Promise of Open Ocean Fish Farming & Digital Technology
An Impact Investor’s View
Cuna del Mar Overview

• Impact Investment Fund focused on the Grand Challenge of aquaculture
  • Prove viability of offshore finfish aquaculture
  • Environmentally sustainable, scalable, and profitable fish production
• Patient capital, but true success requires profitable companies
• Investment focus
  • Open Ocean Farm Technology
  • Species development - primarily warm-water finfish
  • Finfish production - area with limited sources of funding currently
• $100M+ invested to date
Cuna del Mar - Current Portfolio

- **Earth Ocean Farms**
  - Vertically-integrated, Mexico-based producer of Totoaba and Pacific Red Snapper
  - 500 MT of production scaling to 3,000 MT

- **Open Blue**
  - Vertically-integrated, Panama-based producer of Cobia
  - 2,000 MT of production scaling to +5,000 MT

- **InnovaSea**
  - Aquaculture technology company supporting egg to harvest production - based in USA
  - Hatchery, Nursery, Grow-out RAS technology specializing in warm water marine species
  - Submersible pens and supporting ocean grow-out farm systems
  - Instrumentation using IoT, cloud-based data delivery for real-time operational support
  - Largest supplier to world Fish Tracking Network - wireless acoustic telemetry (proven background technology)

- **Center for Aquaculture Technology**
  - Aquaculture biotechnology company with US & Canadian operations
  - Genomics and molecular biology technologies coupled with in vivo testing
• Vertically Integrated Operation: Egg-to-Plate
• Product: Red Snapper & Totoaba
• Expanding National & International markets
“Feed Current & Future Generations in Harmony with the Ocean”

- World’s largest open ocean finfish farm!
- Vertically Integrated Operation: Egg-to-Plate
- 2,000 MT of production Cobia. Scaling to +5,000 MT
- Expanding National & International markets
- Fully Internationally Certified with annual 3rd party audits
- Working through the United Nations Global Compact to achieve the Sustainable Development Goals
Open Ocean Farm System - Precision Fish Farming

Open Ocean Submersible Pens
- 12-pen grid produces 3500 MT/yr.
- Subsea feeding from single point
- All grow-out functions supported: Harvesting, Mortality, Treatment

Real-Time Data Supports Precision Farming
- Equipment status
- Environmental conditions
- Biology & health of fish
Business Overview

- Leading research & development and contract service organization: **Science to improve sustainability and productivity**
- Globally recognized R&D team and highly versatile laboratories
  - Staff are leaders in fish and shellfish health, nutrition, genetics, and gene editing
  - > 30,000 sq. ft of state-of-the-art facilities: Only Level 3 pathogen certified private aquaculture wet lab in the world
  - International scope across all major species
- Fully owned by Cuna del Mar L.P.

Business Segments

- **Health & Nutrition**
  - Commercial trials in fish nutrition and fish health
  - Diagnostics laboratories
  - In vitro models for health and nutrition
  - GLP/GCP regulatory compliance platform
  - Assist with every step of product development pipeline from proof of concept to regulatory approval

- **Genetics**
  - Breeding program design and support
  - Genomic selection and genome wide association studies
  - Genotyping laboratory for marker panels and R&D
  - Genomics expertise, variety of genomic tools
  - Internal R&D for disruptive DNA-based technologies

- **Molecular Biology**
  - Gene editing tools adapted for aquaculture
  - Patents filed for gene editing solutions to fish sterility
  - Program investigating anti-viral solutions for shrimp
  - Integration of gene editing tools into commercial-scale aquaculture breeding program.
Possible Futures - Summary

• Open Ocean Aquaculture: Addressing the Grand Challenge

• We need more fish in the water - what are the business models?
• Highly automated, cost effective, profitable, environmentally sustainable
• Multiple small & medium sized farm sites - scalable 500>5,000>20,000 MT
• Replacing collapsed wild fisheries
• Emerging economies - the growth will be in Asia, India - warm water

• Science & Technology:

• Supply of high quality broodstock for tropical fin fish
• Standardized high efficiency hatchery and nursery systems design
• Health, nutrition and disease management
• “Real Time” complete instrumentation of farm sites
• Capture, Analysis and Utilization of ocean data