

Atelier 1.A - ASPECTS REGLEMENTAIRES : Accès à la mer : un enjeu de développement pour les entreprises et les territoires, comparaison des aspects législatifs et des leviers possibles pour faciliter la mise en œuvre de ces projets

A land-based IMTA case: ALGApplus Lda, Portugal.

Helena Abreu, co-founder

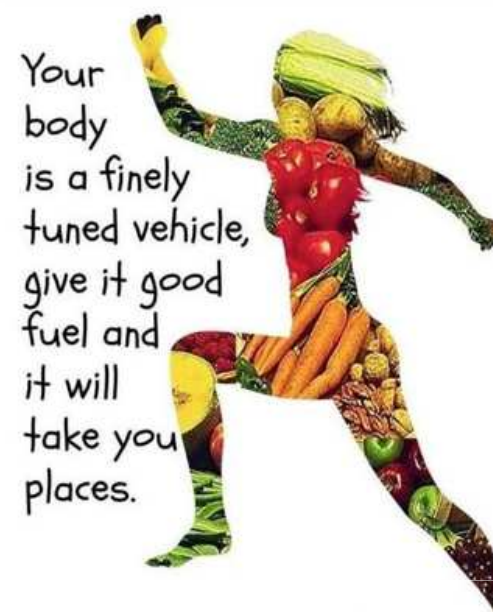


THE OPPORTUNITY – SEAWEED AS a SUPER INGREDIENT

Nutritional value

Protein (3% - 47%)
Fiber (up to 63%)
Lipids: (up to 8%; mainly PUFAS)
Minerals: Ca, Fe, I, K/Na, Mg
Vitamins: A, B, C, E

Functional value



J Appl Phycol (2011) 23:543–597
DOI 10.1007/s10811-010-9632-5

Bioactive compounds in seaweed: functional food applications and legislation

Susan Løvstad Holdt • Stefan Kraan

J. Phycol. *, ***-*** (2015)
© 2015 Phycological Society of America
DOI: 10.1111/jpy.12326

Review

Algae 2010, 25(4): 000-000
DOI: 10.4490/algae.2010.25.4.000

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Antioxidants from macroalgae: potential applications in human health and nutrition

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REVIEW

PROSPECTS AND CHALLENGES FOR INDUSTRIAL PRODUCTION OF SEAWEED BIOACTIVES¹

THE OPPORTUNITY – SEAWEED AS a SUPER INGREDIENT



FOOD



COSMETICS



PHARMACEUTICS



GREEN CHEMISTRY



ANIMAL FEED

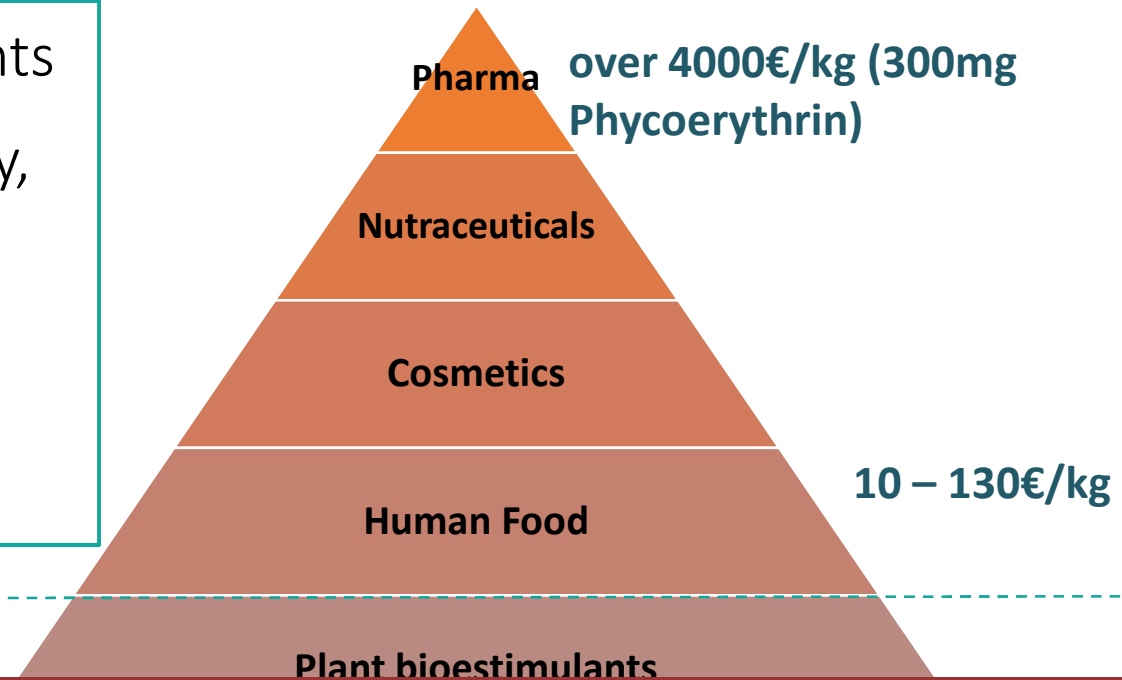


NUTRACEUTICAL



FERTILIZERS

- ✓ Seek for natural ingredients
- ✓ Quality, safety, traceability, standardization
- ✓ Environmental foot-print and origin are of major importance



WILD-SEAWEED BIOMASS IS NOT ENOUGH TO SUSTAIN
THE INCREASING DEVELOPMENT OF NEW PRODUCTS
=AQUACULTURE=

Production & commercialization of high-quality seaweed and derived products



Sustainable production – IMTA

Customized products

Innovation

Communication

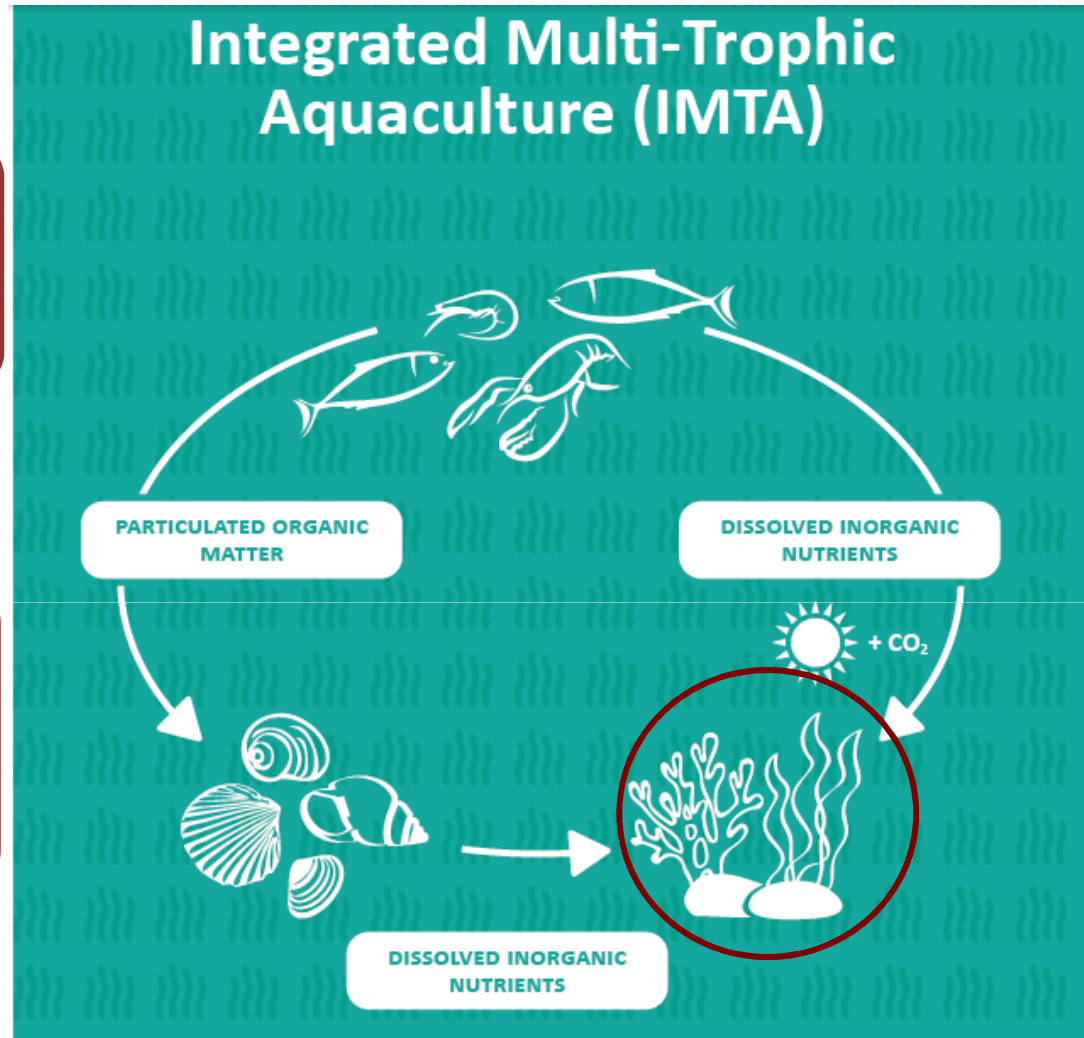
Integrated Multi-Trophic Aquaculture (IMTA)

Product diversification

Environmental awareness

Sustainable technology to increase fish production!
(EC 494/2012)

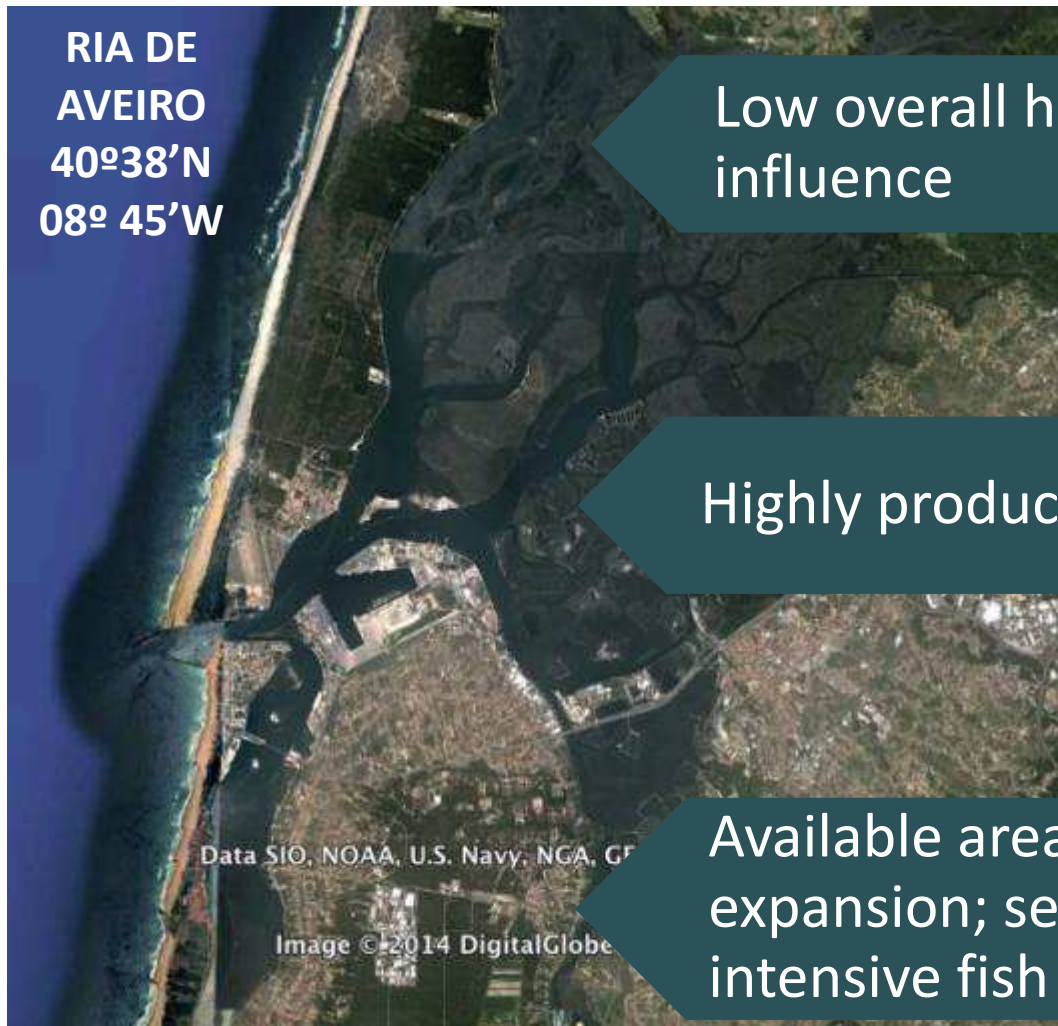
A way to organic certification
(EC 710/2009)



Ecosystem service = Bioremediation

Higher seaweed yields

High quality biomass



Low overall human influence



Highly productive

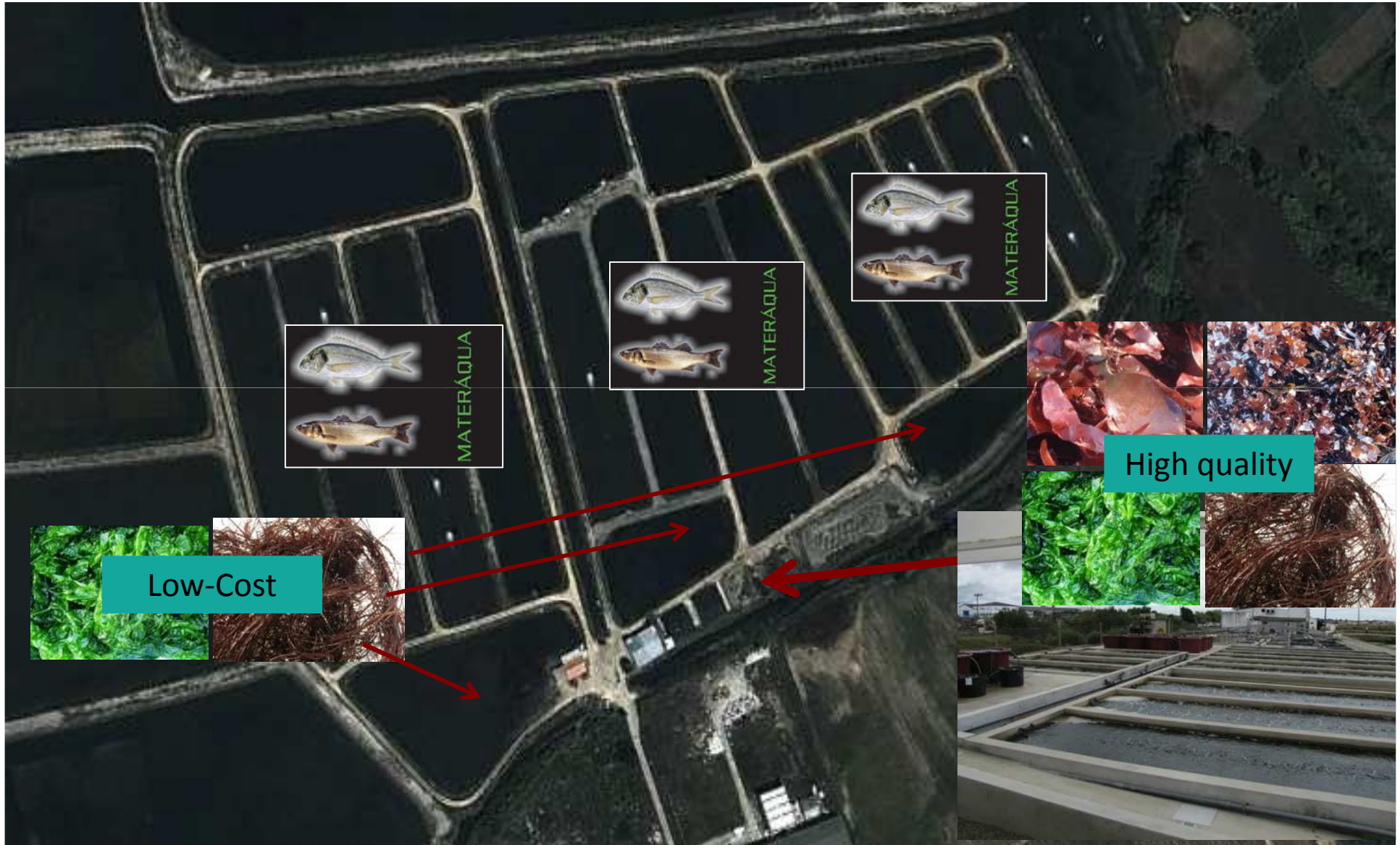


Available area for expansion; semi-intensive fish farms



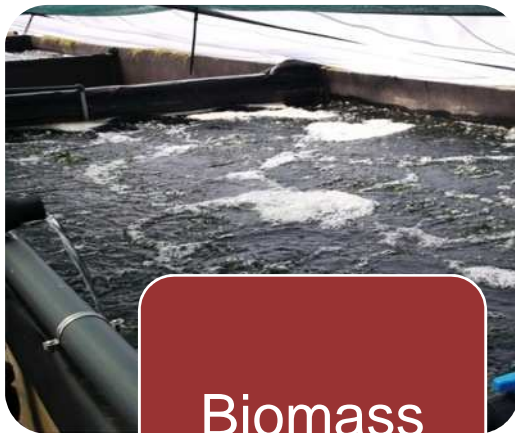
Water surface: 66 km² | Tidal range: 2m |
Average depth: 1m | Salinity: 0 to 36ppm |
Temperature: 10 to 25°C

HOW WE DO IT – IMTA @ ALGApplus



□ Land-based IMTA system

- High yields
- High quality, safe and traceable seaweed biomass
- Tailor made biomass
- Domestication of “new” species



Biomass
production



Processing



Packaging



Biomass production



Vegetative propagation

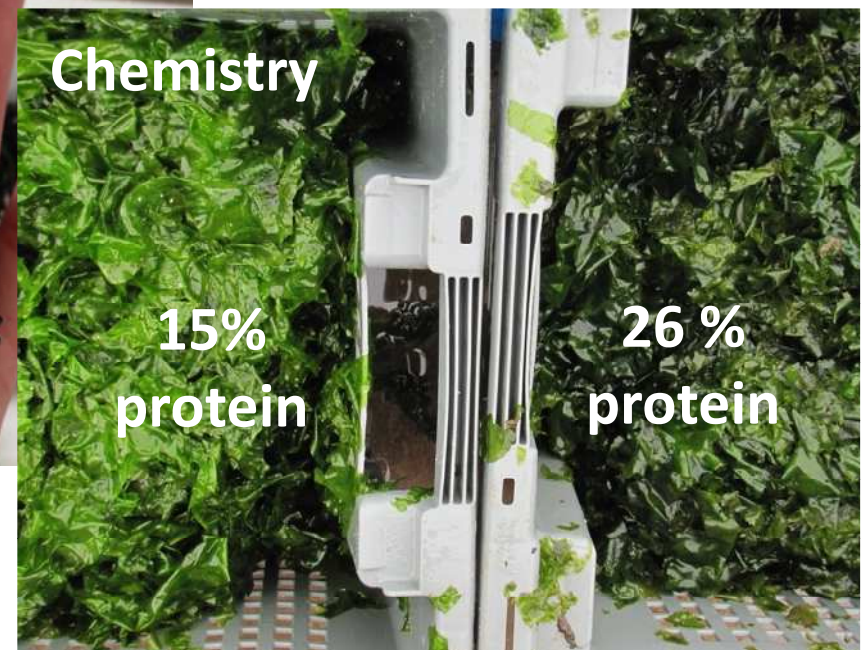
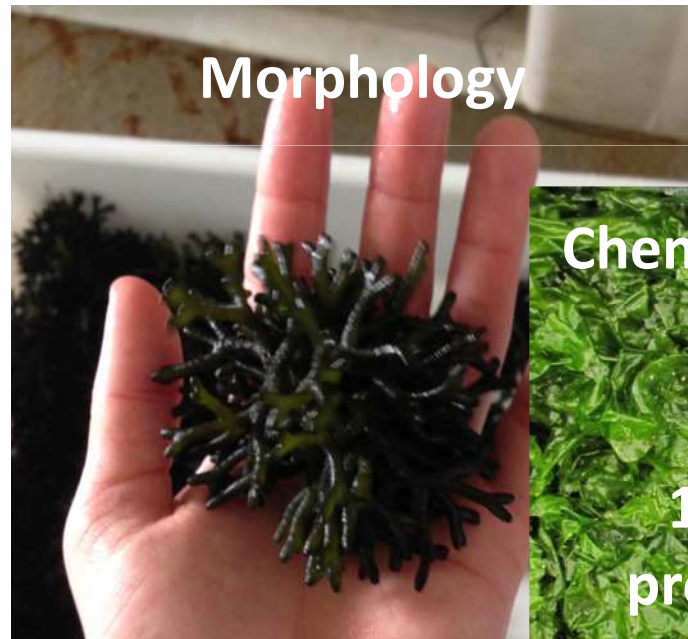
Complete life cycle



Porphyra spp.
(Atlantic nori)

Manipulation of production factors

- Stocking density
- Water renewal
- Harvest time
- Aeration



CONTROLLED PROCESSING

Processing

- Washing
- Drying 25°C
- Milling

Packaging

- Bulk
- End-product



Development of new products and optimization of processes



INNOVATION in FOOD PRODUCTS: partnership with companies

Seaweed can add textures, flavours, nutritional value and functionality to the day-to-day food products



READY-MADE MEALS



GIN | HONEY | CANNED SARDINES



um sabor com tradição...



Private property
Over 20 years in function
Fully-licensed

Shared costs
Optimization of production & processing infra-
structures

Structural and socio-economical heritage

Marketing for high quality and sustainable produced
goods

HOW WE DO IT – IMTA @ ALGAplus

2011 – Research permission to ALGAplus (@Materáqua)



2012 – Materáqua/ALGAplus: 1 year license for novel species (seaweed included in general aquaculture regls.)



2012/2013 – Request for IMTA license – 2 comp the same property = complementarity



2014 - 2028

- Materáqua transfers 1 license to ALGAplus
- Exploitation license in the name of ALGA+ until 2028
- Both companies with licenses for the same species
- Water usage license until 2021



Ireland, Italy, Cyprus, Scotland, Norway, Israel

Updated National Aquaculture Strategic Programs
EU directives

The implications of aquaculture policy and regulation for the development of integrated multi-trophic aquaculture in Europe

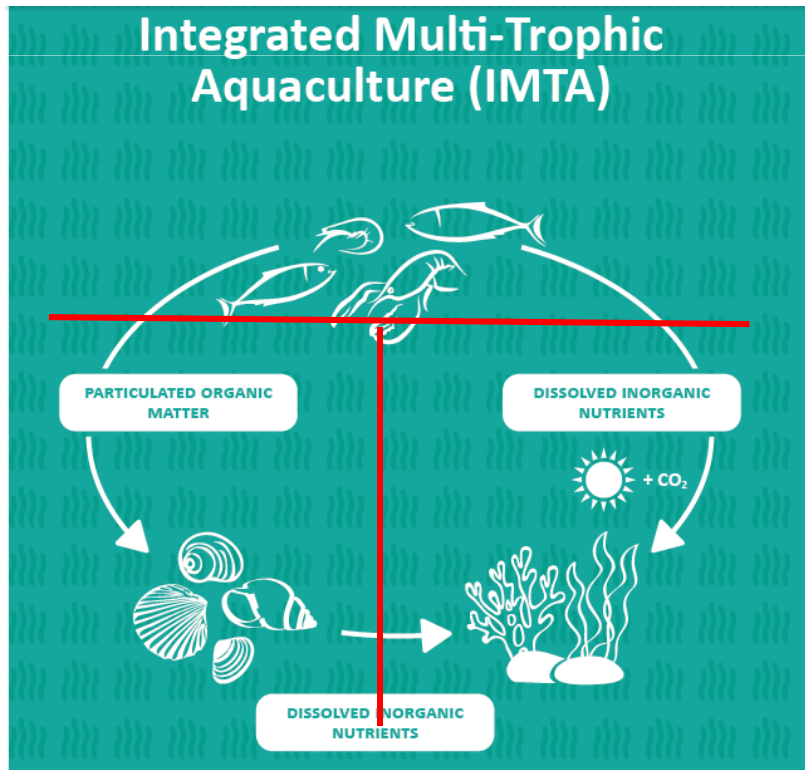


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Increased production

Environmental sustainability

Safety



First IMTA authorization in Norway



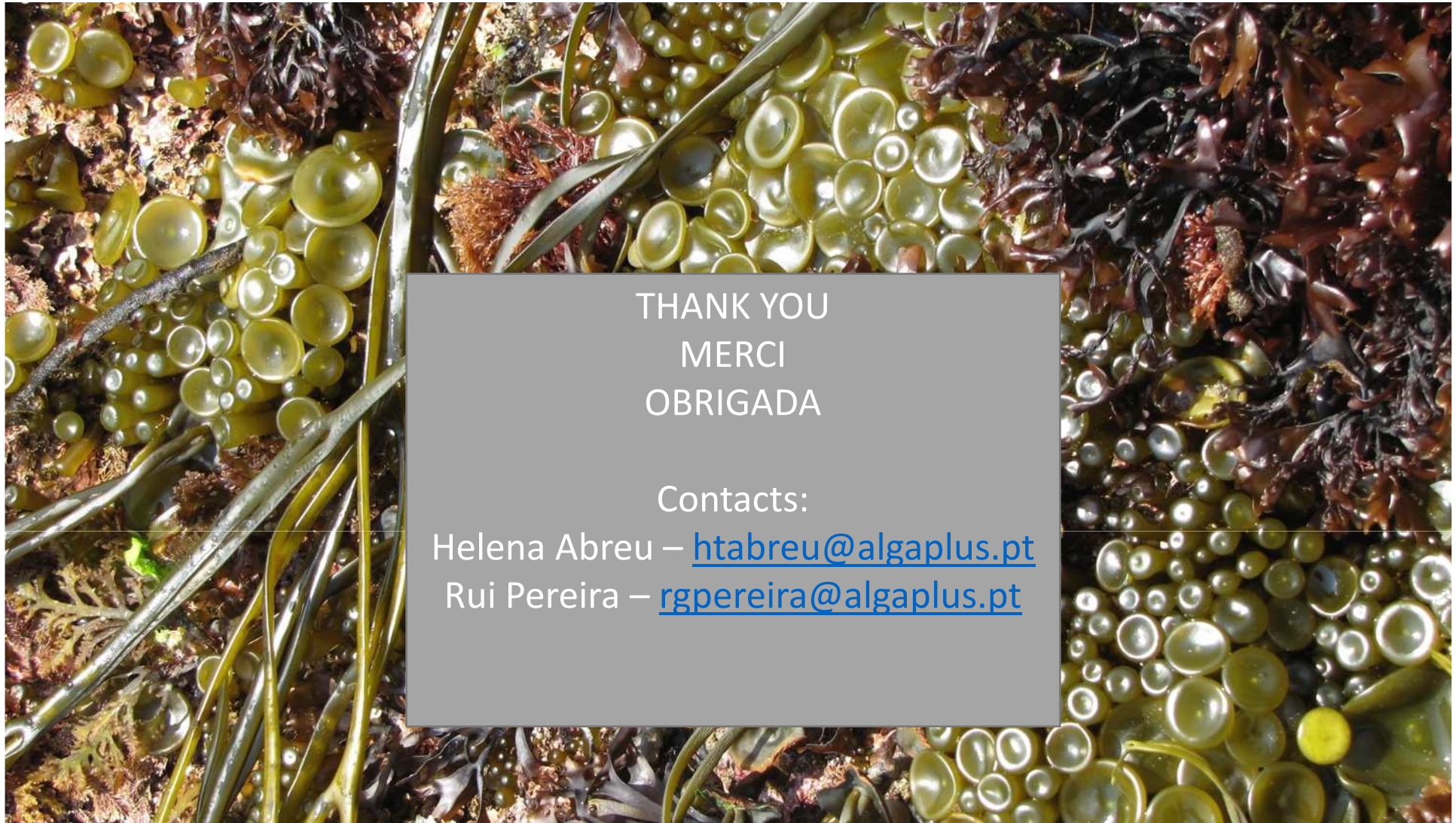
Gildeskål forskningsstasjon AS
Øya
8140 INNDYR

Deres ref

Vår ref
14/4167-32

Dato
23.02.15

Tilsagn om tillatelse til akvakultur av tare på lokaliteten 22995 Oldervika i Gildeskål kommune - Gildeskål Forskningsstasjon AS



THANK YOU
MERCI
OBRIGADA

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