



Office of the Principal Scientific Adviser
to the Government of India

SCIENCE & TECHNOLOGY CLUSTER



BCKIC
Bhubaneswar City
Knowledge Innovation
Cluster Foundation



MISSION 50

Blue Economy

STARTUP

COMPENDIUM



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Marine Fishery and Mariculture

AI based automated seafood sorting

Agua14 Ventures Pvt Ltd

INCORPORATION YEAR : 2024

FOUNDER'S NAME

Abhishek Deshmukh

STAGE OF THE TECHNOLOGY

MVP

INTELLECTUAL PROPERTY

Patent No. 202421003438

TEAM SIZE

2+

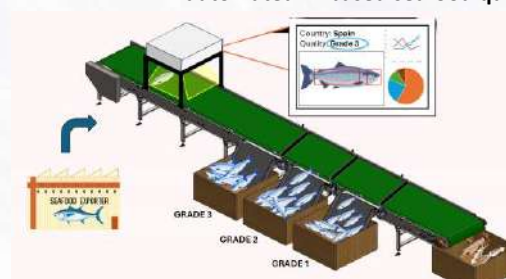
PROBLEM STATEMENT

There is a need to automatically grade seafood for large volume buyers to reduce risk of rejections in exports, improve hygiene practices and get better price realization.



PROPOSED INNOVATION

An automated AI based seafood quality sorter



USP

- Our automated system **eliminates human bias, minimizes contamination, and ensures real-time, consistent seafood grading.**
- It **analyzes size, weight, texture, transparency, and species for precise results, grading over 25+ species.**
- Designed for exporters, processors, and docks, it **lowers operational costs, minimizes wastage, and ensures compliance with global export standards.**
- The solution handles large volumes efficiently, enhancing price realization in premium markets like the EU and US.

TECHNOLOGY DEPLOYED

- Deployed seafood quality detection prototype.
- Currently developing conveyor-based system as MVP for AI based seafood quality sorting



FUNDS RAISED

1. **Biotechnology Ignition Grant (BIG) – 50 Lakhs INR**
2. **Social Innovation Immersion Program (SIIP) – 14 Lakhs INR**

AWARDS & RECOGNITION

- Erasmus Mundus Scholarship for Mobility Master's in Marine Environment and Resources

Marine Fisheries & Mariculture

Driving Innovation in Sustainable Seafood for a Thriving Blue Food Economy

Phoenix Marine Exports and Solution Pvt Ltd (Aquapulse)

INCORPORATION YEAR : 2023

FOUNDER'S NAME

Mrs. Ananya Mohapatra

STAGE OF THE TECHNOLOGY

Market Ready

INTELLECTUAL PROPERTY

202431062357

TEAM SIZE

30+

➔ PROBLEM STATEMENT

Aquaculture faces significant challenges across multiple stakeholders:

• **Farmers** face issues like high input costs, lack of quality supplies, market access, and export facilities, along with vulnerability to environmental fluctuations.

• **Input Dealers** struggle with limited training, access to networks, and working capital.

• **Exporters** face challenges in meeting quality and regulatory standards, competing globally, and ensuring profitability.

➔ USP

- **Antibiotic-free Seafood:** Commitment to high-quality, safe, and natural seafood.
- **Rapid Cooling:** Ice slurry technology ensures freshness and minimises spoilage.
- **Market Bridging:** Connecting farmers directly with exporters, enabling efficient harvest planning and improved profitability.
- **Sustainability:** Reduced feed usage, lower environmental impact, and enhanced farmer profitability.
- **Comprehensive Solutions:** Tailored interventions for aquafarmers, input dealers, and exporters, integrating technology with operational efficiency.



➔ PROPOSED INNOVATION

Pre-Harvest Innovations:

Digital database creation for optimized input supply chains and Application-based forecasting services for real-time environmental updates.

Post-Harvest Innovations:

- Ice slurry cooling technology to preserve seafood freshness.
- Advanced buyer connections reducing time-to-market.
- Ecosystem interventions for streamlined operations across the value chain.

Technology and Services:

- The "Aquapulse" app provides advisory support, market insights, real-time weather forecasts, operational assistance, and government certification facilitation.
- Training and consultancy for best practices in sustainable aquaculture.

➔ TECHNOLOGY DEPLOYED

- Digital Database creation
- Application based forecasting
- Ice slurry cooling system
- Advanced buyer connection
- Efficient supply chain management
- Aquapulse Mobile application and website
- Data driven insights

➔ AWARDS & RECOGNITION

- **"10 Best Fisheries & Aquaculture Startups – 2024"** by SiliconIndia
- **State-wise Bharat Entrepreneur Award** at the Bharat Entrepreneurship Summit 2024
- **Entrepreneur of the Year 2024** by TradeFlock
- Recognition from **Startup Odisha** and **DPIIT** for excellence in sustainable aquaculture.

Marine Fisheries & Mariculture

Innovative Solutions for Sustainable Fish Cage Cleaning in Aquaculture

Bariflo Cybernetics Pvt Ltd

INCORPORATION YEAR : 2018

FOUNDER'S NAME

Mrityunjay Sahu

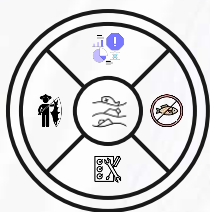
STAGE OF THE TECHNOLOGY

Prototype

TEAM SIZE

30 +

PROBLEM STATEMENT



- ☐ Biofouling and net degradation
- ☐ Disease and Fish Escape
- ☐ Manual Maintenance Limitation
- ☐ Farmer Challenge
- ☐ Insufficient Data Exchange

PROPOSED INNOVATION



USP

- **Precise Cleaning & Maintenance:** Damage-free biofouling removal and autonomous repairs.
- **Advanced Monitoring:** Dual optical and sonar systems for real-time tracking.
- **Smart Navigation:** Efficient hydroacoustic positioning.
- **Sustainability:** Eco-friendly, energy-efficient, renewable-powered.
- **Growth Optimization:** Predictive analytics for better productivity.

AWARDS & RECOGNITION



COLLABORATORS

1. ICAR-CIBA
2. MAGNUM
3. CIFA
4. t-HUB Affairs(GOI)
5. VIT-technology Business Incubator
6. Startup Odisha
7. CSIRO
8. Ministry of Housing & Urban

FUNDS RAISED

Funding Agency	Funding Amount(Lakhs)
1.Waste to Wealth	89
2.Indian Oil Start Up Fund	79.6
3.Rise Accelerator	45
4.Digital Indian Scaleup	35
5.Akamai Accelerator	30
6. Big Birac	43
7.Birac Seed	30
8.Nidhi SSS	25
9.Indian Water Challenge	20

Marine Fisheries & Mariculture

Elevating shrimp farming: Leveraging thermostable antiviral protease inhibitors as a preventive measure against WSSV

Biopioneer Pvt Ltd

INCORPORATION YEAR : 2020

FOUNDER'S NAME

Dr. Bijayananda Panigrahi

STAGE OF THE TECHNOLOGY

Early stage validation

INTELLECTUAL PROPERTY

Patent No. 518759

TEAM SIZE

08+

PROBLEM STATEMENT

1. White Spot Syndrome Virus (WSSV) is a major threat in shrimp farming.
2. Causes mortality of up to 100% within 3–10 days.
3. The global economic loss due to the WSSV is estimated to be around \$1 billion annually.
4. In India, the production loss was estimated to be 48,717 metric tons of shrimp, equivalent to 150 million USD.
5. WSSV eradicated one Indian species *Penaeus monodon* farming.

USP

1. NexGen HM protease inhibitor has wide-ranging protease inhibition abilities.
2. Highly efficient in inhibiting cysteine protease which is abundant in WSSV.
3. Stable at high temperatures and high salinity.
4. It is stable in a wide range of pH and alkalinity.
5. Organically synthesized, lowering risk and antibiotic-free health.

FUNDS RAISED

1. BIRAC Seed fund with KIIT TBI, Amount 30 Lakhs
2. BIRAC- SBIRI. Amount : 50 Lakhs
3. BIRAC-BIG) Amount: 49.43 Lakhs
4. Monthly allowance grant Startup Odisha Amount: Rs.2,64,000
5. PDAM grant from Startup Odisha Amount: 15 Lakhs

COLLABORATORS / INDUSTRY PARTNERS



F3Biotechnology Private Limited for large-scale trials and Market penetration

PROPOSED INNOVATION



Formulation of shrimp feed with a newly developed protease inhibitor is a unique approach to reducing viral load.

TECHNOLOGY DEPLOYED

NexGen HM Protease Inhibitor has been deployed in biotech industries for protein development, enzyme/protein/vaccine stability, and production



AWARDS & RECOGNITION

1. Winner in Nasscom deep tech emerging startup2024.
2. Winner in Tendam Innovator Connect program 2024 (Indo-Gaman program by DAAD).
3. Top 4 finalists at National Startup Award 2024
4. The startup Odisha was recognized as top 20 startups among 1400 Odisha-based startups at fund stack 2. O in the year 2022.
5. The industry outlook was recognized as the top 10 Biotech start-ups in 2021.

Sustainable Aquaculture with IMTA and Smart Technologies

Brahmakamal Research LLP

INCORPORATION YEAR : 2021

FOUNDER'S NAME

Sidhartha Mohanty

STAGE OF THE TECHNOLOGY

Early Validation stage

TEAM SIZE

15 +

PROBLEM STATEMENT

The aquaculture industry faces significant challenges, including the **underutilization of seaweed cultivation, unsustainable shrimp farming practices, lack of automation in seaweed production, and inadequate shrimp pond monitoring**, resulting in inefficiencies, less farmer's income, environmental degradation, and limited scalability.

PROPOSED INNOVATION

The proposed innovation involves implementing the Integrated Multi-Trophic Aquaculture (IMTA) model to integrate shrimp farming with seaweed cultivation, introducing automation technologies to enhance efficiency in seaweed production, and leveraging multispectral drones combined with IoT systems for real-time monitoring and management of shrimp ponds, creating a sustainable, efficient, and scalable aquaculture ecosystem.

USP

Our solution integrates the (IMTA) model to create a sustainable ecosystem of shrimp farming and seaweed cultivation. By combining automation technologies for seaweed production with advanced forecasting and monitoring systems using multispectral drones and IoT, we deliver a comprehensive aquaculture management system. This approach optimizes resources, diversifies farmer income, reduces reliance on single crops, and provides real-time insights, setting us apart in sustainable aquaculture.



FUNDS RAISED

Promoter investment of **₹1.5 crore** to date.

TECHNOLOGY DEPLOYED

Not yet

COLLABORATORS

CSIR- CSMCRI, Elmentoz, Seaweedz Energy, Krimanshi

AWARDS & RECOGNITION

Worked in stealth mode to date, focusing on development and innovation, with plans for strategic public launch.

Sustainable aquaculture development

Blue Wave Aquaculture Pvt Ltd

INCORPORATION YEAR : 2024

FOUNDER'S NAME

Shaurya Agarwal

STAGE OF THE TECHNOLOGY

Early-stage validation

TEAM SIZE

3 +

PROBLEM STATEMENT

- Wild fish populations are declining rapidly, posing a major challenge to marine ecosystems and food security.
- Traditional aquaculture systems are unsustainable, relying heavily on inefficient use of water and land.
- In India, traditional pond farming is inefficient, difficult to track, and not scalable.
- Farm effluents, often polluted with harmful substances, contaminate nearby water bodies and estuaries, damaging ecosystems.
- There is an urgent need for a sustainable and reliable source of protein to meet India's growing demand.

USP

We improve the metrics of a traditional rainbow trout by more than 2x. We cut down production time from 18 to 9 months. Our feed conversion ratio improves feed costs by 25% and lastly, with India, we reduce the cost of fish by almost 40%. Giving us 2x EBITDA growth. Acquisition of genetically identified rainbow trout eggs to ensure uniformity and consistency; Deploying a state-of-the-art airlift system to allow proper and timely grading of fish. And our training at the FREA facility gives us an operational edge empirical for farm success.

FUNDS RAISED

- Blue Wave Aquaculture has raised 650k USD and has a aim of raising a total of 2 million USD.
- 650k USD comes from two investors, one based in India and one based In United States of America.

COLLABORATORS / INDUSTRY PARTNERS

We have collaborated with two Aquaculture firm in Denmark called FREA & NAC. We have also tied up with Indcap Advisors as our financial advisors.

PROPOSED INNOVATION

Build a state-of-the art RAS farm with optimized operation mechanisms and start educating farmers about RAS in India. Position us as RAS enablers in the country along with having the backbone of a large-scale farm and brand. We want to use India's access to economical labor and infrastructure to build a moat of high margins (our cost of \$16/kg vs traditional cost of \$26/kg) and use this farm to educate and partner with local farmers and create a brand for trusted fish selling. We also will conduct R&D in unlocking landlocked growth cycles of fish like Hilsa creating an IP Moat.



TECHNOLOGY DEPLOYED

The pilot project was deployed in Kolkata, this was a 1-ton small project with RAS enabled, we did multiple tests with feed, water quality, fish behavior, probiotics, real time IOT based system. This allowed us to validate the technology in India. This project ran for two years time where we pushed the system to its limit.

AWARDS & RECOGNITION

- Blue Wave Aquaculture has been recognized by Silicon India as top 10 Best Fisheries & Aquaculture Startups - 2024

Marine Fisheries & Mariculture

AI Enabled Fishing Trawler Management & Fish Trading Platform

Blueharvest Pvt Ltd

INCORPORATION YEAR : 2024

FOUNDER'S NAME

Mr.Partha Pratim Das
Mahapatra

STAGE OF THE TECHNOLOGY

Under beta release

TEAM SIZE

4+

PROBLEM STATEMENT

- 1.Overfishing and Stock Depletion Unregulated Fishing Practices & Bycatch Issues
- 2.Inefficiencies in Fishing Operations Operational Costs & Lack of Predictive Tools
- 3.Environmental Degradation Marine Habitat Destruction & Climate Change Impact
- 4.Supply Chain and Market Challenges Lack of Traceability, Market Inefficiencies & Post-Harvest Losses
- 5.Socioeconomic Inequities High Limited Access to Technology & Economic Instability
- 6.Regulatory and Compliance Issues Weak Enforcement & Complex Regulations

PROPOSED INNOVATION

- AI-Driven Innovation for the Fishing Industry



FUNDS RAISED

Bootstrapped

TECHNOLOGY DEPLOYED

- AI Generated
- IOT Enabled

USP

- AI Analytics & Data Dashboard
- Fuel & Resource Monitoring
- Crew & Safety Management
- Fishing Quota Management
- Real Time Data
- Logistics & Shipping Regulatory
- AI-Based Navigation & Route Optimization
- Compliances & Sustainability Monitoring
- Analytics & Dashboard
- Buyer and Seller Matchmaking
- AI Price Optimization & Demand Forecasting
- AI Powered

Marine Fisheries & Mariculture

OxyGini (Ultra-Fine bubbles Device)

Byangoma India Pvt Ltd

INCORPORATION YEAR : 2022

FOUNDER'S NAME

Hanumant Singh

STAGE OF THE TECHNOLOGY

Early stage testing of Working
Prototype

INTELLECTUAL PROPERTY

Patent No. AFR 22467

TEAM SIZE

5+

PROBLEM STATEMENT

Aqua sector have problem of D.O. Sludge and Fecal matter. These factors make Poorer Quantity and Quality, Sludge and Fecal Matter produce Ammonia and Nitrate which are lethal and Low level of D.O. is Much Lethal for Aqua Sector. In the night oxygen not generate and when farmer come to his farm pond he find a huge mortality and low oxygen level effect crop quality and quantity, deposit of fecal matter produce sludge that increase ammonia and nitrate, Which are most lethal for aqua culture. Farmer uses some inorganic products and conventional method (Aerator) to increase O₂ that is expensive and effects less and contaminate The Crop also.

USP

1. Enhances productivity with an additional crop per season, 60% more weight, and export-quality organic products.
2. Energy-efficient, power-free system with zero water wastage, ensuring water sustainability and the use of wastewater bodies for oxygen generation.
3. Creates an optimal habitat for aquatic creatures, reducing mortality and infections while being highly economical with a one-year breakeven point.
4. A first-of-its-kind innovation in India, offering a sustainable and eco-friendly aquaculture solution.

AWARDS & RECOGNITION

Research and Study done at MNIT Jaipur and find our solution enhancing oxygen transfer rate 120 time more in compare of Natural and conventional method – publication Awaited

PROPOSED INNOVATION

We are doing some innovative idea to use some gases for growth and quality improvement in Agriculture (Aqua Culture). Medical, Water treatment and Food processing sectors by the uses of some innovative Ideas and special designed machines that save space to heavily cut down infra cost



TECHNOLOGY DEPLOYED

Vill. - Manyabas, Telangana, A.P.

FUNDS RAISED

15 Lakh – Jitu Bhai khagad, Gujrat- on 23% Equity Basis
3 lakh – MANAGE, Hyderabad
5 Lakh – I Start, Rajasthan
25 Lakh – Bootstrapp

Marine Fisheries & Mariculture

Marine Supply Chain Traceability Platform using Blockchain

Emertech Innovations Pvt Ltd

INCORPORATION YEAR : 2019

FOUNDER'S NAME

Gaurav Somwanshi

STAGE OF THE TECHNOLOGY

Piloting

TEAM SIZE

20 +

PROBLEM STATEMENT

- Lack of transparency and traceability in fisheries supply chain
- Illegal, unreported, and unregulated (IUU) fishing impacting export credibility
- Complex international compliance requirements causing rejected shipments
- Supply chain inefficiencies leading to waste and overfishing
- Climate change impacts affecting marine ecosystem sustainability

USP

- Proven track record: Successfully deployed for 5.2M SKUs in agriculture
- Experience with EU compliance (EUDR implementation for major tire companies)
- Decentralized approach ensuring data immutability
- Customizable solution based on industry-specific requirements
- Integration of both compliance and sustainability metrics

TECHNOLOGY DEPLOYED

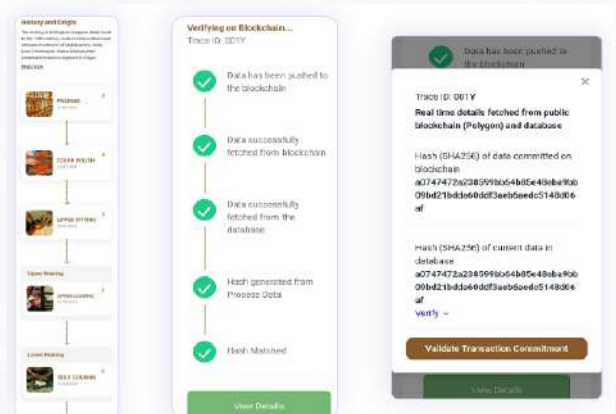
- Blockchain for immutable data recording
- Decentralized architecture
- Real-time dashboard interfaces
- QR code-enabled tracking system
- Automated data validation systems
- Carbon emission tracking modules

COLLABORATORS / INDUSTRY PARTNERS

BKT Tyres, Apollo Tyres, Sahyadri Farms, Peterson Control Union, Government of Maharashtra, RCDF -Government of India, MPEDA - Government of India, Adani Group, IRMRI – Government of India, Mahindra Logistics, Reserve Bank of India (RBI), Vasundhara-Eagl Foundation, Organic Passport

PROPOSED INNOVATION

- Blockchain-based end-to-end traceability system ("bait to plate")
- Integration with existing fisheries systems (e.g., NETFISH, MPEDA)
- Real-time monitoring and verification through QR code tracking
- Carbon emission tracking and waste management insights
- Automated data collection and validation for compliance



AWARDS & RECOGNITION

- **First Prize** - Textile Innovation Challenge (Ministry of Textiles) - Oct 2024
- **Winner** - Agritech Startup of the Year (FICCI) - Dec 2023
- **Winner** - Blockchain Services Award (MSMECCII) - Nov 2023
- **Winner** - Grand Traceability Challenge (Govt. of India) - May 2021
- **First Prize** - Indo-Swiss Competition - Feb 2020
- **Best Agritech Technology** - Cisco - May 2022
- **Runners-up** - Aegis Graham Bell Awards - Feb 2023

FUNDS RAISED

Incubated at Society for Innovation and Entrepreneurship (SINE), IIT Bombay – Fund raised 60 lakhs

Marine Fisheries & Mariculture

Asian Sea Bass Farming: A Sustainable Opportunity in India Transforming the Future of Mariculture in India

Marine Biotech

INCORPORATION YEAR : 2023

FOUNDER'S NAME

Ezhilvalavan

STAGE OF THE TECHNOLOGY

Pre-Revenue/
Commercialization

TEAM SIZE

10+

PROBLEM STATEMENT

Overfishing and declining wild Asian Sea Bass populations have disrupted India's premium seafood supply, worsened by limited quality fingerlings and scarce local feed for farming. Marine Biotech tackles these challenges with an integrated approach, producing its own high-quality fingerlings and feed to ensure a reliable supply chain. This strategy enables sustainable, scalable farming practices, ensuring consistent seafood quality while reducing dependence on wild stocks.

USP

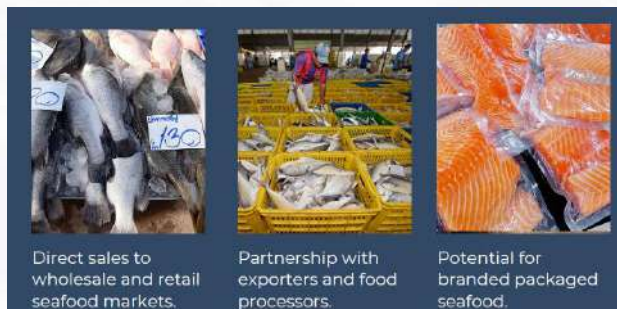
Marine Biotech pioneers a sustainable, integrated approach to Asian Sea Bass (Barramundi) farming in India, addressing key challenges in mariculture. The model starts with a robust fingerling nursery for consistent, high-quality seed stock and transitions to advanced open sea cage systems for optimal growth, high yields, and minimal environmental impact. Proprietary customized pellet feed ensures precise nutrition, reducing feed conversion ratios and enhancing economic and environmental sustainability. By reducing wild stock pressure and creating rural jobs, Marine Biotech drives innovation and sustainability in India's aquaculture sector.

COLLABORATORS

Collaborated with Atal Incubation Centre- Puducherry Technological University, ICAR-CIBA, ICAR-CMFRI, Rajiv Gandhi Centre for Aquaculture.

PROPOSED INNOVATION

Marine Biotech is advancing sustainable Asian Sea Bass (Barramundi) farming to tackle challenges like fingerling scarcity, feed limitations, and overfishing. With high yields (1.5 tons/1,000 m³ annually), rapid growth (6–8 months), and a 40–60% ROI from ₹2 lakh/ton investments, it ensures premium-quality fish for domestic and global markets. This eco-friendly model supports rural jobs and reduces environmental impact.



TECHNOLOGY DEPLOYED

Marine Biotech's end-to-end model integrates seabass fingerling nurseries, open sea cage grow-out phases, and customized feed production.

AWARDS & RECOGNITION

Selected as top 10 finalist out of 217 Startups across the country in the Fish Tank - the grand aquaculture innovation challenge by StartupTN in association with Aquaconnect and Sathyabama -TBI

Marine Fisheries & Mariculture

Climate-Resilient Automation for Sustainable Aquaculture

M-WET

INCORPORATION YEAR : 2024

FOUNDER'S NAME

Samidha Mohapatra

STAGE OF THE TECHNOLOGY

Market ready

TEAM SIZE

5+

PROBLEM STATEMENT



Cyclones driven by climate change cause significant damage to prawn farming in coastal aquaculture regions.

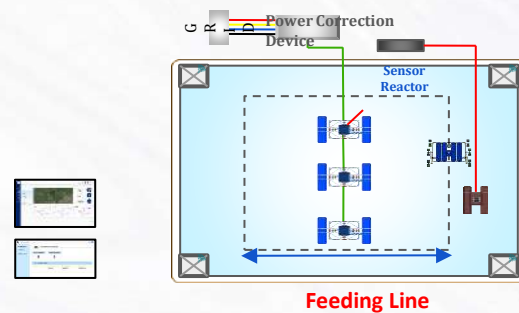


Degrading mangroves, essential for flood protection, increase the vulnerability of prawn farms to cyclones.



The intensifying cyclones threaten the viability and sustainability of aquaculture farming in coastal regions.

PROPOSED INNOVATION



USP

- Cyclone resilience and sustainable water recycling.
- 50% energy savings with sediment aeration.
- AI-powered water monitoring and feeding.
- Scalable IoT with LoRa and remote sensing.

TECHNOLOGY DEPLOYED



COLLABORATORS

ICAR-CIBA, MAGNUM

Marine Fisheries & Mariculture

Sustainable, Tech-Driven Mud Crab Farming and Export

Ninjacrab Aquaculture Pvt Ltd

INCORPORATION YEAR: 2022

FOUNDER'S NAME

SAMEER KUMAR
DALAI

STAGE OF THE TECHNOLOGY

Prototype refinement

TEAM SIZE

6 +

➔ PROBLEM STATEMENT

- High mortality (40%) in pond farming due to cannibalism.
- Lack of consistent crablet supply due to costly hatchery setups.
- Declining wild crab populations from unsustainable fishing practices.

➔ USP

Year-Round Production: Continuous supply with integrated modular hatchery.

High Survival Rates: 80% vs. traditional 40%.

Environmental Restoration: Mangrove plantation for carbon neutrality.

IoT Automation: Reduces labor and ensures precision.

➔ PROPOSED INNOVATION

- **Modular Vertical RAS System:** Space-efficient, scalable, and automated.
- **IoT Automation:** Real-time water monitoring and AI dashboards for optimal productivity.
- **Mangrove Simulation:** Enhances breeding success while restoring ecosystems.
- **Sustainable Model:** Repurposes prawn ponds and supports carbon neutrality.



➔ TECHNOLOGY DEPLOYED

- **IoT-Integrated RAS System:** Modular, space-efficient, and automated.
- **Farm Management Software:** Tracks growth, FCR, and water quality.
- **Symbiotic Bio-Pod System:** Mimics mangrove ecosystems for enhanced breeding.

➔ FUNDS RAISED

NIDHI PRAYAS Grant Secured: ₹6 Lakhs

➔ COLLABORATORS

ICAR-CIBA: Testing and validation partner.

Industrial Exporters: Prospective partners for scaling production and market alignment.

➔ AWARDS & RECOGNITION

NIDHI PRAYAS Grantee under DST, **Government of India**
Participant in Blue Economy 2024 Initiative **AT KIIT-TBI**.

Marine Fisheries and Mariculture

Autonomous Real-Time Image and Video-based Aquaculture site and creature Monitoring Systems

Robic Rufarm India Pvt Ltd

INCORPORATION YEAR : 2017

FOUNDER'S NAME

Mr. Kiriti Madina
Mr. Kapil Dogiparthi

STAGE OF THE TECHNOLOGY

Working Prototype ready

TEAM SIZE

10 +

PROBLEM STATEMENT

- Reducing the occurrence of disease in aquaculture
- Reducing the Mortality Rate in aquaculture crop
- Reducing the usage of harmful antibiotics and Heavy Metals in aquaculture ponds
- Benefiting the farmers with better faster crop growth and best market access within right time.

USP

IoT based modules or Systems for aquaculture site monitoring and automation in aeration in ponds. Service such as mobile application for aquaculture site tracking, crop image and video data, crop certification and scheduling Water sample test then mapping the laboratories nearby with time to time tracking of sample, implementing this as something where 3 key players in aquaculture pond day to day activity. Documenting the growth cycle of Shrimps, Fishes, Oysters & Crabs once at a time. Site's Digital & Paper Documentation of Water, Creature, Feed can be accessed by the technician anywhere/anytime. Creating Video, Photos & Audio data center of creature behavioral analytics.

PROPOSED INNOVATION

- 24/7 Aquaculture Creature Behavior Monitoring using Image and Video based reports
- Advance Creature Disease Detection using AI and Sensors
- Helping Aquaculture Farmers with Pond and Crop Management services and sciences
- Implementing Creature gender switching in aquaculture creatures specifically shrimps and Prawns.



FUNDS RAISED

We have raised grants of 20 Lakhs from RAAFTAR and 5 Lakhs from Nidhi Prayas along with these we have bootstrapped fund some where around 25-30 Lakhs from founders, Family and Friends

COLLABORATORS

1. T-Hub and T-Works
2. Aghub (PJTSU)
3. SINE IIT Bombay
4. PUSA Krishi
5. SRIX (SR Engineering College)

TECHNOLOGY DEPLOYED

We have started the field trials w.r.t Digital Data Generation of Crop, Farmer, Pond and Creature in places such as Kaikaluru, Akividu, Gudivada and Vijayawada at Andhra Pradesh State. Soon we are working to deploy these services in Kerala and Orrisa.

AWARDS & RECOGNITION

Recognitions From

1. Department of Fisheries, Min of FAH&D
2. Start-up India

Awards From

1. TIE Hyderabad
2. A-Idea NAARM
3. Ministry of Fisheries India

Marine Fisheries and Mariculture

Making Aquaculture Sustainable through water quality monitoring and resource optimization reducing mortality rates and yielding export quality shrimps.

Shrimp Hoard Technologies Pvt Ltd

INCORPORATION YEAR : 2017

FOUNDER'S NAME

Sushilkumar Paul

STAGE OF THE TECHNOLOGY

Validation of the
Technology

INTELLECTUAL PROPERTY

Patent No. 327395

TEAM SIZE

5

➔ PROBLEM STATEMENT

Shrimp farming requires early disease detection, as environmental changes often go unnoticed until health declines. Factors like water quality, weather, and regional conditions are dynamic and complex, making manual monitoring costly and inefficient. Delayed detection leads to expensive interventions and significant losses from shrimp mortality. Additionally, traditional methods lack precision and scalability, leaving farmers unable to respond proactively. This underscores the urgent need for automated, data-driven solutions that can provide real-time insights, optimize farm management, and mitigate risks, ensuring sustainable and profitable aquaculture practices.

➔ PROPOSED INNOVATION

Our innovation ensures sustainable aquaculture by monitoring water quality parameters, optimizing resources, and predicting risks. Automated pond management reduces mortality, enhances productivity, and lowers costs by minimizing inefficiencies and power consumption. This results in higher-quality yields and a more sustainable farming approach. By leveraging advanced analytics and IoT-enabled systems, our solution empowers farmers with real-time decision-making tools, ensuring timely interventions and reducing environmental impact. Furthermore, the technology supports scalability, making it accessible to both small-scale and commercial farmers, driving long-term growth and resilience in the aquaculture sector.

➔ USP

Our innovation ensures sustainable aquaculture with continuous water quality monitoring, depth-specific insights, and bio-fouling prevention for accurate data. A cost-effective flow cell mechanism enables multi-pond monitoring, while predictive algorithms provide early warnings and optimize strategies. Geotagged reports simplify farm management and support regulatory validation, empowering farmers and transforming practices.

➔ FUNDS RAISED

BIRAC BIG Grant – INR 50 LAKH



➔ TECHNOLOGY DEPLOYED

The technology involves IoT and sensors for real-time water quality monitoring with electrochemical sensors, automation through motorized depth-specific sampling and flow cell mechanisms, data analytics for predictive trend analysis and optimized farming strategies, software development for geotagged reporting and dashboards, and sustainability practices to reduce resource usage and prevent bio-fouling.

➔ COLLABORATORS

MPEDA

Marine Fisheries and Mariculture

DHIVARA MITRA – An IOT Enabled & solar powered solution for enhanced per cubic meter harvest in prawn farming

Thinkraw Innovative Solutions

INCORPORATION YEAR : 2021

FOUNDER'S NAME

Amrita Jagatdeo

STAGE OF THE TECHNOLOGY

Pre-Commercialisation

INTELLECTUAL PROPERTY

Patent-510507
Design - 394976-001

TEAM SIZE

8 +

PROBLEM STATEMENT

- ✓ High morbidity/Low survival rate problem in fish & prawn stock in aquaculture
- ✓ Lower than optimal level of production from fish & prawn farms
- ✓ Involved drudgery and dependency on human labour to be engaged in the farms
- ✓ High expense of diesel usage for paddler-based aeration process, where used
- ✓ Uneven growth of fish & prawn stocks and feed wastage due to the dispersal being carried out manually

USP

- 1- Solar powered
- 2- Smart System - IoT - Easy monitoring and controlling
- 3- Floating device - Covers the entire pond to achieve uniformity in DO, pH and feed distribution
- 4- Automatic - Reduces dependency on skill-set
- 5- Promotes women entrepreneurs, employment generation

FUNDS RAISED

Grant –

- Selected by MSME Hackathon programme – INR 12.5 Lakhs
- Selected by IIT Ropar – INR 2 Lakhs

Equity-

- INR 2.5 Lacs by STPI, Bhubaneswar
- Received INR 25 Lakh funding under Chunauti 2.0 NGIS
- Selected by KIIT TBI – INR 27.5 Lakhs

DEBT-

- Selected by NRDC for INR 30 Lakh funding (OCD)

COLLABORATORS / INDUSTRY PARTNERS

- MECHEM for float unit
- AirOxy for micro bubble aeration pipe
- AA Biotech for DO & pH probes

PROPOSED INNOVATION

- ✓ An integrated IoT enabled and solar powered navigable solution to provide the right ecosystem for the proper growth of fish and prawn farming
- ✓ Uniform distribution of Feed
- ✓ Maintaining uniformity in Dissolved Oxygen (DO) and pH value of farm water across the pond
- ✓ Lowering diesel usage to a minimal level
- ✓ Lower dependency on human labour

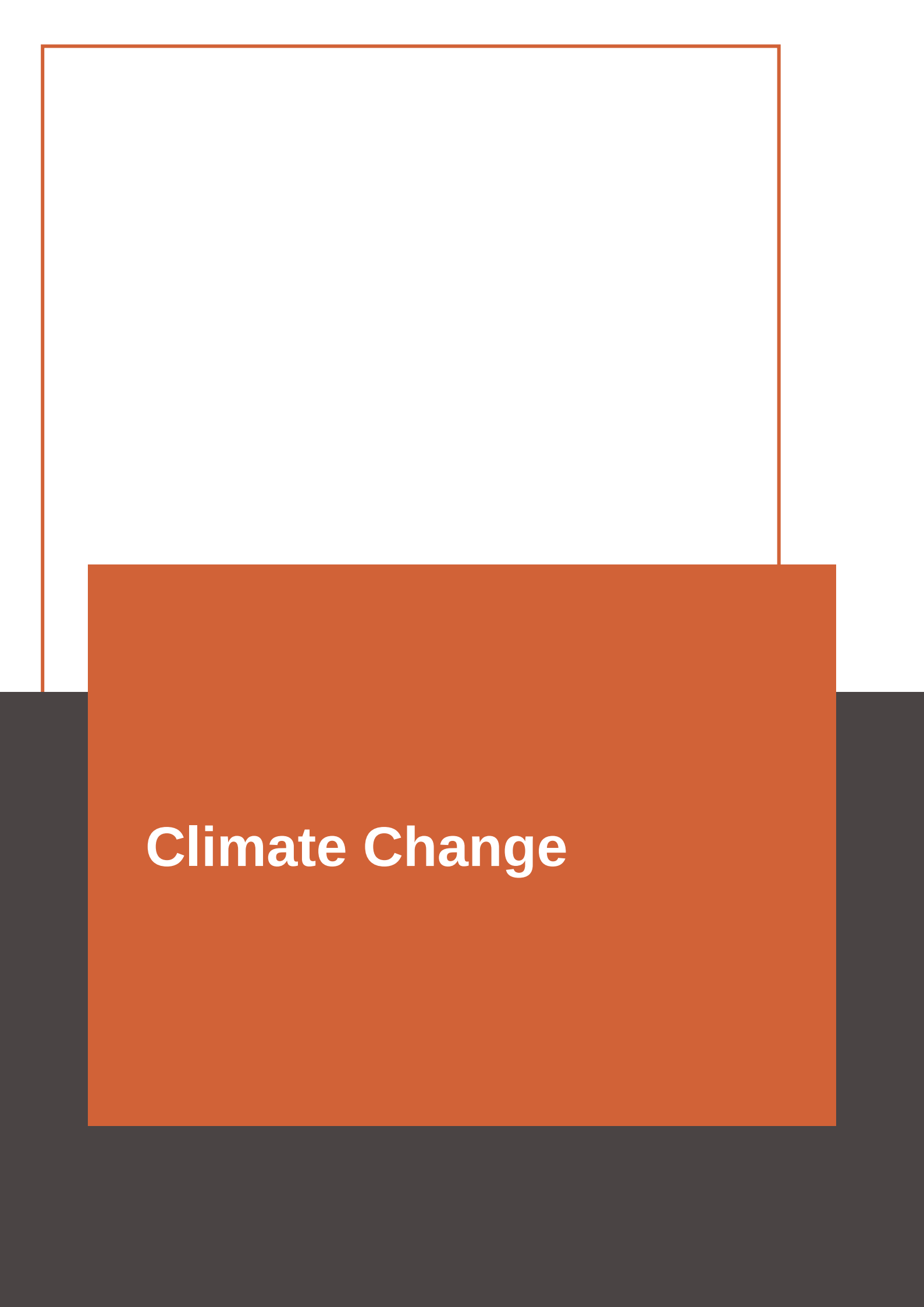


TECHNOLOGY DEPLOYED

1. We have sold five units of DhiavarMitra to a NABARD-supported FPC as Basta Farmers Producer Company Ltd, Balasore
2. We have sold two units to Kansabansa Farmers Producer Company Ltd, Balasore
3. We have given away one unit on rental mode to a farmer in Kajang, Jagatsinghpur

AWARDS & RECOGNITION

- Among top 5 innovative ideas in Asia region at the Lemon Grant contest
- Awarded by 7 smart cities convergence help at Pragati Maidan, Delhi
- Best innovative technology in aquaculture sector- Directorate of Fisheries, Govt. of Odisha
- Swayam Siddha award by The Sambad, Odisha



Climate Change

Climate Change

Turning Emissions into Assets: A Sustainable Approach to Carbon capture, Utilization and Sequestration

Algae Labs Private Limited

INCORPORATION YEAR : 2020

FOUNDER'S NAME

Dr.Gowtham Thirumalai

STAGE OF THE TECHNOLOGY

Market ready / TRL 8

TEAM SIZE

9 +

PROBLEM STATEMENT

Rising GHG'S emissions from high carbon footprint industries necessitate sustainable and scalable solutions to combat climate change.

Climate Change Challenge

- Rising CO2 levels are a major contributor to climate change, leading to global warming and environmental degradation.
- Necessitating urgent and scalable solutions to reduce their carbon footprint and mitigate climate impacts. Addressing these emissions is critical to achieving climate stability and supporting sustainable development goals.

USP

- Unique, sustainable solution that mitigates industrial emissions.
- Generates economic value by converting captured gases into marketable products.
- In-house developed culture tanks that reduce the need for high land footprint.
- Enable efficient large-scale algae cultivation.
- Integrate seamlessly with existing industrial setups for real-time gas capture and conversion.

FUNDS RAISED

- Bootstrapped

COLLABORATORS / INDUSTRY PARTNERS

BPCL (Bharat Petroleum Corporation Limited)

- Ministry of Coal
- Amman Minerals, Indonesia
- Kothari Sugar

PROPOSED INNOVATION

- Development of algae-based CCSU (Carbon Capture, Sequestration, and Utilization) systems that capture industrial emissions (CO₂, SO_x, and NO_x) and convert them into valuable by-products like bio-fertilizers, bio-stimulants, and animal feed supplements, contributing to a circular economy.



TECHNOLOGY DEPLOYED

- Innovative algae Cultures, cultivation and processing systems.
- Proprietary culture tanks designed to:
 - Minimize land footprint.
 - Enhance large-scale algae cultivation efficiency.
- Integration with industrial setups for:
 - Real-time greenhouse gas capture.
 - Conversion of emissions (CO₂, SO_x, NO_x) into valuable by-products.

AWARDS & RECOGNITION

- Recognised by Bharat Petroleum Corporation Limited (BPCL) for innovation in carbon capture and utilization.
- Memorandum of Understanding (MoU) signed with BPCL to develop CCUS solutions for their oil and gas industry.
- Collaboration with the Ministry of Coal for a 10 TPD CCUS project at NLC Power Plant, fully funded under a government grant worth approximately ₹45 crore.

Climate Change

Building Climate Resilient and Sustainable Aquaculture

Almericus Blue Ventures Pvt Ltd

INCORPORATION YEAR : 2022

FOUNDER'S NAME

Kumar Gurusamy

STAGE OF THE TECHNOLOGY

MVP

INTELLECTUAL PROPERTY

Patent No. 5421192

TEAM SIZE

8 +

➔ PROBLEM STATEMENT

Aquaculture Farming (Shrimp farming) is faced with several issues in relation to climate change impacts due to global warming. With increasing, extreme events such as floods, storms, cyclones, tsunamis brackish water aquaculture are vulnerable to climate change due to its total dependence on the coastal ecosystem. Nearly 20-30% of Aquaculture farms fail due to a lack of planning towards climate change. \$17 Bn Loss Expected in next 25 years due to climate change.

➔ PROPOSED INNOVATION

We at Almericus, Understood the seriousness of the problem and started building solutions to help Aquaculture farmers. Land selection is the first process where aquaculture begins and we want to start our solution from there. We provide Climate smart initiative by integrated Geospatial intelligence solutions in the land marketplace to help farmers to have informed decisions about climate-related risk, Regulatory guideline risks associated with a land during site selection process.

➔ USP

Almericus is building world's first aquaculture land marketplace by connecting land buyers and sellers in mobile app. Our Integrated Geospatial Intelligence solution uses satellite remote sensing technology that provides detailed insights of a land/pond with it's regulatory guidelines, Environmental Parameters, and Climate Risk associated with that land for a farmer to take informed decision during aquaculture site selection process. Through our app we will enable A.I powered climate resilience and sustainable aquaculture operations.



➔ TECHNOLOGY DEPLOYED

Almericus leverages cutting-edge satellite remote sensing technology to power its innovative land marketplace. By integrating geospatial solutions, the platform provides real-time data on land use, vegetation cover, soil quality, and hydrological patterns and climate risks. This enables accurate identification of potential sites for aquaculture operations. The geospatial system offers stakeholders actionable insights through high-resolution imagery and predictive analytics, enhancing transparency and decision-making.

➔ FUNDS RAISED

INR 3 Lakhs

➔ COLLABORATORS

ICAR-CIBA, MPEDA

➔ AWARDS & RECOGNITION

- Recognized by Naavic-Nivedi and received grant
- Incubated with ICAR-CIBA

Climate Change

A Nature Tech CRaaS (Carbon Removal as a Service) solution provider focused on NbS

Carbon Innovations by Idealers B2B Pvt Ltd

INCORPORATION YEAR : 2022

FOUNDER'S NAME

Cdr Sravan Kumar Khuntia

STAGE OF THE TECHNOLOGY

Pre-Commercialization

INTELLECTUAL PROPERTY

Trade Mart No.5787705

TEAM SIZE

5 +

PROBLEM STATEMENT

1. Farmers are eligible but not aware about Carbon Credit (offset) for additional income.
2. Urgent need of Farming process improvement (including agroforestry and mangroves) to save water and reduce GHG
3. No easy access (platform) to Carbon credit & Trading (Farmers, NGOs, MSMEs and Startups).
5. Livelihood concerns with meagre income from their farm land, specifically mangroves.
6. Net Zero compliance is a complicated concept to be followed by MSMEs, Startups and smaller businesses.

PROPOSED INNOVATION

carbinnov.com, as a carbon offsetting platform, can play a significant role in helping companies offset their carbon emissions in several ways along with additional income for all stakeholders.

1. Connecting companies with high-quality carbon offset projects (Blue Carbon).
2. Simplifying the offsetting process for small farmers and other stakeholders of NBS projects (Blue Carbon).
3. Providing additional value-added services towards development of a robust mangrove project.

USP

We are providing a complete solution for a NBS carbon project, all relevant services under one umbrella including financial support. We are connected to the ground level farmers in the mangrove haven of South East Asia.

1. Our specialization in Blue Carbon projects in association with world's best carbon asset management organization and European Tech team highly specialized in Blue Carbon projects. We will be the first one to initiate a blue carbon project in India.
2. We are connected to the ground level farmers in the mangrove haven of South East Asia.
3. Technical Expertise

AWARDS & RECOGNITION

1. Top 100 Business Plans of India by NMIM.
2. Asia Zonalist at Eureka conducted by IIT Bombay.
3. Selected for incubation by VillGrow backed by Harvard Business School, Booth school of Business.
4. Received the prestigious Sustainability Award 2024 for Cleantech Mart, from the elite world class entrepreneurship nurturing organization - TIE Delhi.
5. Indian Achiever's Award 2023 for Promising Startup in Sustainability sector, Indian Achievers' Forum.

FUNDS RAISED

Bootstrapped



TECHNOLOGY DEPLOYED

1. Connecting companies with high-quality carbon offset projects.
2. GHG inventory management.
3. NBS Carbon project development & Carbon Credit Calculation module.
4. Agri Tech for healthier plantation with lowest carbon footprint.
5. GIS and Remote sensing module for Nature Based Solutions

COLLABORATORS / INDUSTRY PARTNERS

1. Global partner, world's best carbon asset manager from Europe.
2. Four NGOs expert in mangrove plantation and maintainance.

Offshore energy and green mobility

Offshore energy and green mobility

Aquaairx Autonomous Systems Pvt Ltd

HAUV (Hovering Autonomous Underwater vehicle)

INCORPORATION YEAR : APRIL 2024

FOUNDER'S NAME

1. Jitendra Saini
2. Gouthami T S

STAGE OF THE TECHNOLOGY

MVP stage

TEAM SIZE

10 +

PROBLEM STATEMENT

Marine infrastructure like bridges, ports, and subsea pipelines face harsh conditions that cause corrosion, damage, and costly downtime without regular maintenance. Traditional diver inspections are limited by safety risks and poor visibility, highlighting the need for reliable, real-time solutions to enhance operational efficiency, reduce risks, and extend asset lifespan.

PROPOSED INNOVATION

The Hovering Autonomous Underwater Vehicle (HAUV) is a Made-in-India solution for underwater inspections, bathymetry, and environmental monitoring, offering autonomous navigation via advanced SLAM technology and obstacle avoidance. With 8-hour endurance and real-time data processing through the ADVAR platform, it reduces CO₂ emissions, enhances safety, and optimizes offshore operations efficiently.

USP

USP of AquaAirX HAUV & ADVAR Platform

- 95% CO₂ reduction vs. traditional offshore inspections.
- Cuts operational costs by 50% and reduces on-site personnel by 70%, improving safety.
- Provides real-time 3D mapping and accurate bathymetry surveys with ± 2 cm precision.
- The ADVAR platform automates data processing and regulatory reporting, reducing post-survey time by 80%.



FUNDS RAISED

- Pre-Seed Round of 1.5 Cr
- Received IDEX grant of 1.5 Cr

COLLABORATORS / INDUSTRY PARTNERS

1. Incubation with IIT Hyderabad
2. MOU with Nitte University
3. MOU with REVA University

TECHNOLOGY DEPLOYED

1. The technology is in trial stage and we have a good 10 clients with ACV of \$1M in the pipeline who have requested for trials.
2. The deployment would start in 2025 July

AWARDS & RECOGNITION

1. Has been awarded with India's prestigious IDEX Open Challenge - Indian Navy.
2. Has been recognized by INC 42 Media as top 30 Hot startups in Nov 2023.
3. The Founder has been recognized for top 50 women in innovation by CII in 2024.
4. Selected under NSRCEL Maruti Suzuki cohort

Sustainable Hydrogen Production through Electrolyzers for Decarbonizing Offshore Energy

Hydrogen Innovation Pvt Ltd

INCORPORATION YEAR : 2024

FOUNDER'S NAME

Dr. M Krishna Kumar

STAGE OF THE TECHNOLOGY

TRL - 6

TEAM SIZE

10 +

PROBLEM STATEMENT

Hydrogen Innovation Pvt Ltd envisions revolutionizing the offshore energy landscape by delivering advanced AEM and PEM electrolyzers, enabling renewable hydrogen production at scale, fostering energy independence, and accelerating the global transition to net-zero emissions. Our solutions aim to transform offshore operations by integrating sustainable hydrogen systems, reducing reliance on fossil fuels, enhancing energy security, and creating a scalable blueprint for decarbonized energy ecosystems across industries and regions worldwide.

USP

Hydrogen Innovation Pvt Ltd delivers state-of-the-art AEM and PEM electrolyzers specifically designed for offshore energy applications, featuring unmatched durability, seawater compatibility, modular scalability, and industry-leading efficiency. Our innovative technologies enable cost-effective, renewable hydrogen production in harsh marine environments, empowering offshore operations to achieve energy independence while reducing carbon footprints.

AWARDS & RECOGNITION

- Hydrogen Innovation Pvt Ltd is recognized as one of the top-3 startups from the Mangaluru (Karnataka) cluster by K-DEM, acknowledging our innovative approach in sustainable hydrogen production
- Successfully pitched at Mangalore Blue, receiving acclaim from a distinguished panel of industry experts and venture capitalists.

FUNDS RAISED

- Raised 1.5 million dollar in equity from angel investor network

PROPOSED INNOVATION

Hydrogen Innovation Pvt Ltd introduces next-generation AEM and PEM electrolyzers, engineered for offshore environments, utilizing seawater as feedstock and renewable electricity for efficient, scalable hydrogen production. Our modular systems are designed for harsh conditions, offering enhanced durability, reduced energy consumption, and minimal maintenance. By integrating cutting-edge catalyst and membrane technologies, we address cost, efficiency, and sustainability, creating a transformative solution for offshore energy applications.



Development of 10 KW stack and Multiple product trials and validation with customers

TECHNOLOGY DEPLOYED

Hydrogen Innovation Pvt Ltd integrates advanced to enable efficient hydrogen production directly from seawater. Our systems are designed with corrosion-resistant materials to withstand the challenges of harsh offshore environments, including high salinity, variable temperatures, and continuous mechanical stresses. The modular, compact design allows for easy scalability and seamless integration with offshore renewable energy sources like wind and solar.

COLLABORATORS / INDUSTRY PARTNERS

- ChemEngg Research, IISER-TVM, NITK, Batliboi, Halward Engineers

Offshore Energy and Green Mobility

Wave Engine: Low-Cost Ocean Wave Power Solutions

Pureelectron India Pvt Ltd

INCORPORATION YEAR : Aug 2023

FOUNDER'S NAME

JAGANNATH NAYAK

STAGE OF THE TECHNOLOGY

TRL 3

INTELLECTUAL PROPERTY

Patent No. 201631026341
(CBR: 12705 /Docket: 12684)

TEAM SIZE

2 +

➔ PROBLEM STATEMENT

60-70% of Electric power demand is met by thermal power plants that gives rise to 40% Pollution and consume limited fossil fuel resource, rise in global warming. Solar power available for 5-6 peak hours in a day. Needs Storage. Wind Power is site specific, needs land mass. Wave power has more power flux density than wind (300 times more per square meter) Oceans cover 70 % of earth and marine power is enormous (power flux density around 300 times more than wind power) still lacks proper low-cost technologies to harness the great power source. India has around 7516km of coastal line. Water Scarcity, Need for Green Hydrogen, security.

➔ USP

Offshore Wind cum Wave Power Megawatt Addition, Energy Park, Wave Powered Ships smart buoy for Navy. Wave Powered floating Homes, islands , Carbon Credit. Many companies producing Carbon can buy our product to offset carbon footprint, Low Power device can power local coastal industries, Hotels, Resorts, Wave powered desalination to provide fresh water (packaging, Bath, pumped Supply), Water ATMs (B2C), Coastal Street Lights can be powered (B2G) Megawatt Scale: Supply power to Grid, Hydrogen Fuel generation facility Wave powered Desalination.

➔ COLLABORATORS

Rotary Club Award for Sustainability

➔ AWARDS & RECOGNITION

Startup India, Startup Odisha, NRDC Delhi

➔ PROPOSED INNOVATION

A low-cost innovative marine wave energy converter device for consistent and optimal electric power output. It can generate consistent electric power 24/7 in spite of wave irregularities and low height wave. The output power can be sold to grid as well as can be used industrially like desalination plant to produce drinking water from salty sea water or produce green hydrogen with electrolysis powered by waves. Surveillance and Security Coastal Monitoring. Weather Monitoring smart Bouyei, Port Lighting Solutions Underwater Drones charging and communication Solution



➔ TECHNOLOGY DEPLOYED

RESONANCE BASED TECHNOLOGY: Employs Maximum power Capture with Special Buoy designs.

GRAVITY BATTERY: Potential Energy Storage for continuous power output during long interval of Waves gaps.

MULTIMODE ENERGY CAPTURE: provides a unique ability to capture energy from the ocean in all six degrees of freedom (heave, pitch, surge, roll, and yaw) enabling power to be produced across a very wide range of wave conditions.

LOW COST INSTALLATION & HIGH EFFICIENCY ENERGY CAPTURE CONVERSION

Seaweed & Value chain

Seaweed & Value chain

Seaweed-Insect-Market Waste-Bycatch based Aquaculture feed (SIMBA)

Aqua Doctor Solutions

INCORPORATION YEAR : 2019

FOUNDER'S NAME

Dr. Debtanu Barman

STAGE OF THE TECHNOLOGY

Prototype ready

TEAM SIZE

10 +

➡ PROBLEM STATEMENT

- Fish market and processing industries generate significant waste, causing odors and environmental hazards.
- Effective waste management is essential to mitigate pollution and promote sustainability.
- Rising feed prices impact the aquaculture industry, affecting profitability.
- Inadequate feed hinders fish growth, increasing production costs.
- Cost-effective, nutrient-rich feeds are needed to improve economic viability and sustainability.

➡ USP

- **Revolutionary Ingredients:** Utilizes brown seaweed, agricultural pests, fish market waste, and bycatch species for nutrition and sustainability.
- **Waste Repurposing:** Reduces pollution, promoting resource efficiency.
- **Nutrient-Rich Formula:** Supports aquatic health with essential nutrients.
- **Holistic Sustainability:** Combines nutrition, sustainability, and innovation.
- **Industry and Environment Benefits:** Provides a sustainable future for both.

➡ PROPOSED INNOVATION

Our innovative aquaculture feed utilizes nutrient-rich ingredients such as brown seaweed, agricultural pests, fish market waste, and bycatch species. This sustainable solution reduces environmental impact, improves aquatic species' health and growth, and promotes responsible aquaculture practices. It offers a circular, efficient approach to feeding farmed fish while maximizing resource utilization.



➡ COLLABORATORS

IB Group, Dayal Feed Formulations

➡ TECHNOLOGY DEPLOYED

The technology deployed for fish feed production involves several steps:

- 1. Ingredient Selection:** Sourcing seaweed, bycatch fish, market waste, and insects.
- 2. Mixing & Formulation:** Combining ingredients to create a balanced feed.
- 3. Pelletizing/Extrusion:** Shaping the feed into pellets.
- 4. Drying & Cooling:** Ensuring proper texture and preservation.
- 5. Packaging & Storage:** Final packaging for storage and distribution, ensuring a 2-tonne/day production capacity.

➡ AWARDS & RECOGNITION

- National Atal Award 20 June 2024
- MSME Honours awarded- 2024 champion of cause
- Manage Agri EUREKA- 2024 RUNNER UP
- CMA MSME Conclave 2024, Organized by HII
- STAR performer ,2024 Organized by NEEDP
- Best fisheries consultant ,2024 Organized BY ARANYA BANGLA FOUNDATION

Seaweeds & Value Chain

Salicornia brachiata: A Gift from the Sea to Transform the Quality of Life and Blue Economy

DR. SETHI's Laboratories Pvt Ltd

INCORPORATION YEAR : 2023

FOUNDER'S NAME

Dr. Kalyan K. Sethi

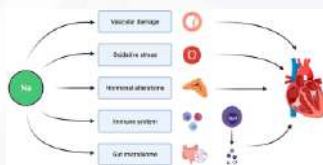
STAGE OF THE TECHNOLOGY

Prototype ready

TEAM SIZE

5 +

PROBLEM STATEMENT



- Quality of Life
- Hypertension/High blood pressure due to Na⁺ salt
- ~5 Million Cardiovascular Morbidity and Mortality
- Limited Information and Awareness/ Limited Supplier of *Salicornia herbacea* extract.
- Limited Scientific Study and High Production Costs of *Salicornia herbacea* extract.
- Boost Economy and Reduce Unemployment: The cultivation, harvesting, and processing of *Salicornia* can spur job creation in coastal regions, enhancing local economies.
- Increase Ecotourism and Education

PROPOSED INNOVATION

Laboratory-scale *Salicornia brachiata* (seaweed) extract
Production Technology

- Waste to-value addition
- High yield, Cost-effective, Environmentally friendly, and less time-taking



USP

- It is a low-sodium salt with a high yield.
- Nutrient Composition: Vitamins, minerals, and micronutrients.
- Food and Culinary: Young stalks and seeds are consumed in various forms.
- Medicinal Uses: hypertension and inflammatory diseases
- Industrial Applications: Cosmetics and food industries, and it serves as a source for biofuels.
- Zero waste technology.

TECHNOLOGY DEPLOYED

Zero Waste Laboratory-scale *Salicornia brachiata* (seaweed)
Extraction Technology

- Seaweed waste to-value addition
- High percent yield
- Cost-effective method
- Environmentally friendly and less time-taking
- Create opportunity for Farmer
- Potential Blue Economy

COLLABORATORS / INDUSTRY PARTNERS

- M/s CRO Pharmatrendz Pvt. Ltd., BJB Nagar, Bhubaneswar, Odisha, India,
- M/s Cognosmed Laboratories Pvt Ltd, Patna, Bihar, India

FUNDS RAISED

BIG NER INCUBATEE
Grant-in-aid:
INR 50 lakhs

Seaweed & Valuechain

GoSeaGraze

Gocarín Industries Pvt Ltd

INCORPORATION YEAR : 2022

FOUNDER'S NAME

Dr. Ramanuj Panda

STAGE OF THE TECHNOLOGY

Field Trials & Validation

INTELLECTUAL PROPERTY

202441069246

TEAM SIZE

17+

PROBLEM STATEMENT

- The Major problem occurs in cattle is with Feed Conversion Ratio (FCR) or Feed efficiency (FE).
- India has the poorest FCR compared to other countries.
- Among Indian states, Odisha and West Bengal has the poorest FCR compared to others.

USP

- Pioneering innovation in *Gracilaria verrucosa* as a biostimulant in their cattle supplements, with proven effects has been enriched and Chelated with our patented technology (Implements cutting-edge technologies (enzymatic hydrolysis + microencapsulation)
- Dual Impact Solution:
- Improves Feed Conversion Ratio (FCR) and milk yield by 10–15%.
- Reduces methane emissions, contributing to environmental sustainability.

PROPOSED INNOVATION

- All cures' points towards better feed and digestibility.
- The answer to the all the problems is seaweeds. Several scientific studies have pointed out, that
- Seaweed decreases the somatic cell count
- Increases digestibility
- Reduces methanogenesis.
- A seaweed-based product , namely GoSeaGraze, for improving FCR and Immunity in cattle.



TECHNOLOGY DEPLOYED

- Technology is in pre market trial stage.
- Advanced techniques like chelation, enzymatic hydrolysis, and microencapsulation enhance *Gracilaria verrucosa*'s efficiency in cattle feed, improving digestion, reducing emissions, and supporting livestock monitoring.

FUNDS RAISED

- BIG LEAP FUND

COLLABORATORS

- Started Working with State Diary Cooperatives (Kangsabati Cooperative Milk Union)

AWARDS & RECOGNITION

- Bharat Entrepreneur Award
- Top Promising Startup by HeadStart in the Bharat Pitchathon 3.0

Marine biodiversity and conservation

Marine biodiversity and conservation

Enhancing Coral Reef Restoration Through 3D printing Technology

AquaGenesis 3D Solutions

INCORPORATION YEAR : 2025

FOUNDER'S NAME

Thoudam Kheljeet Singh
P Vicky Kumar
Dr. Anil Kumar Birru

STAGE OF THE TECHNOLOGY

Prototype

TEAM SIZE

4+

PROBLEM STATEMENT

- Over 75% of the world's coral reefs are under threat due to climate change, pollution, overfishing, and human activities
- Coral reefs in India (Gulf of Mannar, Andaman & Nicobar Islands, Lakshadweep) are significantly degraded.
- Traditional methods like coral transplantation and artificial reefs are expensive, labor-intensive, and ineffective.
- These reef are often non-bio-compatible, often leading to poor coral settlement and also these methods fail to replicate the complexity and functionality of natural reefs.
- There is a critical need for cost-effective, efficient, and sustainable restoration techniques.

USP

- 3D-printed coral structures mimic natural reefs with bio-compatible materials like calcium carbonate and PHA.
- Customizable designs tailored to specific marine conditions enhance coral growth and biodiversity.
- Rapid, cost-effective, and scalable production compared to traditional methods.
- Integration of real-time sensors for continuous reef health monitoring.
- Sustainable, eco-friendly solution with applications in conservation, tourism, and research.

FUNDS RAISED

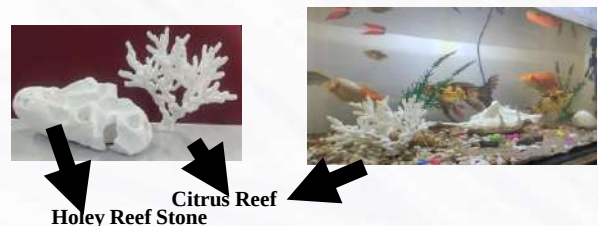
Bootstrapped

COLLABORATORS

Akumen AI Pvt. Ltd.

PROPOSED INNOVATION

- Use of 3D printing with bio-compatible materials to replicate natural coral skeletons, promoting coral settlement and ecosystem integration.
- Cost-effective, scalable production with integrated sensors for real-time monitoring of reef health and water quality, enabling adaptive restoration.
- Diversified applications in aquariums, theme parks, and research, supported by partnerships with NGOs, government bodies, and CSR initiatives.



TECHNOLOGY DEPLOYED

- Not yet approached

AWARDS & RECOGNITION

- Winner 'Ideation Hackathon' of The PM-DevINE PROJECT: Digital Design and 3D Printing Center of Excellence (2024)
- Third prize under the prototype stage in the MTI-HUB Innoventure: Start up Pitch Challenge (2024)

Marine Biodiversity and Conservation

STRATIFY 3D

Stratify 3D Pvt. Ltd

INCORPORATION YEAR : 2022

FOUNDER'S NAME

Dodda Srinivas,
Dhritiman Dey
Akshay Sahu

STAGE OF THE TECHNOLOGY

Validation of the technology

TEAM SIZE

3

PROBLEM STATEMENT

Coral reefs, often referred to as the rainforests of the sea, occupy a mere 0.1% of the global ocean floor yet support over 25% of marine biodiversity, making them one of the most vital and diverse ecosystems on the planet. Despite their ecological and economic significance, with services valued at an estimated \$2.7 trillion annually, coral reefs are highly vulnerable to anthropogenic stressors. Between 2009 and 2018, coral cover declined by 14%, primarily due to recurring large-scale bleaching events and insufficient recovery periods. This alarming decline underscores the urgent need to address the growing threats to these ecosystems, which continue to suffer from a lack of awareness, inconsistent restoration efforts, and minimal private-sector engagement in countries like India.

USP

The low pH 3D-printable material has been meticulously developed at the lab scale, ensuring alignment with all necessary parameters for practical printability. This innovative material is specifically engineered to support coral reef growth while maintaining structural integrity in marine environments. Our team has already demonstrated its expertise by successfully creating complex 3D-printable units, showcasing the capability to translate intricate designs into functional outputs. With this strong foundation of technical knowledge and hands-on practical experience, we are now poised to deploy this cutting-edge technology at a real-world scale, contributing to sustainable coastal development and marine ecosystem restoration.

COLLABORATORS

IIT Guwahati

AWARDS & RECOGNITION

Stratify 3D received recognition as part of the G20 initiatives for designing, printing, and deploying a 3D-printed security post at IIT Guwahati, utilizing M40-grade sustainable concrete.

PROPOSED INNOVATION

Our innovation combines 3D concrete printing with low-pH, eco-friendly materials to promote coral reef growth. This enables the creation of biomimetic artificial reefs (ARs) that mimic natural habitats and support coral attachment and regeneration. The low-pH material aligns with marine environments, minimizing ecological disruptions and enhancing coral settlement and biodiversity. By tailoring AR designs to local conditions and using sustainable materials, this scalable solution addresses key challenges in coral restoration effectively



TECHNOLOGY DEPLOYED

With the Pradhan Mantri Matsya Sampada Yojana (PMMSY) allocating Rs. 20,050 crore for the Blue Revolution and sanctioning Rs. 126 crore for 732 artificial reef units across 10 coastal states, our project strategically positions itself in the B2G (Business-to-Government) segment as a key innovator. By pioneering India's first-ever artificial coral reef system tailored to rejuvenate coastal fisheries and foster coral reef growth, we align seamlessly with the Department of Fisheries' vision for promoting sustainable and responsible development within the fisheries sector. This initiative not only enhances marine biodiversity but also directly contributes to the livelihoods of over 4 million fishermen and coastal communities, offering a scalable and impactful solution to India's vast maritime economy.

Marine Pollution

Marine Pollution

Catalytic Ozone Enhancer

Aqualys Water Technologies

INCORPORATION YEAR : 2024

FOUNDER'S NAME

Boney Antony

STAGE OF THE TECHNOLOGY

Pilot testing

TEAM SIZE

5+

➔ PROBLEM STATEMENT

Toxic chemicals from factories and farms are finding their way into our oceans, harming marine life and putting the livelihoods of coastal communities at risk. This pollution is disrupting the delicate balance of marine ecosystems that so many people and species depend on.

Chemical contaminants in our natural water sources is harming aquatic life across the world. We have built a sustainable solution to address this issue.

➔ USP

Our unique technology removes chemical contaminants like heavy metals, fertilizers, pesticides, antibiotics, PFAS, etc. from water cost effectively and with zero water wastage.

➔ FUNDS RAISED

20 Lakhs in startup grants from TECHIN, IIT Palakkad

➔ COLLABORATORS / INDUSTRY PARTNERS

TECHIN, IIT Palakkad; MG University, Kottayam

➔ PROPOSED INNOVATION

Aqualys Water Technologies develops products to treat and reuse water with chemical contaminants like heavy metals, fertilizers, pesticides, antibiotics, PFAS, etc. We envision a world where our natural water sources are free of chemical effluents from new age pollutants from industries.



➔ TECHNOLOGY DEPLOYED

- We have developed our own proprietary catalyst based treatment technology to treat water.

➔ AWARDS & RECOGNITION

- Top 50 sustainable startups in India 2024 by TATA Group and IIM Calcutta

Marine pollution

Development of Novel, Naturally Porous Cellulose based Oil Spill Kit for Marine Pollution

ChemActiva Innovations Pvt Ltd

INCORPORATION YEAR : 2023

FOUNDER'S NAME

Dr. Goutam Kulsi

STAGE OF THE TECHNOLOGY

Prototype developed

TEAM SIZE

3 +

PROBLEM STATEMENT

Marine oil spills devastate ecosystems, economies, and public health. Current synthetic sorbents, while effective, are costly, non-reusable, and cause secondary pollution, including microplastics and environmental harm. Affordable, biodegradable alternatives like cellulose-based sorbents provide a sustainable, eco-friendly solution to these challenges.

USP

- Eco-friendly, solvent-free process to produce cost-effective cellulose-based marine oil spill kits.
- Derived from an abundant, non-edible plant source, reducing manufacturing costs and environmental impact.
- Renewable, biodegradable alternative to synthetic sorbents with societal value by transforming craft material waste into a high-value product.
- Combines affordability, sustainability, and efficiency, offering a groundbreaking solution for marine pollution while supporting biodiversity and local resources.

PROPOSED INNOVATION

Our **cellulose-based oil spill kit**, derived from the **Shola plant**, provides an eco-friendly, cost-effective solution for marine oil spills. Key features of our proposed products are

- High Absorption Efficiency:** Absorbs 40–60 grams of oil per gram, selectively removing oil while leaving water clean.
- Reusability:** Retains performance after seven cycles of use.
- Sustainability:** Enables 95% oil recovery through solvent extraction.

Eco-Friendly Design:

- Includes booms, pillows, and pads for diverse spill scenarios.
- Made from lignin-free Shola pith (75% cellulose) using a green, solvent-free process.

With superior performance and scalability, this kit ensures effective oil spill cleanup while promoting renewable resources and biodiversity conservation.

TECHNOLOGY DEPLOYED

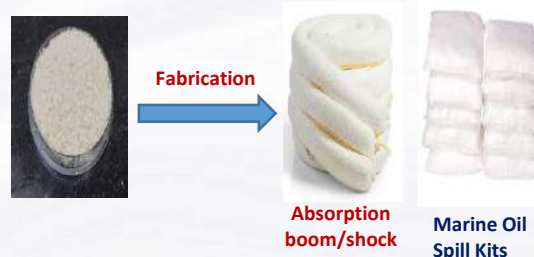
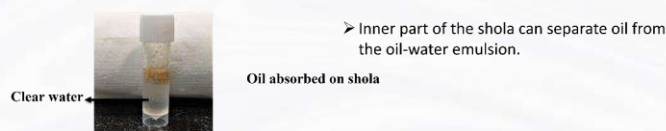
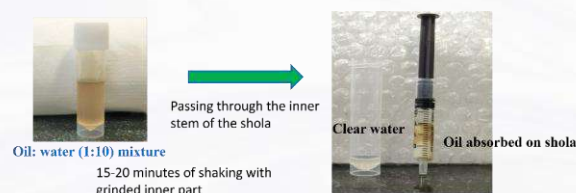
Prototype has been generated. We are looking for fabrication of the product to test and deploy in real time environment.

AWARDS & RECOGNITION

- Awarded DST NIDHI-PRAYAS in 2024
- Awarded HDFC Parivartan CSR Grant (2024-2025)

FUNDS RAISED

- DST NIDHI Praya
- HDFC PARIVARTAN



Marine Pollution

"Sustainable Barricades: Transforming Marine Plastic Waste into Eco-Friendly BARRICADING SYSTEM"

Privaakindia Innovaton Pvt Ltd

INCORPORATION YEAR : 2023

FOUNDER'S NAME

Sidharth Padhy

STAGE OF THE TECHNOLOGY

Proof of Concept (PoC)

TEAM SIZE

5

PROBLEM STATEMENT

TWO PROBLEM STATEMENTS:

- Limited Reuse of Recycled Plastics (polypropylene).**
14 million tons of plastic enter oceans annually from which 2.38 million tons waste are polypropylene (PP). Only 10% of global plastic waste is recycled, 70% in landfill.
- Need of Sustainable Material for Safety Infrastructure.**
Existing materials for safety infrastructure like barricades are unsustainable and environmentally inadequate.

USP

- Sustainability:** Utilizes ocean waste, contributing to marine plastic reduction and landfill diversion.
- Customizability:** Tailored solutions for various applications.
- In-house Material Production:** Ensures cost-effectiveness and quality.
- Performance:** High durability, greater impact resistance, and longer lifespan compared to metal barricades.
- Circular Economy Integration:** First-of-its-kind initiative in India to repurpose marine waste into infrastructure materials.

FUNDS RAISED

NIDHI EIR

AWARDS & RECOGNITION

- Startup India
- Startup Odisha
- XLRI
- MSME
- Ministry of Science and Technology
- KIIT TBI

PROPOSED INNOVATION

INTEGRATIVE SOLUTION FOR BOTH PROBLEM STATEMENTS:

- Developing sustainable composites by recycling ocean-sourced polypropylene plastic.
- Use of this sustainable composite material for developing road & industry based safety products like crash barrier and guards.
- Incorporating an advanced compounding process to combine recycled PP with elastomers, natural fibers, and virgin PP.



TECHNOLOGY DEPLOYED

- Recycling Process:** Collection, washing, shredding, segregation, melting, extrusion, and granule formation of PP waste.
- Composite Development:** Unique blend of recycled PP, virgin PP, elastomers (compatibilizers), and natural fibers. Designed for high strength-to-weight ratio and reusability.
- Manufacturing Innovation:** Patent-pending process for integrating recycled ocean plastic into composites.

Marine Pollution

NanoEye: Nanophotonics based Real time Microplastic Detection Sensor

Qualivon Technologies Pvt Ltd

INCORPORATION YEAR : 2020

FOUNDER'S NAME

Pavan Kumar Kotturti

STAGE OF THE TECHNOLOGY

Wworking prototype ready

INTELLECTUAL PROPERTY

Patent No. 202431041367

TEAM SIZE

4

PROBLEM STATEMENT

Microplastics pose a significant threat to marine and human life. Recent studies reveal that trillions of microplastics have invaded the world's oceans, with even Antarctica being contaminated. Alarmingly, microplastics are now entering human blood at an alarming rate. Understanding the dynamics and spatial concentrations of microplastics is crucial for policymakers to develop effective strategies to mitigate this growing environmental and health crisis.

PROPOSED INNOVATION

The major outcome of the proposed project is to design and develop the in-situ microplastic detection system which can be integrated to any marine vehicles and obtain the following data:

1. Real-time detection of various types of microplastics in the ocean and obtaining their concentration
2. Generate the Global Ocean Map of Microplastics and identify their dynamics and,
3. Provide the data to scientists, researchers and stakeholders to design effective marine policies to further curb the release of MP's into the oceans.

USP

USPs of Our Silicon Photonics-based Microplastic Sensors

1. Unparalleled Sensitivity
2. Portable and Field-Ready
3. Multi-Parameter Detection
4. Low Power, High Efficiency
5. Cost-Effective Solution
6. Real-Time Detection
7. Selective Detection
8. Seamless Integration

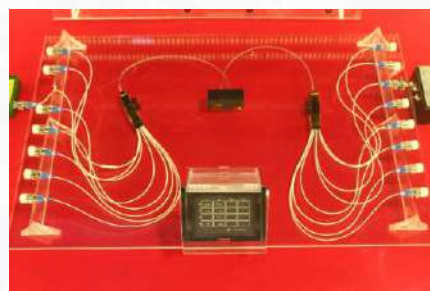
FUNDS RAISED

CIE-IIITH	- INR 2.70 Lakhs
SISFS, SID, IISc Bangalore	- INR 20 Lakhs
CZC, IIT Madras	- INR 5 Lakhs
AITAM	- INR 2.5 Lakhs
Startup Odisha MAG	- INR 2.7 Lakhs
NIDHI-Prayas	- INR 6 Lakhs
BIG Grant	- INR 50 Lakhs

Total Fund Raised - INR 88.9 Lakhs

COLLABORATORS

University of Cambridge, IOCL



TECHNOLOGY DEPLOYED

Our solution utilizes Silicon Photonics in conjunction with absorption spectroscopy to detect microplastics in water. The absorption spectroscopy mechanism involves measuring the absorption of light by microplastics at specific wavelengths. Different types of microplastics absorb light at distinct wavelengths, creating a unique absorption spectrum. By analyzing this spectrum, and combining with Fuzzy logic system, our solution can identify and quantify the presence of microplastics in water.

AWARDS & RECOGNITION

- Awarded the Leadership in Innovation fellowship (LIF) Global 2024 by Royal Academy of Engineering, UK.
- Selected among top 5 companies around the world for Silicon Photonics and granted research budget fund from Fraunhofer IoF.

Marine Pollution

Tackling Marine Pollution and Building Resilient Coastal Communities Through Waste Upcycling

Renow Sustainable Solutions Pvt Ltd

INCORPORATION YEAR: 2024

FOUNDER'S NAME

Neha Mohanty

STAGE OF THE TECHNOLOGY

Prototype ready

TEAM SIZE

3

PROBLEM STATEMENT

Every minute, a **truckload of plastic waste** enters oceans, while the textile industry adds **92 million tons of waste annually**, with synthetic fibers contributing **35% of ocean microplastics**. This pollution endangers species like **Olive Ridley turtles**, reduces fish stocks, threatens coastal livelihoods, and increases **shipping fuel consumption by up to 40%**. Frequent **cyclones** further exacerbate the economic vulnerability of affected communities.

PROPOSED INNOVATION

- **Cross-Waste Innovation:** Transforms river-bound textile and PP plastic waste into sustainable interior panels through ethical sourcing and upcycling
- **Project Second Stitch:** Empowers cyclone-affected women through skills training in upcycled craft production, creating sustainable livelihoods and strengthening communities
- **Circular Impact:** Operates on **zero-waste production model**, aligning with SDGs

USP

- 3-Tier Waste Segmentation for Optimal Utilization
- Reduce marine pollution by ensuring that no textile waste enters water bodies by monitoring ocean health and traceability
- Integrated Livelihood Generation for Coastal and cyclone-affected communities, especially women artisans
- Sustainable products: Each panel is made of 70% waste, artisanal products carry a story crafted with love & zero harm to the planet
- Scalable and Replicable Model



FUNDS RAISED

- ❖ Grant by Department of Science & Technology as part of NIDHI - EIR Programme

COLLABORATORS

Ocean conservation groups | Tech enablers | Export facilitators | Interior design firms | Waste management authorities | Research institutions | Corporate sponsors

TECHNOLOGY DEPLOYED

- **Segregation and Processing:** Sorting & cleaning facilities to handle textile and PP waste with eco-conscious binders and natural additives in upcycled products.
- **Upcycling Techniques:** Custom formulations paired with hybrid production techniques to create items in Project Second Stitch.
- **Digital Systems:** Integrated tracking & monitoring solutions

Marine Pollution

Eco-Floater - “Multipurpose Autonomous Water Drone to Clean Water Bodies”

Scrapify Ecotech Pvt Ltd

INCORPORATION YEAR: 2022

FOUNDER'S NAME

Azhagu Pandia Raja M.P

STAGE OF THE TECHNOLOGY

Validation

INTELLECTUAL PROPERTY

Design Application No.
420784-001

TEAM SIZE

8

PROBLEM STATEMENT

- **Plastic Waste:** Major contributor to water body pollution.
- **Water Hyacinths:** Overgrowth disrupts ecosystems and water flow.
- **Algal Blooms:** Harmful blooms deplete oxygen and release toxins.
- **Oil Spills:** Severely damage aquatic life and water quality.
- **Existing Methods:** Labor-intensive, inefficient, and unsustainable cleanup practices fail to address the scale and complexity of the problem effectively.

USP

- **Multi-Functional Capability:** Combines waste collection, oil spill removal, and algal bloom control.
- **Advanced Technology:** Features UV and ultrasonic systems for effective algae management.
- **Real-Time Monitoring:** Continuously tracks water quality for proactive intervention.
- **Dual-Mode Operation:** Offers both manual and automated functionality for versatility.
- **Sustainable Solution:** Provides an efficient, scalable, and eco-friendly approach to water restoration.

FUNDS RAISED

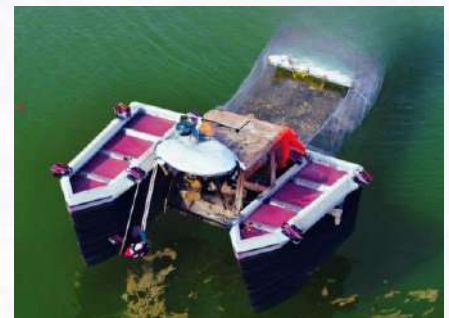
- TANSEED 4.0 : INR 10 Lakhs
- SISFS : INR 8 Lakhs
- Fiten, FetNa (USA): INR 2 Lakhs
- Nidhi Prayas : INR 3.5 Lakhs
- TIDE 4.0 : INR 7 Lakhs
- CZC, IIT Madras : INR 5 Lakhs

COLLABORATORS / INDUSTRY PARTNERS

- School of Sustainability, IIT Madras.
- Denmark Technical University. Skylab, Denmark
- Tamil Nadu Technology Hub (iTNT).
- Crescent Incubation and Innovation Council.
- PSG-Science & Technology Entrepreneurial Park (STEP).

PROPOSED INNOVATION

- Autonomous water-cleaning drone with IoT and AI-powered automation.
- Removes floating debris, water hyacinths, and oil spills.
- Controls harmful algal blooms using UV light and ultrasonic technology.
- Real-time environmental monitoring for water body restoration.



TECHNOLOGY DEPLOYED

- **IoT and AI Automation:** Enables real-time monitoring, autonomous navigation, and efficient task execution.
- **Waste Collection:** Removes plastic waste, water hyacinths, and floating debris effectively.
- **UV & Ultrasonic Technology:** Controls harmful algal blooms safely and sustainably.
- **Oil Spill Removal:** Advanced system for efficient containment and extraction.
- **Dual-Mode Operation:** Offers manual and automated modes for versatile water restoration.

AWARDS & RECOGNITION

- Recognized as one of the Top 75 global ideas in NITI Aayog's "Thinking for the Planet: 75 Ideas to Promote LiFE."
- Selected as one of only two startups to represent India at the Denmark Tech Fest 2024 in Copenhagen.

Marine Pollution

AUTONOMOUS WATER SURFACE CLEANING ROBOT

Techtogreen Drone & Robotics Pvt Ltd

INCORPORATION YEAR : 2025

FOUNDER'S NAME

Mr. Parnab Das
Dr. Santanu Mandal

STAGE OF THE TECHNOLOGY

TRL 5

INTELLECTUAL PROPERTY

Under Process

TEAM SIZE

6

PROBLEM STATEMENT

- Waste on water surfaces threatens aquatic life, ecosystems, and water quality.
- Manual cleaning methods are inefficient, slow, and labor-intensive.
- Traditional cleaning machines rely on non-renewable energy, increasing costs.
- Ineffective navigation leads to time and energy wastage during waste collection.
- Lack of autonomous, sustainable solutions for cleaning large and small water bodies.

PROPOSED INNOVATION

- AI-Powered Autonomous Water Cleaning Robot. efficiently collects waste from water surfaces with minimal human intervention.
- AI and IoT integration: Detects and collects debris while distinguishing between waste and aquatic life.
- Smart Navigation: GPS-enabled system calculates the shortest path for optimal waste collection.
- Solar-Powered: Equipped with solar panels for continuous, eco-friendly operation.
- Automatic Net Replacement: Automatically replaces full nets and disposes of waste for non-stop cleaning.
- Flexible and Lightweight: Easy to deploy in various water bodies (ponds, lakes, rivers).

USP

- Autonomous Navigation:** GPS-enabled, self-navigates with minimal human input using auto identification of trash.
- AI & ML Detection:** Detects and identifies waste with advanced AI and machine learning.
- Continuous Cleaning:** Automatic net replacement for uninterrupted operation.
- Versatile Waste Collection:** Efficiently collects both large items and small debris by dynamically adjusting collection size.
- Real-Time Monitoring:** Software tracks location, journey, and waste collected, allowing remote operation.

TECHNOLOGY DEPLOYED

The technology deployment is in process

FUNDS RAISED

Under Process

COLLABORATORS

VIT-AP University



AWARDS & RECOGNITION

- National Award: Hackathon 3.0 on Speed Breeding for Crop Improvement, ICAR, Govt. of India
- Gold Award: Automotive drone-based multitasking device, Goa State Innovation Council & Indian Innovation Association
- Prize: HackAP Hackathon 2024, INR 25,000

Marine Pollution

Autonomous, Eco-Friendly, and Scalable Modular Systems for Waterway Cleaning and Pollution Control

Vertox Labs Pvt Ltd

INCORPORATION YEAR : 2021

FOUNDER'S NAME

Sheetal Priyadarsini

STAGE OF THE TECHNOLOGY

Prototype has been developed

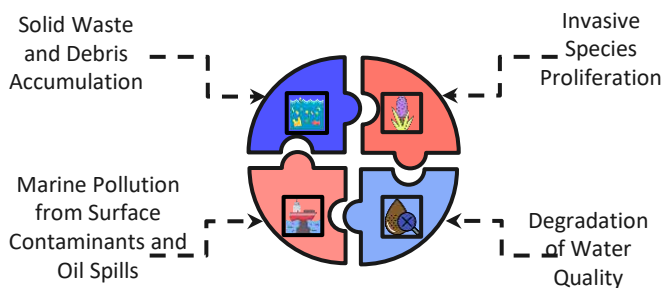
INTELLECTUAL PROPERTY

Patent No.202031026796

TEAM SIZE

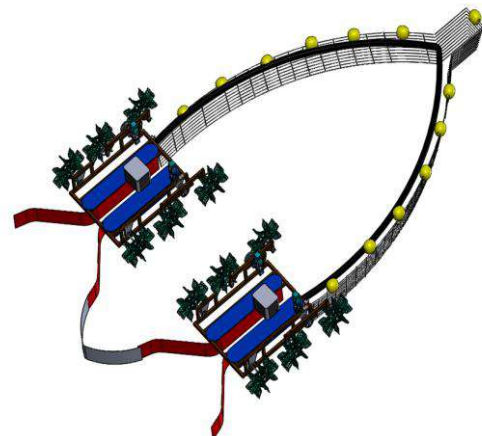
10 +

PROBLEM STATEMENT



PROPOSED INNOVATION

Our solution features autonomous, eco-friendly modules equipped with fishnet and sponge mechanisms for debris and spill cleanup, adaptable formations for diverse waterways, and scalable, sustainable designs leveraging energy-efficient propulsion, optional solar charging, and eco-friendly materials to address pollution control comprehensively.



USP

- Modular & Adaptive: Reconfigures for diverse cleaning tasks.
- Versatile Tools: Removes debris, oil, and biofilm efficiently.
- Autonomous & Sustainable: Smart navigation with eco-friendly design.
- Cost-Effective: Reduces labor and equipment costs.

FUNDS RAISED

1. INR 25 Lakhs support form DST Govt. of India
2. INR 3.6 lakhs form MeiTY
3. INR 5 Lakhs from the Ministry Agriculture
4. INR 43 Lakhs form BIRAC, DBT
5. INR 8.4 Lakhs USAID

TECHNOLOGY DEPLOYED

The technology is in the final developmental stage. Once its completely ready the filed trial deployment will be initiated

AWARDS & RECOGNITION

- Patent has been Granted on the technology
- Winner of the India Water Pitch-Pilot Scale Strup Challenge 2022

COLLABORATORS / INDUSTRY PARTNERS

National Buildings Construction Corporation (NBCC)
NPCC (National Projects Construction Corporation Limited) . ICAR Central Institute of Brackishwater Aquaculture

AI for Marine Resources

AI for Marine Resources

Unmanned Underwater Robot (UUR)

Coratia Technologies Pvt Ltd

INCORPORATION YEAR : 2021

FOUNDER'S NAME

Debendra Pradhan

STAGE OF THE TECHNOLOGY

Early validation

INTELLECTUAL PROPERTY

Patent No. = 3

TEAM SIZE

14 +

PROBLEM STATEMENT

1. Coral Reef Health Deterioration.
2. Ecosystem Disruption due to Mining Impact.
3. Offshore Infrastructure Damage.
4. Climate-Induced Coral Loss.
5. Operational Barriers in Coral Restoration.
6. Risks on Ancient Reefs.
7. Inefficient Manual Inspections.
8. Invasive species disruption.
9. Mining Activities Leading to Sedimentation & Habitat Destruction.
10. Corrosion and Structural Integrity Issues in Offshore Infrastructure.

USP

1. Precision Coral Planting Technology
2. Underwater Remote Structural Health Monitoring
3. Carbon Sequestration Support
4. Real-Time Environmental Monitoring
5. Biodiversity Restoration
6. Non-Invasive Operation
7. Efficient Deep Mining

TECHNOLOGY DEPLOYED

1. Robotic Manipulative Arm
2. Autonomous Navigation and Obstacle Avoidance
3. Hyperspectral camera for 4k Imaging
4. Sonar Mapping
5. Modular Payload System
6. Data processing with AI algorithms
7. Sensor Fusion Technology

FUNDS RAISED

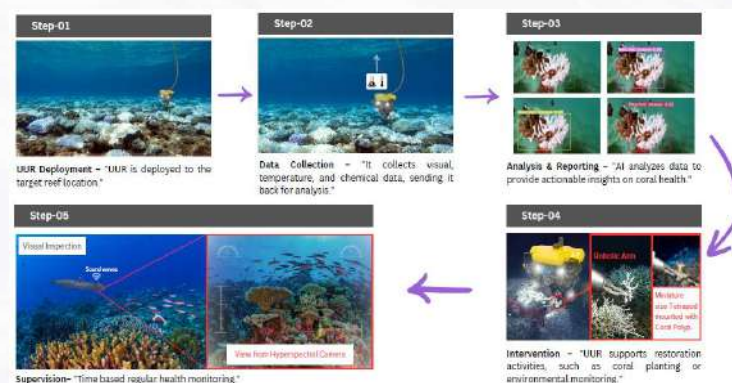
1. Total fund raised till now: ₹ 424.25 Lakhs

COLLABORATORS / INDUSTRY PARTNERS

C-MET
NIT Rourkela

PROPOSED INNOVATION

The proposed solution features an advanced Unmanned Underwater Robot (UUR) to plant coral polyps and collect mineral samples, paired with an Autonomous Underwater Vehicle (AUV) for **monitoring coral health** and **inspecting submerged infrastructure** like offshore oil rigs and pipelines. Equipped with imaging, sonar, and environmental sensors, the system supports **coral restoration**, **sustainable mining**, **infrastructure assessments**, and **long-term ecosystem health**.



AWARDS & RECOGNITION

1. Winner in US Reality Show 'Meet of Drapers' Semifinals, Representing India in Season 7
2. League of Top 10 In NASSCOM EMERGE 50 Awards
3. Winner of USHUS seed fund grant
4. Winner of Boeing BUILD 3.0
5. Most promising startup award- by ELCINA
6. Winner of NXP Tech Startup Challenge by Ministry of Commerce & Industry
7. Winner of iDEX-DISC-7 Challenge by Ministry of Defence
8. Winner of MEITY TIDE 2.0 by Ministry of IT & Electronics, GOI
9. Winner of Telecom Technology Development Fund, Ministry of Communication, GOI
10. Winner of NRDC Seed Fund Grant
11. Winner of IMAGE-COE in Computer Vision & AI
12. Winner as BEST STARTUP in Industry Segment(Most Promising Startup), IESA

AI for Marine Resources

Automated AI based fish health monitoring and management system

FisHealth14 AI Ventures Pvt Ltd

INCORPORATION YEAR : 2024

FOUNDER'S NAME

Shraddha Bashetti

STAGE OF THE TECHNOLOGY

MVP

INTELLECTUAL PROPERTY

Patent No. 202321083927

TEAM SIZE

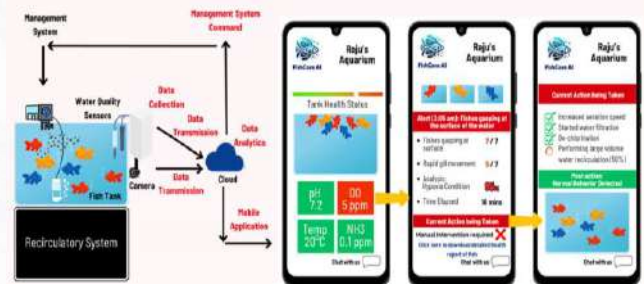
2+

PROBLEM STATEMENT

There is a need to automatically monitor and manage fish health for fish handlers to reduce mortality, operating costs, prevent losses and increase profitability.

PROPOSED INNOVATION

- An automated AI based fish health monitoring and management system



USP

- Early detection of health issues
- Automated remote management of the tank
- 24/7 monitoring and alerts
- Reliable and customized algorithms
- 15+ species supported with 10+ parameters
- Personalized data driven insights and recommendations

TECHNOLOGY DEPLOYED

- Deployed fish health monitoring system for aquariums.
- Currently developing actuator-based system as MVP for AI based fish health management

FUNDS RAISED

Received following funds from BIRAC, Department of Biotechnology, Govt. of India:

- Biotechnology Ignition Grant (BIG) – 50 Lakhs INR
- Entrepreneur in Residence (EIR) – 4 Lakhs INR

AWARDS & RECOGNITION

- Erasmus Mundus Scholarship for Mobility Master's in Marine Environment and Resources

Marine Industries, Trade Technology & Services

Marine Industries, Trade Technology and Services

Quality shrimp detector and Grader

Sarvadhara Tech Innovations Pvt Ltd

INCORPORATION YEAR : 2024

FOUNDER'S NAME

Hanish Venkat

STAGE OF THE TECHNOLOGY

Working MVP – LAB environment

TEAM SIZE

6

PROBLEM STATEMENT

Quality assessment, counting, and grading are critical processes in aquaculture, especially shrimp culture. These tasks are typically performed manually, requiring 20-30 workers for each task. However, manual operations are prone to errors, leading to inaccuracies that result in significant business losses.

USP

Complete Automation: Eliminates human intervention in quality assessment, counting, and grading.

High Accuracy: Ensures precise detection and consistent grading with advanced technology.

Real-Time Processing: Delivers instant results for improved efficiency and decision-making.

Cost-Effective: Affordable for small and medium-scale farmers and processing units.

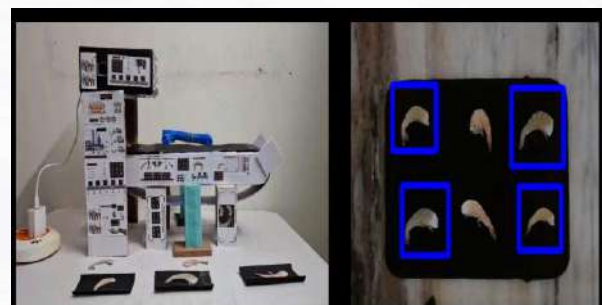
Industry Standards: Compatible with global market requirements.

Labor Optimization: Minimizes manual effort, reducing costs and errors.

Labor Optimization: Minimizes manual effort, reducing costs and errors.

PROPOSED INNOVATION

Our product revolutionizes shrimp aquaculture by automating the processes of quality assessment, grading, and counting. It accurately identifies shrimp quality, assigns grades based on established standards, and provides an exact count of quality shrimp. The system eliminates human intervention, ensuring a fully automated process. Utilizing cutting-edge technology, it delivers exceptional accuracy and efficiency at an affordable cost, making it the perfect solution for small- and medium-scale farmers as well as processing units.



FUNDS RAISED

- IIT Hyderabad and Greenko: INR 1,00,000
- Vishnu Foundation TBI and DST: INR 50,000
- VR Technology Business incubator: INR 20,000

Our startup is bootstrapped where we invested **INR 1,00,000** for **Research and Development**.

COLLABORATORS

1. Vishnu Foundation TBI
2. IIT Hyderabad
3. IIT Madras
4. Sagar Grandhi Sea Foods Pvt Ltd
5. Vignan TBI
6. VR TBI

TECHNOLOGY DEPLOYED

The Technology is in MVP stage and will be deployed for the initial field trials soon.

AWARDS & RECOGNITION

- Top 75 Startups in India: Selected via the BUILD program by IIT Hyderabad and Greenko Group.
- Seed Funding: ₹1,00,000 from IIT Hyderabad and Greenko Group for product development.
- Aquathon Cohort: Selected for the Vishnu Foundation TBI's prestigious program, securing ₹20,000 in funding.
- Awards: Winner of Spark Tank (₹30,000, VISHVA TBI) and Ignite Program (IIT Mandi Catalyst).
- Media Recognition: Featured as a top aquaculture product in multiple media outlets.
- Institutional Ties: Collaborated with VISHVA TBI, VIGNAN TBI, ITIC, IIT Madras, VRTBI, and Wadhvani Foundation.

Marine Industries, Trade Technology and Services

Ai powered digital traceability platform for food traceability (including fish and seafood)

TRALEXHO

INCORPORATION YEAR : 2021

FOUNDER'S NAME

Jayan Nallacherry

STAGE OF THE TECHNOLOGY

Market Launched

INTELLECTUAL PROPERTY

2 patents granted

TEAM SIZE

7

PROBLEM STATEMENT

Mature markets such as the US and Europe are enforcing stringent regulations to enhance safety and sustainability, driving digital traceability adoption. The US FDA's FSMA Act mandates food recall within 24 hours, potentially preventing 3,000 deaths annually. Similarly, the EU promotes sustainable trade through the EUDR and curbs illegal fishing via the EUFCR, with compliance expected by January 2026. These regulations impact export businesses from countries without digital traceability and domestic producers in the US and EU. Developing regions like the Middle East and Far East are also likely to adopt similar standards. Post-COVID, heightened consumer demand for transparency further reinforces digital traceability as a global necessity for safe, sustainable products.

USP

- Tralexho's TaaS platform ensures item-level traceability, compliance, and seamless integration with IoT, Blockchain, and ERP systems.
- AI-powered, it fosters consumer trust, safety, and sustainable growth.
- Affordable, adaptable, and tailored for diverse sectors.

FUNDS RAISED

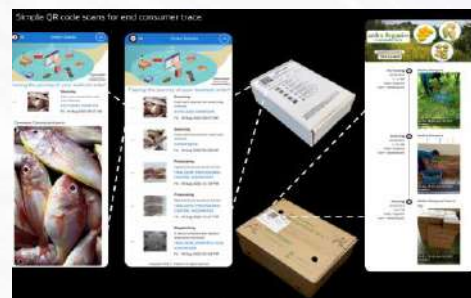
Bootstrapped. Apart from the self funding by founders (of approx. INR 1 Crore), Raised an additional first round of INR 75Lakhs through Friends & Family round.

COLLABORATORS / INDUSTRY PARTNERS

1. GDST Solution Partner (Global Dialog on Seafood Traceability) for interoperable traceability platform complying to US and European standards.

PROPOSED INNOVATION

Transparency is key to food safety and sustainability in today's complex food production systems. Tralexho's AI-powered Digital Traceability-as-a-Service platform enables tracking from farm or sea to fork, ensuring regulatory compliance and building consumer trust. By fostering responsible practices and enhancing safety, Tralexho accelerates business growth while driving innovation and sustainability in the food industry.



TECHNOLOGY DEPLOYED

Tralexho's AI-powered, self-configurable platform enhances productivity, reduces waste, and ensures regulatory compliance. Scalable and mobile-friendly, it offers affordable solutions tailored for India and developing nations. The technology is available in the market and has been deployed.

AWARDS & RECOGNITION

1. MPEDA - Selected Tralexho's TaaS platform as one of the 10 technological intervention that can accelerate India's export target of 8 to 18 BUSD by 2030 as part of 2024 next gen technology conclave.
2. GI Startup grand challenge award by DPIIT/Startup India
3. Forbes Select 200 companies with Global Business Potential
4. Buhler India startup sprint 2024 finalist
5. TGS100 startup recognised by TIE global startups 2024
6. Selected by IIMK and Kochi Shipyard for Seed & Grants.

Credore (Trustless Private Limited)

Credore (Trustless Private Limited)

INCORPORATION YEAR : 2021

FOUNDER'S NAME

Lingraj Mahanand

STAGE OF THE TECHNOLOGY

Pre revenue generation

INTELLECTUAL PROPERTY

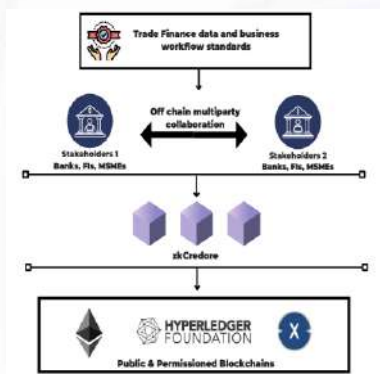
In Progress

TEAM SIZE

9

PROBLEM STATEMENT

Global trade relies on paper-based processes, causing inefficiencies, delays, and fraud risks. Credore solves this by offering an MLETR-compliant platform for secure, digital trade documentation like electronic Bill of Lading, Promissory Notes and many more. It ensures transparency, compliance, and faster trade cycles, empowering exporters, financial institutions, and MSMEs with seamless global trade operations.



USP

- MLETR-compliant platform for secure, legally recognized digital trade documentation.
- Supports eBLs, invoices, and promissory notes for seamless transactions.
- Real-time integration with global verification systems like ICEGATE, DGFT, and LDB.
- Enhances access to trade finance for exporters and financiers.

COLLABORATORS / INDUSTRY PARTNERS

ICC India, IMDA Singapore, DCSA, FIATA, ULIP, Central Warehousing Corporation

PROPOSED INNOVATION

Credore makes cross border trade efficient with its MLETR-compliant digital platform, enabling secure issuance, transfer, and verification of eBLs, promissory notes, and invoices. By integrating with global systems and ensuring legal validity, it reduces delays, enhances transparency, and empowers MSMEs and financial institutions for seamless, paperless cross-border trade operations.

TECHNOLOGY DEPLOYED

- Blockchain Technology ensuring secure, immutable, and transparent digital trade documentation
- Smart Contracts to Automate the issuance and transfer of digital assets like eBLs and promissory notes.
- API Integrations connected with ICEGATE, DGFT, LDB, and other verification systems for real-time data validation.
- MLETR Compliance Framework and Global Standards

FUNDS RAISED

- INR 7 Lakhs from TIDE Grant, MeitY GOI
- INR 3.2 Cr VC investment

AWARDS & RECOGNITION

- Won INR 2.1 Crore at the Hedera Bharat Blockchain Yatra Hackathon.
- Won INR 5 Lakh in the XDC Global Hackathon
- Achieved Top 5 finalist position in the ULIP Hackathon organized by NLDS.

Marine Bio Manufacturing

Marine Bio-Manufacturing

EnzyChroma: Natural Hair with Bio-Color Technology

EthnoBio Deeptech Innovations Pvt Ltd

INCORPORATION YEAR : 2024

FOUNDER'S NAME

Shital Bhanushali
Mohanish Borana

STAGE OF THE TECHNOLOGY

Prototype Refinement

TEAM SIZE

3+

PROBLEM STATEMENT

Globally, approximately 23% of young individuals suffer from the issue of grey hair. Permanent oxidative **hair dyes** dominate the market share as current solution. However, the chemical ingredients present in these hair dyes, apart from being a major cause of **marine pollution**, also pose risks of toxicity and **carcinogenicity**. They can lead to epigenetic alterations in gene expression, permanently damaging the scalp and hair health and causing **hair loss, alopecia, and hypersensitivity**.

This underscores the need and market demand to address hair graying in young populations with a natural, damage-free, eco-friendly solution.

USP

Our enzymatic hair dye offers a safe, natural, less-irritant, and damage-free solution for effective gray coverage with a natural and customized at-home hair dyeing experience for fast-paced lifestyles; customizable color intensity and antioxidant benefits for improved scalp and hair health; No plastic usage for an environmentally conscious approach; and formulation with a 'Less is More' strategy.

FUNDS RAISED

- Startup India Seed Fund Scheme (20 L, Final Stage), NIDHI Prayas (10 L, Final Stage), GENESIS EIR (10 L) and TIDE 2.0 (4 L).
- A commitment of a matching investment of up to INR 40 L at the pre-seed funding round.

COLLABORATORS / INDUSTRY PARTNERS

- Universidad Miguel Hernández de Elche (Spain)
- Prospera Biotech (Spain)

PROPOSED INNOVATION

EnzyChroma is a **scientifically backed nature-based innovative biotech solution** designed to meet the needs of an underserved market by offering an alternative to traditional hair dyes which either change the natural shade of hair or offer the desired color at the cost of damaging the hair and scalp health. EnzyChroma – (a) **preserves the original hair color**; (b) provides a subtle and seamless approach to hair coloring; (c) integrates effortlessly into a fast-paced lifestyle; (d) avoids the obvious appearance of dyed hair while offering healthy hair, and (e) **is completely plastic-free, and poses no harm to the marine environment upon drainage after washing**.



AWARDS & RECOGNITION

- 'Most Innovative Initiative in Biotechnology Sector' Award by Association of Biotechnology Companies of the Province of Alicante (AEBA), Spain [2024]
- Recognition Award by Laboratories Quinton, Spain [2024]
- Recognition Award by Bioval Cluster of the Valencian Community, Spain [2024]
- Grand Finalist (Bio-innovation), Himalayan Start-Up Trek, IIT Mandi [2024]

Marine Bio-Manufacturing

Formulation of bio-sunscreen product derived from Marine Blue Green Algae

JAS Biotech. LLP

INCORPORATION YEAR : 2020

FOUNDER'S NAME

Dr. Sikha Mandal

STAGE OF THE TECHNOLOGY

Early validation stage

INTELLECTUAL PROPERTY

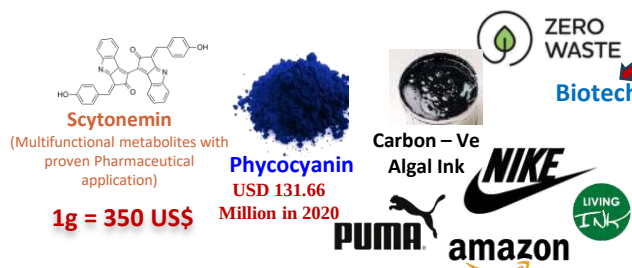
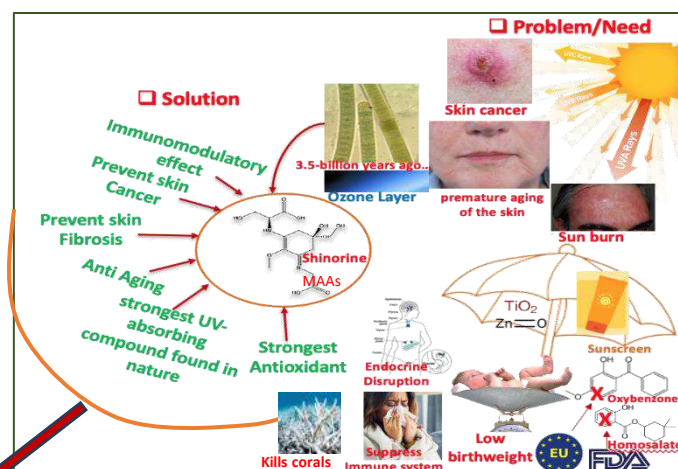
Patent : in process of filing
Trademark completed

TEAM SIZE

5 +

PROBLEM STATEMENT

- Despite decades of using chemical sunscreens with synthetic UV filters, the incidence of malignant melanoma continues to rise. These chemicals are linked to significant health concerns, including hormonal disruptions affecting sexual development, reproductive health, low birth weight in children, and ecological damage, such as coral bleaching. In response, the US FDA has removed 14 of the 16 commonly used sunscreen chemicals from its GRASE (Generally Recognized as Safe and Effective) category.
- We are developing a bio-sunscreen with all-natural ingredients and UV-absorbing compounds of marine blue-green Algae, which will not only save millions of lives from skin cancer but also help with various health problems people face due to the use of present chemical sunscreens and will have a high-demand product.



TECHNOLOGY DEPLOYED

- Not yet ready

PROPOSED INNOVATION

- They developed the extraordinary capability to survive in UV radiation due to Mycosporine Amino Acid like Substances (MAAs).
- We have established mass culture of a marine blue-green alga with high MAAs (**the strongest UV-absorbing compound found in nature**) and developed the bio-sunscreen using MAAs and other natural ingredients.

USP

- Our Product will have **"first to market"** from marine Blue-green algae.
- Our product will have **100% Organic certification by ECOCERT, EU Certification for natural cosmetics.**
- Our product will provide **broad-spectrum protection, antioxidant-rich, softening and moisturising skin, fast-absorbing, non-greasy, and suitable for all skin types.**
- Customers are highly concerned about sun damage, and since not a single product in this category is available on the market, and our product is developed based on a good scientific study and is all-natural, it will have a high USP.

FUNDS RAISED

- We have raised 50 Lack from BIRAC (BIG-18 call)

COLLABORATORS / INDUSTRY PARTNERS

- Bose Institute, CDRI, VISVA-BHARATI

AWARDS & RECOGNITION

- MSME Recognition (UDYAM-OD-19-0052587)
- Participated in FABA whale tank
- applied for DPIIT Startup Recognition.

Marine Bio-Manufacturing

Sustainable Extraction and Therapeutic Applications of Phosphorylcholine from Crustacean Shell Waste for Diagnostic and Vaccine Innovation

Inflanova AB, Sweden

INCORPORATION YEAR : 2022

FOUNDER'S NAME

Dr. Shailesh Kumar Samal
Dr. Sandeep Keshavan
Dr. Johan Frostegård

STAGE OF THE TECHNOLOGY

Validation stage

INTELLECTUAL PROPERTY

UK Patent: WO/2023/217787
Indian Patent no :202431035123
EU National Phase: 23723073.5

TEAM SIZE

7+

PROBLEM STATEMENT

India faces rising chronic and infectious diseases, requiring sustainable phosphorylcholine-based diagnostic and vaccine innovations from crustacean shell waste.

USP

Sustainable and innovative phosphorylcholine extraction from crustacean shell waste for cutting-edge diagnostics and vaccines, addressing India's chronic and infectious disease burden.

FUNDS RAISED

- Prof. Johan Frostegård and Dr. Shailesh Kumar Samal, have secured several grants at Karolinska Institutet from many funding agency across the world such as by the INTRICARE Marie Skłodowska Curie, Swedish Heart Lung Foundation, the Swedish Research Council, the Stockholm County (ALF), the King Gustav V 80th Birthday Fund, the Swedish Association against Rheumatism, AMGEN and Karolinska Institutet Internal grants for R&D activities.
- Inflanova raised approx. 150,000 USD as a part of friends and family round in Sweden.
- Dr. Shailesh Kumar Samal received a grant of 250,000 USD from BIRAC, Govt. of India for validation of Diagnostic KIT, in India.

COLLABORATORS / INDUSTRY PARTNERS

Industrial Partners: Magnum Seafood; Magnum Pharmatech; Coagulation Profile; Annexin Pharmaceuticals; Poltreg.
Academic Partners: Karolinska Institutet, Sweden ; Maastricht University, Netherlands; ICCVS Poland; Luleå Technical University, Sweden; RWTH Aachen, Germany; IIT Ropar; IIT Kanpur; PGIMER Chandigarh, KIIT University, Odisha.

PROPOSED INNOVATION

- Theragnostic Concept: ELISA based diagnostic Kit with a novel biomarker anti-PC and Vaccine for Cardiovascular Diseases.
- Low levels of anti PC antibodies are risk marker and high levels are protection marker.



TECHNOLOGY DEPLOYED

- The technology deployment is in process for the first phase of filed trials.

AWARDS & RECOGNITION

- Dr. Shailesh, is the elected fullmember of Sigma Xi, The most prestigious scientific research honor society of the world in 2024.
- Dr. Shailesh received Young Scientist title at the Lindau Nobel Laureates Meeting, Germany
- Recognition Of Excellence, Karolinska Institutet
- Research Award MSCA: Phosphorylcholine in atherosclerosis and immunity 2020
- BIRAC-SRISTI- GYTI Awardee 2017, India

Marine Bio-Manufacturing

Fortified Biochar-Algal Biostimulants Nutrimix for Precision Agronomic-Fertilization

JayMa Bio Innovations Private Limited

INCORPORATION YEAR : 2022

FOUNDER'S NAME

Dr. Bunushree Behera

STAGE OF THE TECHNOLOGY

Early validation

INTELLECTUAL PROPERTY

202431060499

TEAM SIZE

5

PROBLEM STATEMENT

- Demand to increase agricultural productivity for achieving better livelihood has caused indiscriminate use of synthetic fertilizers thereof generating tonnes of agricultural residues causing environmental degradation.
- Improper agri-waste management of crop-residues involving in-situ burning of crop residues leads to air pollution and soil degradation declining the nutritional properties of soil

PROPOSED INNOVATION

- Technology comprises using activated carbonaceous biochar as natural flocculants for efficient and cost-effective harvesting of a mixed consortium of microalgae
- Biochar formulation fortified with essential nutrients and bioactive metabolites from microalgae

USP

- Eco-friendly
- Can be produced in bulk
- Easy to implement by farmers
- Advantages of biochar supplemented with enriched algal nutrients and bioactive functional metabolites
- Affordable and low cost fertilizer



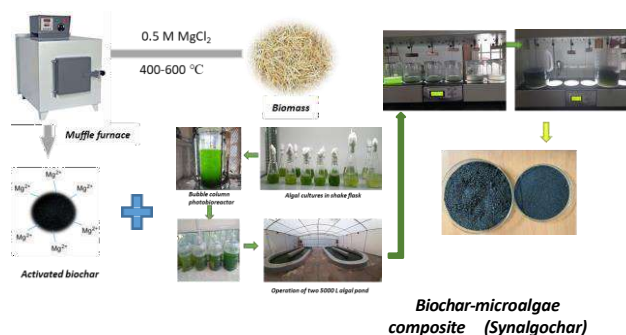
Synalgochar

FUNDS RAISED

- BIRAC- Biotechnology Ignition Grant (BIG) -50 Lakhs

COLLABORATORS / INDUSTRY PARTNERS

Dr. Sanjay Kumar Dwivedi
Senior Scientist, Department of Agronomy,
College of Agriculture IGKV, Raipur (CG) 492 012 India



AWARDS & RECOGNITION

- Top 20 in National AgriInnovate Hackathon, presented by NABARD

TECHNOLOGY DEPLOYED

- Not yet ready

Marine Bio-Manufacturing

Eco-Milking: A Breakthrough Solution for Methane Reduction and Dairy Productivity Enhancement in Climate-Resilient Agriculture using marine algae feed supplements.

Pinnacle Biosciences India Pvt Ltd

INCORPORATION YEAR : 2023

FOUNDER'S NAME

Dr. Adhi Visvanathan

STAGE OF THE TECHNOLOGY

TRL-9 Commercial launch, Post marketing studies and surveillance

TEAM SIZE

30 +

PROBLEM STATEMENT

- Current seaweed cultivation is limited to soft seas and lagoons, restricting its commercial scalability.
- Livestock farming is a major contributor to methane emissions, a potent greenhouse gas.
- Methane emissions exacerbate climate change, with methane being 25 times more potent than CO₂.
- Inefficiencies in nutrient absorption reduce productivity in the dairy industry.
- Current solutions fail to address both methane reduction and productivity improvement simultaneously.

USP

Unique Cultivation Methodology: Cultivating seaweed in rough and deep seas using proprietary technology, making large-scale commercial cultivation a reality.

Algae Selection: A unique blend of brown, red, green, and blue-green algae, rich in minerals and bioactive compounds, provides diverse health benefits.

Polysaccharide Breakdown: The seaweed polysaccharides, which are typically inert and indigestible in their natural form, are broken down into monomers through a proprietary process. This allows the nutrients to become bioavailable, making them easier for the animal to absorb.

COLLABORATORS

Seamoz-Australia, Metagreen –Malaysia, Green Trade Solutions – United Kingdom, Udaan Trade Links- Nepal, and Goglobal-Singapore.

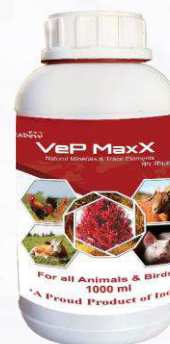
PROPOSED INNOVATION

Algae-based Formulation: A nutritional blend derived from brown, red, green seaweeds, and blue-green algae to improve animal health and productivity.

Dual Benefit: Simultaneously reduces methane emissions by up to 90% and enhances milk yield BY 30% and quality.

Safe and Effective: Unlike existing solutions, our product is non-toxic, ensuring animal health while mitigating methane emissions.

Proven Efficacy: Commercial trials in Australia have shown increased milk yield and reduced somatic cell counts (SCC). Methane mitigation has been confirmed via in-vitro rumen trials.



TECHNOLOGY DEPLOYED

Technology deployment has been done in small scale and also product has been launched in the market which has received good feedbacks.

AWARDS & RECOGNITION

Pinnacle Biosciences has been invited by the Tamil Nadu State Government to attend the 76th Republic Day Parade in Delhi on January 26. We are recognized as one of the best performers under the Agricultural Infrastructure Fund (AIF). This achievement reflects our commitment to innovation and excellence in the agricultural sector.

Marine Bio-Manufacturing

Cluster Model: Seaweed Cultivation & Processing

Raftech Solutions Pvt Ltd

INCORPORATION YEAR: 2023

FOUNDER'S NAME

Akshay Jadhav

STAGE OF THE TECHNOLOGY

MVP ready, Ongoing
field trials and validation

TEAM SIZE

3

PROBLEM STATEMENT

Sole dependency of Fisherfolks on marine fish catching and increased uncertainty in fishing due to illegal fishing activities, climate change. Lack of awareness of seaweed cultivation in coastal areas.

PROPOSED INNOVATION

A sustainable Seaweed cluster in Maharashtra which will include activities like seaweed cultivation, development of seaweed seedbank, post harvest processing of biomass and manufacturing of various value added products like carrageenan, bio-stimulant, etc. This will help to enhance the livelihood of fisherfolks by providing them with additional income source along with benefitting the seaweed industry by availability of seaweed raw material, reduced transportation cost and overall growth of the seaweed sector and the Konkan region.

USP

The seaweed bio-stimulant is specifically made for the hydroponics and aquaponics segment, to reduce the abiotic stress on plants, and increase its nutrient uptake capacity. Its effective on vegetable and fruit crops. We want to develop a reverse model of IFFCO and Aquagri for the bio-stimulant to ensure that the stakeholders get the maximum value. There are other competitors Bio Prime, Syngenta, Biostadt, Zero circle, etc who do not have a cluster model and either import raw material from other countries or develop single product from seaweed.



FUNDS RAISED

10 lakhs grant funding under Startup India Seed Fund Scheme from a-IDEA NAARM

COLLABORATORS

a-IDEA ICAR- NAARM, ICAR-CIFE, Mumbai, ICT, Mumbai, MSSU i-Spark Foundation, Digital Impact Square, A TCS Initiative

TECHNOLOGY DEPLOYED

We have developed seaweed bio-stimulant for hi-tech farming and carrageenan in the food industry from red seaweed

AWARDS & RECOGNITION

Won 2nd place at the COOP Pitch Competition 2024,
Was a part of the Sharad Pawar Inspire Fellowship

Marine Bio-Manufacturing

Harnessing the Power of Seaweeds: Sustainable Cultivation with IMTA & Bio-Manufacturing Hub Development

Seaweedz Energy Pvt Ltd

INCORPORATION YEAR: 2023

FOUNDER'S NAME

Hari Ramaraju. B

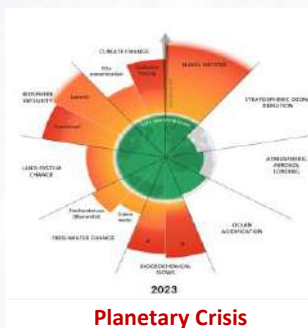
STAGE OF THE TECHNOLOGY

Validationn of the
Technology

TEAM SIZE

8

PROBLEM STATEMENT



Environmental Degradation and Climate Change in Aquaculture: Coastal and marine environments are increasingly suffering from nutrient pollution, primarily Co₂, nitrogen and phosphorus, due to aquacultural runoff. sludge wastewater discharge

PROPOSED INNOVATION



Integrated multi-trophic
aquaculture(IMTA)

BIO-MANUFACTURING HUB



USP

- Resource and Energy Efficiency and Environmental Sustainability.
- Enhanced Productivity and Profitability of the Aquafarmers and create live hood to costal communities
- Our animal feed products is made from 100% natural ingredients (seaweed), sustainably sourced, high in nutrition and minerals, and also helps to reduce GHG's on the environment.

TECHNOLOGY DEPLOYED

1.IMTA (Seaweed + Shrimp) Cultivation

Successfully deployed **Integrated Multi-Trophic Aquaculture (IMTA)** technology in Amalapuram, East Godavari District, Andhra Pradesh.

2. Aqua Booster Feed Supplement Testing

Conducted field trials of the **Aqua Booster Feed Supplement** in aquaculture systems.

FUNDS RAISED



5 Lac Grant



10 Lac Grant

AWARDS & RECOGNITION



Manage agri-eureka 2024



COLLABORATORS



Marine Bio-Manufacturing

High performance non-toxic anti corrosion paints for marine ecosystem

Terracarb Pvt Ltd

INCORPORATION YEAR: 2019

FOUNDER'S NAME

S Solomon Jones

STAGE OF THE TECHNOLOGY

Market Launched

INTELLECTUAL PROPERTY

INT202041004340

TEAM SIZE

13

PROBLEM STATEMENT

Traditional epoxy paints used in industrial and marine applications often suffer from poor corrosion resistance, limited mechanical strength, and reliance on toxic additives. These limitations result in reduced durability and environmental hazards. Additionally, high maintenance costs associated with frequent recoating and repairs further burden industries. There is an urgent need for an advanced, eco-friendly solution that enhances performance while reducing operational and environmental costs.

PROPOSED INNOVATION



USP



TECHNOLOGY DEPLOYED

In Process. The technology has been already launched in the market.

FUNDS RAISED

- Bootstrapped
- NIDHI PRAYAS 6 7 Lakhs

COLLABORATORS / INDUSTRY PARTNERS

- IISC Bangalore
- IIT Kanpur
- IIT Palakad

AWARDS & RECOGNITION

- Innovation voucher grant recipient, TN govt
- NIDHI RAYAS , DST
- National winner BOING BUILD
- National winner, Social Innovation Lab by CITI bank & IIT Kanpur
- Winner, SAP Innocity by IIMA Ventures

Marine Bio-Manufacturing

Thinkgenix Biotech Pvt Ltd

Bio-Organic fertilizers from Fish Waste Recycling

INCORPORATION YEAR : 2022

FOUNDER'S NAME

Debadutta Mishra

STAGE OF THE TECHNOLOGY

Market Launched

INTELLECTUAL PROPERTY

In progress

TEAM SIZE

6+

PROBLEM STATEMENT

Aquaculture faces challenges like high mortality, uneven stock growth, and feed wastage, compounded by the absence of fish and prawn waste processing centers, leading to severe economic losses, environmental pollution, and resource mismanagement, while also increasing the dependency on manual labor and excessive fuel consumption for aeration. This creates unsustainable practices in the industry.

PROPOSED INNOVATION

- Fish wastes generated from fish processing industries and fish markets is an excellent resources material for production of value-added organic fertilizer and bio supplements.
- Production process is simple, low cost, less labour intensive and low on energy consumption but **generates high quality products**.
- Eliminate all environmental concerns of waste disposal.



USP

- Fish Hydrolysate is highly bioactive. Awesome for promoting plant and fish growth.
- Fish fertilizer is a gold mine of nutrients
- It is one of the oldest and most effective fertilizers, for centuries it has been recognized as an excellent organic fertilizer source
- Waste to Wealth Product.

TECHNOLOGY DEPLOYED

We have developed Agri Inputs from the production of fish Hydrolysate through Bio-refinery technology for agricultural crops.

FUNDS RAISED

- Received Seed Stage Grant of Rs.24 Lakh by RKVY RAFTAAR by PUSA KRISHI, ICAR-IARI, New Delhi.

AWARDS & RECOGNITION

- Successfully launched our Products at DBT-Institute of Life science (ILS) on presence of Science and Technology Minister Mr. Ashok Ch Panda, Director ILS and with Startup Odisha.
- Selected among the Super 20 Start-ups of Fund Stack 2.0 by Startup Odisha. Recognized by Startup Odisha in Make In Odisha Conclave 2022.
- Recognised and exhibited our product at Agri Startup Conclave at PUSA KRISHI, IARI. Exhibition inaugurated by Hon'ble Prime Minister Sri Narendra Modi.

COLLABORATORS / INDUSTRY PARTNERS

DBT-ILS, ICAR-PUSA KRISHI, Dept. of Agriculture and OSOCA.

CRAFTZYMES BIOTECH PVT LTD

Heterologous Production of Bioactive Peptides for Enhanced Feed Additives

Marine Bio Manufacturing

INCORPORATION YEAR : 2023

FOUNDER'S NAME

Dr. J. Sridharan
Dr. D. Subha

STAGE OF THE TECHNOLOGY

TRL3

TEAM SIZE

3 +

PROBLEM STATEMENT

- Over use of antibiotics in aquaculture - causes allergies, cancer, anemia, and other serious diseases
- Ban Antibiotics – Save Indian Aqua culture Industry and Exports campaign started in 2017(Source: aqua deals blog)
- Addition of Antibiotics in animal feed (including poultry) - At an alarming stage.

PROPOSED INNOVATION

- Focus on **Bio Active Peptides or Antimicrobial Peptides (AMPs)** as alternatives to the use of **Antibiotics in Hatcheries and Aqua culture farms.**
- **AMPs** serves as supplements without the side effects of Antibiotics

USP

- Ease of use
- Custom tailored Protein engineering
- Cost effective



TECHNOLOGY DEPLOYED

- Rearrange AMPs sequence to avoid the action sites of digestive enzymes
- Regulate the Fermentation process

FUNDS RAISED

- Self Funded
- NIDHI PRAYAS funded for a Different project

AWARDS & RECOGNITION

- NIDHI PRAYAS fund - Development of Affordable LAMP-based kits for aquaculture diagnostics and carp breed purity
- Incubated at PSG STEP, Coimbatore
- DPIIT recognized
- STARTUP TN registered

COLLABORATORS / INDUSTRY PARTNERS

- ANALYTICA CHIMICA PVT LTD, Chennai
- SRI BIOSYS LLP, Coimbatore

Maritime Security

Maritime Security

Ocean technology for security and surveillance

Innogle Technologies Pvt Ltd

INCORPORATION YEAR : 2019

FOUNDER'S NAME

SHOBANA
UTHAYASHANKAR

STAGE OF THE TECHNOLOGY

MARKET READY

INTELLECTUAL PROPERTY

PATENTED, HOLD 18 IP

TEAM SIZE

17+

PROBLEM STATEMENT

In Marine : Profitable Fishing

- Unpredictable Real-time Fish Availability
- High Fuel Costs and Inefficient Fishing Routes

Telecom & Life safety

- Limited /No Connectivity- Maritime
- Delayed SOS

Ocean Data -80% unexplored

- High Cost of Data Collection

In Inland : High Mortality Rates: Disease outbreaks

- Inconsistent Water Quality
- Feed Inefficiencies

USP

Atham Nirubhar products , First-Mover Advantage with 18 IPs. Plug-and-Play Design for quick and easy deployment Acts as an Intelligent Bycatch Reduction Device. Ensures Life Safety for 27.7 Million Seafarers with real-time deep-sea rescue alerts. Provides Seamless Two-Way Communication for seafarers. Real-time water quality parameter with count and size alerts for fish farmers. Cost-Effective Solution for collecting ocean carpet data. Supports Climate Change & Disaster Early Warning Alerts. Fully Compliant with Industry Standards and Policies.

FUNDS RAISED

- Total Grant and Award money Received from TCOE, DOT, HDFC and MEITY as Rs 1.2Cr

COLLABORATORS / INDUSTRY PARTNERS

- Telecommunications Standards Development Society, India, DoT TSDSI,
- 3rd Generation Partnership Project (3GPP),, VOICE ,BSNL, QUALMATRIX, Lekha, United States Agency for International Development USAID, VOICE of Indian Communication Technology Enterprises

PROPOSED INNOVATION

- **Kadalcompass Deep (KC-D & KC-C) Fishing Device:** For digital Ocean and to processes data via IoT and AI. With 26 unique features, it aids fishermen by marking PFZ, black points, cross-border alerts, net safety, and more.
- **Life Safety Watch:** A digital ID for fishermen, offering real-time tracking and alerts within 20 even in Deepsea.
- **Underwater Device (UWD):** A bycatch reduction tool with real-time AI-enabled visuals to identify the right catch and avoid unintentional species. Equipped with integrated sensors and AI vision technology, it enhances sustainable fishing by attracting only the intended species. workers.

TECHNOLOGY DEPLOYED

- 82 Kadalcompass Device and Underwater Device Deployed
- Services offers
- Custom AI for UK client



AWARDS & RECOGNITION

- Represented Ministry of Fisheries at IMC on 2023 and 2024
- Won Best 5G Use Case in DoT's 5G Hackathon
- Awarded Most Innovative 5G Use Case by IMC 2022
- Won MeitY's "Innovative Startup of the Year" 2019
- Winner of TieNCR & Power2SME's Manufacturing Spirit Award
- National Startup Award 2020 Finalist
- Top 40 Finalist in Data Innovation Bazaar 2020
- NITI Aayog WTI Awards 2019 Finalist
- Nasscom Design4India 2019 Awards Finalist
- Selected by DoT as Best IoT Use Case for 34 Top Ministry Officials

Maritime security

Autonomous Boats

Nehkhilesh Technologies Pvt Ltd

INCORPORATION YEAR : 2024

FOUNDER'S NAME

Neh Jawanpuria

STAGE OF THE TECHNOLOGY

Proof of concept

INTELLECTUAL PROPERTY

Patent Application no. :
202431091114

TEAM SIZE

2

PROBLEM STATEMENT

- Absence of made in India modular ASVs
- Absence of made in India thrusters, outboard motors, ESCs and motor controllers.
- Absence of made in India GCS, hardware and software for ASV operations.

PROPOSED INNOVATION

- To develop and mass manufacture Modular ASVs in "Boat in a Box" configuration in India.
- To develop and mass manufacture Axial flux motor powered thrusters and propulsions systems for electric vessels and ASVs.
- To develop a made in India ground control station hardware and software system.

USP

- Modular ASVs with modular and replaceable payloads for different operations including ISR, SAR and armed missions.
- Axial flux motor powered thrusters and propulsions systems for electric vessels and ASVs.
- Made in India ESCs and motor controllers for use in propulsion system

TECHNOLOGY DEPLOYED



FUNDS RAISED

- NIDHI EIR Grant of 2.1 Lakh Rs.
- MEITY TIDE EIR Grant of 3.6 Lakh Rs.

AWARDS & RECOGNITION

- Recognised by Startup India, Startup Odisha
- Incubation at IIT Mandi Catalyst, FTBI NIT Rourkela

COLLABORATORS

Cleghorn Mfg. co. ltd.



