Digital Tools for Pond Management

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Challenges in Aquaculture

CHOOSING THE RIGHT POST LARVAE

MANAGING DISEASES

TRACING THE PRODUCE

ESTIMATING RIGHT AMOUNT OF FEED

ENSURING THE QUALITY HARVEST

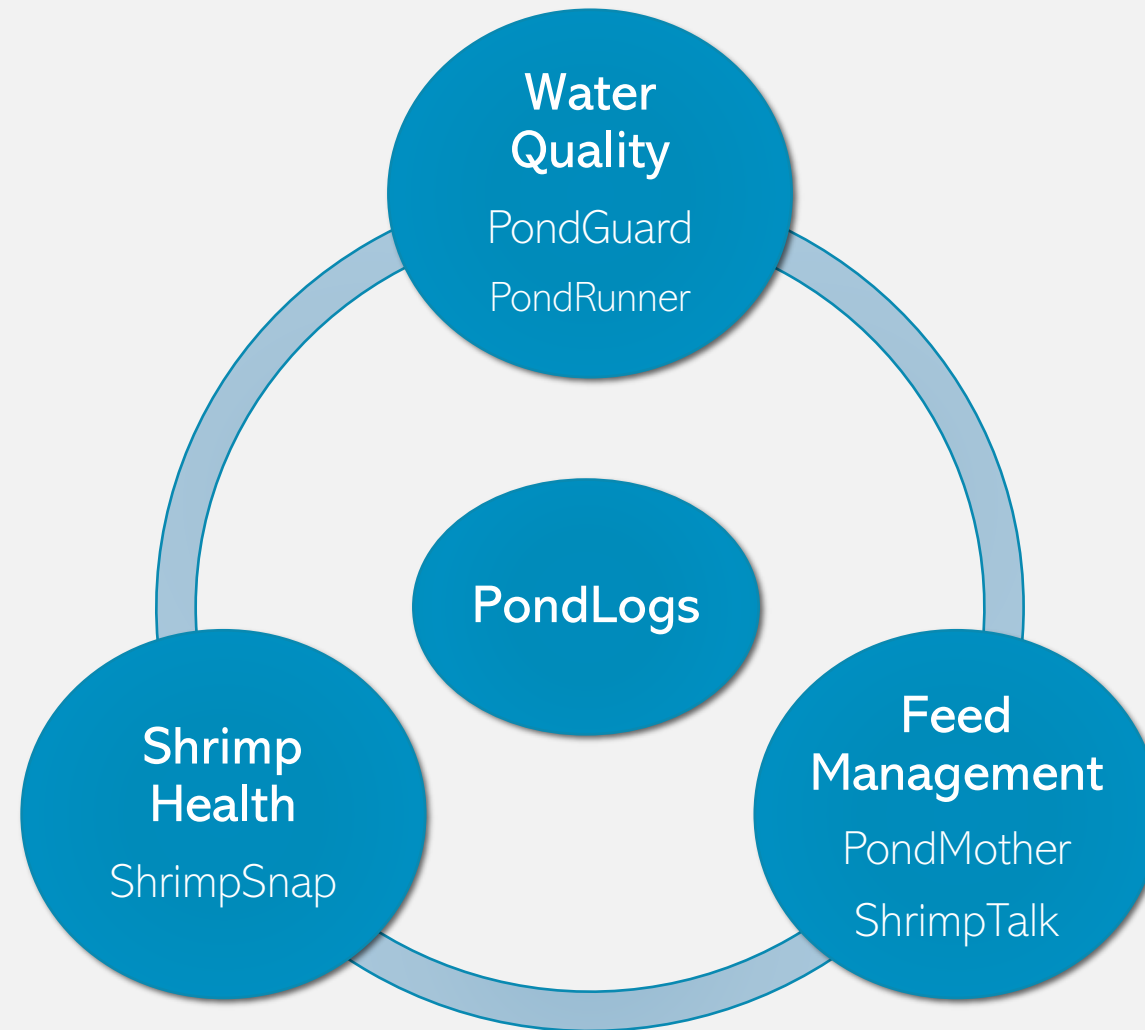PROCESSING OF INSURANCE CLAIMS

MONITORING GROWTH

ESTIMATING THE RIGHT TIME TO HARVEST

CREDIT PROFILING OF FARMERS

Shrimp Pond Management

IoT for Shrimp Farming

Eruvaka develops IoT devices and mobile-based decision tools for real-time monitoring and automation of aquaculture farms to reduce the risk and improve profitability of farms.

PondGuard
Real-time Monitoring of DO, pH

PondMother
Precise Automatic Feeder with Smart Controls

ShrimpTalk
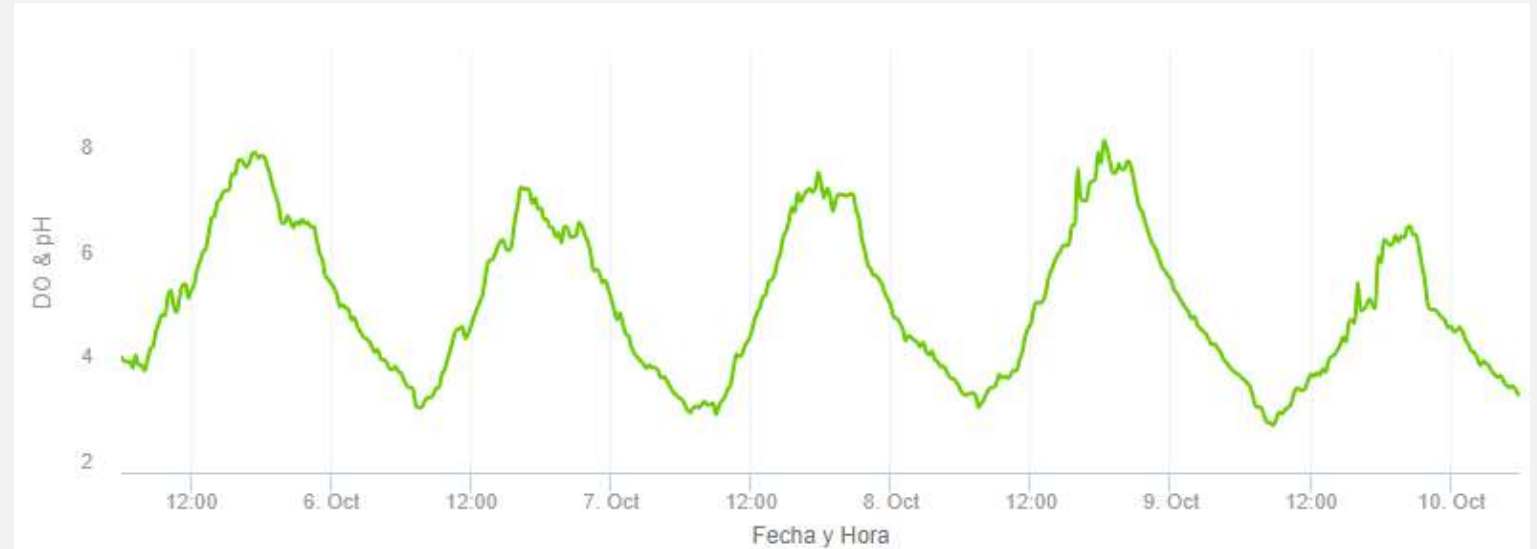Underwater Acoustics-based Feeding System

PondLogs
Cloud-based Pond Management Software

PondGuard

- Real time monitoring of DO, water temperature
- Cloud based Data Analytics Platform
- Self - Calibration
- Self - Cleaning

PondGuard – Self Cleaning

PondRunner

- **Automated Aerator Control** based on DO levels
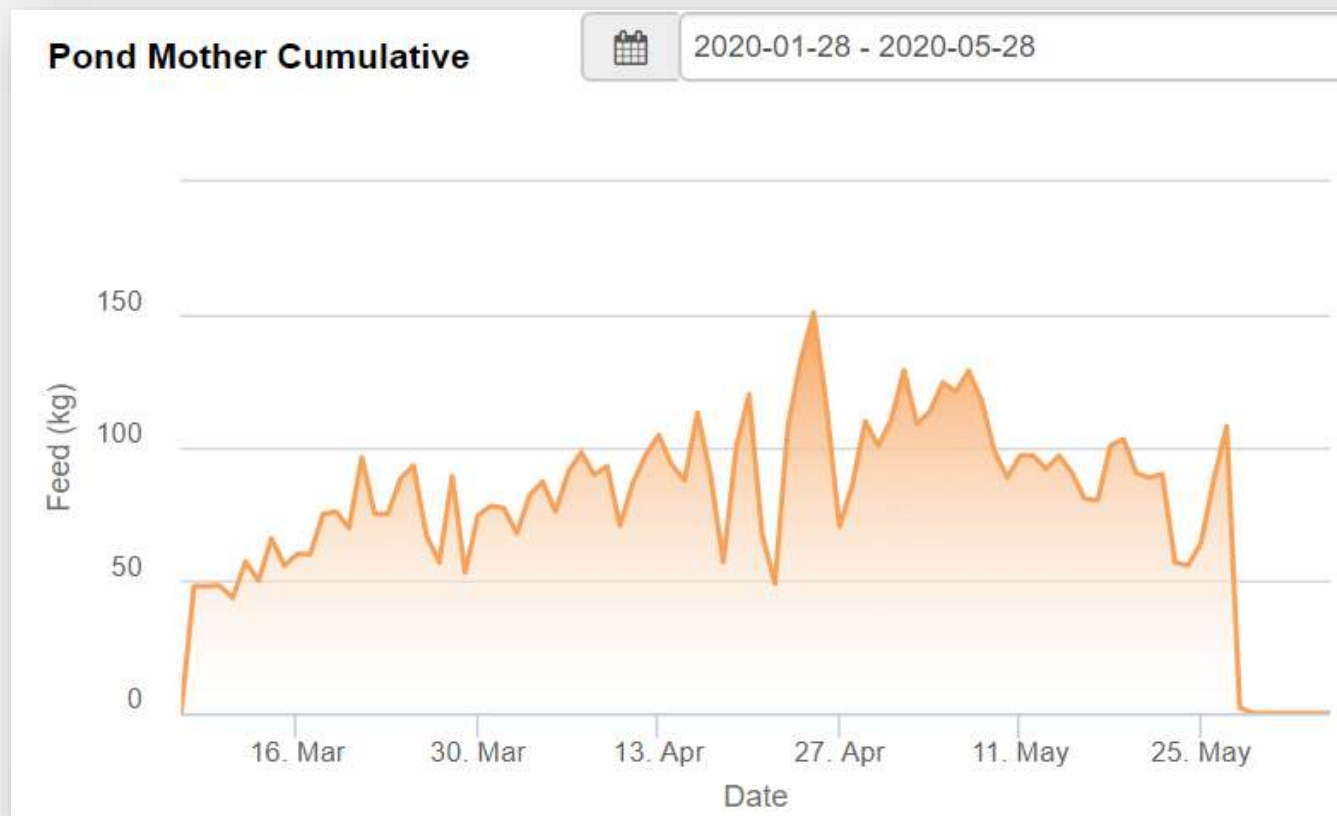- **Real-time monitoring** of motor voltage and currents

PondMother

- **Automatic Feeder** for Shrimp
- **Digitally controlled** feed dispensing
- **12m radius** uniform feed dispensing
- **125Kgs** Hopper Capacity

- **Feed report** real-time access
- **Mobile app alerts** for any deviations
- **Solar Powered** with 4-day battery backup

Pond Mother Cumulative   📅 2020-01-28 - 2020-05-28

Real-Time Monitoring

Cloud / Internet

Customer Dashboard
- Acoustic Feeding Control
- Water Quality Monitoring

ShrimpTalk for Sensing Shrimp Appetite

Cloud-based Pond Management

Anytime, Anywhere

Solar Powered Intelligent Auto-Feeder
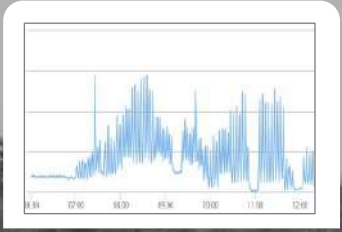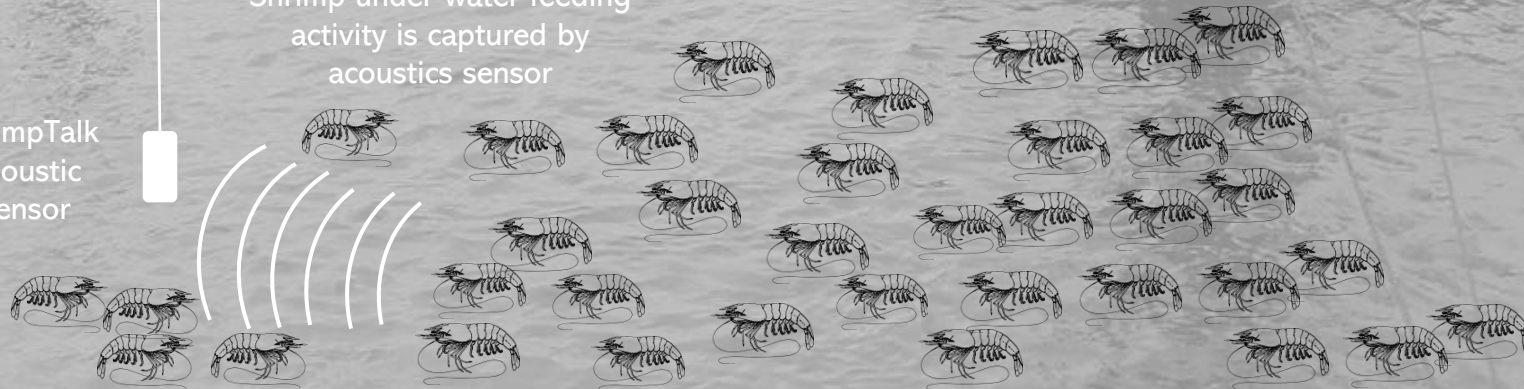
App-based Feed Management

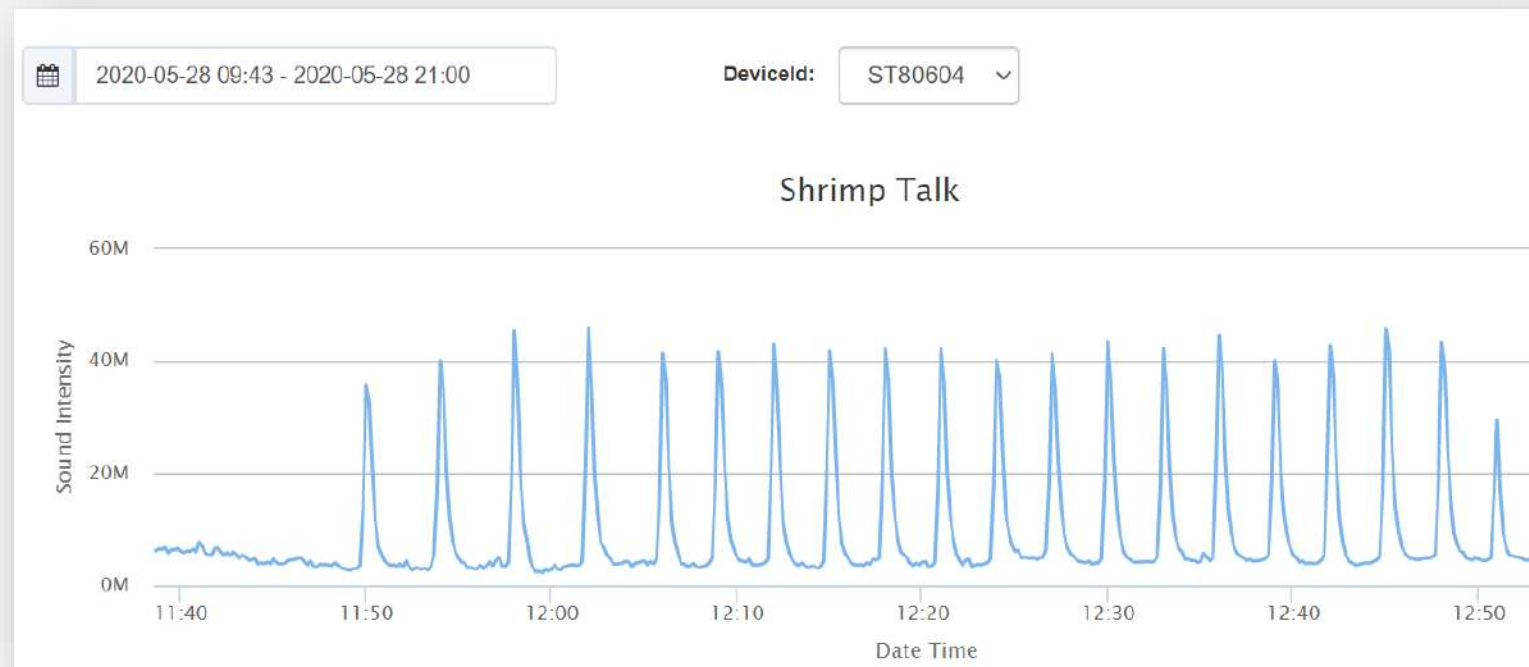Shrimp under-water feeding activity is captured by acoustics sensor

ShrimpTalk Acoustic Sensor

Eruvaka

ShrimpTalk

- **Underwater acoustics-based** Shrimp feeding system
- **On demand feeding** based on Shrimp appetite
- **Reduces Feed wastage** and improves water quality

- Highly effective in feeding shrimp, results in **better FCR and faster growth**
- **24 x 7 feeding** system

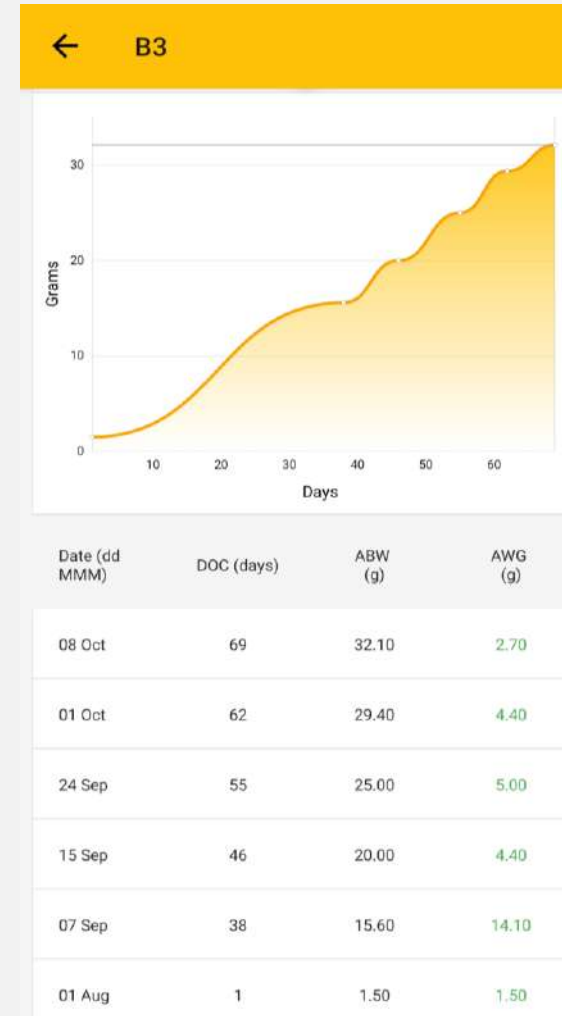# Acoustic Feeding + Intelligence = AI Feeding

- On-demand feeding of the shrimp based on acoustics, water quality, weekly growth data

- Also feed them on growth models

- Fine Balance between Growth and Profitability

Pond Soil, Water parameters

Passive Acoustics

Shrimp Health

Intelligent Feeding

Weather conditions, Seasons

Shrimp Growth & Genetics
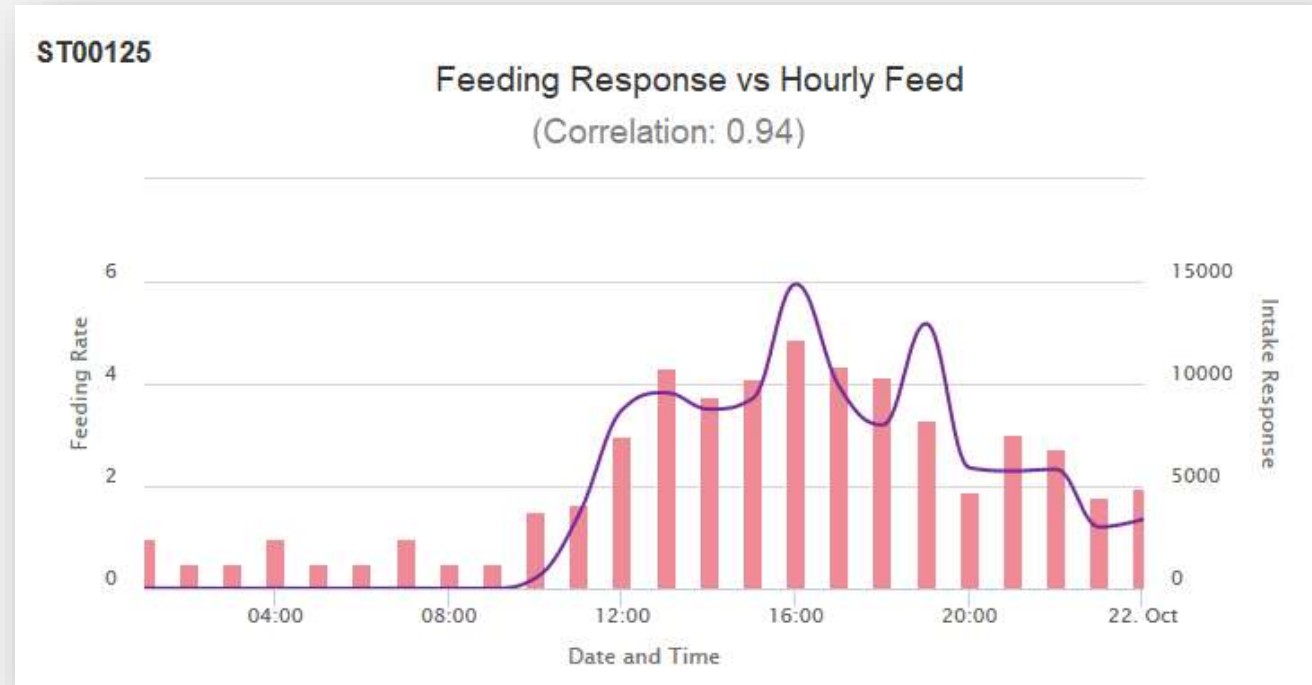
Growth to full potential

- Feeds the shrimp to its full growth potential

# Feeding Response vs Hourly Feed

- Feeding is regulated based on feeding response of the Shrimp

- Hourly dispensed feed varies based on the feeding response

# Feed Intake Co-relation to DO & Temp

- DO and Temperature play a major role in feed consumption and animal metabolism

- Shrimp are poikilothermic, metabolism, growth and feed intake are tied to temperature

- AI feeding regulates the feeding based on DO, Temperature


Hourly Feed Vs DO Vs Temperature
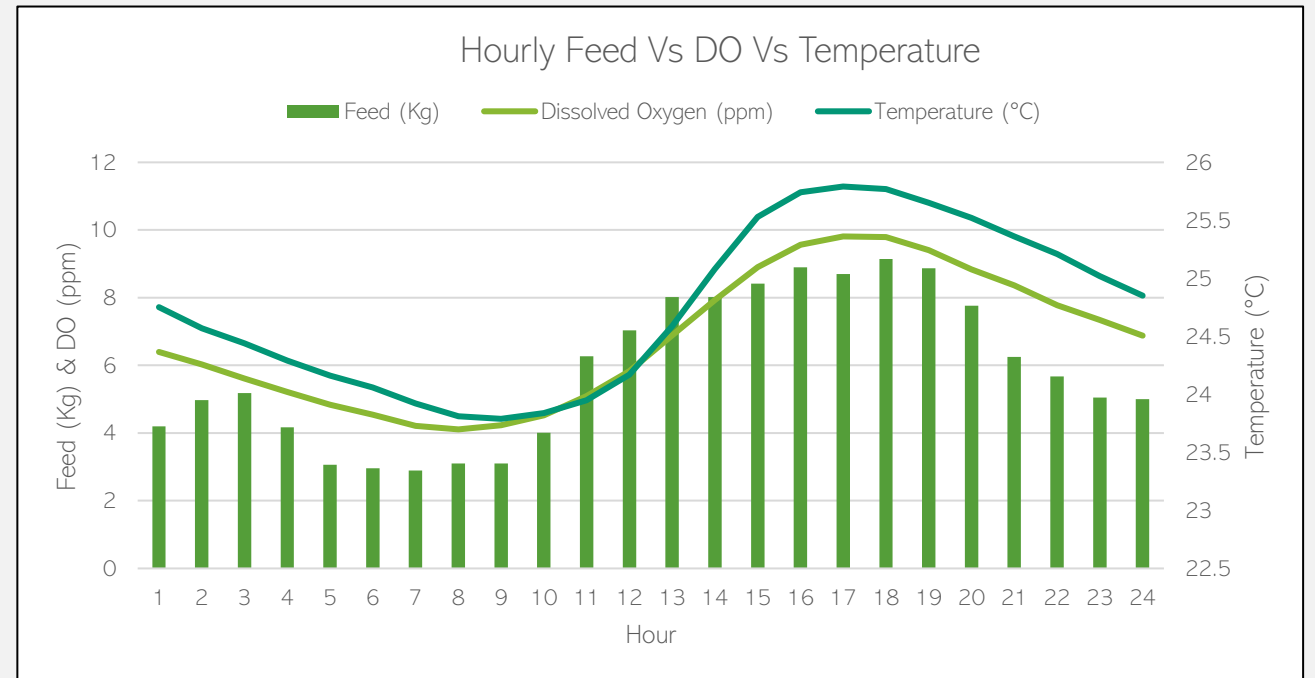
Feeding models for different growth rates

- AI Feeding automatically regulates the feeding based on past few weeks growth data

- AI algorithms learn the data for each pond and dynamically adjust the models based on pond potential

- Pond Specific growth models will be developed over a period

Feeding Model for Different Growth Rates
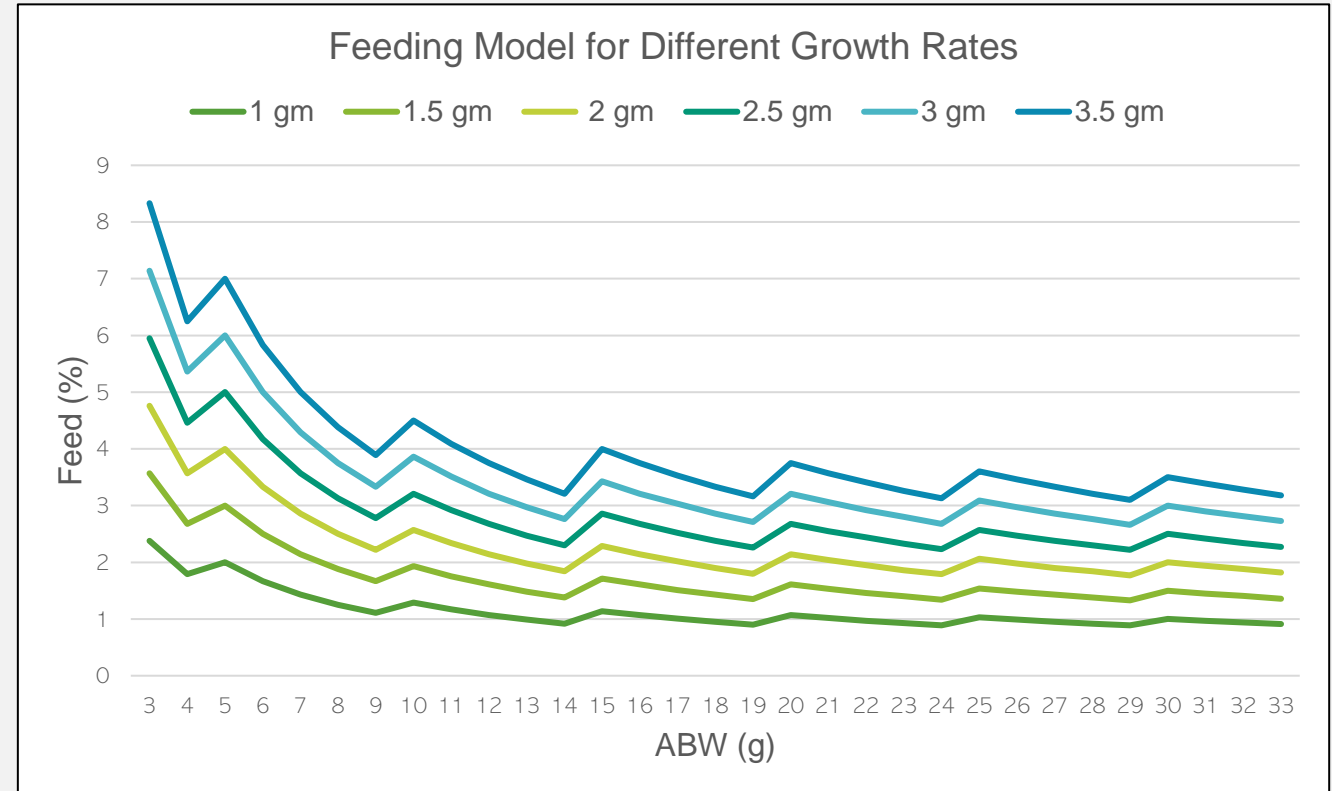
Feeding Patterns during White Feces
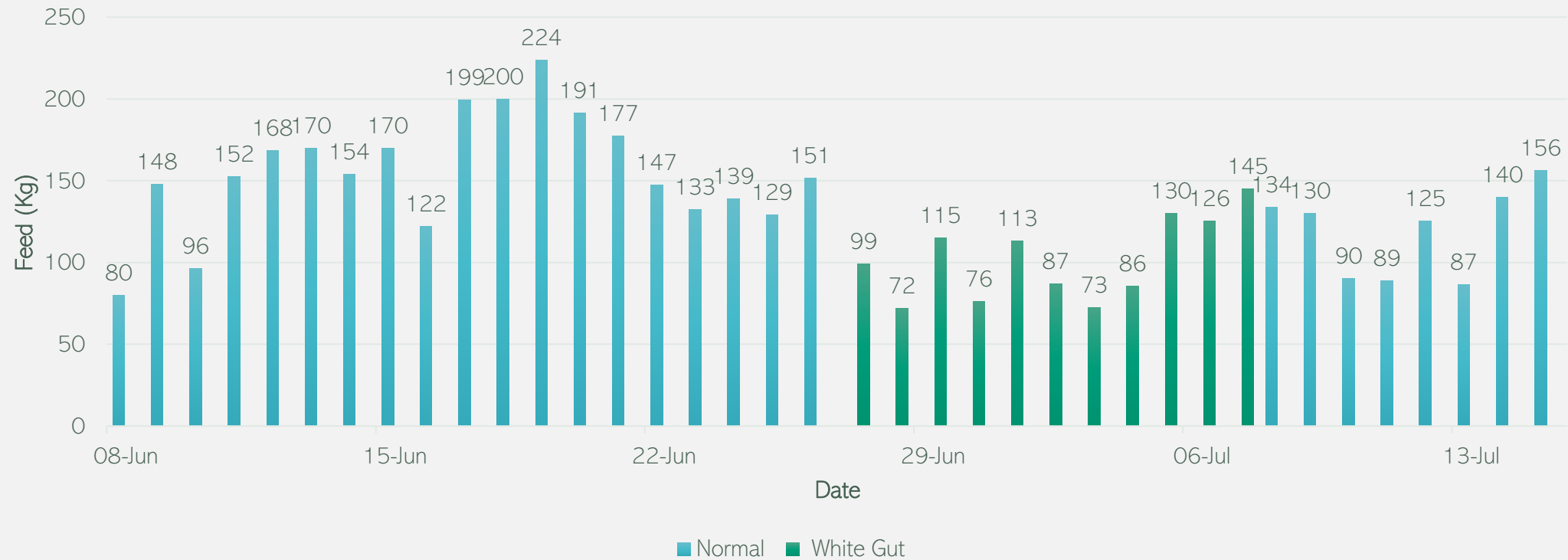
Profitability Analysis
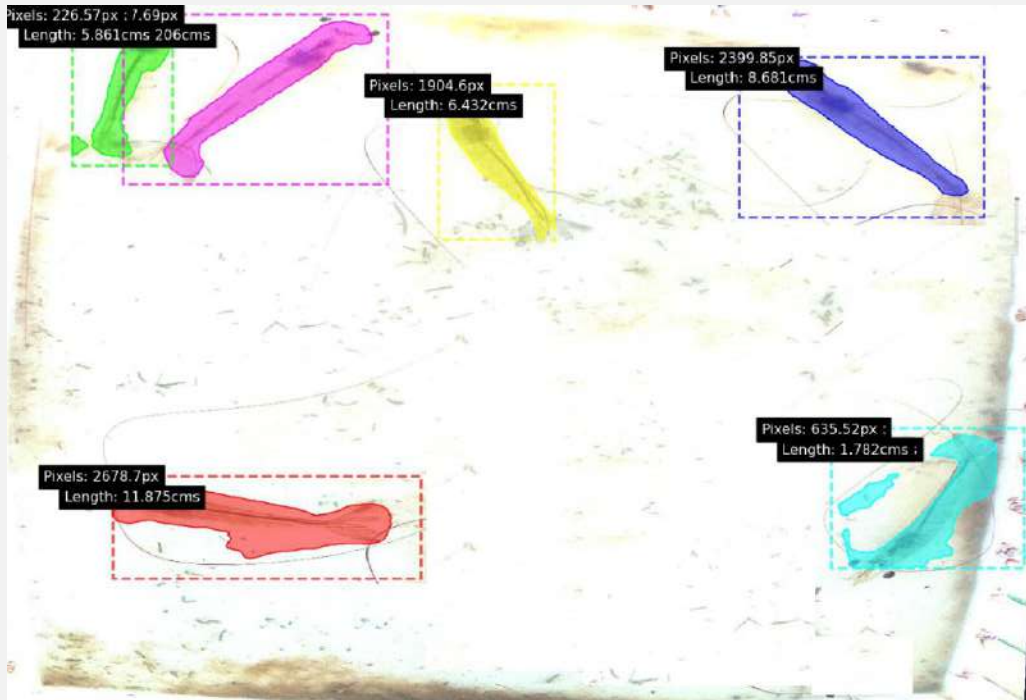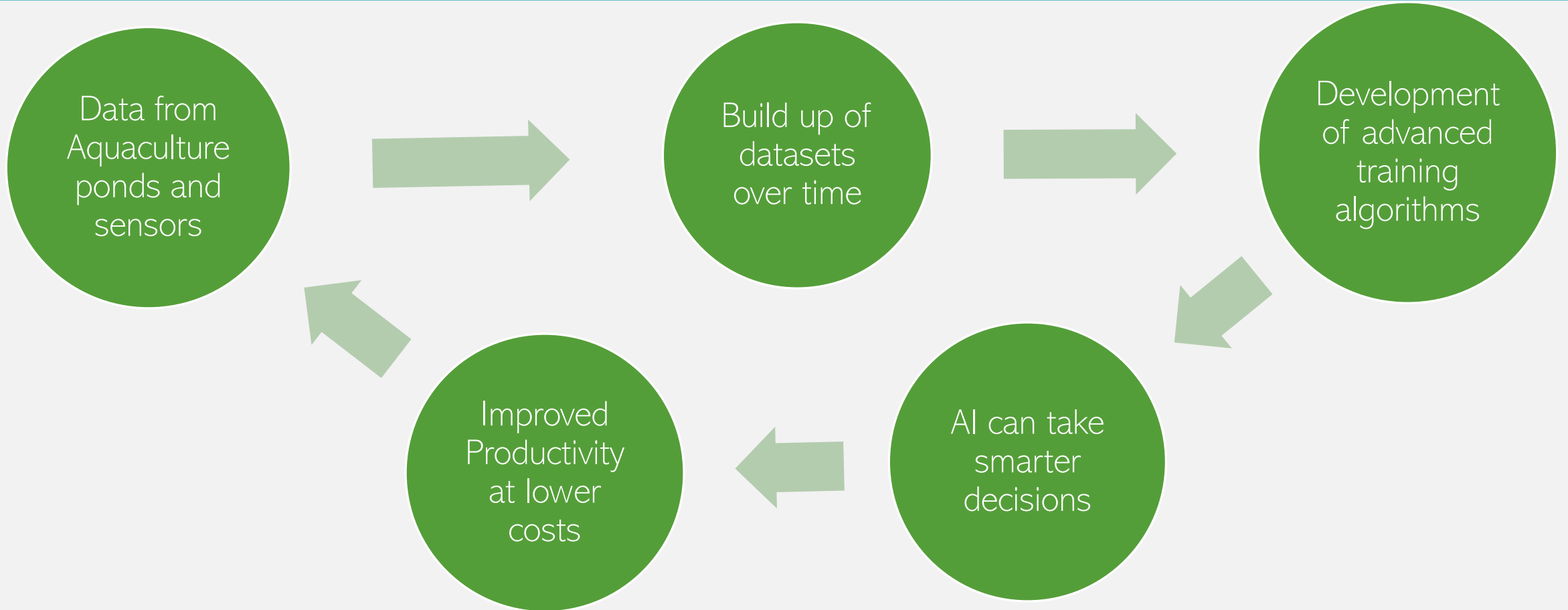

Profit Analysis
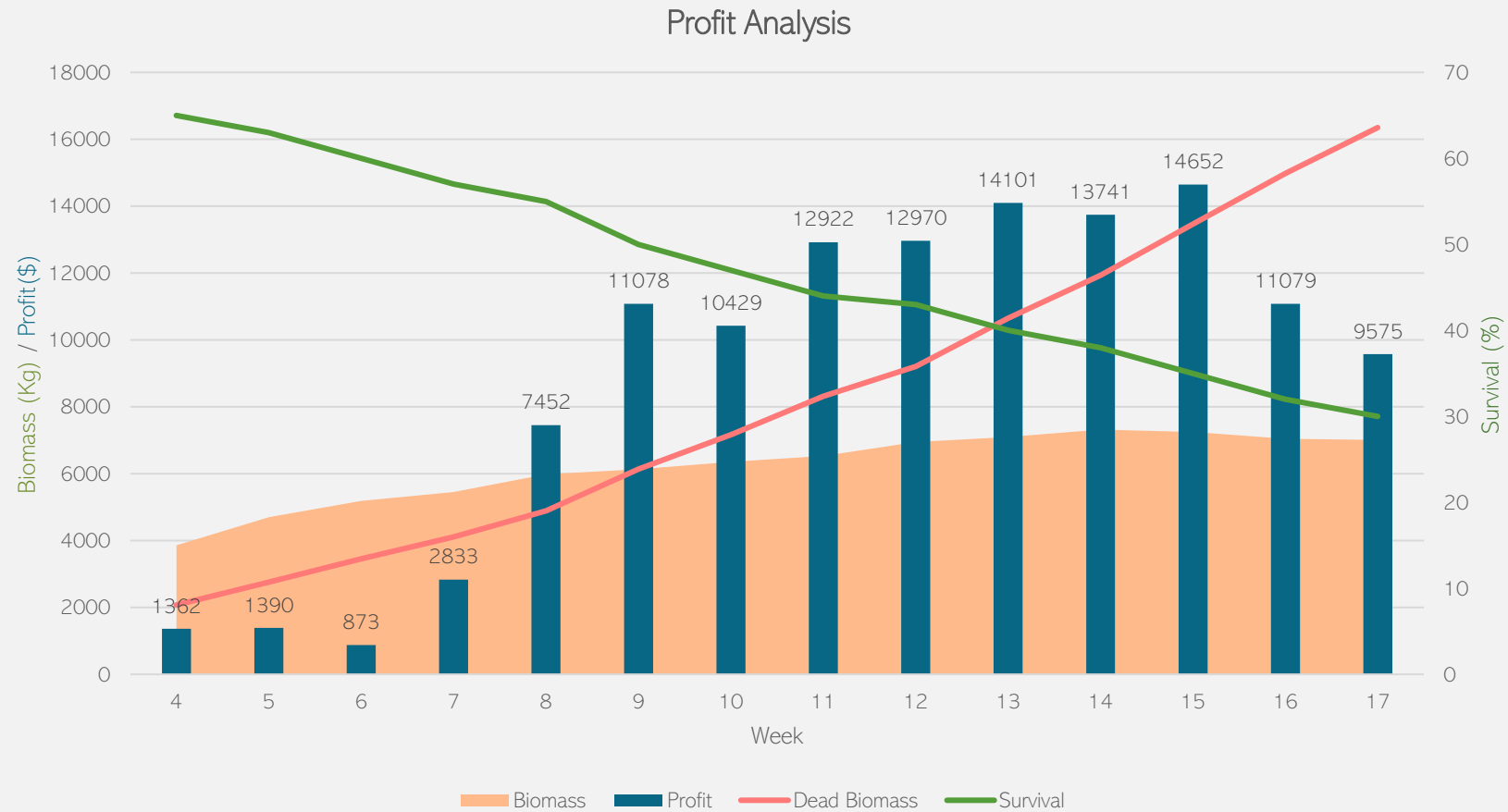
ShrimpSnap

- Image Processing of shrimp to estimate the growth

- Growth data is sent to feeding systems to optimize the feeding model

AI in Aquaculture

How to be successful?

- Mutual Trust between all stakeholders

- Transparency of data

- Willingness to adapt technology

Technology can never replace human beings
It can only serve us better

Thank you

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