

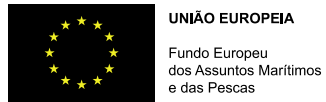
# “Aquaculture in an Outermost Region”

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AQUICULTURA E BIOTECNOLOGIAS MARINHAS  
DOS AÇORES, S.A.



# INTRODUCTION



**AQUAZOR**  
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- In 2016 Aquazor was founded in the AZORES to develop aquaculture projects and innovative marine biotechnologies;
- After considering the local environment of the Azores, AQUAZOR decided to start aquaculture with fish and seaweeds;
- The fish selected was the new “**Greater Amberjack**” ( *Seriola dumerilli*), a fast growing species that is developing to be the “salmon of southern Europe” ...
- The 20 species of seaweeds selected were chosen among the more than 300 species of the Azores, to be applied in feed, food and cosmetics/pharmaceutical uses;

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# INTRODUCTION



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- Aquazor presented in 2017, 7 projects to the EU/FEAMP program, representing an investment of nearly 3 Million Euros in “Innovation in Aquaculture” projects;
  - The projects were the following :
    1. **MATER-Aqua** : a hatchery for *Seriola*;
    2. **ATLANTIC-Fish** : an offshore cage to grow *Seriola*;
    3. **LAB-Algae** : a Phycology (seaweed) Lab;
    4. **ECO-Algae** : 4 different Offshore structures to grow seaweeds;
- All the projects are installed and running.

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# 1. MATER-Aqua



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**1. MATER-Aqua** : a fish hatchery that was developed to study and take care of the reproduction and nursing of *Seriola* and to produce juveniles of 30-40g of individual weight.

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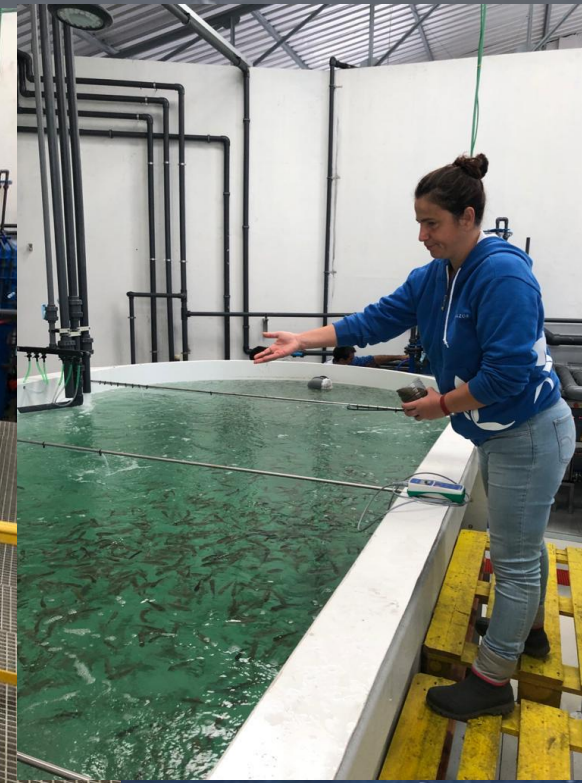
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# 1. MATER-Aqua



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## 2. ATLANTIC - Fish



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**2. ATLANTIC-Fish** : an offshore cage to study the operations and growth of *Seriola* juveniles coming from the Hatchery with 30-40g until a final commercial weight of 2,5 – 3 kg of individual weight.

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## 2. ATLANTIC - Fish



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# 3. LAB - Algae



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**3. LAB-Algae** : a Phycology (seaweed) Lab to study the production of seed to grow different seaweed in offshore conditions;

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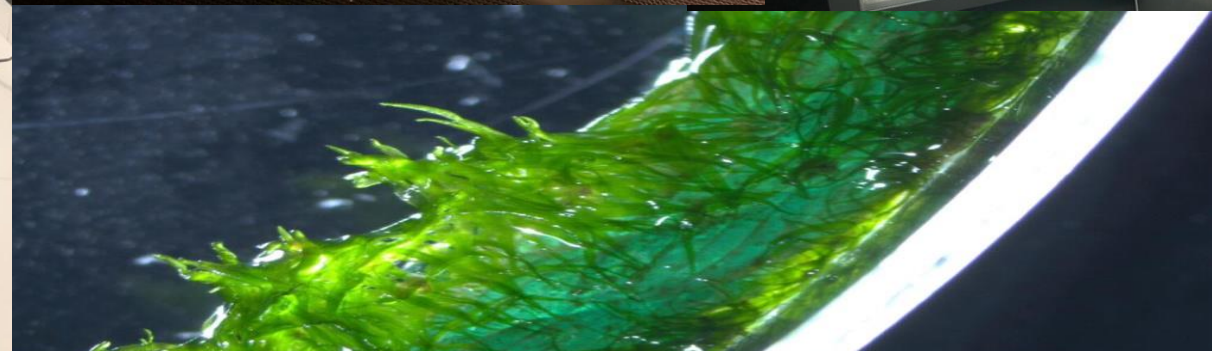
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# 3. LAB - Algae



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## 4. ECO-Algae



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**4. ECO-Algae** : 4 different Offshore structures to study the production of seaweeds in 3 different Azorean islands ( S.Miguel, Terceira and Faial) .

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# 4. ECO-Algae



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# NEW PROJECTS FOR 2020



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- The commitment of AQUAZOR towards innovation on the Blue Economy, led to develop several projects now under development like :
- METFREE;
- I 2 MILK;
- I 2 EGG;

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# METFREE PROJECT



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- Methane is now a big threat to the Planet, being one of the worse gases with greenhouse effect;
- Cows are responsible for 25% of the production of METHANE in the world;
- Cows and dairy products are the main income of the AZORES islands, which produce 1/3 of the milk and 50% of all the cheese of Portugal;
- It is urgent to develop a solution to avoid the **greenhouse effect** from cattle and become more sustainable;
- If a solution can be developed for this problema, the AZORES can be the initial case study and a potential solution.

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# METFREE PROJECT



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# METFREE PROJECT



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## Methane Reduction Project

- how to reduce methane emission by a minimum of 25%

A cow emits 500l of methane per day, which is equivalent to 10% of the energy she would otherwise use for performance and milk production



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# METFREE PROJECT



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**RED SEAWEED**

*Asparagopsis sp.*

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# METFREE PROJECT



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- After studying several seaweeds, the genus *Asparagopsis sp.* has been found as a seaweed which given to the cattle at a rate of 2-3% of the daily feed could prevent the emission of up to 98% of Methane;
- We expect that the methane that is not emitted is converted to build up **more meat and more milk** on the cattle production;
- To try to prove the beneficial environmental effect as the important production effect, an initial trial is being conducted with 100 cows;
- If this trial is successfull a further trial will be made on an entire Island of the Azores, that will be the first **METFREE ZONE** in the World.

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# METFREE PROJECT



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# I 2 MILK PROJECT



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- Iodine is a very important element that has been supplied for decades to men through the use of iodated salt (common salt NaCl with added iodine) to prevent several human diseases as goiter and to assure the supply of iodine to pregnant women and young children, to whom iodine is vital;
- The lack of iodine in daily human diet is responsible for several severe problems to young children and potential major damage to their cognitive development;
- The deficiency of iodine in the Azores affects 70% of the population.

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# I 2 MILK PROJECT



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- This experiment is starting in the Azores islands, known for its dairy industry as previously described;
- And a place with a great source of seaweeds in the seas around the islands;
- The seaweeds are one of the best sources of organic iodine
- The goal is to transfer from the seaweed to the milk the carrying capacity of providing iodine to our diet;
- Cows are fed with a feed supplement made of seaweeds rich in iodine and produce a **iodine rich milk NATURALLY !**

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# I 2 MILK PROJECT



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# I 2 MILK PROJECT



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Drink I-MILK and get all  
the iodine you need !

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# I 2 EGG PROJECT



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- The I 2 EGG experiment is similar to the I 2 MILK but using chickens and their eggs;
- Eggs are a very rich and balanced food, and one of the more consumed protein in the world;
- The goal is to transfer from the seaweed to the **eggs** the carrying capacity of providing iodine to our diet;
- Chickens that produce I-EGGS are fed with a feed supplement of seaweeds rich in organic iodine **NATURALLY**;

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# I 2 EGG PROJECT



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# I 2 EGG PROJECT



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EAT I-EGGS and get all  
the iodine you need !

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# CONCLUSIONS



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- AZORES is in the middle of the Ocean, halfway to America.
- AZORES is a natural Marine Lab in the ATLANTIC for science and innovation in the BLUE ECONOMY;
- The BIOTECHNOLOGIES are a very important part of the Oceans research for the future;
- The projects carried out by AQUAZOR will need a strong support from the EU during the next 10 years to be able to develop and launch new products in the market;
- **The EU support is essential to the near future development of the BLUE ECONOMY, with positive impact on the OCEANS.**

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THANK YOU !

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