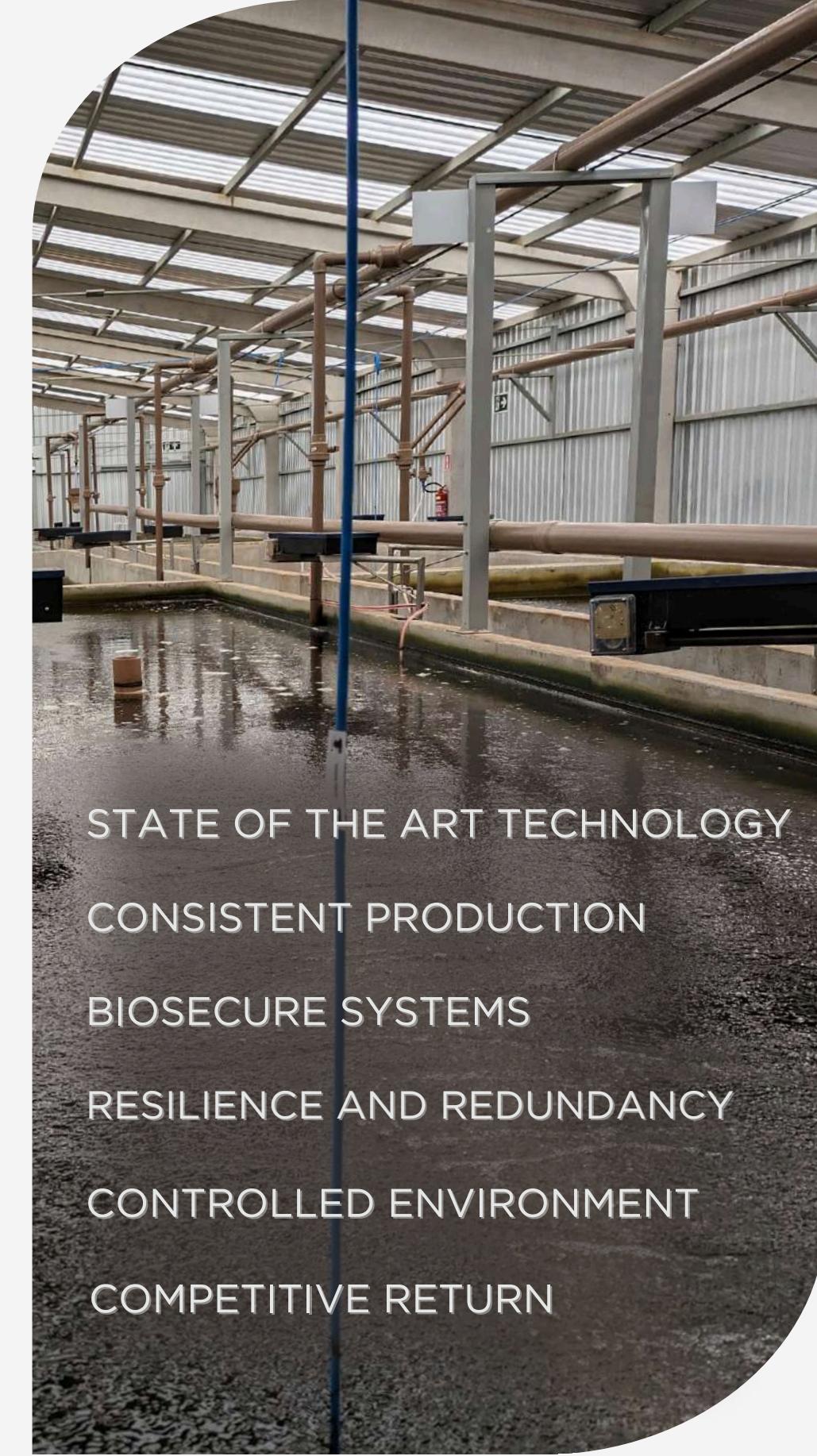


# MAPProjects

## RECIRCULATING AQUACULTURE SYSTEMS



STATE OF THE ART TECHNOLOGY  
CONSISTENT PRODUCTION  
BIOSECURE SYSTEMS  
RESILIENCE AND REDUNDANCY  
CONTROLLED ENVIRONMENT  
COMPETITIVE RETURN

MEET:

# MAP

MIRYAM AQUACULTURE PROJECTS LLC

**Welcome** to the MAP family, where experienced fish farm pioneers come together to support your success! We will navigate your endeavour with dedication and passion, using the most up to date know-how and innovative technologies, to drive your growth.

**Our vision** - is to promote the sustainable development of the global aquaculture industry and the well-being of the people who depend on it.

**Our mission** - is to partner with existing and new producers and institutions to provide tested solutions to industry challenges across the value stream.

**Our method** - We take a hands on multidisciplinary approach through our three main activities; MAProjects, MAProduce, and MAProcess!

## OUR TEAM OF AQUACULTURE VETERANS AND MULTIDISCIPLINARY EXPERTS



**Yedod Snir**  
**CEO & Co-founder**



**Israel Snir**  
**President & founder**



**Denis Joshua Mancia**  
**Hatchery Manager**



**Mario Ramirez**  
**Chief Tech Officer**



**Yaron Shaool**  
**Chief Financial Officer**



**Grisel Alfaro**  
**Administration and Sales**



**Allan Reyes**  
**Growout manager**



**Mario Gonzalez**  
**Maintenance manager**



**Luiz Felipe Porto**  
**Sales manager**

Leading the Tilapia  
and RAS industry  
since 1977



“IT’S NOT ABOUT THE FISH, IT’S ABOUT THE PEOPLE!”

*Israel Shir*

FOUNDING PRESIDENT

“

## *A vision for sustainable aquaculture*

We envision ideas, produce food, create jobs, invest in our communities, educate the young, protect our environment, and seek joint happiness, “By the people and for the people!”

## Our Four E's

- **EXPERIENCE** - Without practice it's just theory
- **ETHICS** - Humility and respect, we will not be greedy
- **ENVIRONMENT** - The environment is loaned and we must return it improved
- **ECONOMICS** - We do not sell products, we sell solutions and nourishment.



## Experience of generations



1988 - Yedod and his brother developing RAS concepts



2023 - Yedod and his father Israel in a RAS project

## A love rooted from birth

My life journey and career have been intertwined with the development of aquaculture. From the waters of the Jordan River, brought up the industries renowned pioneers, to lead some of today's, largest commercial projects.

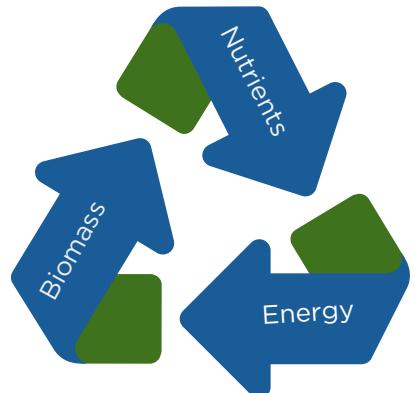
*Yedod Shir*  
CEO

# WE ARE YOUR MAP

*for sustainable aquaculture*

## Current Challenges in Global Aquaculture and our Approach:

- 1. Bottlenecks that impede production growth**  
A network of experienced management supported by a common core
- 2. Climate instability and natural disasters**  
Controlled culture systems, isolated from the environment
- 3. The progression of new disease**  
Emulate nature, prevention, promoting animal health
- 4. Constant changes in market demand and requirements**  
Compete in production costs, adapt to survive
- 5. High risk investment**  
Conservative assumptions and confident returns



# THE SYSTEMS OF THE FUTURE

*for today's aquaculture!*



TECHNOLOGIES

OPERATIONS



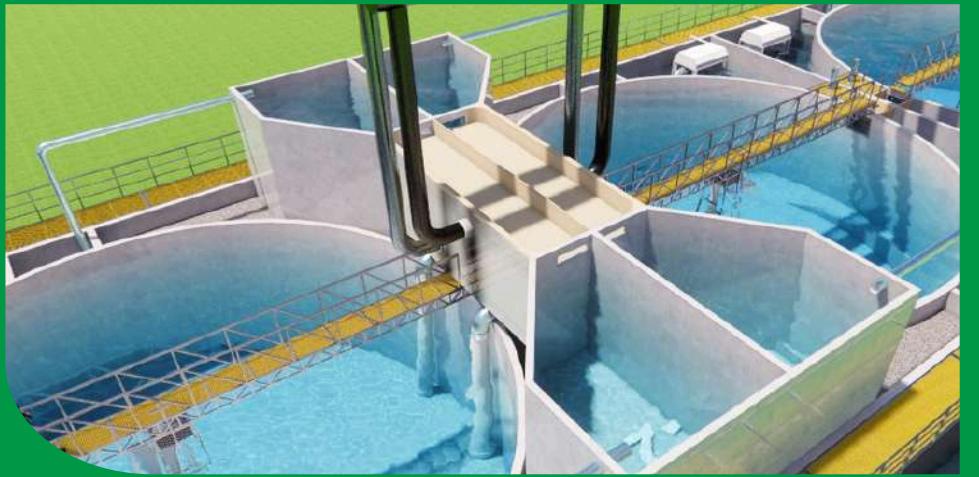
PRODUCTION

PROCESSING



# FROM VISION TO REALITY

*nature in your hands*



- **GENERAS** - Biosecure genetic selection
- **REPRODURAS** - High fecundity, consistent spawns
- **INCUBRAS** - Controlled egg-hatching systems
- **PROTOFLOC** - Larval cultivation in natural mesocosm
- **ALERAS** - Production of uniform and healthy fingerlings
- **JUVERAS** - Vaccinated and resilient juveniles
- **GROWRAS** - Efficient and safe on growing



# ALERAS

*Uniform and consistant  
growth, year round!*

**PROCESS** - EMULATING NATURE  
**BIOSECURITY** - FROM DESIGN THROUGH OPERATIONS  
**CONTORL & MONITORING** - REDUNDANT SYSTEMS  
**LABOR** - MECHANIZATION AND AUTOMATION  
**PRODUCTIVITY** - MAXIMUM AND CONSISTENT  
**COST** - COMPETITIVE AND CONSISTENT  
**INPUTS** - MINIMUM USE OF WATER AND ENERGY  
**ENVIRONMENT** - IMPACT NEUTRAL

## PRACTICAL FINGERLING PRODUCTION SYSTEMS



***"THE INITIAL DAYS OF  
ITS PRODUCTION,  
ESTABLISHED THE  
GROUNDWORK FOR  
ITS SUCCESS."***

INCUBRAS system installed in Brazil

## REPRODURAS

### Controlled spawning



The REPRODURAS is a 240m<sup>3</sup> system each with its own dedicated filtration system to preserve biosecurity. The broodstock are kept isolated throughout their production cycle, which lasts one year until they are replaced by the next generation. The system is designed for easy handling and mechanization of egg collection, as this task is the most laborious.



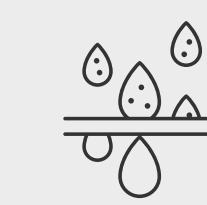
## INCUBRAS

### Biosafe hatching

INCUBRAS is a patented system developed for efficient and biosafe incubation. The systems are capable of hatching eggs from a batch of breeders and growing the larvae until the life sac is absorbed.



Temp. control



Bio-Filtration



Desinfection

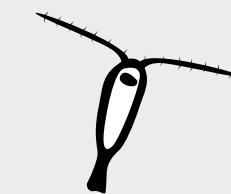


## PROTOFLOC™

### Natural Nutrition



Tilapia larvae do not complete their intestinal development until one week old. The animal is very vulnerable to pathogen infestation. Health at this critical stage is essential for performance throughout the rest of the cycle. The founders of MAP have been involved in the worldwide development of floc cultures that provide a natural habitat and an abundance of beneficial microorganisms that serve as food and probiotics for this larval stage.



Natural food



High survival



Little H2O Exchange

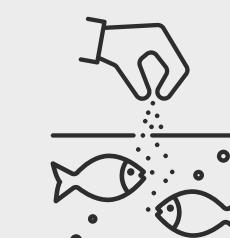


## FINGERAS

### Year-round, steady growth

Each system consists of 5 circular tanks of 50-100 m<sup>3</sup> with self-cleaning of solids and upper layer. The filtration train consists of passive removal of solids (non-mechanized), nitrification in MBBR type filter, polishing filter, disinfection and return pumping to the tanks.

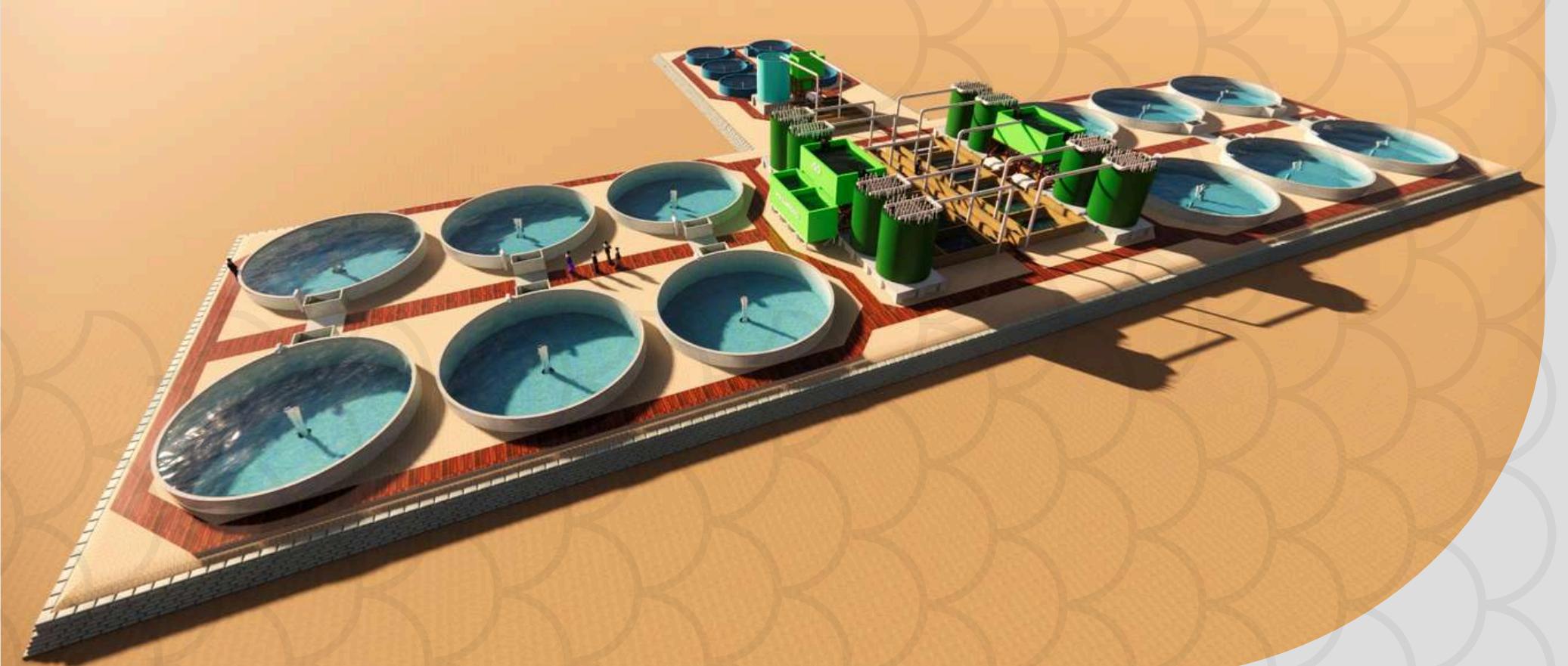
The harvesting, grading and counting system is automated to reduce labor. The turnover rate is approximately 5% per day. The ALERAS system receives fish from the PROTOFLOC system and gradually adapts them to the RAS environment, allowing them to grow to an average weight of 2-3 grams.



High carrying capacity



Practical operation



# JUVERAS

WE PLACE SPECIAL EMPHASIS ON THE PRIMARY STAGES OF GROWTH TO PROVIDE THE PRODUCER WITH A LARGE ANIMAL THAT IS RESISTANT TO THE CHALLENGES OF THE GROWOUT. (PONDS, CAGES, RAS ETC.)

*Vaccinated and  
resilient juveniles,  
ready for the field!*

**BIOSECURITY** - VACCINATED ON SITE

**MONITORING** - BACKUP SYSTEMS

**LABOR** - MECHANIZATION AND AUTOMATION

**PRODUCTIVITY** - HIGH LOAD CAPACITY

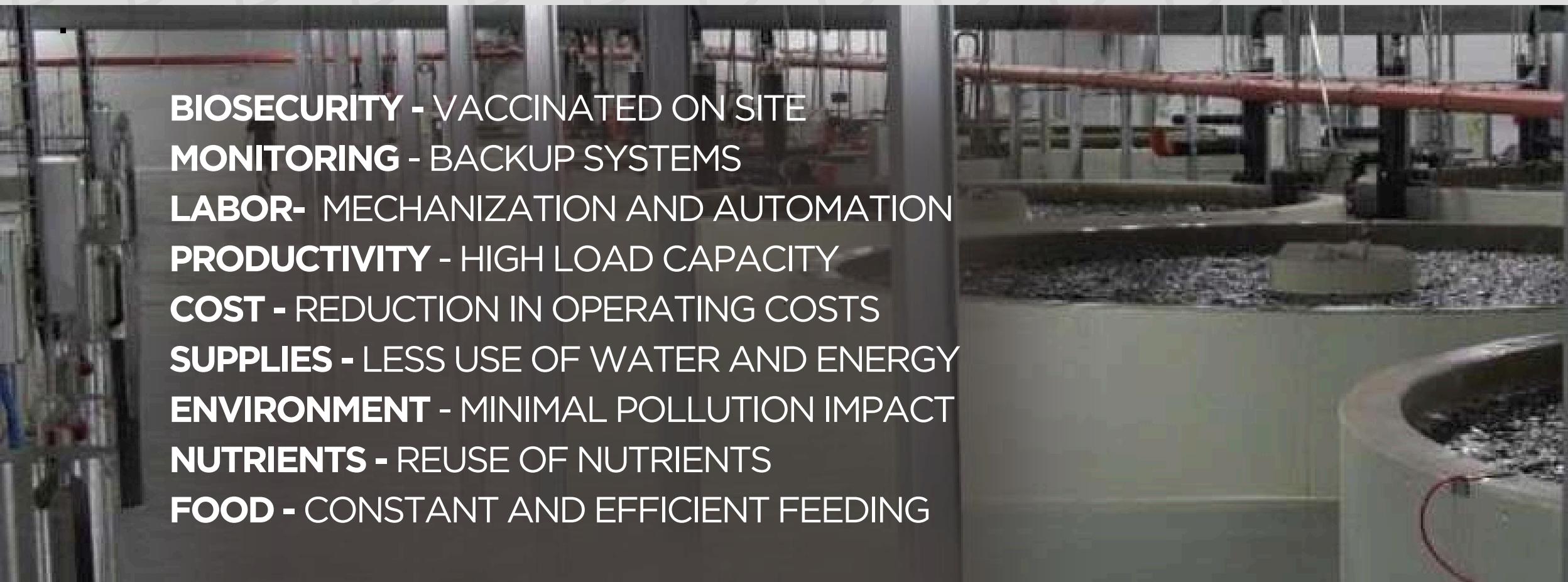
**COST** - REDUCTION IN OPERATING COSTS

**SUPPLIES** - LESS USE OF WATER AND ENERGY

**ENVIRONMENT** - MINIMAL POLLUTION IMPACT

**NUTRIENTS** - REUSE OF NUTRIENTS

**FOOD** - CONSTANT AND EFFICIENT FEEDING



# JUVERAS

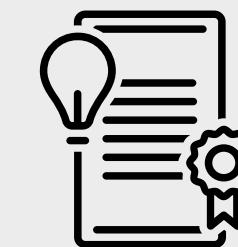
## Growth and control



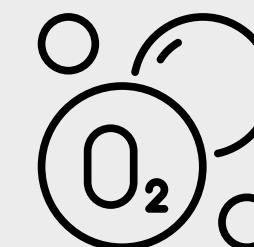
### INTENSIVE SYSTEM FOR JUVENILE PRODUCTION

The JUVERAS system consists of two internal phases before and after vaccination. From 3 to 15 grams of "prevax" and from 15 to 30 grams of "postvax". Each system has 6 tanks of  $200\text{ m}^3$  with a solids separation system, upper water and mortality extraction.

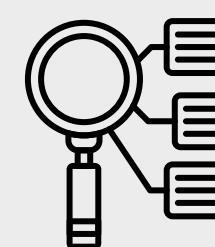
The filtration train consists of retention and removal of fine solids, biological filtration based on patented FSBR filters, degassing, oxygenation, disinfection and gravity return. The JUVERAS system reaches high loads of  $>70\text{kg/m}^3$  to provide high biomass production in an extremely efficient and safe way.



Patented systems



Oxygen systems



Classification systems



Vaccination systems

# GROWRAS

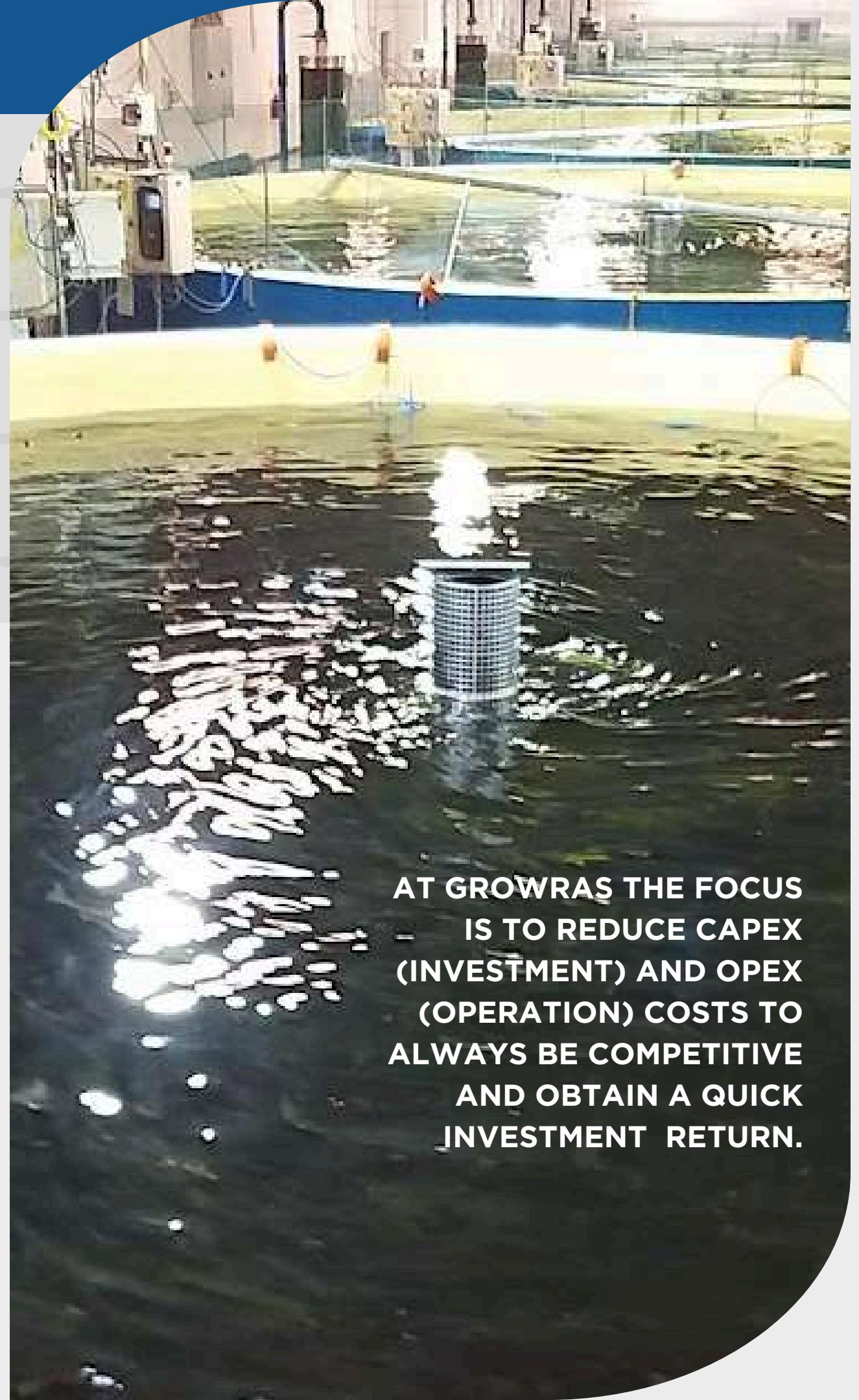
*High-yield fish with low production costs.*



## FROM LARGE FISH PRODUCTION TO PROCESSING PLANT

Nowadays, supplying food to chains requires consistency in quantity, quality and price. The investment and therefore the greatest risk occurs in the fattening phase. The name of the game is to remove variables and make the most of the main inputs (water, nutrients, energy, labor and time).

The GROWRAS system is similar to JUVERAS in that at MAP we design in a standardized way to facilitate operators. Each system has many years of experience in design, always seeking the greatest operational efficiency and repeatability of operations. The fish grow quickly from Juveniles to >1000 grams and develop greater performance and excellent flavor and texture due to constant swimming.



## We interface with all existing culture methods:

### EARTH PONDS

Aquaculture in excavated ponds can be an ecologically sound way of raising fish, however, it requires a lot of land, water, energy and labor. MAP has decades of experience designing, constructing and operating some of the world's leading projects. We can offer many technical solutions to optimize aquaculture in tanks in both mono and polyculture.



### CIRCULAR TANKS

Activated Floc Systems (AFS) is a mixed water system that has many advantages due to its relative simplicity, but requires considerable experience to operate consistently. The founders of MAP participated in the initial development of AFS with counterparts in India and Israel. We have the capability to design, implement and deliver training on large BFT systems for a variety of species.



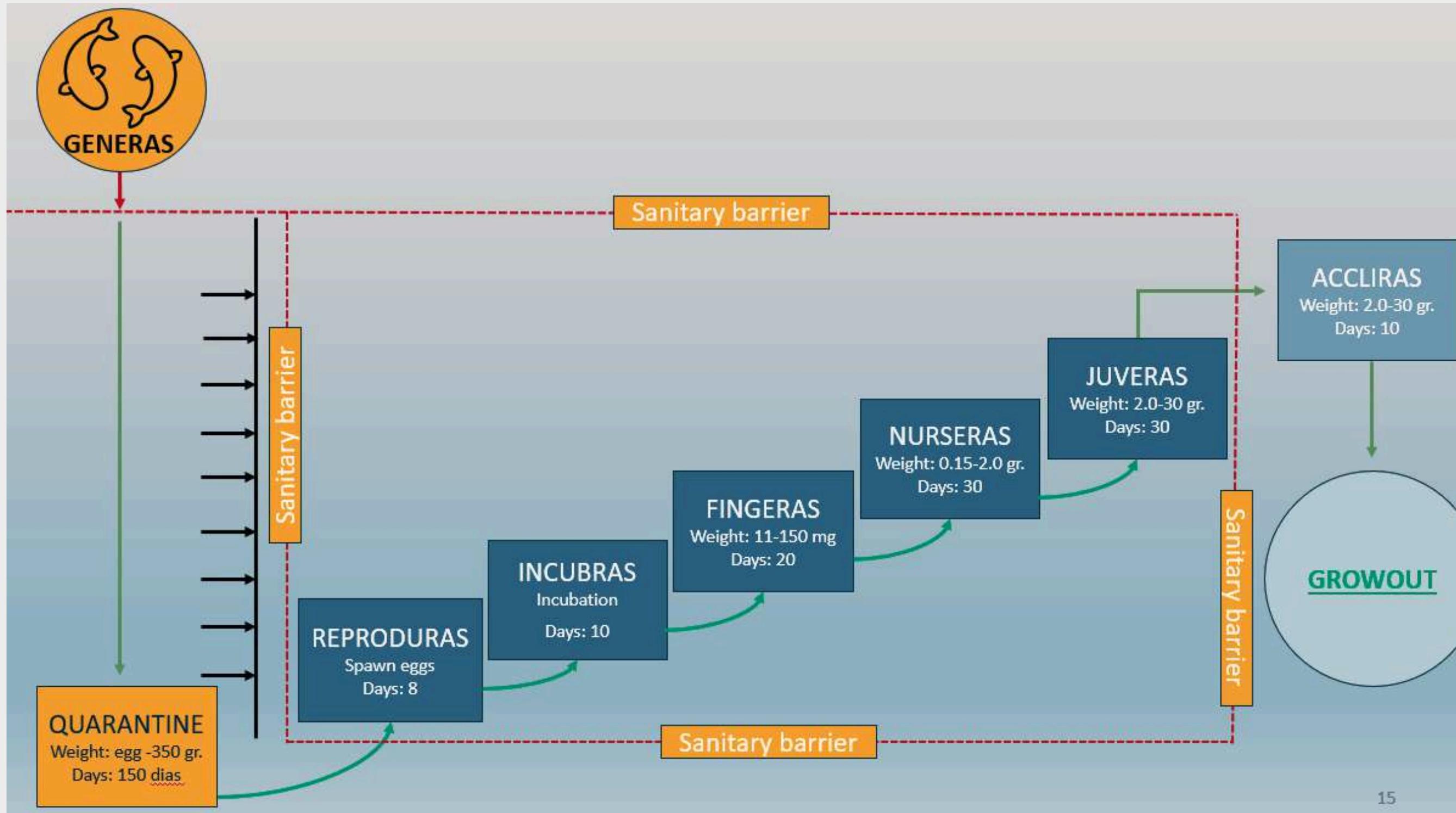
### NET CAGES

MAP has designed, built and managed some of the largest cage projects in the world and can provide expertise and technologies for both freshwater and marine environments, including offshore submersible systems.



# BIOCORRIDOR

Traceability and total control



Our “Biocorridor” concept is a fundamental part of all projects and our operational logic. The concept is to ensure that batches of fish do not mix (as far as possible), avoiding possible cross-breeding of diseases and allowing the elimination of a single batch without affecting the entire production. It also serves to measure the productivity of different genetic lines.



# HANDS ON EXPERTS

*We are operators!*



## PRODUCTIVE MANAGEMENT

We are operators, and all our projects, technologies and methods are geared towards achieving maximum and efficient production. We stay engaged to ensure your project or manage it appropriately.

## RESEARCH AND RESEARCH

MAP's approach is one of CONSTANT IMPROVEMENT. We never assume we know everything. MAP serves as a benchmark across all participating projects to create standardization and consistency in results. That's why we constantly evaluate better systems and methods to ensure our partners have a competitive advantage.

## MONITORING OF CONSTRUCTION PROJECTS

During the engineering phase, MAP identifies value opportunities. During construction, MAP is present in the field to ensure that all project assumptions become reality. Construction is carried out in phases, with production beginning on each finished unit.



based on experience



standardized operation



scalable operation



trained team



best results



constant monitoring



animal health



best return

# OPERATIONS

*How we monitor our Projects*

## MONITORING OF CONSTRUCTION PROJECTS



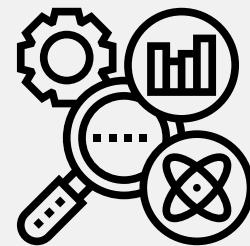
WORK  
SUPERVISION



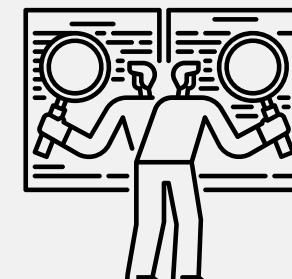
SYSTEM  
INITIALIZATION



## RESEARCH & STUDY



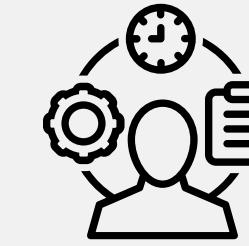
RESEARCH AND  
DEVELOPMENT



COMPARATIVE  
EVALUATION



## PRODUCTION MANAGEMENT



MANAGEMENT  
PARTNERSHIP



PROFESSIONAL  
GUIDANCE

# WHY WORK with MAP?



WE PROVIDE SYSTEMS BASED ON UNIQUE EXPERIENCE AND  
REMAIN INVOLVED UNTIL YOUR SUCCESS.

SYSTEMS WITH CONTINUOUS INTERFACE FOR A  
PROCESS AND BIOSAFETY



SYSTEMS DESIGNED FOR MINIMAL USE OF WATER,  
ENERGY AND LABOR



PRACTICAL OPERATIONS, REDUCING THE NEED FOR  
SPECIALIZED LABOR



TEMPERATURE CONTROLLED TO MAINTAIN YEAR-ROUND  
PRODUCTION IN TEMPERATE ZONES



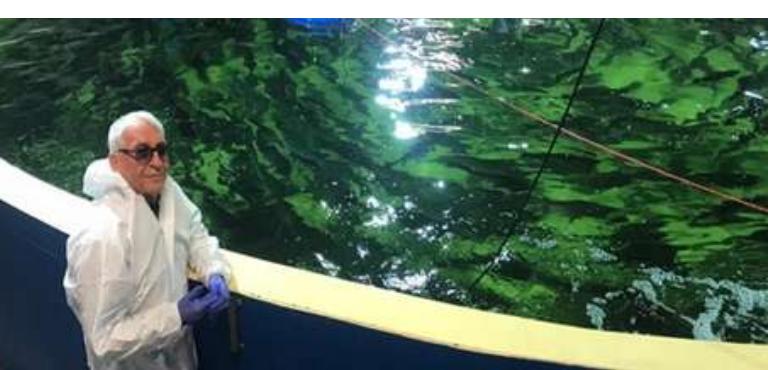
CONCEPT OF BIOCORRIDORS TO AVOID CROSS  
CONTAMINATION



INTEGRATION BETWEEN ALL STAGES OF THE PROCESS



MECHANIZED TRANSFER AND AUTOMATED MONITORING  
SYSTEMS



## TIMELINE *typical*

From planning to production, your business will  
have a complete and customized fattening system.

**DAYS**

**510**

**COMMISSIONING & TRAINING**

**480**

**IMPLEMENTATION OF THE MAP  
PROJECT**

**260**

**DETAILED DESIGN & FINAL QUOTE**

**200**

**CONCEPTUAL DESIGN**

**110**

**LOCATION & BUDGET**

**70**

**PRODUCTION PLAN**

**PROJECT CHARACTERIZATION**



