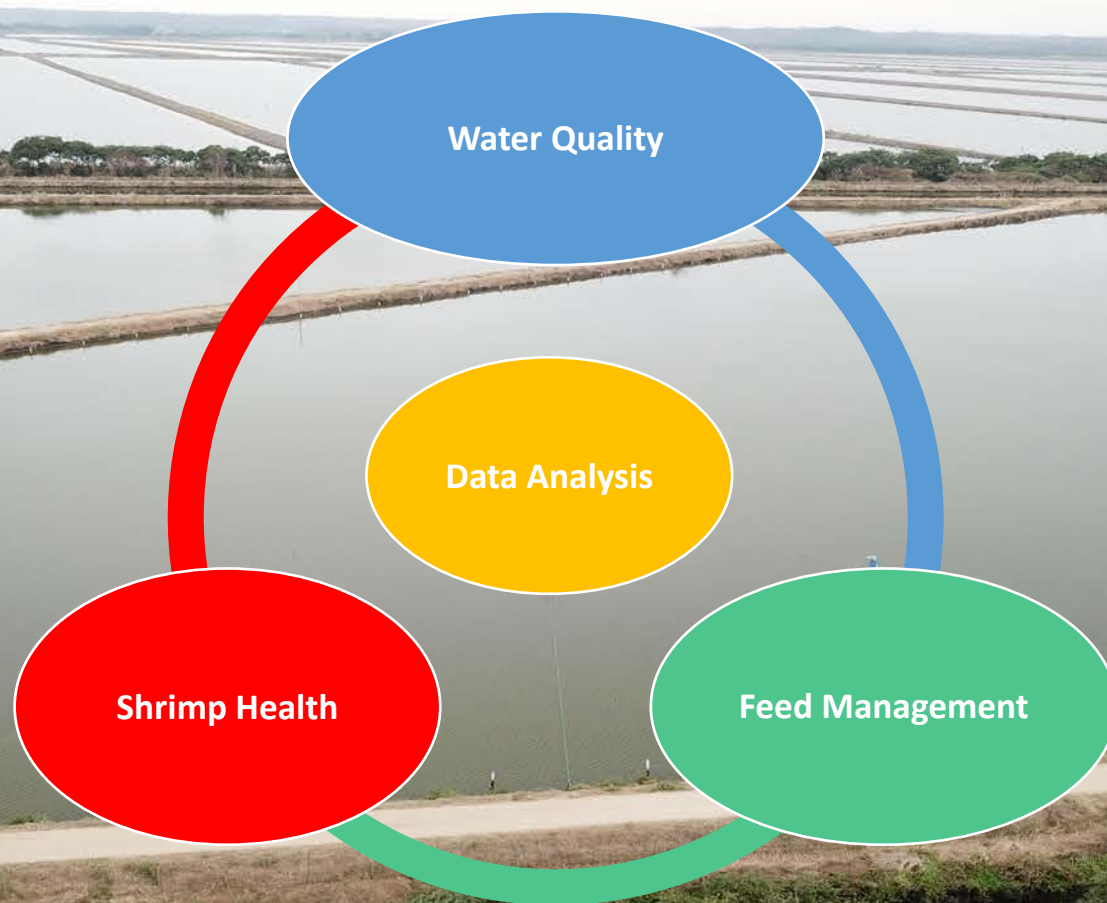


# Intelligent Solutions for Shrimp farming

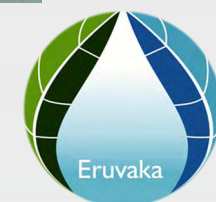
Sreeram Raavi  
Founder & CEO  
Eruvaka Technologies





## Real Time Water Quality Monitoring

- DO, pH , Temperature
- Analytics on diurnal data to check for deviations





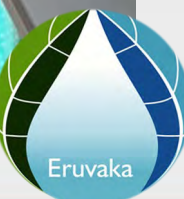
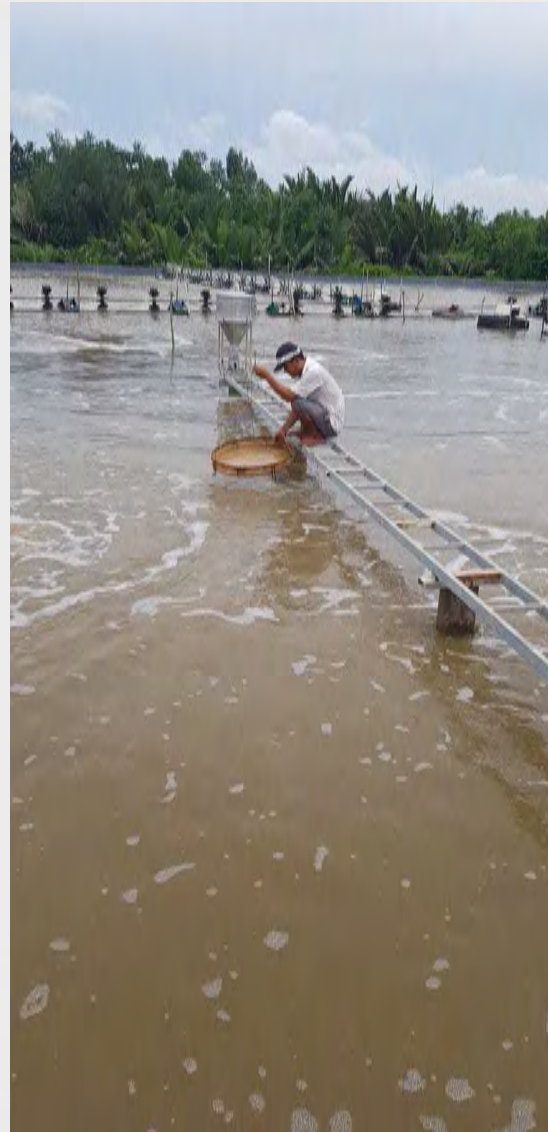
## Smartphone based Water Quality Monitoring

- Farmers had to carry water to a lab far away to check other water quality parameters
- Simplified test procedures to test Ammonia, Nitrite, Alkalinity, Potassium, Calcium, Magnesium
- Camera and Flash of Smartphone are used as colorimeter.
- Data is recorded digitally on the app.



## Automatic Feeders

- Feeding the shrimp with Automatic Feeders has lot of benefits.
- But the adoption in India is less than 1%
- Assessing the feed trays and regulating the feed is a real pain





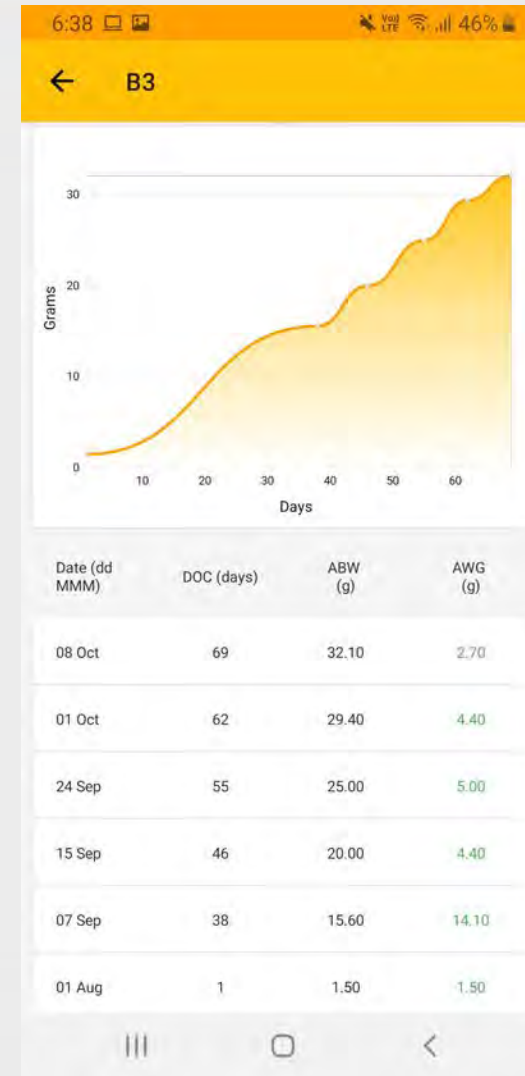
## Autonomous Feeding of Shrimp

- On-demand feeding of the shrimp based on acoustics, water quality, growth models
- Only task of the farmer is to fill the hopper.
- No need to monitor the feed trays.



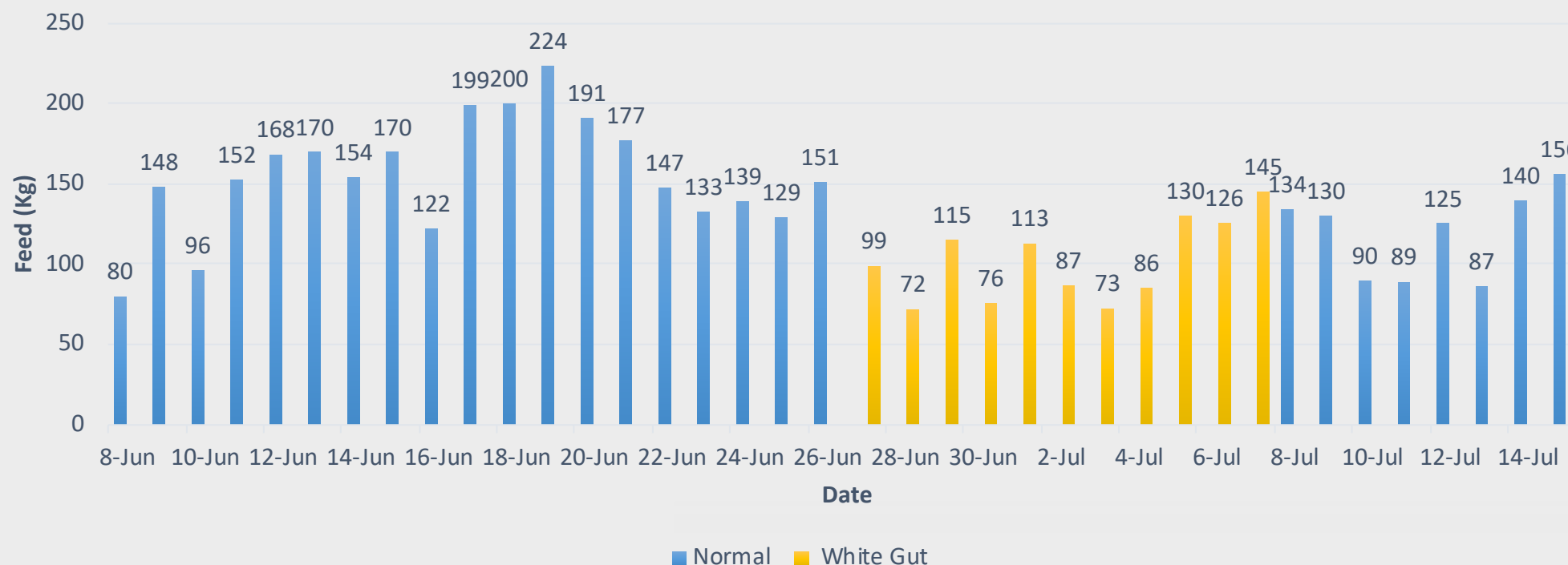
## Autonomous Feeding of Shrimp

- Feeds the shrimp to its full growth potential
- Seed shifted from Nursery
- 24-Hour feeding



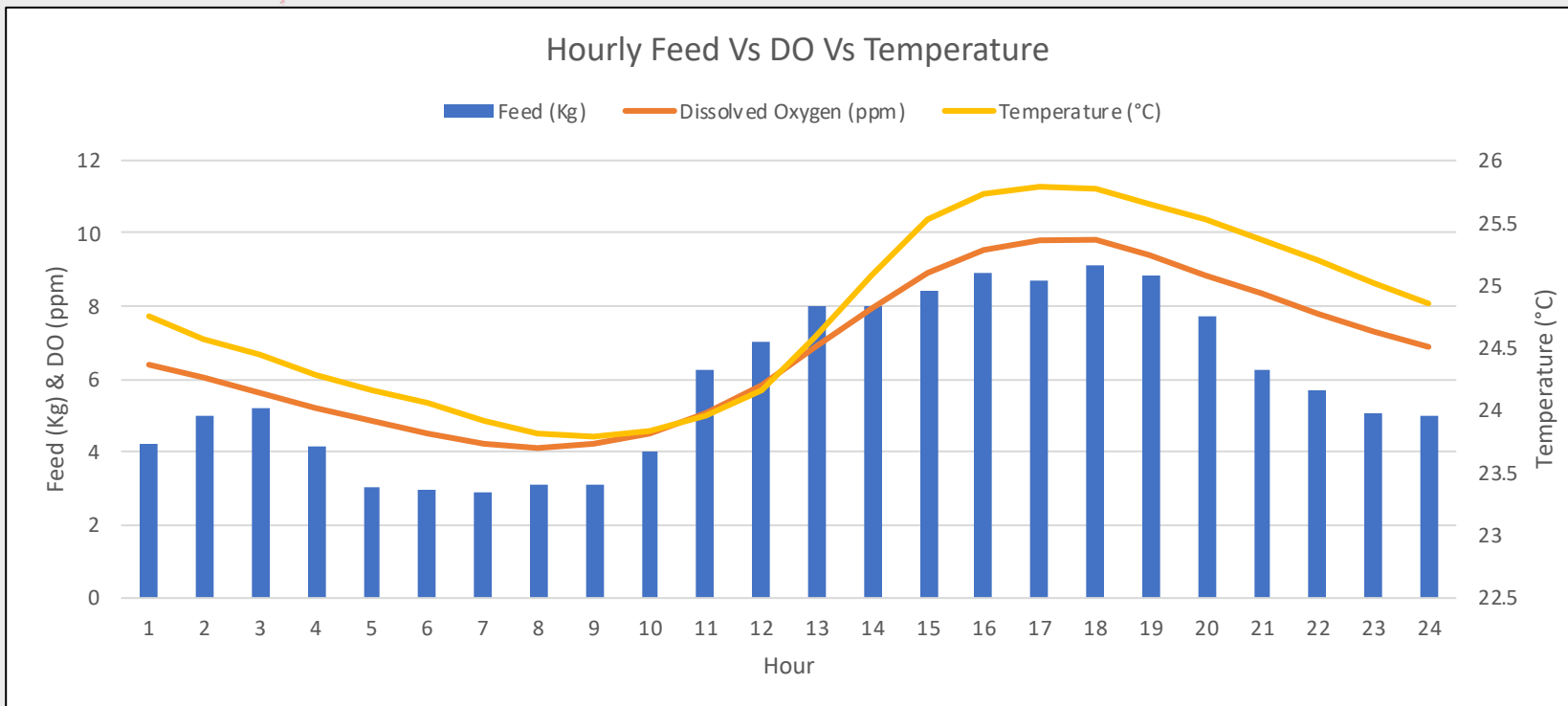
## Feeding Patterns during White Feces

- High Feed Intake followed by sudden down fall
- 25% drop in survival in 2 weeks, no growth





# Feeding Intake Co-relation to DO & Temp

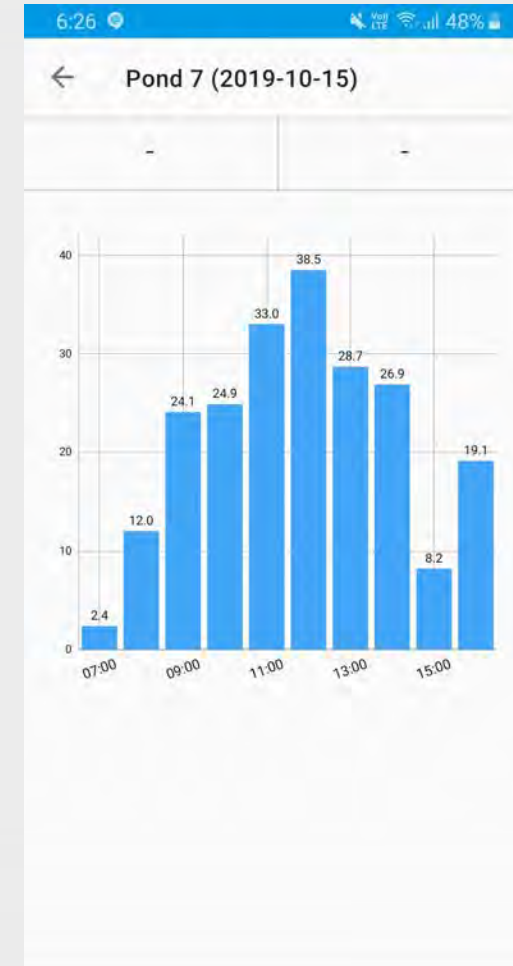
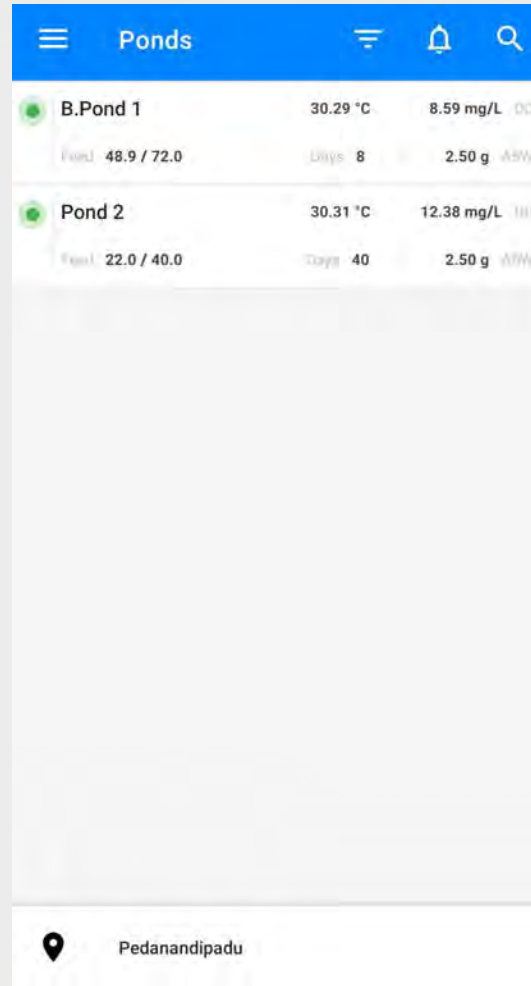


## ShrimpSnap

- Automated feed tray to capture the images of shrimp
- Shrimp Size and distribution are analyzed from those images
- Disease symptoms are identified via computer vision.



# Mobile App Monitoring



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## Devices – Data Transformation

### Pond Automation

- PondMother
- PondGuard

### Precision Feeding

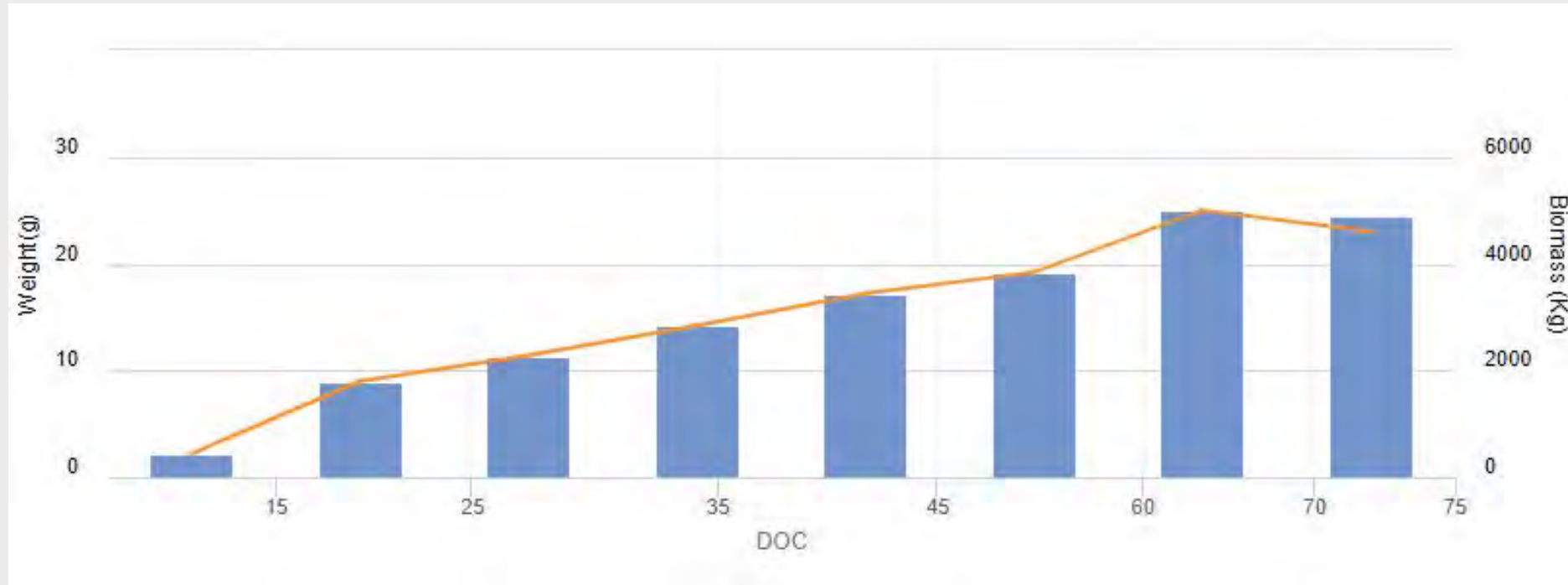
- ShrimpTalk

### Value Beyond Precision Feeding

- Bio-Mass Estimation
- Assessment of Growth Patterns
- Pond Health Index
- Early disease detection
- Prediction of Yield and Profitability

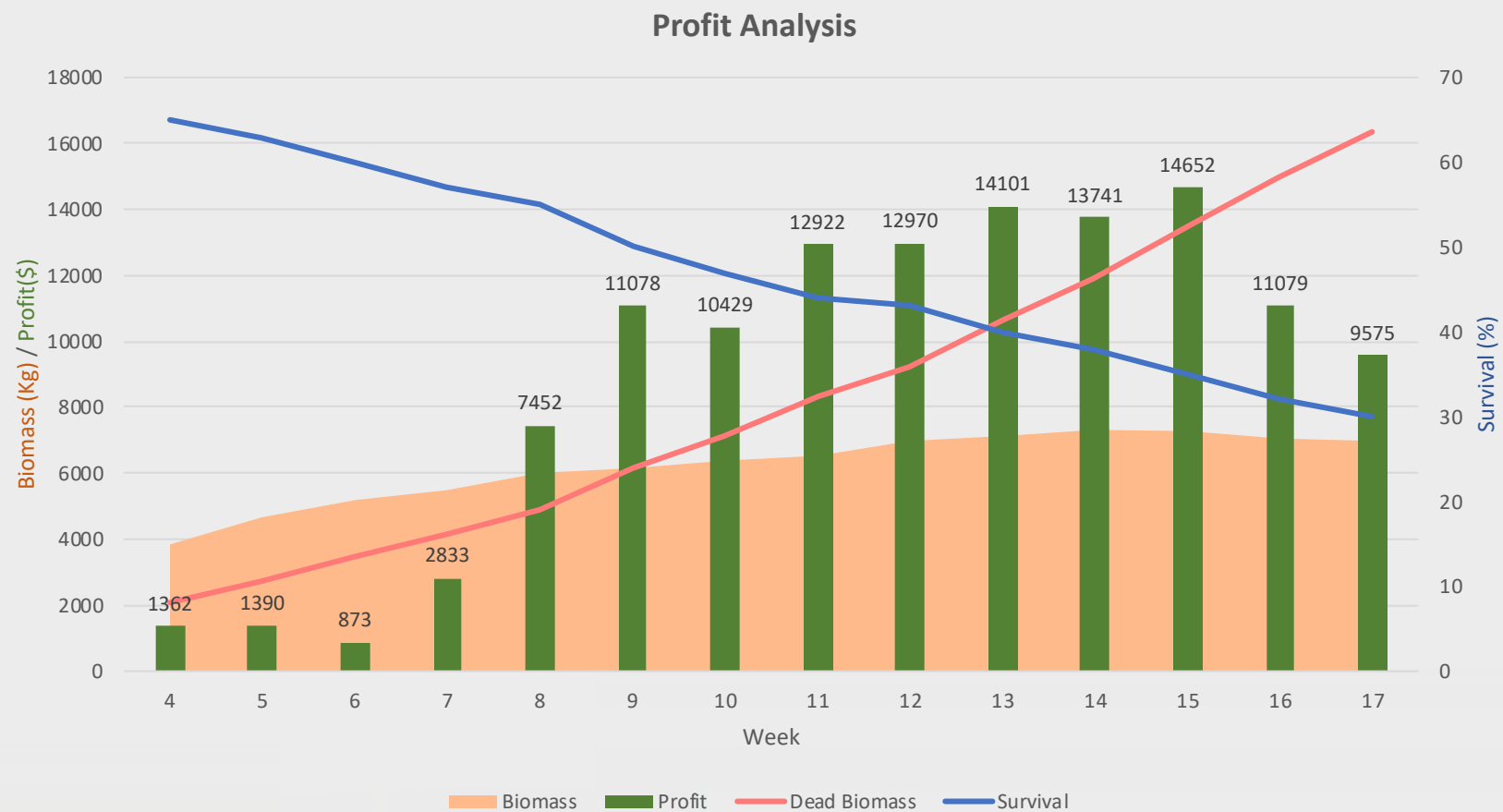


## Bio-Mass Estimate



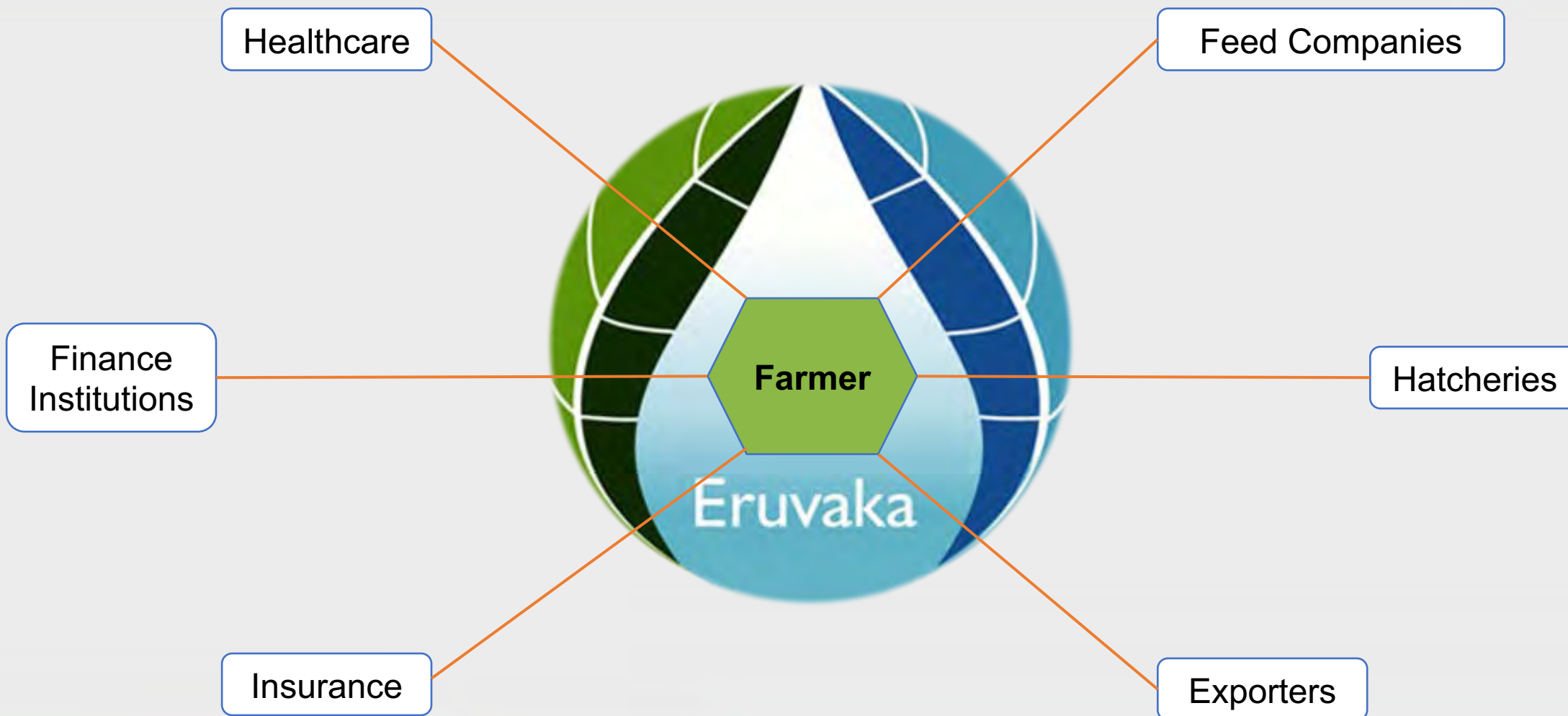
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## Profitability Analysis



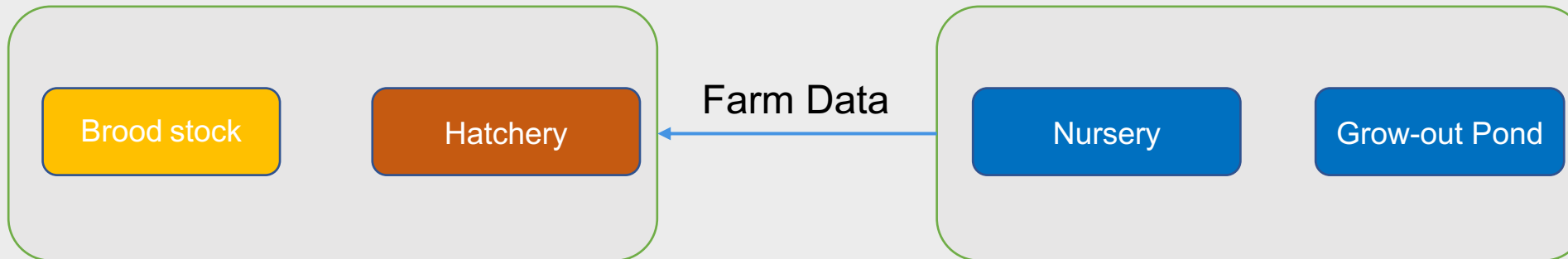


## Data for all Stakeholders



## Data for Brood Stock / Hatcheries

- Farm Performance data helps Brood Stock Centres and Hatcheries to choose ideal Genetic families



## Data for Feed Companies

- Real-time pond performance data helps feed companies to provide better extension services
- Relative Growth Index for each geography helps feed companies to formulate customized feeds
- Better feed demand forecast and production planning





## Data for Shrimp Processing Companies

- Biomass availability data eases the sourcing operations
- Traceability reports
- Complete pond performance reports
- Images of Shrimp and Size Distribution



## Insurance and Financial Institutions

- Data helps them to underwrite the risk
- Based on pond performance data financial institutions can increase the credit limits
- Insurance companies can settle the claims based on the pond data.



# Driving the Digitalization of Aquaculture around the Globe

## Eruvaka

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Transforming Aquaculture

