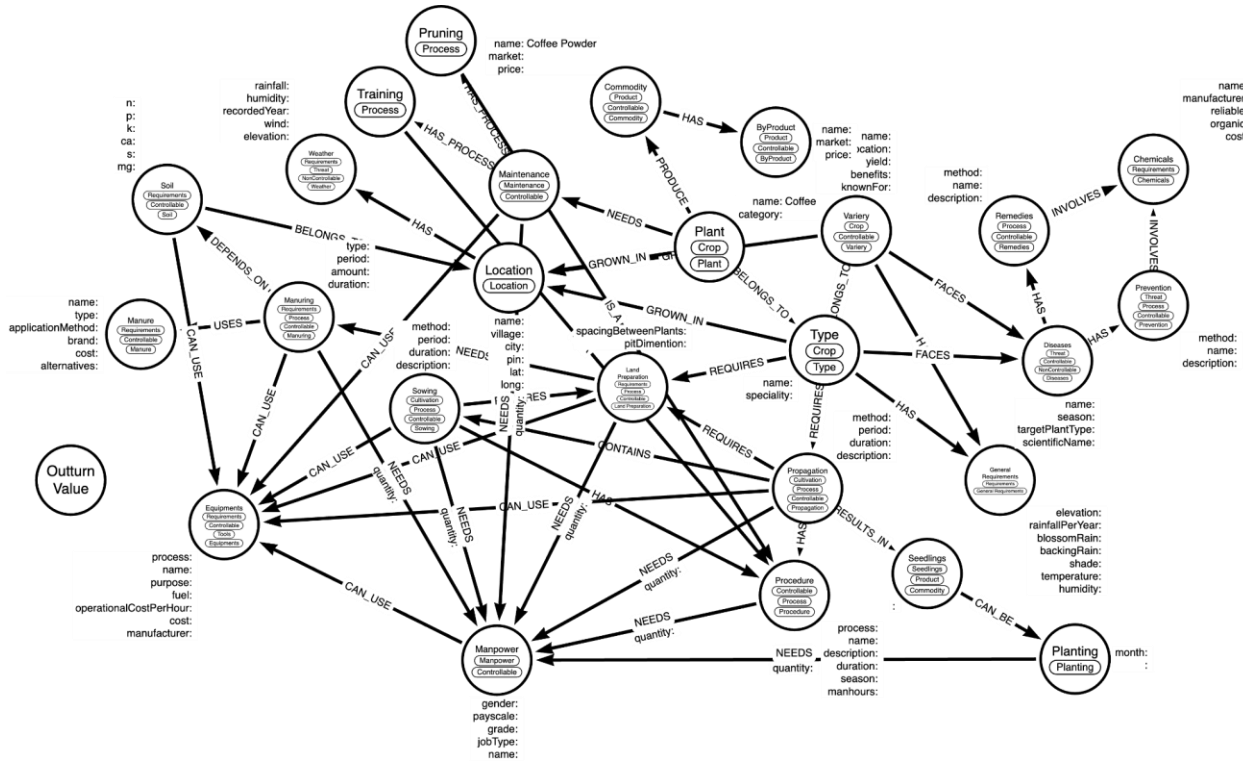
- Mr. Sooraj K Babu



Sooraj K Babu, the founder and CEO of NeuBiom Labs, brings in the experience from his agricultural upbringing in Wayanad, Kerala inspiring his work with a profound comprehension of the challenges faced in the agricultural sector. Presently, he serves as a Ph.D. research scholar affiliated with the Games Engineering Research Group at the University of Würzburg in Germany. In addition, he serves as a scientist at the BIRAC BioNest (Dr Moopen's iNEST) leading the Digital Health research wing.

NeuBiom Labs is an impact-driven AgTech startup focused on empowering farmers through the development of human-centric AI tools that help optimize aquaculture and agriculture practices and improve yields. Their flagship platform, AquaScope, offers a user-friendly, multilingual interface that provides personalized recommendations for farm management, water quality monitoring, and species health management. The AI system integrates knowledge from traditional, scientific, and data-driven sources, utilizing large

language models and knowledge graphs to offer actionable insights. By addressing challenges like climate change, digital divides, and knowledge gaps, NeuBiom Labs aims to promote sustainable aquaculture and support farmers in making data-driven decisions.



Agroneugraph

For more information

Mr. Sooraj K Babu

Founder

M/s. NeuBiom Labs Pvt Ltd

team@neubiom.com

8921306042

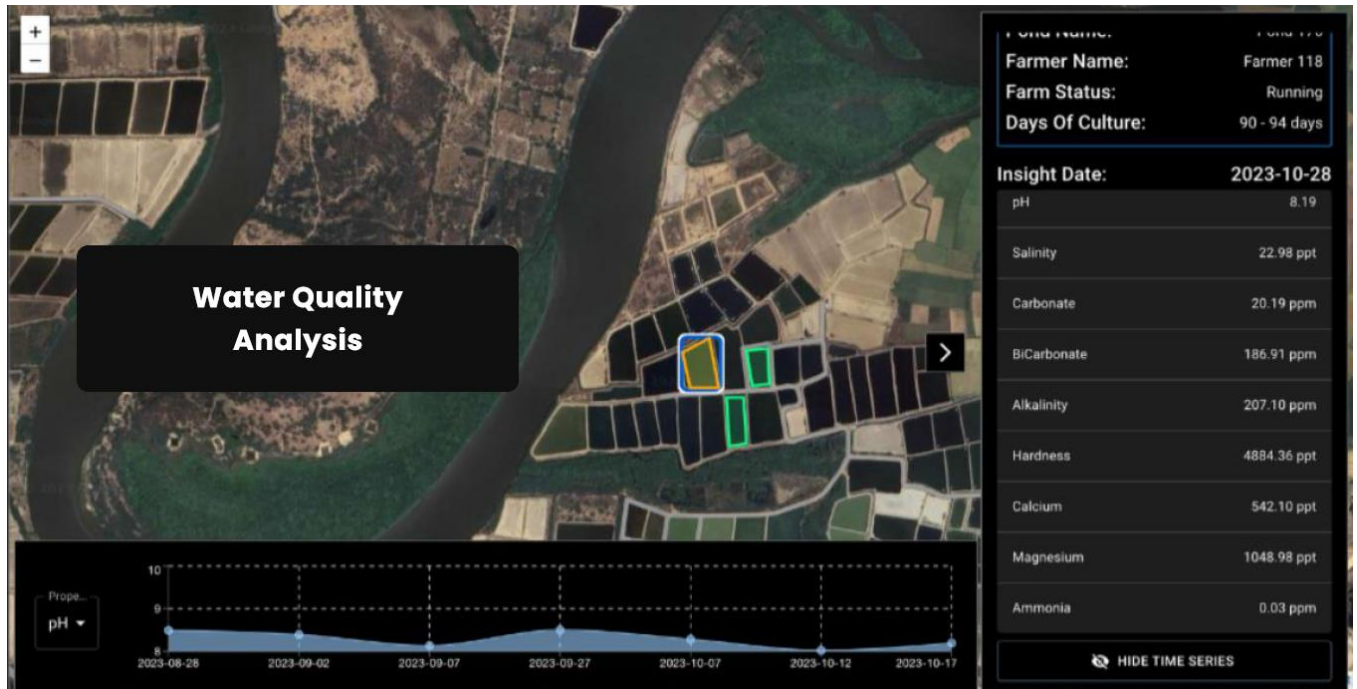
REALTIME GEO-SPATIAL ANALYSIS FOR AQUACULTURE

- Mr. Pranit Mehta



Pranit Mehta is the Co-Founder & VP, Business Development at GalaxEye Space, a DeepTech startup building India's first private constellation of Earth Imaging Satellites. An IIT Madras alumnus, he leads GalaxEye's efforts in the aquaculture industry through their brand, GalaxEye Blue. GalaxEye Blue utilizes advanced remote sensing and satellite imagery to monitor and predict stocking and harvesting activities, assess water quality parameters, and more, without the need for physical pond samples. Under Pranit's leadership, GalaxEye is revolutionizing aquaculture, providing innovative solutions for more efficient and sustainable farming practices, having signed up a couple of marquee clients in India, and currently experimenting its tech across 6 countries.

GalaxEye Blue, developed by GalaxEye Space, is the world's most advanced Geospatial AI Software for Aquaculture, harnessing satellite imagery and advanced analytics to transform India's shrimp farming industry.



Despite being a global leader, the industry faces challenges such as fragmented data sources, inconsistent product quality, and environmental sustainability issues. GalaxEye Blue addresses these challenges by providing a comprehensive, real-time geospatial platform that maps aquaculture ponds, monitors culture status, forecasts markets, and optimizes water quality assessments. With over 3 lakh ponds already mapped across India, GalaxEye Blue is pioneering the first geospatial atlas of aquaculture ponds in India, offering unprecedented insights and tools to enhance productivity, ensure product quality, and support sustainability.

For more information

Mr. Pranit Mehta

Co-Founder

M/s. GalaxEye Space

pranit@galaxeye.space

9444377789

**AUTOMATED SHRIMP LARVAE COUNTING IN HATCHERIES AND PONDS
(BAYLINE) AND REAL TIME AND SUSTAINABLE MONITORING OF WATER
QUALITY IN AQUACULTURE PONDS (BAYLINK)**

-Mr. SUNKARANAM VENKATA NARAYANA RAO (HARI)



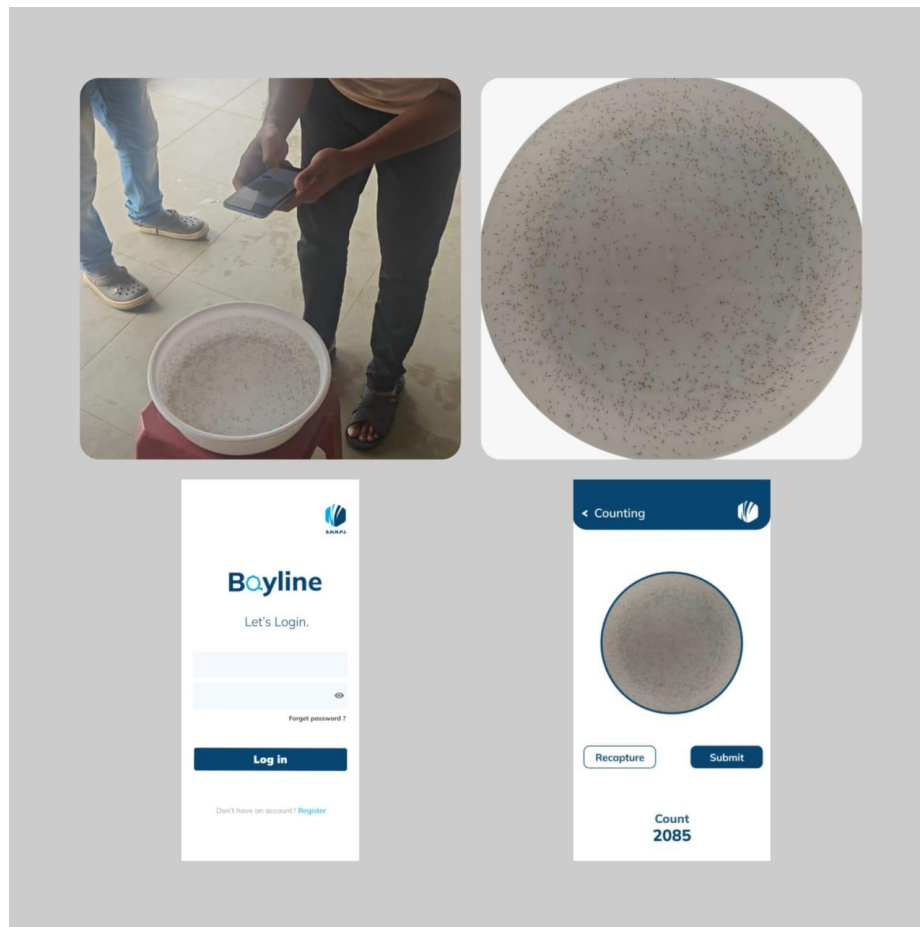
S.V. Narayanarao is an experienced professional with over 30 years in shrimp hatchery and farming. He specializes in both P. Monodon and L. Vannamei shrimp farming, with expertise in farm management, biosecurity, and technical operations. His career spans roles from Farm Technician to Technical and Sales Manager, showcasing his comprehensive knowledge of the shrimp industry.

SREE HARINARAYANA SHRIMP TECHNOLOGIES Pvt Ltd (SHNPL) is at the forefront of transforming the shrimp farming industry through cutting-edge technology and innovation. By integrating artificial intelligence, IoT, and mobile applications, SHNPL is addressing the challenges faced by shrimp farmers and revolutionizing aquaculture practices. Their solutions promise to enhance efficiency, reduce costs, and promote sustainability in an industry that is crucial for global food security.

Innovative Solutions:

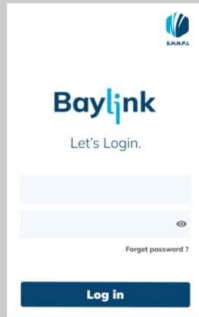
BAYLINE Mobile App:

This sophisticated app leverages AI and IoT to automate tasks and enhance precision in shrimp farming. Key features include advanced computer vision algorithms that detect and count shrimp post-larvae with 95% accuracy in under 20 seconds, providing a critical tool for inventory management and stocking decisions.



BAYLINK Water Monitoring System:

This IoT-based system continuously monitors vital water parameters to ensure optimal conditions for shrimp health and growth. The system offers real-time data and alerts, enabling farmers to respond promptly to any changes, thus preventing potential losses.



For more information
Mr. Sunkaranam Venkata Narayana Rao
Managing Director
M/s. Sreeharynarayana Shrimp tech. Pvt Ltd
s_venkatanarayanarao@yahoo.co.in
9959380345

TEORA'S SOLAQ PLATFORM FOR AQUACULTURE DISEASE MANAGEMENT

- Mr. Shanmugha Harish Kumar Paruvada



Harish is a leader in Biotechnology who is spearheading transformative solutions for aquaculture and agriculture at TeOra. With a robust background working with Fortune 500 healthcare and life sciences companies, Harish brings strategic vision and data-driven decision-making to the forefront of research and business building.

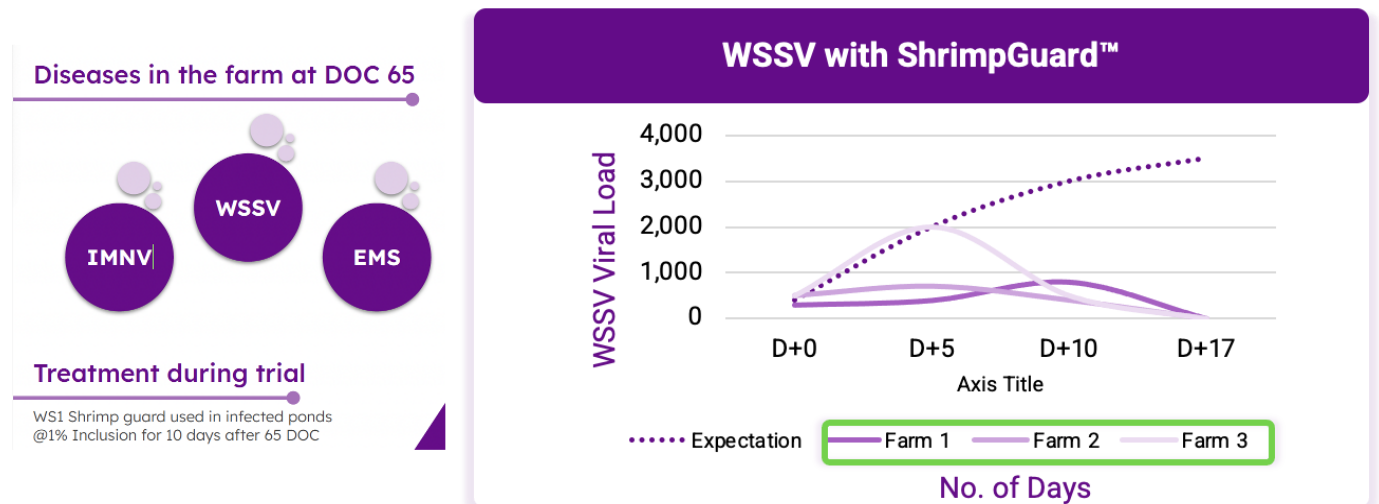
At TeOra, Harish leads the India business, overseeing key functions including R&D, Sales & Marketing, Operations, HR, and Finance. Their leadership extends to nurturing strategic partnerships, and managing and driving fundraising and investor relations to align TeOra's vision with impactful investments. Passionate about leveraging technology for social good, Harish is committed to delivering innovative and sustainable solutions that shape the future of biotech and beyond.

TeOra is committed to solving the challenges of disease management in aquaculture through innovative solutions grounded in synthetic biology and material science. The company focuses on the rapidly expanding aquaculture sector, particularly tropical species, which is crucial for satisfying the growing global demand for sustainable seafood.

Aquaculture, especially in the Asia-Pacific region, is undergoing significant growth but faces severe challenges from disease outbreaks. Traditional methods, such as antibiotics, present risks to both human health and environmental sustainability. TeOra's SOLAQ platform offers a transformative solution by combining bioinformatics, synthetic biology, and precision fermentation to develop customizable, orally delivered vaccines and therapeutics.

SOLAQ's efficacy has been validated in shrimp and fish. In trials against the White Spot Syndrome Virus, showed a remarkable increase in survival rates from 0% in untreated shrimp to 83% in treated shrimp. Similarly efficient solutions have been tested out in fish for *S. inae* and Scale drop disease virus thus proving the platform's capabilities to target a variety of disease-causing pathogens. The platform's products are designed to be easily stored, cost-effective, and compatible with existing farming practices.

ShrimpGuard™ helps combat WSSV



Virus NOT DETECTABLE after treatment with ShrimpGuard™

TeOra is poised to revolutionize disease management in aquaculture by providing natural, sustainable, and safe alternatives to harmful chemicals, ultimately enhancing productivity and reducing losses across the industry.

For more information

Mr. Shanmugha Harish Kumar Paruvada

Director & General Manager

M/s. Teora Lifesciences Pvt Ltd

harish.paruvada@teora.life

7060334516

MOVING INTELLIGENT AUTOFEEDER-MILA FEEDER

- Mr. VANKA SAI NAGA LOKESH



Mr. Lokesh Vanka hails from a small village in southern India, Bantumilli, Andhra Pradesh. His parents have been involved in shrimp aquaculture for over 25 years, and he grew up witnessing the struggles faced by them and other farmers in the region.

While studying for a Diploma in Electronics and Communication Engineering (ECE) in 2015, Mr. Vanka entered the aquaculture sector and personally experienced the challenges it posed. Later, he pursued a B.Tech in ECE, and at the age of 20, he started his own firm to provide innovative solutions to farmers.

His entrepreneurial spirit and contributions to the sector earned him several prestigious honors and awards, including a recognition award from the Hon'ble Chief Minister of Andhra Pradesh, Sri Nara Chandrababu Naidu, in 2019, from the Hon'ble Vice President of India, Sri M. Venkaiah Naidu, in 2018, and from the Hon'ble Prime Minister of India, Sri Narendra Modi, in 2022. In 2019, he was also awarded a national prize of ₹3 lakh by 3M-CII in the Rural Innovation category.



Moving IntelLigent Auto Feeder

In 2019, we developed the first moving feeder in India - MILA FEEDER Moving IntelLigent Auto Feeder. It broadcasts feed into the pond, similar to a traditional method of feeding. This feeder is unique in that it uses Artificial Intelligence and Machine Learning (AI/ML) to detect when the shrimps are hungry and automatically feed them as well as monitor water parameters and control aeration motors system in real time with sensors and automation systems. This feeder has the potential to revolutionize the shrimp farming industry in India. It is also eco-friendly and has a low energy consumption. We are hopeful that this product will provide a better future for shrimp farmers and their families.

For more information

Mr. Vanka Sai Naga Lokesh
CEO & Co-Founder
M/s. Milatronics Private Limited
vankalokesh009@gmail.com
9182566321