



COOPERATIVA
REGIONAL
DE ECONOMIA
SOLIDÁRIA

Célia Pereira
Funchal, June 2018

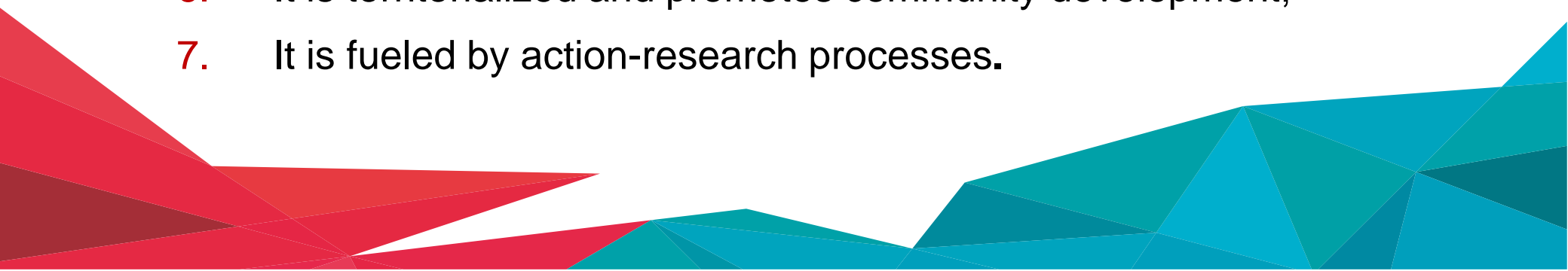
What is a solidarity economy?

Multidimensional, Integrated Economy and Re-encounter with Life in all its aspects:

- It is solidary, not in the narrow social sense, but in the systemic sense, of interdependence and integration with life in all the ways in which it expresses itself, and not only with its human component;
- It goes further than the Social Economy, because it assumes itself as a New Economy of Integrated Life, being based on 7 basic principles.



Principles of Solidarity Economy

1. It is, first of all, an economic activity or a set of economic activities;
 2. It promotes social cohesion;
 3. It is respectful and values the environment, and a dignified reunion with Nature;
 4. It promotes and values cultural diversity;
 5. Seeks more efficient, rigorous and integrated models of management, regulation, certification and governance;
 6. It is territorialized and promotes community development;
 7. It is fueled by action-research processes.
- 

PESSOAS

TRADIÇÃO

LOCAL

MISSION

Promoting the solidarity economy movement in the Azores, combining the dimensions of local and community development, professional, personal and social training and the production and marketing of products and services.

SUSTENTABILIDADE

VISION

- Cooperation – “The union makes the force”
- Democrated social claim
- Networking
- Project Potential and Applications for Investment Support Programs
- Research - Action

IDENTIDADE

**Believing in
Solidarity
Economy since
2000**

CRESAÇOR

Strategic vision

- **A vision based on three main areas: economic democracy, social justice and valuing people;**
- **Diversity of intervention areas;**
- **Increase access to education, training and job incubation;**
- **Support the creation and sustainability of solidarity economy initiatives;**
- **Provide economic-financial consulting services aiming at the sustainability and autonomy of micro-enterprises of social insertion.**





COOPERATIVA
REGIONAL
DE ECONOMIA
SOLIDÁRIA

10 equipas

+ de 50 colaboradores

AZORES FOR ALL
CENTRO DE FORMAÇÃO CO-EX
CORES
CRIAÇÕES PERIFÉRICAS
GABINETE DA QUALIDADE
GABINETE DE ACONSELHAMENTO AO CIDADÃO ENDIVIDADO
GABINETE DE APOIO AO MIGRANTE
GABINETE DE EMPREENDEDORISMO E MICROCRÉDITO BANCÁRIO
MUSEU MÓVEL
QUINTA DO NORTE

**Dozens of
projects
completed**



Apoio: Governo dos Açores

PESSOAS TRADIÇÃO LOCAL

25 cooperadores + de 50 parceiros

Acesa – Associação Centro de Estudos de Economia Solidária do Atlântico

Alternativa – Associação Contra as Dependências

Arrisca – Associação Regional de Reabilitação e Integração Sócio-Cultural dos Açores

Associação de Juventude de Candelária

Associação Part'Ilha

Associação Sol Nascente

Aurora Social – Associação de Promoção de Emprego Apoiado

Cáritas da Ilha Terceira

Casa de Repouso João Inácio de Sousa

Casa de Saúde de São Miguel – Instituto São João de Deus

Casa do Povo da Maia

Centro Social e Cultural da Atalhada

Centro Social e Paroquial de Ribeira Chã

Cooperativa Celeiro da Terra

Cooperativa de Artesanato de Santa Maria

Cooperativa de Artesanato Senhora da Paz

Cooperativa de Economia Solidária Pescadores da Ribeira Quente, CRL

Kairós – Cooperativa de Incubação de Iniciativas de Economia Solidária, CRL

Norte Crescente – Associação de Desenvolvimento Local

Santa Casa da Misericórdia de Angra do Heroísmo

Santa Casa da Misericórdia da Praia da Vitória

Santa Casa da Misericórdia da Ribeira Grande

Santa Casa da Misericórdia do Nordeste

Santa Casa da Misericórdia de Santa Cruz das Flores

Santa Casa do Divino Espírito Santo da Misericórdia da Maia

SUSTENTABILIDADE

COOPERAÇÃO IDENTIDADE

CULTURA

PESSOAS TRADIÇÃO LOCAL

intervenção nas 9 ilhas

AMBIENTE SUSTENTABILIDADE

COOPERAÇÃO IDENTIDADE

açores

cooperadores em 5 ilhas

www.cresacor.pt

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www.azoresforall.com

CRESAÇOR

25 Organizations

Solidarity Economy Network of the Azores

- **Geographic dispersion;**
- **Diversity of intervention areas;**
- **Dependence on public financing and autonomization difficulties;**
- **Difficulties of access to training of relevance, for the introduction of innovation in their products and work methodologies;**
- **Lack of means to continually promote in-work training to its target audience; and**
- **Need to reactivate their function as insertion companies.**





Problem / Needs

The poor visibility of products and services with origin in solidarity economy;

Customize and give credibility to the Seal of Guarantee CORES;

To promote the economic viability and sustainability of the organizations of the Solidarity Economy Network of the Azores.



PAST

Is innovative but ...

It is not known and valued

Is not seen as a guarantee of something relevant



We need to change this situation





CORES

CORES

CORES

Mission

- Support companies that practice the values of Solidarity Economy through the certification of products and services, with the intention to their valuation in the market

Vision

- To be a seal identified by all consumers as being credible, with a guarantee of quality and rigor in its use, and in which companies and consumers feel valued in their dimension of production and consumption.

CORES



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Produtos com valores

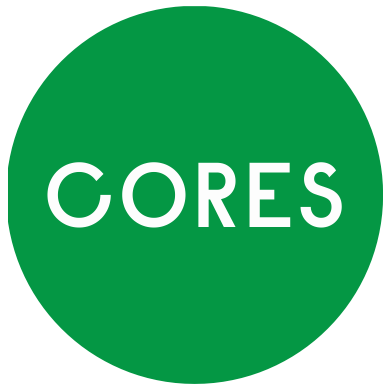
Procure este selo de garantia



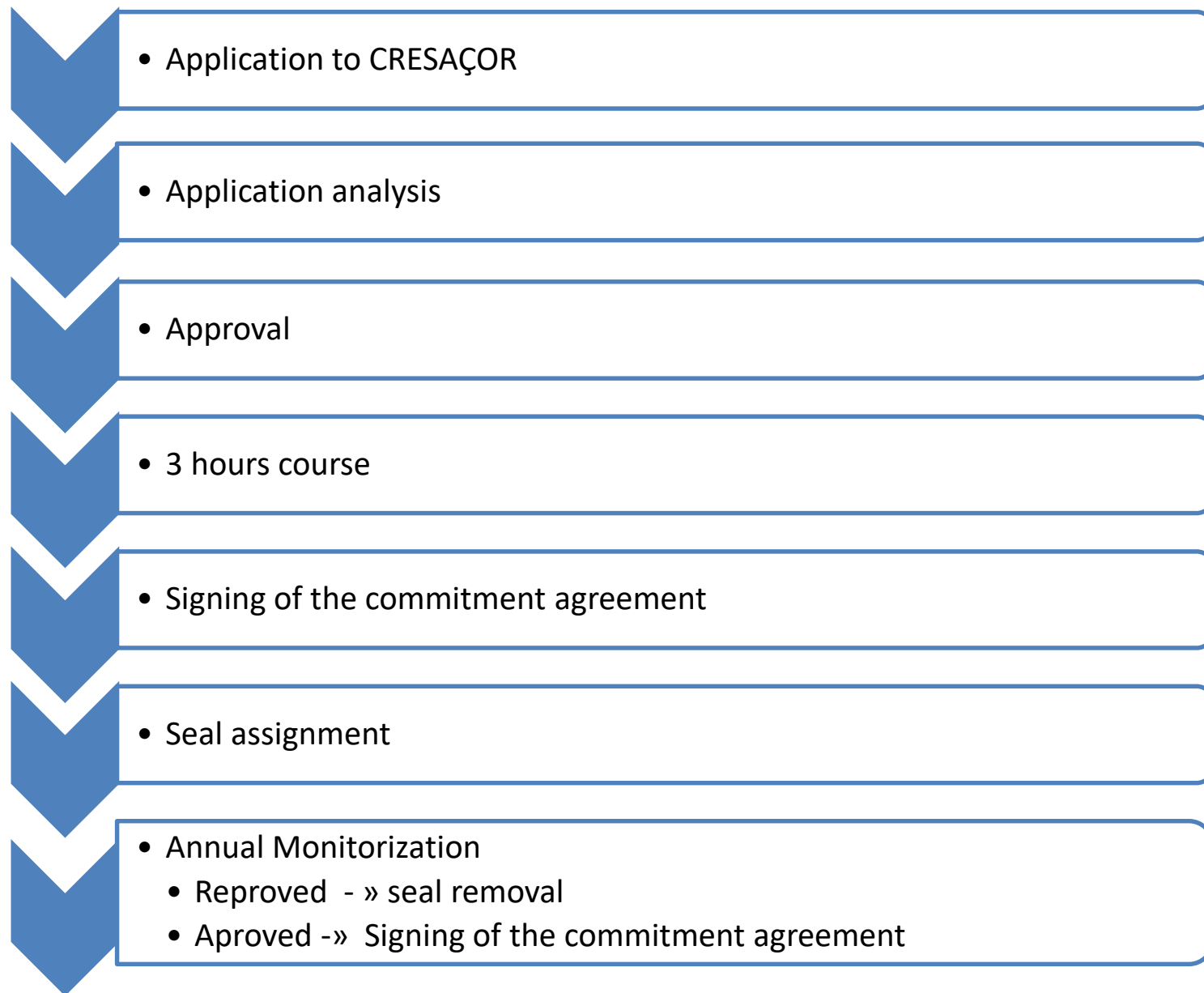
How?

Project Açores+

- Training - management, marketing, sales techniques, customer service, communication, english;
- Consultants - innovation, creativity and sustainability of solidary economy companies;
- Promotion of Cooperativism;
- Promotion and Marketing of products and services with Seal of Guarantee CORES; and
- Public disclosure sessions.



PHASES of the Certification Process



Certification Process

CORES

Selection

1st Organization

2nd
Products/Services



CRITÉRIOS DE AVALIAÇÃO DOS SERVIDORES

		Ativo	Passivo	Formação	Observações
AVALIAÇÃO DO IMPACTO ECONÔMICO					
Estruturação de um projeto e desenvolvimento de objetivos prioritários	Realização de avaliação econômica de oportunidade	1			
	Contribuição na elaboração de EPI sobre o desenvolvimento				
AVALIAÇÃO DO IMPACTO SOCIAL					
Qualidade das Oportunidades	Processos e qualidade de oportunidades e de projetos				
	Ética e Conduta	Atuação ímpeccável em âmbito administrativo			
Avaliação do Capital Humano	Condições Físicas Legais	1			
	Qualificação Profissional e Técnica (ex. formação acadêmica, cursos, formação)				
	De Formação com especialização				
	Condições das parcerias				
Relações Institucionais e Intersetoriais	Parcerias (públicas, locais, internacionais, outras organizações, etc.)				
	Avaliação de riscos das parcerias	1			
	Participação e envolvimento em ações de intercâmbio				
	Outros				
AVALIAÇÃO DO IMPACTO AMBIENTAL					
Tratamento de Resíduos	Separação dos resíduos em local apropriado	1			
	Reciclagem e reaproveitamento de materiais				
	Utilização de material reciclado				
	Identificação de mecanismos de poupança de água				
Avaliação Energética	Utilização de energia não poluente				
	Formação com eficiência energética (desperdício de energia, substituição de lâmpadas comuns, etc.)				
	Identificação de procedimentos de poupança de combustível				
AVALIAÇÃO DO IMPACTO CULTURAL					
Avaliação da Cidadania Cultural	Processos e diversidade cultural				
	Atuar em projetos culturais produzidos em regime de parceria com instituições (museus, escolas, etc.)	1			
		Total			
		Média			

Organization

Selection

1st Organization

2nd Products/ Services

CORES

Products/Services

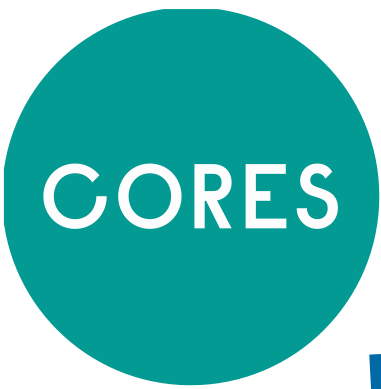
Selection

1st
Organization

2nd
Products/
Services

GRELHA DE AVALIAÇÃO PRODUTO				
	Elimin.	NA	Pontuação 1-5	Observações
IDENTIDADE CULTURAL				
É representativo da história e tradição locais	x			
É genuíno				
PROCESSO PRODUTIVO				
Incorporação de matéria prima Local	x			
Utilização de práticas tradicionais				
Cumprir legislação (HCCP, registo, Hig. Seg. etc.)				
EMBALAGEM				
Material embalagem é poluidor				
Estética				
Identidade com imagem CORES	x			
PONTO DE VENDA				
Elementos identificadores no exterior	x			
Visibilidade dos produtos cores no interior	x			
Organização interna do ponto de venda				
Estética do ponto de venda				
Material publicitário no ponto de venda				
Equipamento dos funcionários				
	Total			
	Média			

CORES



CORES Seal

Values / Impact



- Economic impact
- Social Impact
- Environmental Impact
- Cultural coherence
- Cultural Identity
- Productive process
- Packing
- Selling point

CORES



The estimated SROI ratio for the Seal of Guarantee CORES is 1:3, which means that for every **€1.00** invested there is a social return of **€ 3.00** in 2017 and 2018



CORES

Newsletter

Gores

O Selo CORES é uma garantia, para os consumidores, que os princípios da Economia Solidária estiveram na base da criação dos produtos/serviços que detêm esta marca.

Defer este Selo significa que na base do produto ou serviço o valor da produção tem como fim o interesse comum e não o lucro e que a intervenção social é realizada de maneira

diferente, apostando na capacitação e desenvolvimento pessoal e sócio-profissional das pessoas. Para mais informações, consulte as [Perguntas Frequentes](#).

Selo

Para criar uma Identidade Visual coerente com os valores que a sustentam, o processo do projecto de design é fundamental, no seu desenvolvimento devemos assumir responsabilidades sociais, éticas, ecológicas e económicas.

As escolhas que se fazem no projecto de design são importantes: desde os materiais,

aos fornecedores, aos impressores, bem como a valorização de métodos e tecnologias que se encontrem, de algum modo, desfavorecidos. Todos estes aspectos desempenham um papel muito importante na imagem final do produto, como também, no desenvolvimento económico de uma determinada comunidade.

Assim, fomos ao encontro de uma oficina tipográfica que trabalhasse com técnicas antigas de impressão. Foi na Tipografia Micaelense, fundada em 1947, situada no centro de Ponta Delgada que imprimimos o selo CORES. O selo foi impresso através de uma gravura original, numa máquina tipográfica Heidelberg antiga.

www.cores.pt

- ❑ Promoting economic viability and sustainability of the organizations of the Solidarity Economy Network of the Azores.



"I know my job is a drop in the ocean, but without it the ocean would be smaller"

"Eu sei que o meu trabalho é uma gota no oceano, mas sem ele o oceano seria menor"



COOPERATIVA
REGIONAL
DE ECONOMIA
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PODER
DA NATUREZA
The Power of Nature

UBQ II - Unidade Bioquímica Madeira

UBQ is a regional microenterprise based on technology that focuses on the production of macroalgae and the development of new applications of these or their biofunctional compounds in food and in the agrifood sector.

In order to reach its objectives the UBQ has as partners



The company in this phase of implementation and development the company has been supported by the funding programs:

- +Conhecimento
- PROCIÊNCIA
- Horizon 2020 SME funding program

Projecto apoiado pelo programa + Conhecimento II

INTERVIR+ para uma Região cada vez mais europeia



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AUTÓNOMA
DA MADEIRA**



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**UNIÃO EUROPEIA
Fundo Social Europeu**



H2020 SME Funding Instruments

Funded by the Horizon 2020
Framework Programme of the
European Union

Iniciativa empresarial da UBQ na utilização de macroalgas marinhas para extração e purificação de componentes bio funcionais

➤ Produção industrial de macroalgas marinhas



Figura 2 - Diagrama de um sistema de produção de macroalgas marinhas.



Figura 3 - Cultivo de algas marinhas em tanques de cultivo.

➤ Macroalgas marinhas



Figura 4 - Alga vermelha (Gracilaria sp.), espécie de alta valor nutricional.



Figura 5 - Alga verde (Ulva sp.), espécie de alta valor nutricional.



Figura 6 - Alga castanha (Enteromorpha sp.), espécie de alta valor nutricional.

➤ Extração e Purificação de componentes bio funcionais



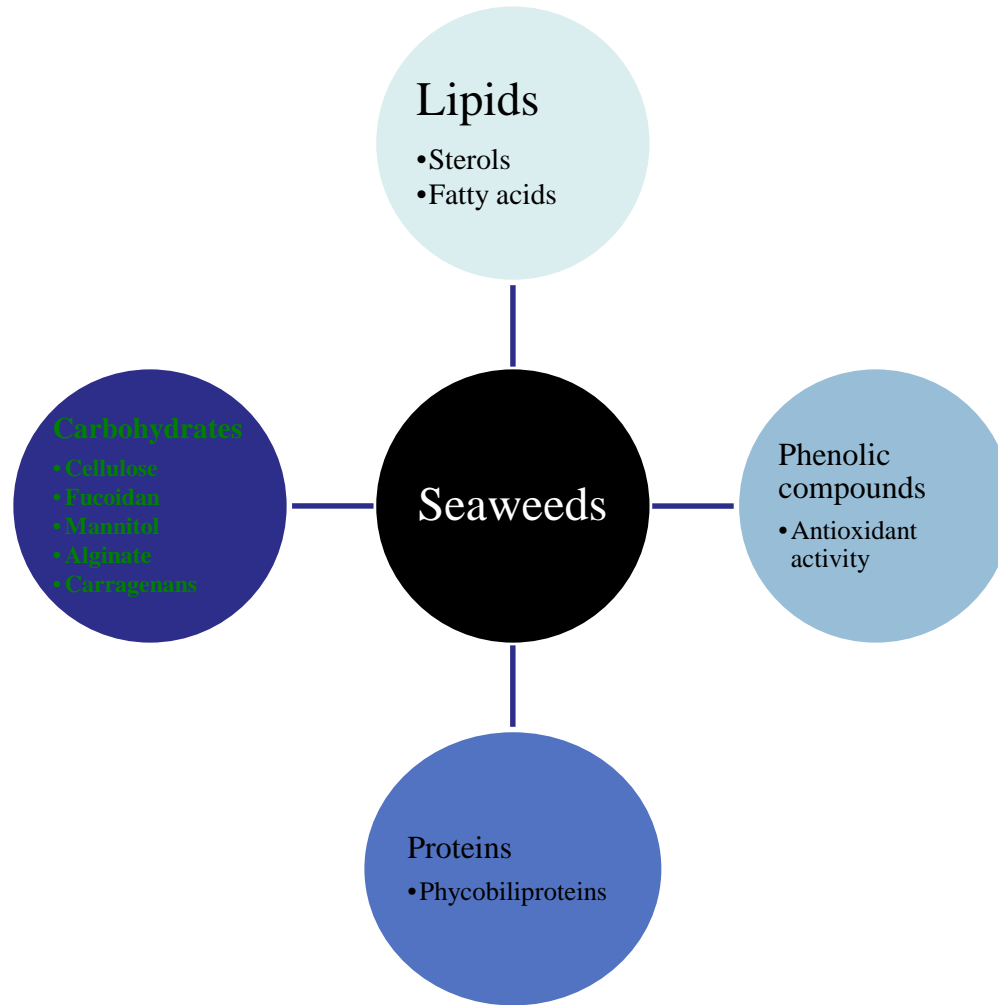
Figura 7 - Cápsulas de algas marinhas.



Figura 8 - Pó de algas marinhas.



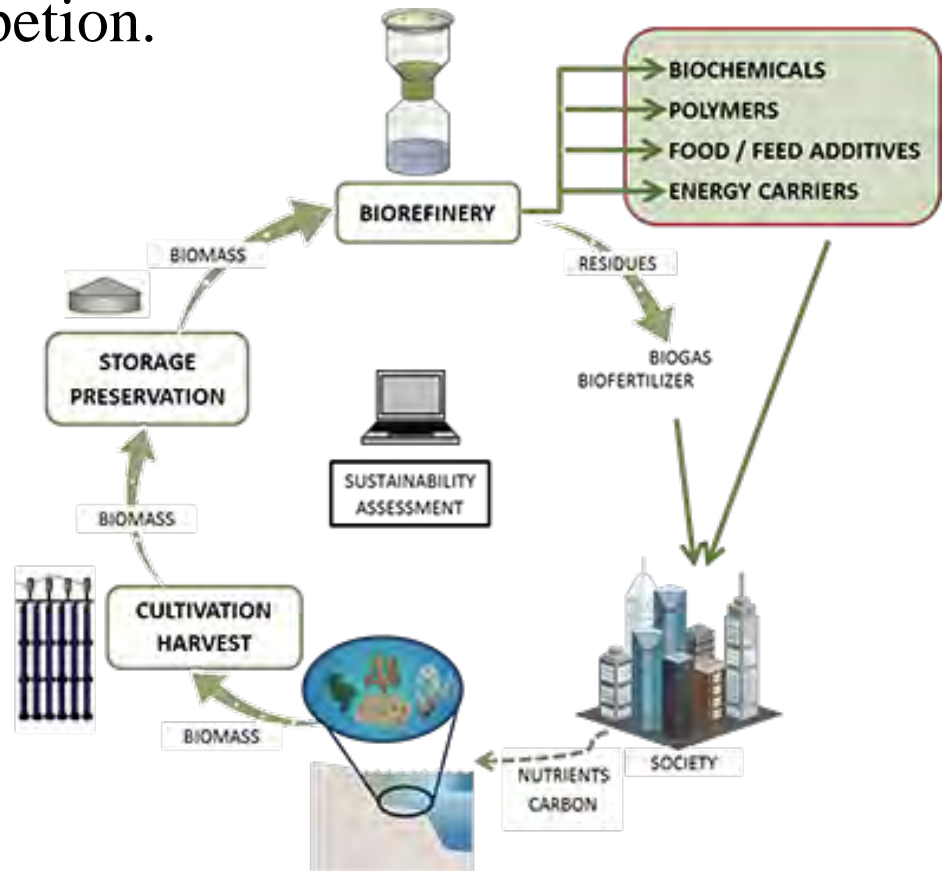
Figura 9 - Óleo de algas marinhas.

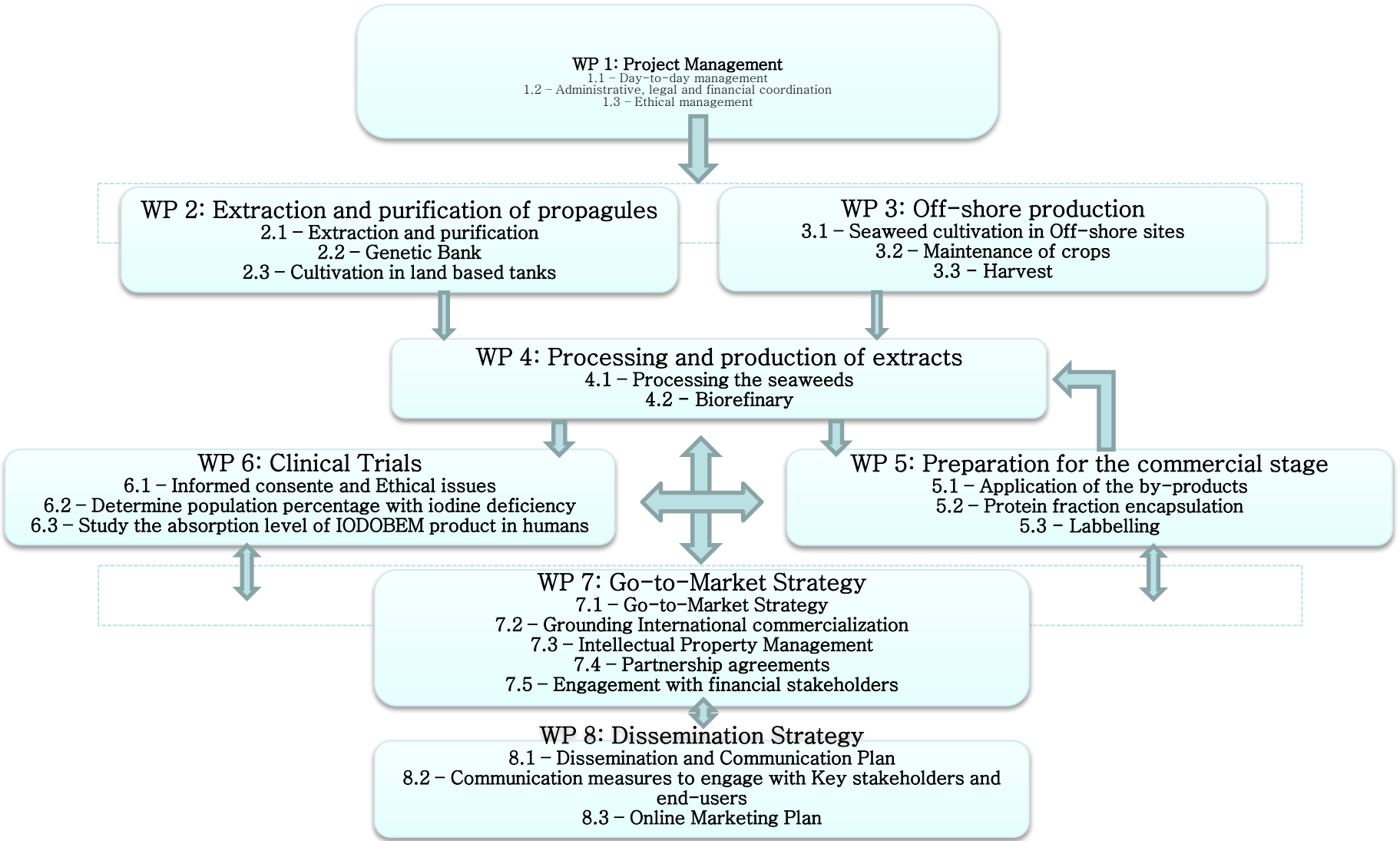


Biorefinery

Biorefinery is a “new” production strategy sustained:

- Due to the increased awareness in industry of the need to use biomass resources in a more rationale way both economically and environmentally;
- Need to develop more high-value products and diversify the products to meet global competition.





Assessment of total iodine in seven seaweed species from Madeira Archipelago and development of a biorefinery strategy using red seaweed *Asparagopsis taxiformis* D.



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Abstract

Iodine content of seven seaweed species from Madeira Archipelago were evaluated, using methodology initially described by Sandell and Kolthoff (1937). *Asparagopsis taxiformis* D., presented the highest concentration (1203.34 mg.100g⁻¹ dw), followed by *Galaxaura rugosa* J.V.L. (41.76 mg.100g⁻¹ dw), *Chondrus crispus* S. (22.12 mg.100g⁻¹ dw), *Zonaria tournefortii* L. (16.88 mg.100g⁻¹ dw), *Nemalion elminoides* V. (13.85 mg.100g⁻¹ dw), *Grateloupia lanceola* J. A. (13.63 mg.100g⁻¹ dw) and *Ulva lactuca* L. (12.91 mg.100g⁻¹ dw). Due to *A. taxiformis* higher quantity of iodine, this red seaweed was assessed in its potential to be used as starting material to produce an iodine rich bioactive extract. Two methodologies were applied, stirring for 72 hours at room temperature (M1) and Soxhlet extraction for 6 cycles (M2), both with re-extraction. Also, four different solvents were used, distilled water, ethanol, methanol, and ethyl acetate. Several parameters were considered, particularly extraction yield, iodine, total phenolic (TPC), chlorophyll a and total carotenoids content (TCC). Antioxidant activity, determined by reduction activity, free radical scavenging assay (DPPH) and ferrous ion chelating (FIC), M1 developed the highest extraction yield and water was the most efficient (28.83 g.100g⁻¹ dw). Iodine content was also greater in M1, except when using water, achieving a maximum concentration with ethanol (3372 mg.100g⁻¹ dw). TPC achieved maximum concentration in M1 and ethanol was the most efficient (1908 mg GAE.100g⁻¹ dw). Water did not extract any detectable amount of chlorophyll a and ethanol obtained the highest concentration in M1 (45.96 mg.100g⁻¹ dw). In TCC, ethyl acetate developed the highest concentration (58.21 mg.100g⁻¹ dw) using M1. For antioxidant potential, ethanol demonstrated higher reduction activity result for M1 (1908 mg AAE.100g⁻¹ dw) and M2 (1156 mg AAE.100g⁻¹ dw). Water and ethanol were the best solvents for free radical scavenging assay (DPPH) in M2, both with same result (IC50 1.37 mg.mL⁻¹). For FIC, highest chelating activity was determined in M1, with ethanol (86.47%). After solvent extraction, the remaining residue was used to extract three more valuable products, implementing a biorefinery strategy, starting with lipids extraction followed by carragenans and finally with cellulose extraction. Residue quantity was higher after each extraction.



Introduction

In many areas of the world, the soil surface is progressively poorer in iodine content due to leaching processes [1]. The majority of the bioavailable iodine is supported by marine systems and marine organisms as seaweeds can accumulate substantial quantities of iodine [2]. This important mineral is essential for human physiology due to its incorporation in thyroid hormones T3 (3,5,3'-triiodo-L-thyronine) and T4 (thyroxine or 3,5,3,5'-tetraiodo-L-thyronine) responsible for the regulation of mitochondrial energy metabolism as well as the cellular oxidation, thermoregulation, intermediary metabolism, the metabolism of carbohydrates, lipids, protein and nitrogen retention. Iodine plays an important role in human metabolism and its intake deficiency is particularly harmful in pregnancy and childhood, remaining a major public health concern in many countries [3]. Portugal and islands are no exception and proximity to the sea does not prevent iodine deficiency. A study involving 3631 pregnant women, 83.2% in the mainland and 94.6% in Madeira and Azores Archipelagos have a urinary iodine concentration below 150 µg.L⁻¹ [4], considered by the OMS to be the optimal excretion value for humans. This gives seaweeds great potential as a supplement in the functional food industry which can

Materials and methods

The seaweed used for this study were collected in Madeiran south coastline from intertidal zone to a maximum of a 10 meters depth dive. All samples were lyophilized, milled and vacuum packed in polypropylene bags. The biochemical, antioxidant and extraction of valuable compounds assays were performed according to the methods described in table 1.

Assay	Procedure
Iodine	Mahesh et al. (1992) and Pina et al. (1996)
Total Phenolic Content (TPC)	Cheo et al. (2008)
Chlorophyll a and total carotenoids	Weilham (1994) and Kumar et al. (2009).
Reducing Activity	Yuan et al. (2005)
Free Radical Scavenging Assay (DPPH)	Yen & Chen (1995) and Duan et al. (2000)
Ferrous Ion Chelating (FIC)	Decker & Welch, (1996) and Chevo et al. (2008)
Lipids	Folch et al. (1956)
Carragenans	Tavande et al. (2012)
Cellulose	Bugel et al. (2015)

Results

Seven seaweed species from Madeira archipelago were assessed in their iodine content, to determine the potential of locally produced seaweeds as a raw material to develop an iodine rich bioactive extract. *Asparagopsis taxiformis* showed the highest iodine content and was selected as a starting material to develop a seaweed extract. In order to monetize, a biorefinery strategy was implemented to the residue, extracting lipids, carragenans and cellulose, producing other valuable products. Extract yield was low when using ethanol (99.5%) as a primary solvent, but it developed the highest content of iodine in the bioactive extract, also the highest content of TPC and reducing activity using either of the two different extraction methodologies (M1 - stirring for 72 hours, M2 - Soxhlet extraction for 6 cycles) and the highest content for chlorophyll and FIC for M1. When extracting valuable products from the remaining residue, ethyl acetate developed the highest content of lipids, carragenans and cellulose, probably due to its lowest yield in the **Bibliography**

- [1] EFSA (2006) Opinion of the Scientific Committee on Food on the tolerable upper intake level of iodate (expressed as I) (October 2006). Tolerable Uj intake levels Vitamin Miner 51 - 58.
- [2] Saenko GN, Kravtsova YY, Ivanenko V V, Sheludko SI (1978) MARINE BIOLOGY Concentration of Iodine and Bromine by Plants in the Seas of Japan and Okhotsk. Mar Biol 47:243-250.
- [3] Andersson M, Karvambanathan V, Zimmermann MB (2012) Global iodine status in 2011 and trends over the past decade. J Nutr 142:744-750.
- [4] Limbert E, Prazeres S, Siao Pedro M, Madureira D, Miranda A, Ribeiro M, Jacome de Castro J, Carrilho F, Oliveira MJ, Reguengo H, Borges F; thyroid study group of the portuguese endocrine society. (2010) Iodine intake in Portuguese pregnant women: Results of a countryside study. Eur J Endocrinol 163:631-635.
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Total lipids and fatty acids composition of macroalgae *Asparagopsis taxiformis* D., *Ulva lactuca* L. and *Zonaria tournefortii* L. of Madeira Archipelago



Nunes, N.^{1,2}, Ferraz, S.¹, Valente, S.², Maria Carmo Barreto ³, Pinheiro de Carvalho, M.A.A.^{1,4}

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Abstract

Total lipids (TLs) and fatty acids (FAs) composition of 3 macroalgae, Rhodophyta (*Asparagopsis taxiformis* (Dellie) Trevisan de Saint-Léon 1845), Chlorophyta (*Ulva lactuca* Linnaeus 1753) and Phaeophyta (*Zonaria tournefortii* (J.V.Lamouroux) Montagne 1846) were assessed. TLs were determined using Bligh and Dyer (1959) method of which *Z. tournefortii* (12.04%) had the highest yield, followed by *A. taxiformis* (6.62%) and *U. lactuca* (2.36%). For *A. taxiformis*, 94% of FAs composition are saturated fatty acids (SFA) of which 14:0 (18.92%) and 16:0 (71.86%) comprise the majority. For *Z. tournefortii*, 43.24% of FAs is monounsaturated fatty acids (MUFAs) being mostly 16:1 (26.77%) and 18:1 (16.47%). *U. lactuca* major FAs are MUFAs, reaching 30.05% and major constituents are 16:1 (15.40%) and 18:1 (24.65%). Polyunsaturated fatty acids (PUFAs) were present in higher quantity in *Z. tournefortii*, 16.63%, having an eicosapentaenoic acid, (EPA, C20:5 ω 3) and arachidonic acid (AA, 20:4 ω 6) concentration of 2.59% and 1.17%, respectively. It was determined in *U. lactuca* a concentration of 15.67% of PUFAs, but did not have any EPA or AA. The sum of ω 3 FAs ($\Sigma\omega$ 3) ranged from 9.05% in *Z. tournefortii* and 11.44% in *U. lactuca*. Likewise, the sum of ω 6 FAs ($\Sigma\omega$ 6) ranged from 1.17% in *Z. tournefortii* and 4.23% in *U. lactuca*. The $\Sigma\omega$ 6/ $\Sigma\omega$ 3 ratio demonstrated a higher value in *U. lactuca* (0.37) than *Z. tournefortii* (0.13), being the value 1 considered to be ideal. $\Sigma\omega$ 3 of highly unsaturated fatty acids (HUFA), that comprise the sum of 20:5 ω 3 and 22:5 ω 3, *Z. tournefortii* demonstrated higher content (3.81%) than *U. lactuca* (1.11%).

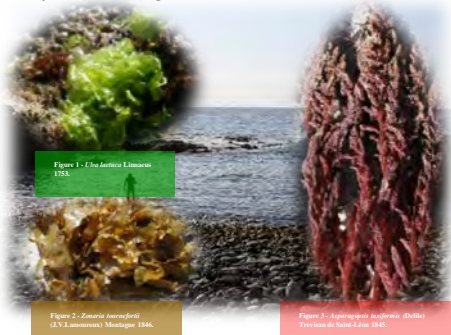


Figure 1 - *Ulva lactuca* Linnaeus 1753.

Figure 2 - *Zonaria tournefortii* (J.V.Lamouroux) Montagne 1846.

Figure 3 - *Asparagopsis taxiformis* (Dellie) Trevisan de Saint-Léon 1845.

Introduction

Seaweeds are a potential source of bioactive compounds with increasingly applications in pharmaceutical, biomedical and nutraceutical industry [1]. An attractive resource that provides beneficial lipids to introduce in functional food or health supplements [2]. Regarding human nutrition, these FAs are of extreme importance for normal growth and development, due to our inability of human metabolic synthesis. PUFAs have nutritional implications and studied extensively for biotechnological, food, feed, cosmetic and pharmaceutical applications [3].

Materials and methods

The seaweed used for this study were collected in Madeiran south coastline from intertidal zone to a maximum of a 10 meters depth dive. All samples were lyophilized, milled and vacuum packed in polypropylene bags. TLs were determined using Bligh and Dyer (1959) method and FAs composition was determined using a prior conversion to FAMES (fatty acid methyl ester) and analysed by GC-MS. Helium was used as the carrier gas, with a flow rate of 2.6 mL.min⁻¹, using internal standard the heneicosanoic acid (C21:0).

Results

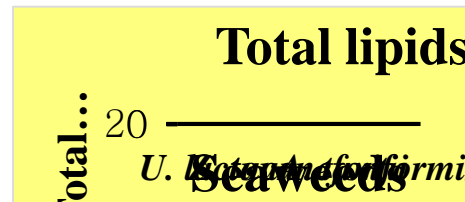


Figure 4 - Total lipid content in 3 different seaweeds.



Figure 5 - Fatty acid content, which saturated fatty acid (SFA), mono-unsaturated fatty acid (MUFA) and poly-unsaturated fatty acid (PUFA) in 3 different seaweed.

Conclusion

Overall, *A. taxiformis* FAs are essentially SFAs, *Z. tournefortii* has the highest content of TLs and its FAs have higher concentration of MUFAs and PUFAs. *U. lactuca* has high content of MUFAs and PUFAs and the highest $\Sigma\omega$ 6/ $\Sigma\omega$ 3 ratio.

Bibliography

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- [2] Boulom S, Robertson J, Hamid N, et al (2014) Seasonal changes in lipid, fatty acid, α -tocopherol and phytosterol contents of seaweed, *Undaria pinnatifida*, in the Marlborough Sounds, New Zealand. *Food Chem* 161:261–269.
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Sponsors





Abstract n.º:
PO-02-12

Analysis of the biochemical composition and antioxidant properties of 7 seaweeds from Madeira Archipelago



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Abstract

The biochemical composition and antioxidant activity were determined in 7 selected seaweeds from Madeira Archipelago, Portugal. *Asparagopsis taxiformis* D. (figure 1) was found to have substantial quantities of protein, fat, fiber and starch, compared to the other seaweeds analysed. *Zonaria tournefortii* L. (figure 3), an unexplored seaweed, was found to possess the highest values of chlorophyll a, total carotenoids and antioxidant activity, determined through Total Phenolic Content (TPC), Ferric Reduction Antioxidant Potential (FRAP), Ferrous Ion Chelating (FIC), Free Radical Scavenging Assay (FRSA) and β -Carotene Bleaching (β -CB). Several statistical analysis

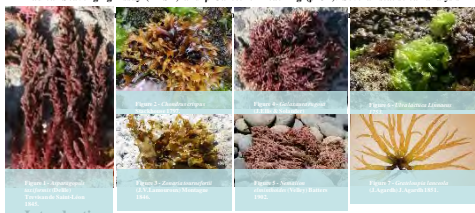


Figure 1 - Images of the seven seaweeds analysed.

INTRODUCTION

Portugal has an exclusive economic zone of 1.720.560 Km² of sea and only 91.763 Km² of land area, creating an enormous potential to establish a sea related economy. A Portuguese territory, the Autonomous Region of Madeira (figure 8), where this study was carried out, has 10.823 Km² of sea and only 810 Km² of land (Portuguese Navy, 2015), with the same potential concerning sea related industries. Seaweeds are an excellent source of bioactive compounds such as carotenoids, dietary fiber, protein, essential fatty acids, vitamins and minerals (Fleurence, J., 1999). This is the first study carried out in Madeira to assess the biochemical and antioxidant potential of different seaweeds, in order to evaluate their potential as raw material for the food and beverage industry.

Materials and methods

The seaweed used for this study were collected in Madeiran south coastline from intertidal zone to a maximum of a 10 meters depth dive. All samples were lyophilized, milled and vacuum packed in polypropylene bags. To implement the anti-oxidant analysis a 50% methanol extract was obtained. The biochemical and antioxidant assays were performed according to the methods described in table 1.

Table 1 - Description of the assays that were used in this research and the

Assay	Procedure
Moisture	AOAC 925.10.2000
Ashes	AOAC 930.22.2005
Fiber	Chemical method
Lipids	Folch et al. (1956) and Bligh and Dyer (1959)
Protein	AOAC 979.04.2005
Soluble sugars	Dalry (1958)
Starch	Hodge and Heister (1962)
Total Phenolic Content (TPC)	Cheung et al. (2008)
Chlorophyll a and total carotenoids	Wellburn (1994) and Kumar et al. (2009)
Ferric Reducing Antioxidant Power (FRAP)	Oyano (1986) and Yuan et al. (2005)
Ferrous Ion Chelating (FIC)	Dicker & Welch, (1990) and Cheung et al. (2008)
Free Radical Scavenging Assay (FRSA)	Yin & Chen (1995) and Chatur et al. (2008)
β -Carotene Bleaching (β -CB)	



Figure 8 - The image on the right represents the Madeira Archipelago and the coast of Africa. The title and in the Atlantic Ocean highlights the location of the Madeira Archipelago, a group of Portuguese islands. In the left side it is represented a map of the island of Madeira and the research perspective area are indicated with red dots.

Results

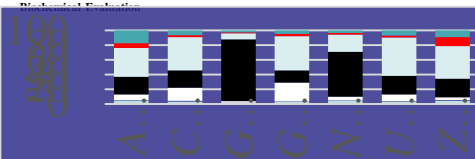


Figure 9 - Mean values for the biochemical parameters for each seaweed. The values are presented in % of dry weight.

Antioxidant quantification



Figure 10 - Mean values for the antioxidant quantification parameters for each seaweed from Madeira. The values are presented in milligrams of component or equivalent per 100 grams in a dry weight or in percentage. A close-up of seaweeds with smaller quantities is presented at the right superior corner.

Antioxidant activity



Figure 11 and 12 - Mean values for the antioxidant activity parameters for each seaweed from Madeira. The values are presented either in milligrams of component or equivalent per 100 grams in a dry weight or in percentage. A close-up of seaweeds with smaller quantities is presented at the right superior corner of each graphic.

Statistical analysis

Active	-b	-c	-d	-e	-f	-g
Fiber						
Fat						
Chlorophyll a						
Carotenoids						
TPC						
FRSA						
FRAP						
FIC						
β -CB						

Table 2 - Statistical significance at 0.01 level

Signalling: + or - reveal the type of relation between parameters in their positive or negative correlation, respectively.

Letters indicate the interval of the linearly correlation (0.7 > 0.1000 < 0.999; 0.5-0.999 < 0.9999 < 0.9999).

Discussion

The results of the biochemical, antioxidants quantification and activity are summarized in the figures 9 to 12. These results were statistically analyzed using SPSS 23 software. The output of the Pearson test are presented in table 2 and important correlations were determined, showing the degree of positive or negative influence between them. *Asparagopsis taxiformis* can be highlighted by its high protein content and *Grateloupia leucocla* by its starch content. *Zonaria tournefortii*, an unexplored seaweed, with so little information available, was highlighted by higher content of fat and antioxidant activity due to its high contents of carotenoids and phenolic compounds. The parameters described to each seaweed above were found to be statistically different from the other seaweeds used in this work.

Conclusion

We successfully prospected several seaweeds in Madeira Archipelago and determined important parameters, increasing our knowledge and understanding about the value of some seaweeds in their antioxidant capacity and biochemical composition. Our findings strongly suggest a pursue to evaluate the implementation of these seaweeds as a whole or its extracts in the food industry or produce food supplements to act as nutraceuticals. Also additional work should be done to determine the protein quality in *Asparagopsis taxiformis* and determine the individual compounds that are responsible for this antioxidant activity in *Zonaria tournefortii*.

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Sponsors



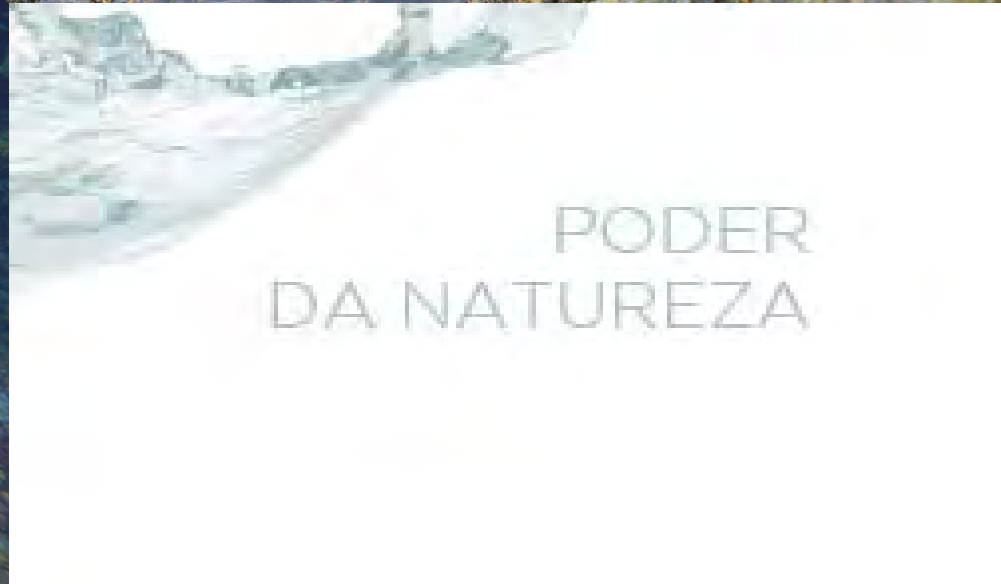
BPMA. Objectivos específicos

O projeto tem como objectivos específicos:

- Realizar a prospecção de macroalgas marinhas e avaliar o seu potencial.
- Proceder à bioprospecção das algas, com maior potencial, e avaliar as perspectivas da sua na obtenção de extractos e na optimização das fórmulas galénicas da UBQ.
- Estudar o ciclo vegetativo e produtivo das macroalgas em condições de cativeiro e semicativeiro.
- Desenvolver técnicas de cultivo e micropropagação de algas, a fim de implementar uma produção aquícola de macroalgas.
- Desenvolver e optimizar o processo de industrial de produção das fórmulas galénicas da UBQ.

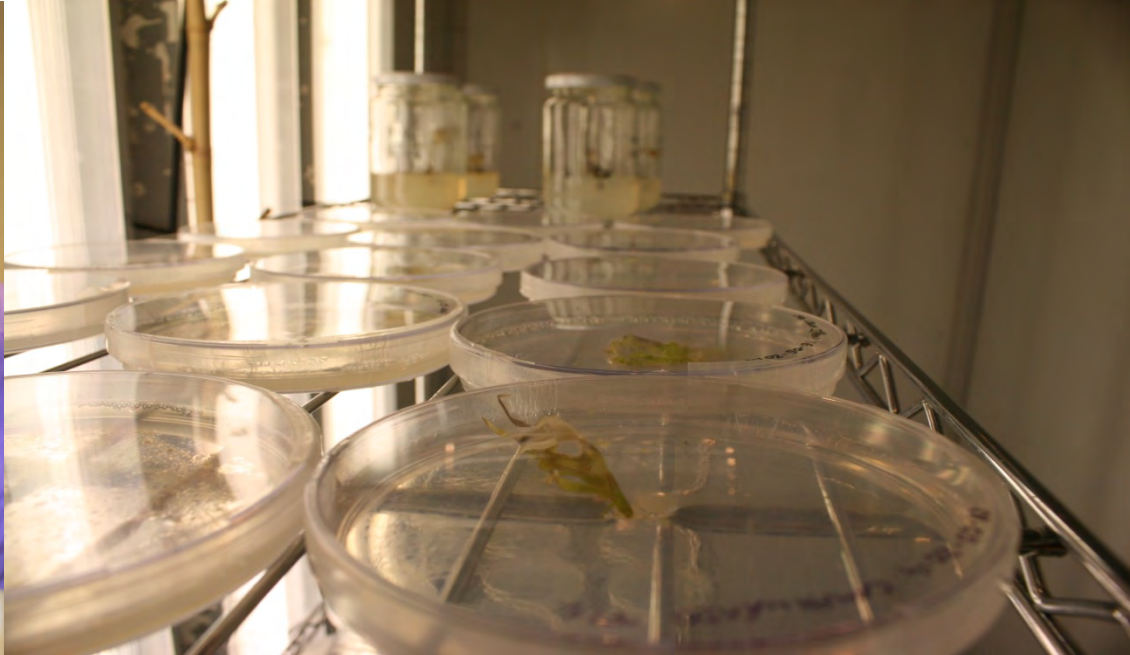
Projecto BPMA. Actividades

Prospecção de macroalgas marinhas e avaliação do seu potencial.



Projecto BPMA. Actividades

Desenvolvimento de técnicas de cultivo e micropropagação de macroalgas.



Projecto BPMA. Actividades

Optimização das fórmulas galénicas da UBQ.



Projecto BPMA. Actividades

Estudo do ciclo vegetativo e produtivo das macroalgas em condições de cativeiro e semicativeiro.

Projecto BPMA.

Perspectivas

Implementação da produção aquícola de algas.

Início da produção das formulas galénicas da UBQ.

Estudo de uma parceria entre a UBQ, a Aquilha e a Universidade para desenvolvimento de projectos na área avaliação e valorização dos recursos marinhos.



GROW RUP
Interreg Europe



European Union
European Regional
Development Fund

OCEAN METISS

Contribution to Maritime Spatial planning in the Western Indian Ocean



Co-financé par le Fonds européen
pour les affaires maritimes et la
pêche de l'Union européenne

UR
UNIVERSITÉ
DE LA RÉUNION

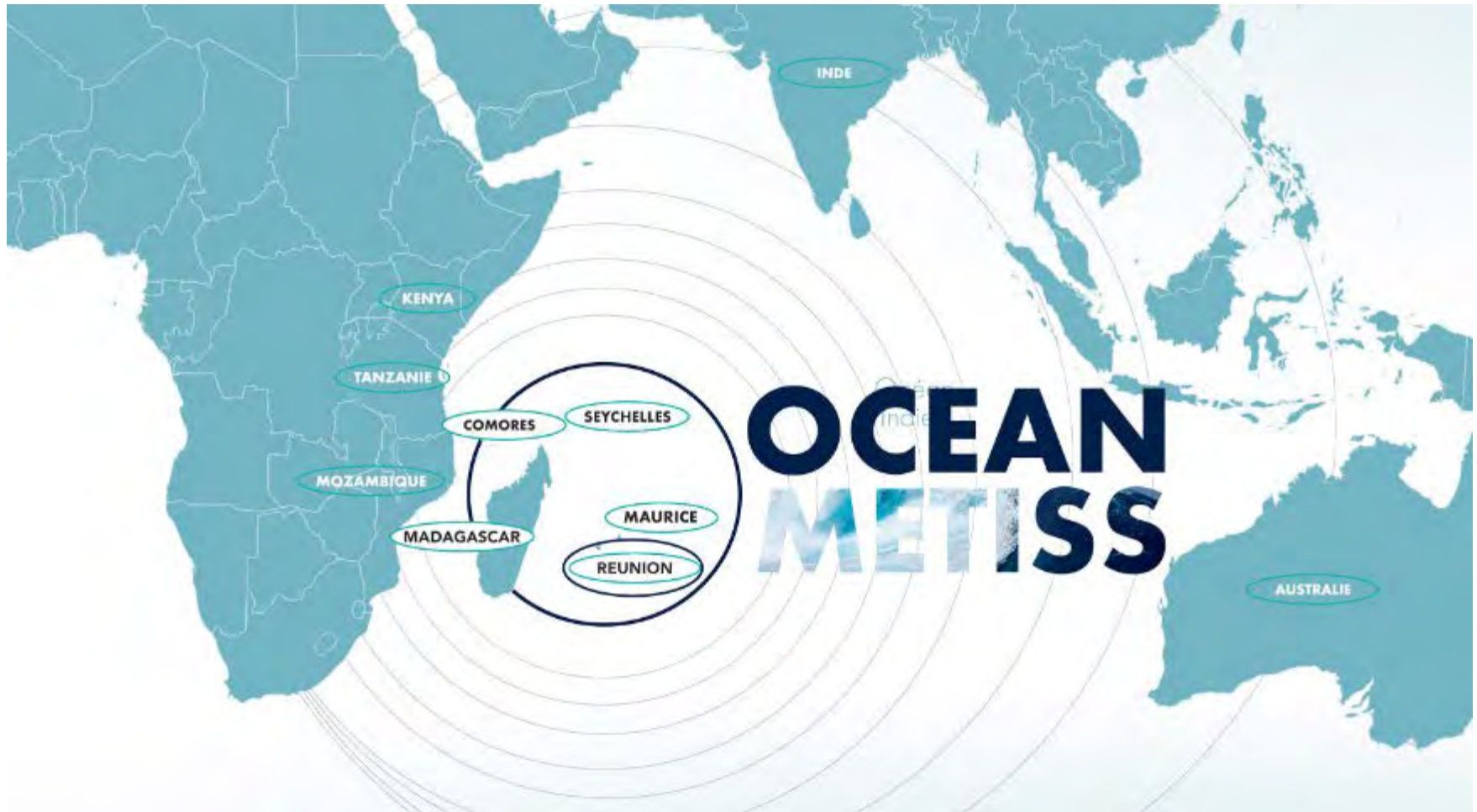


Interregional site visit – Workshop

June 2018

OCEAN METISS

Contribution to Maritime Spatial planning in the Western Indian Ocean



Cofinancé par le fonds européen pour les affaires maritimes et la pêche de l'Union européenne

UR UNIVERSITÉ DE LA RÉUNION



Blue economy/growth in La Réunion

I – VISION, STRATEGY & PLANNING



OCEAN METISS

Contribution to Maritime Spatial planning in the Western Indian Ocean

II - RESEARCH & DEVELOPMENT

The Blue Institute

III - PARTNERSHIPS & NETWORKS

Example: Collaboration agreement with the University of Western Australia

IV - INFRASTRUCTURES & FACILITIES

Regional plan for the organisation and equipment of fishing ports (PROEPP)

Maritime Spatial Planning (MSP)

MSP is...

...a public process of **analyzing and allocating the spatial and temporal distribution of human activities in marine areas** to achieve ecological, economic, and social objectives that are usually specified through a political process;

UNESCO (Ehler and Douvere, 2009)

... a cross-cutting policy tool enabling public authorities and stakeholders to apply a **coordinated, integrated and trans-boundary approach**. (...) promoting the sustainable development and growth of the maritime and coastal economies and the sustainable use of marine and coastal resources.

... a framework for **consistent, transparent, sustainable and evidence-based decision-making**.

Directive 2014/89/EU, European Commission, 2014

Location



Projekat finansiran od strane Ministarstva odbrane Republike Srbije
podrška u okviru projekta "Program razvoja nauke i tehnologije" (PRNT) 2014-2016



Delo objavljeno uz
podršku Evropske unije

Landscapes



This project has received funding from the European Union's Horizon 2022 research and innovation programme under grant agreement No 844782



En français

Ecosystem services

© Martin Riethmuller, LIFE+Pétrels



© Veronique Lambert, Globice, 2013



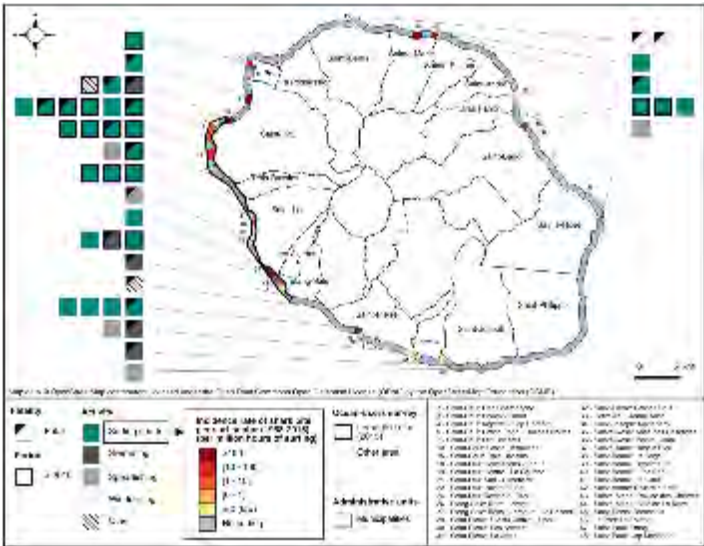
© Anne Lemahieu, UMR ESPACE-DEV, OSU-Réunion



La Réunion : local context

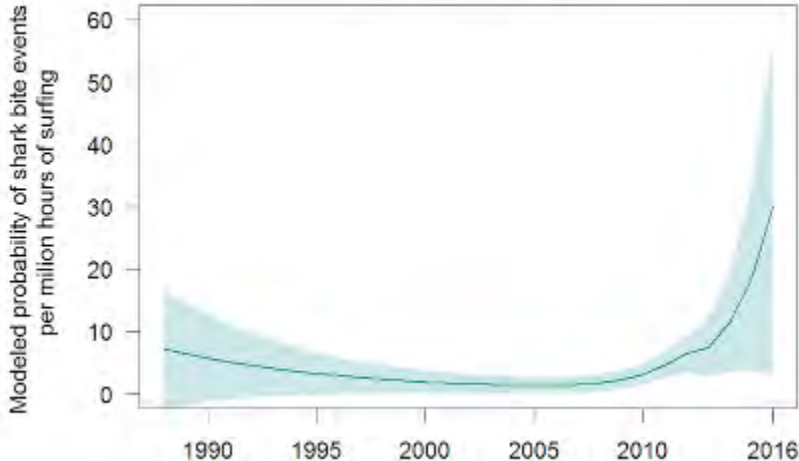
- EU overseas territory in the Indian Ocean, EEZ of 0.3 million km² and 0.9 millions inhab.
- Tropical biodiversity hotspot (marine and terrestrial)
- High exposure to natural and ecosystem risks
- Human capital (900,000 inhab.), high unemployment rate
- Scientific capital (data, knowledge, methods, networks)
- New emerging marine activities : renewable marine energy, ecotourism, shipping hub, cruise tourism, offshore aquaculture, research and development, etc.
- Ecosystem services : not an option but the condition of health, well-being and growth

Shark risk management



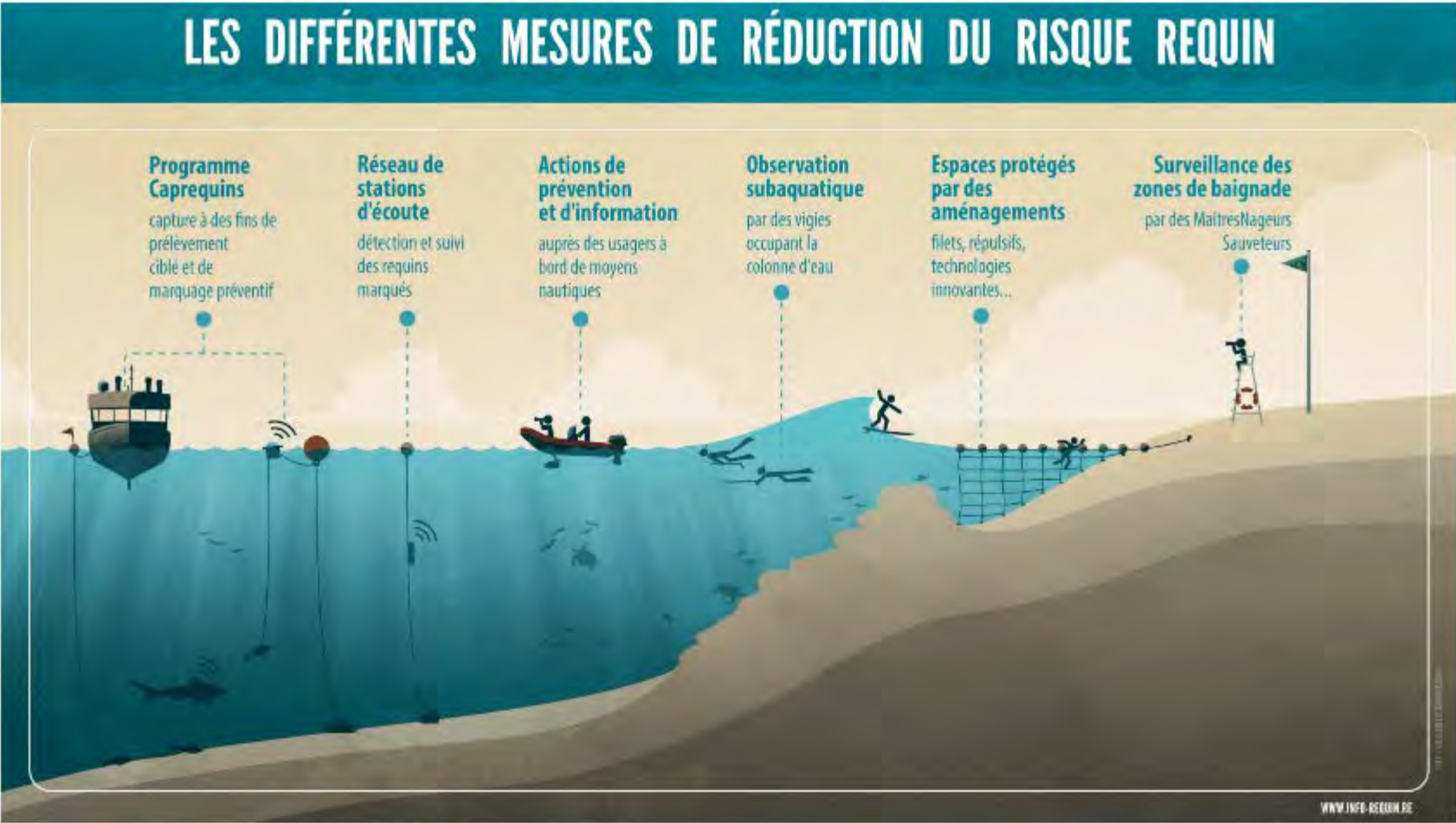
(Lagabrielle et al., 2018)

Modeled probability of shark bite events



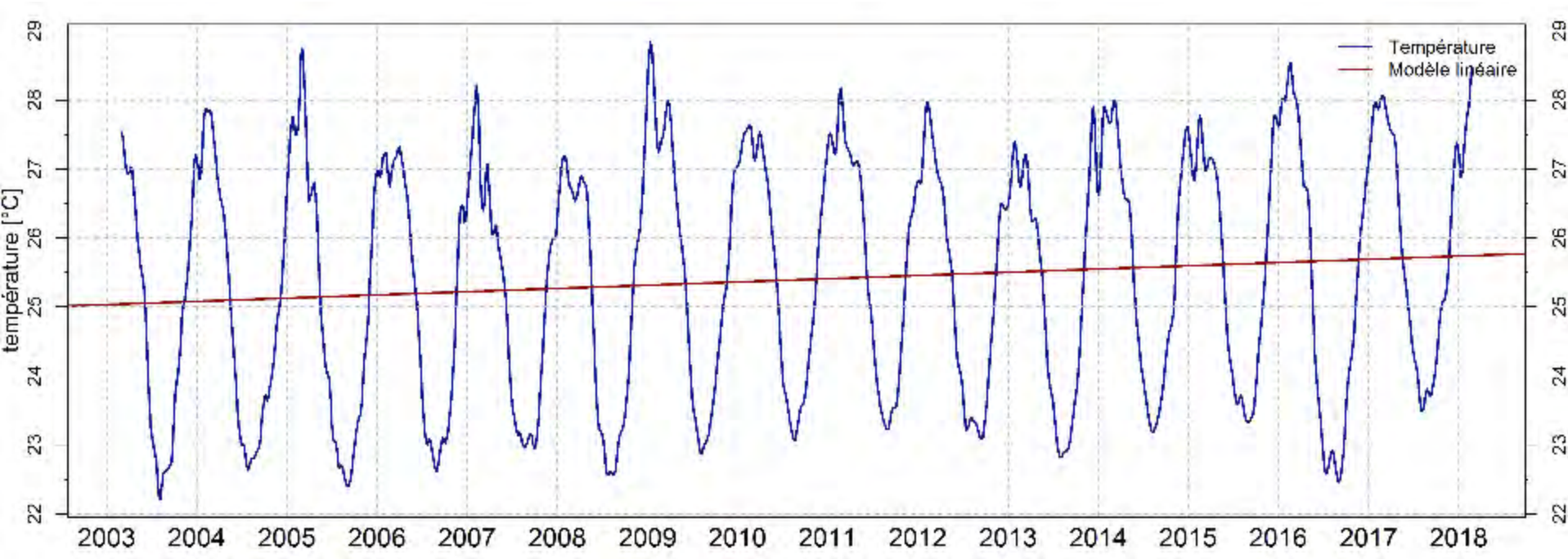
(Lagabrielle et al., 2018)

Shark risk management



Shark risk reduction measures

Climate change : Ocean warming



(Wiefels et al., in prep.)

Sea surface temperature increase (MODIS 2002-2018)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 101019722

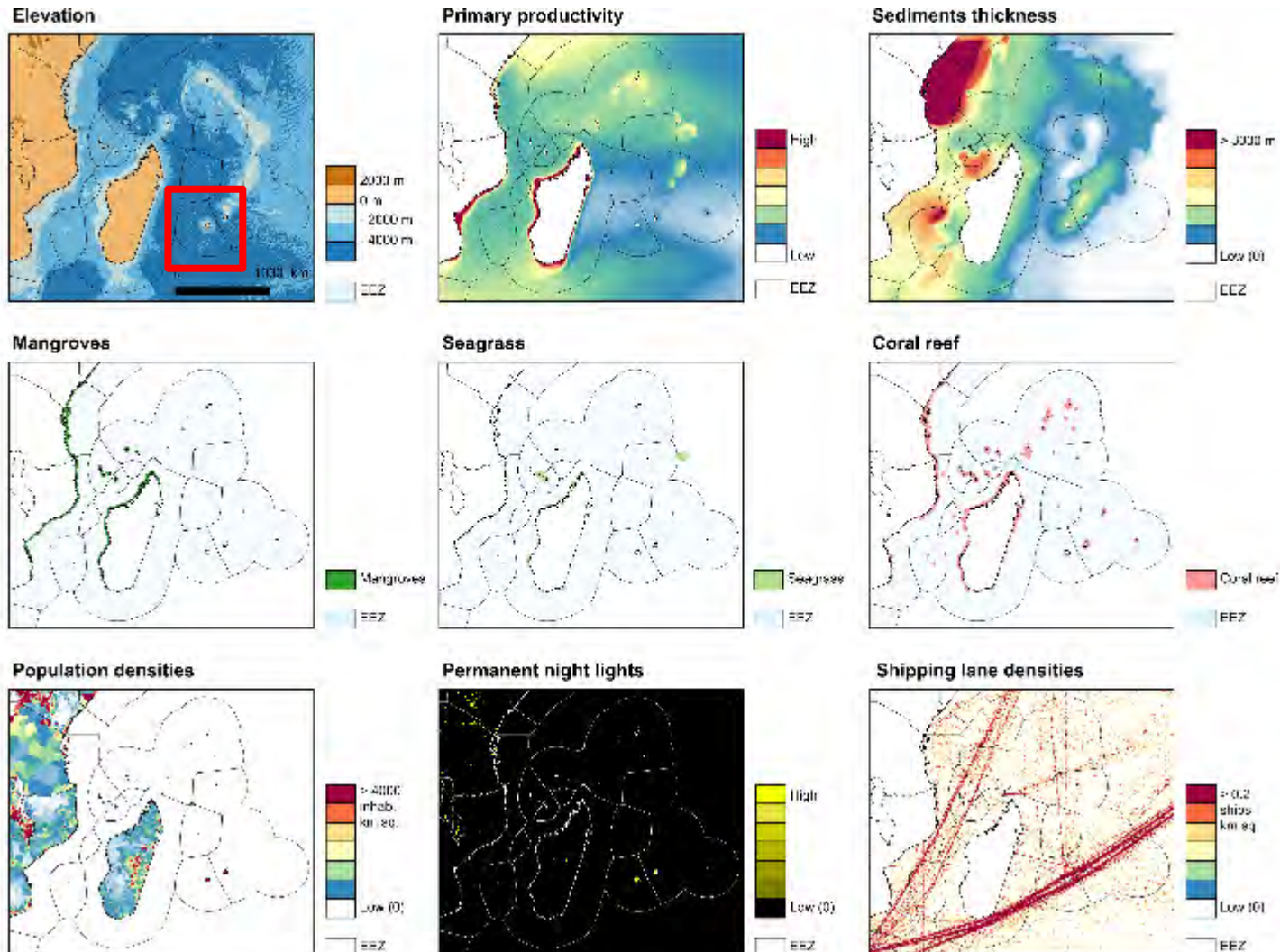


Delivering local and regional growth

The Western Indian ocean

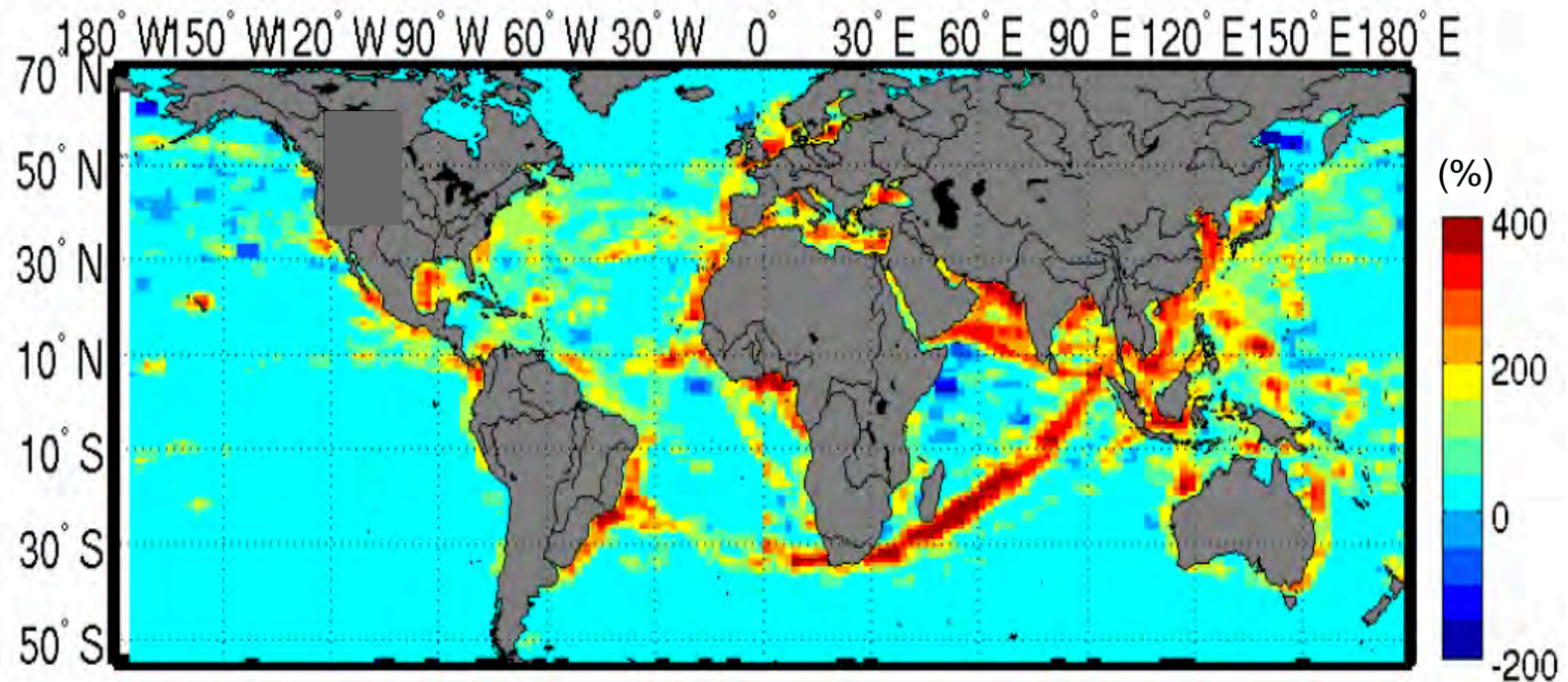
- Western Indian ocean : 72 million km² and 221 millions inhab.
- High-quality ecosystem services but rapidly degrading
- Spatially puzzled MSP initiatives with different objectives (conservation, fisheries, economic development, etc.) and different areas of interest (local and national)
- Western Indian ocean is not yet considered as a particular sea basin area according to the EU (part of the Outermost Regions Basin)
- MSP is a new attribution for a Regional Council in France → Pilot-project
- France State is developing the Strategic Document of the Sea Basin (DSBM)
- Shared attribution between EU-State-Region → Diplomacy coordination (regionalisation & internationalisation)

The Western Indian ocean



(Lagabrielle, 2017)

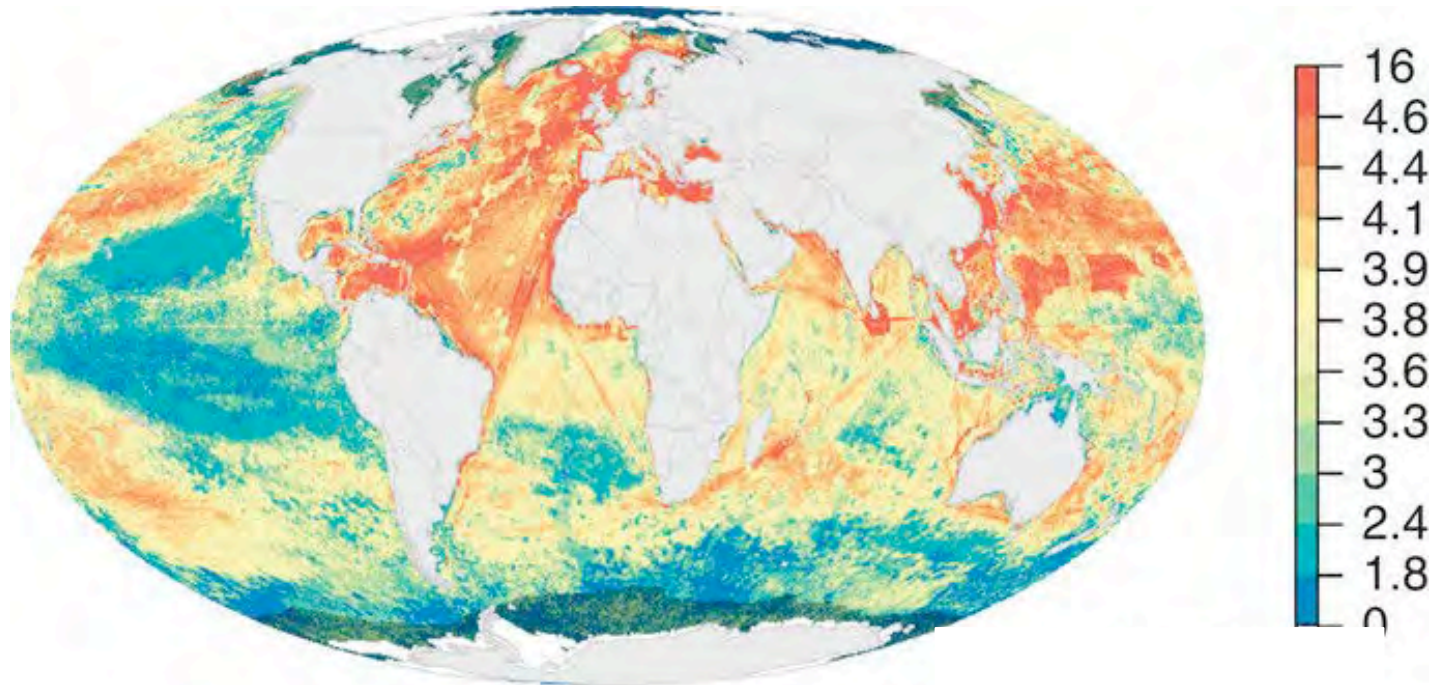
The Western Indian ocean



(Tournadre, 2014)

Evolution of maritime traffic (1992-2013) :
Rapid increase (+ 400%) in the Western Indian ocean

The Western Indian ocean



(Halpern et al., 2014)

Anthropogenic impacts on ocean ecosystems :
Increasing in the Western Indian ocean

Ocean Metiss objectives

- Producing a multi-scale multi-level blue economy/growth vision
- Developing a multi-scale marine spatial plan to operationalize this vision
- Understanding local and regional social-ecological systems
- Sharing and gathering international expertise on the blue economy/growth
- Mutualizing and focusing technical and scientific human resources efforts toward the blue economy/growth
- Developing skills and training for the maritime sectors
- Ensuring a sustainable structural support to the blue economy/growth beyond the project duration

Ocean Metiss project

Timeline

- Start :February 2018
- End : January 2020
- Duration : 24 months

Budget

- Total budget : 1 270 854 €
- UE (EMFF-EASME): 963 211 €
- National contribution by France and Regional Councils

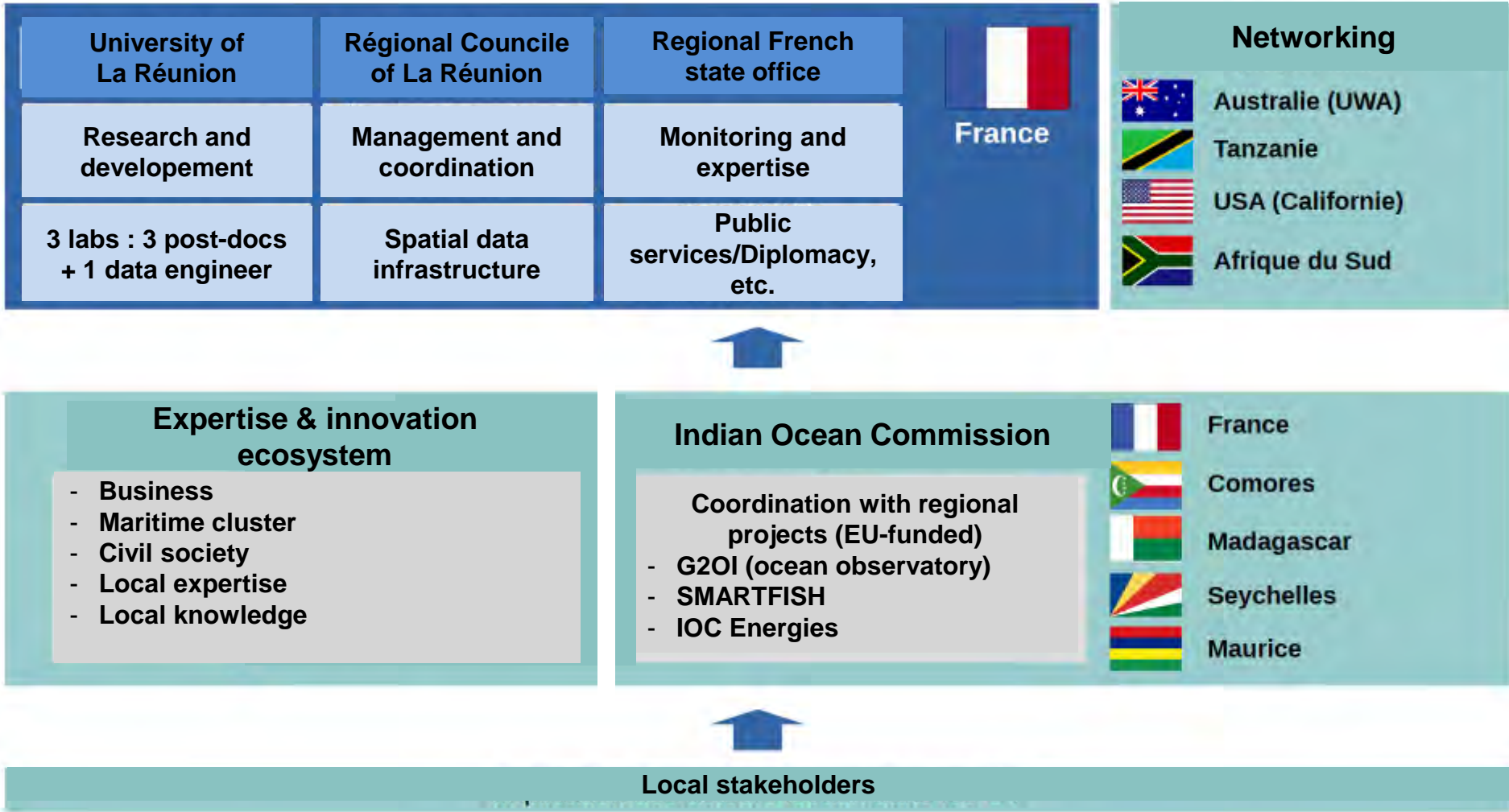
Key events

- Kick-off meeting (Brussels) : 6-7 February 2018
- Opening conference (La Réunion) : 29-30 March 2018
- 1st Global MSP Forum UNESCO/UE (Brussels) : 24-25 May 2018
- 2nd Global MSP Forum UNESCO/UE (La Réunion) : 3-4 December 2018
- Mid-term conference (La Réunion) : 4-5 December 2018
- Shark risk management conference (La Réunion) : 5-6 December 2018

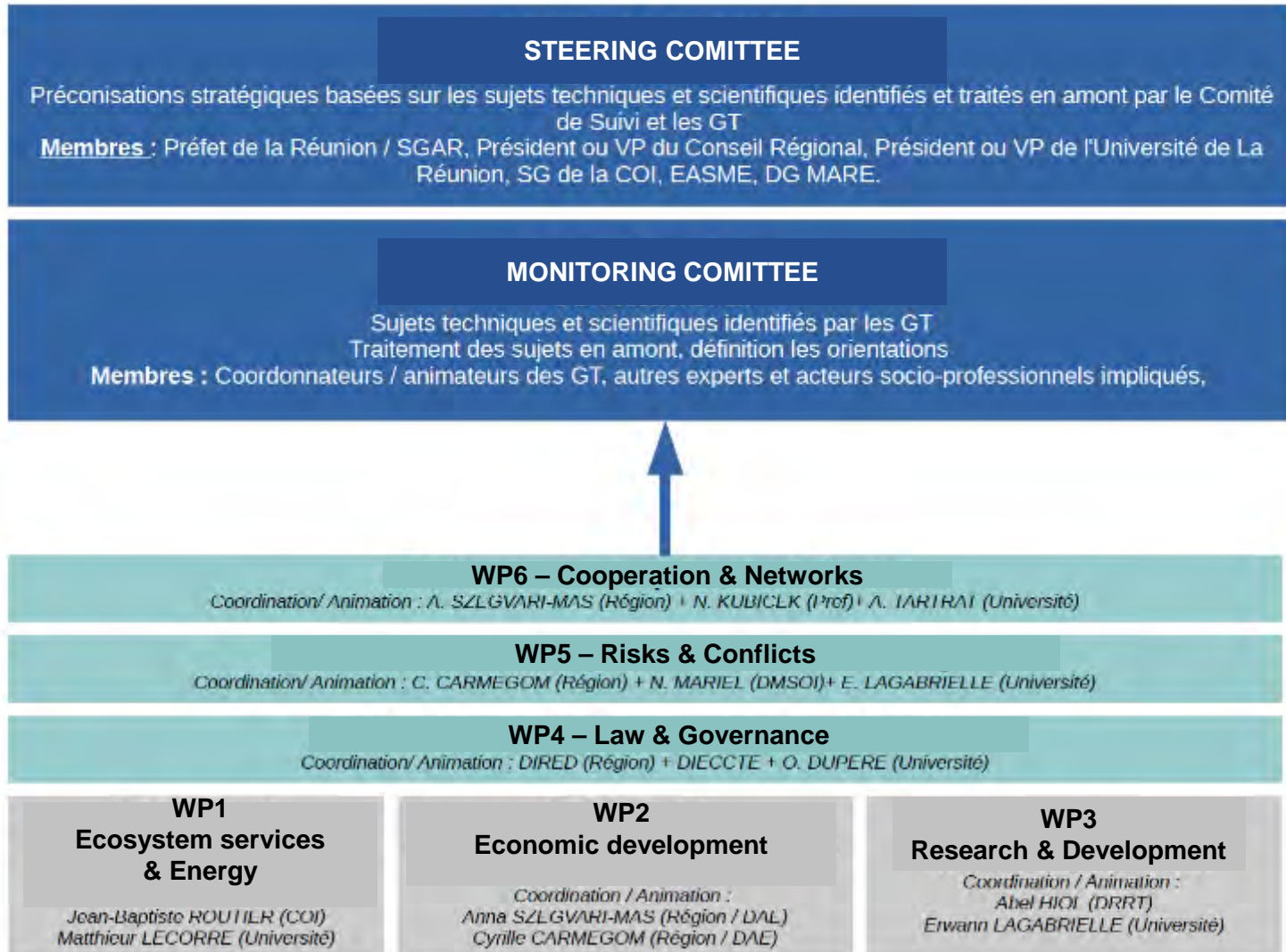
Benchmark missions

- MSP projects (SIMNORAT, etc.)
- Sweden, California, Madeira, Açores, etc.

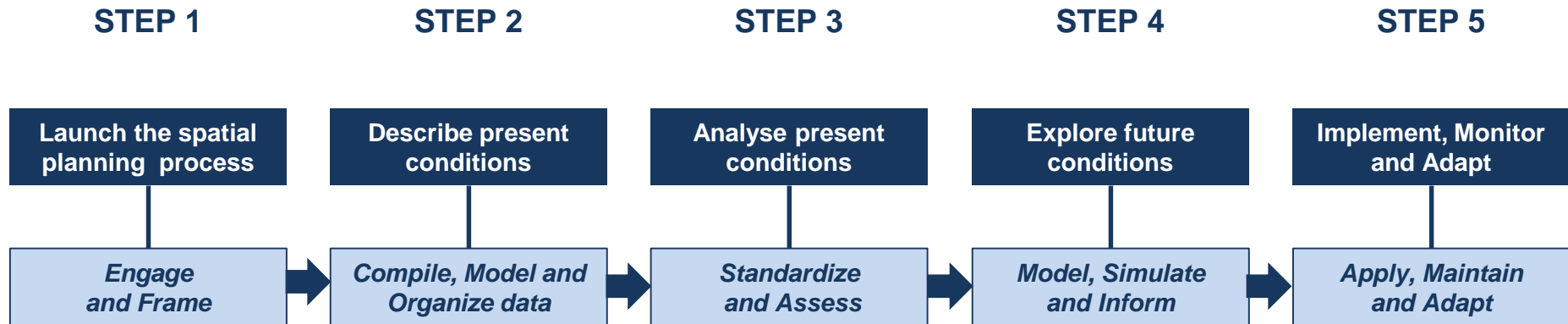
Project structure and governance



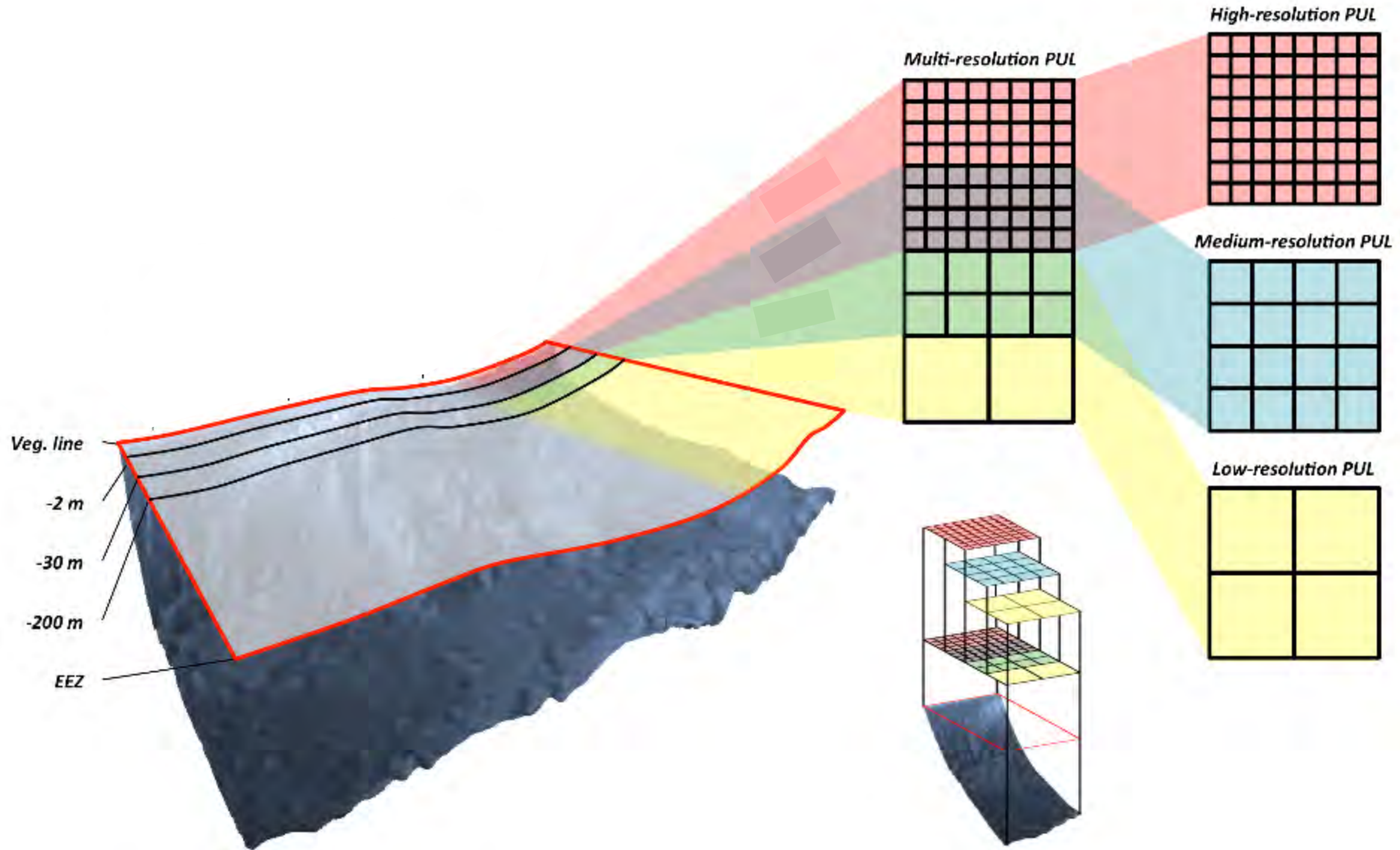
Project structure and governance



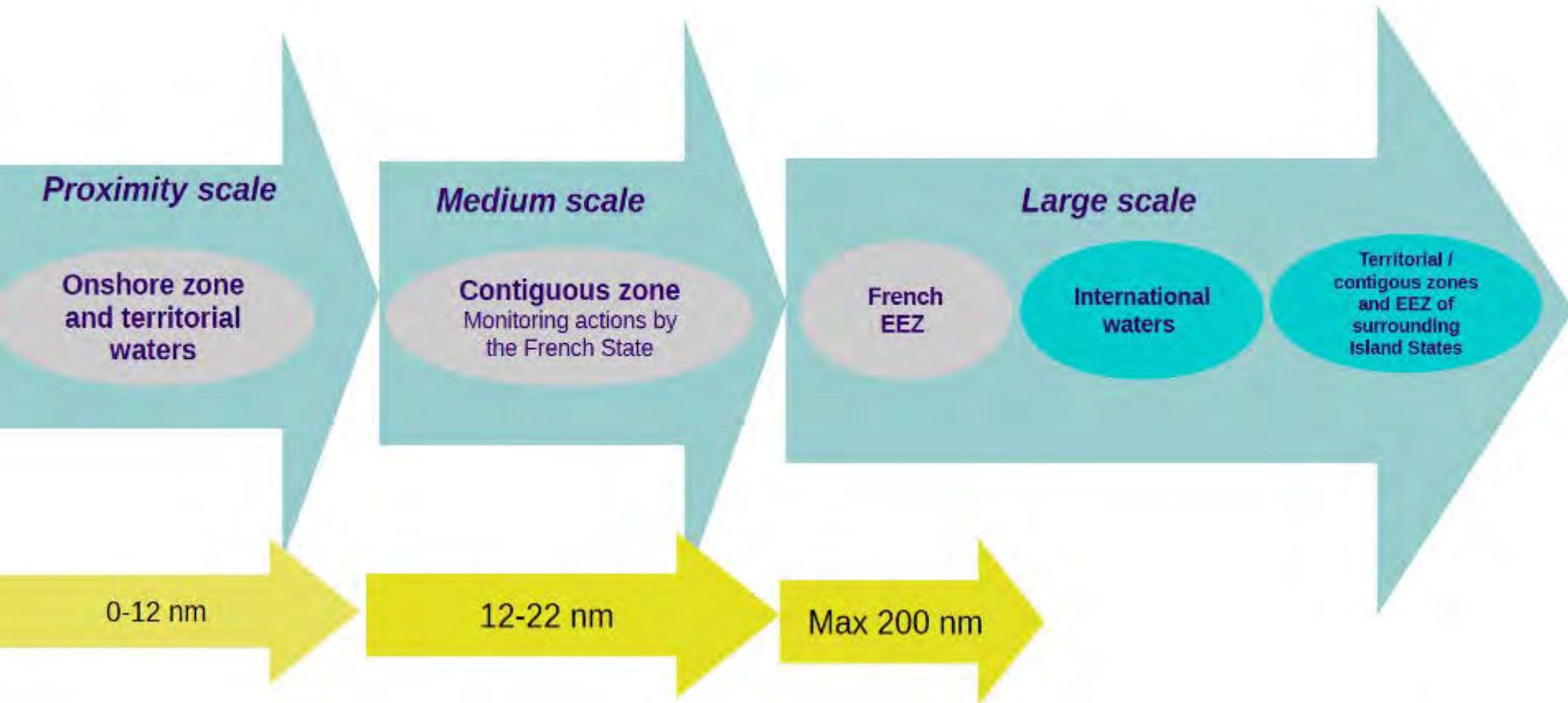
MSP steps



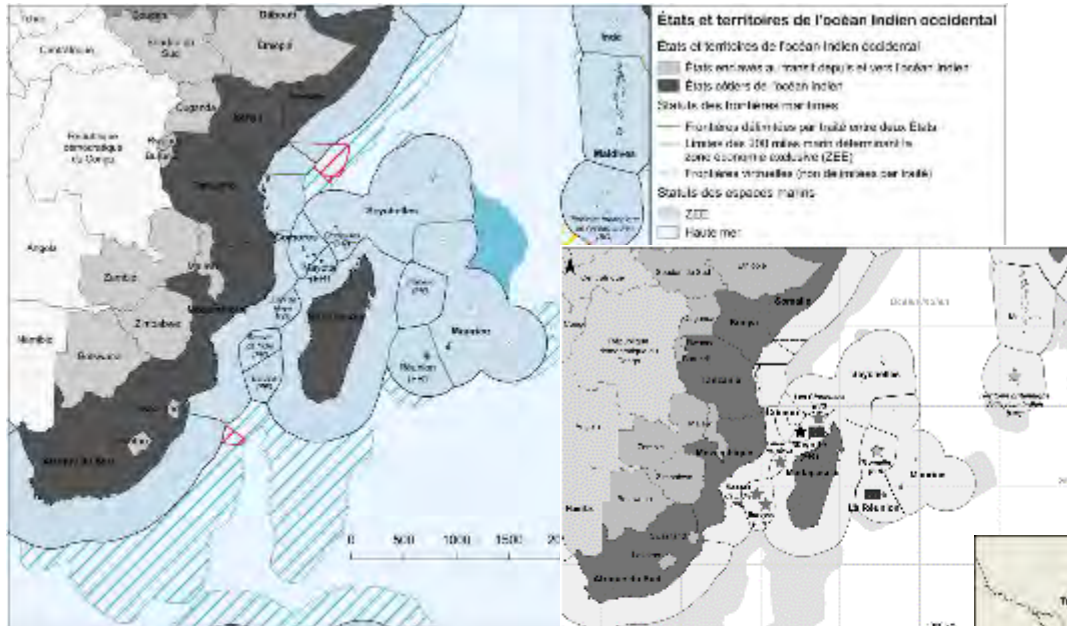
Multi-scale MSP



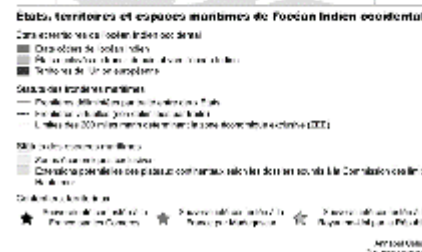
Multi-scale MSP



Geopolitical analysis



Celeste et al., 2018

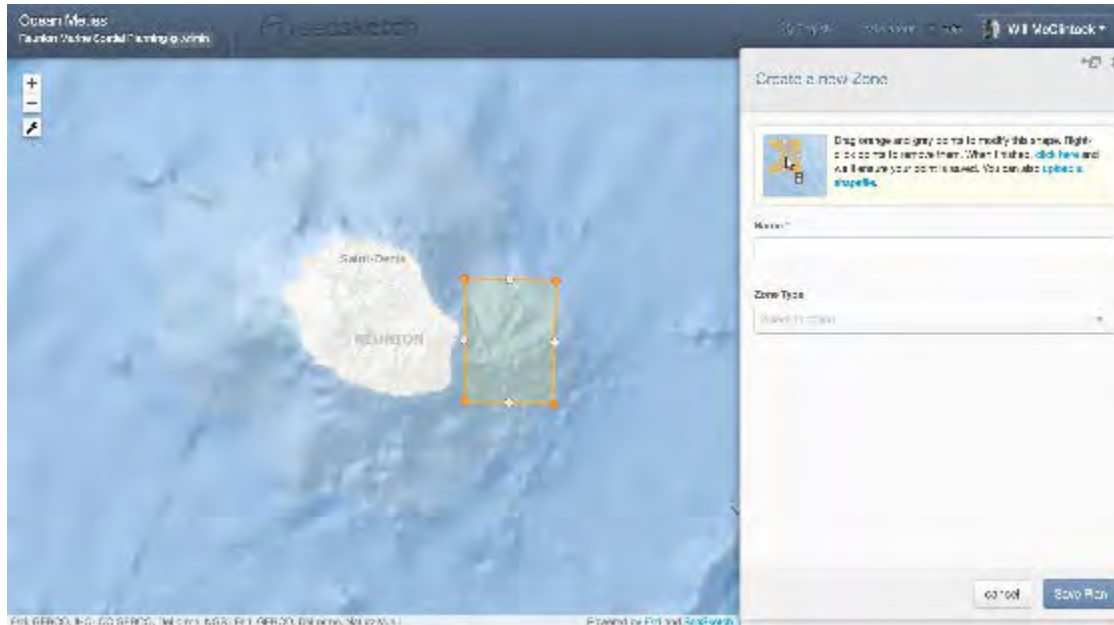


Bouchard et al., 2018



Celeste et al., 2018

Multi-level stakeholders participation



Thank you

BUGGY POWER

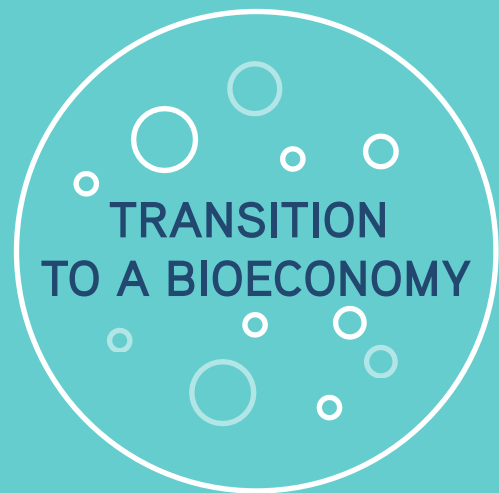
Microalgae
life creators

Interregional site visit – Workshop

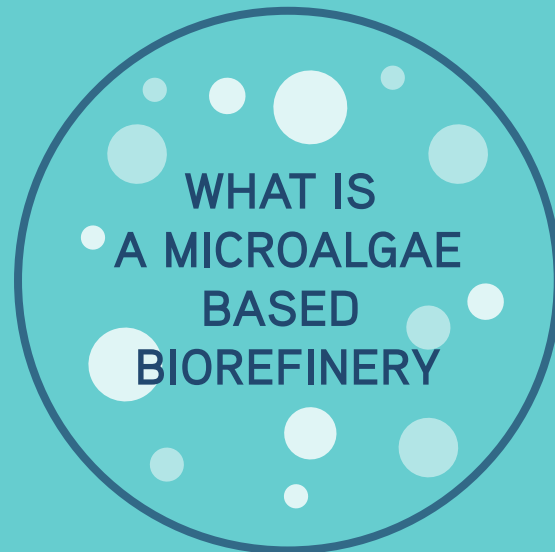
**BUGGYPOWER Microalgae Biorefinery
State-of-the-Art:**

The Production Unit of Porto Santo, Madeira

Teresa Telo
Buggypower - Production Unit Manager – Porto Santo
ttelo@buggypower.eu



1



2



3



4

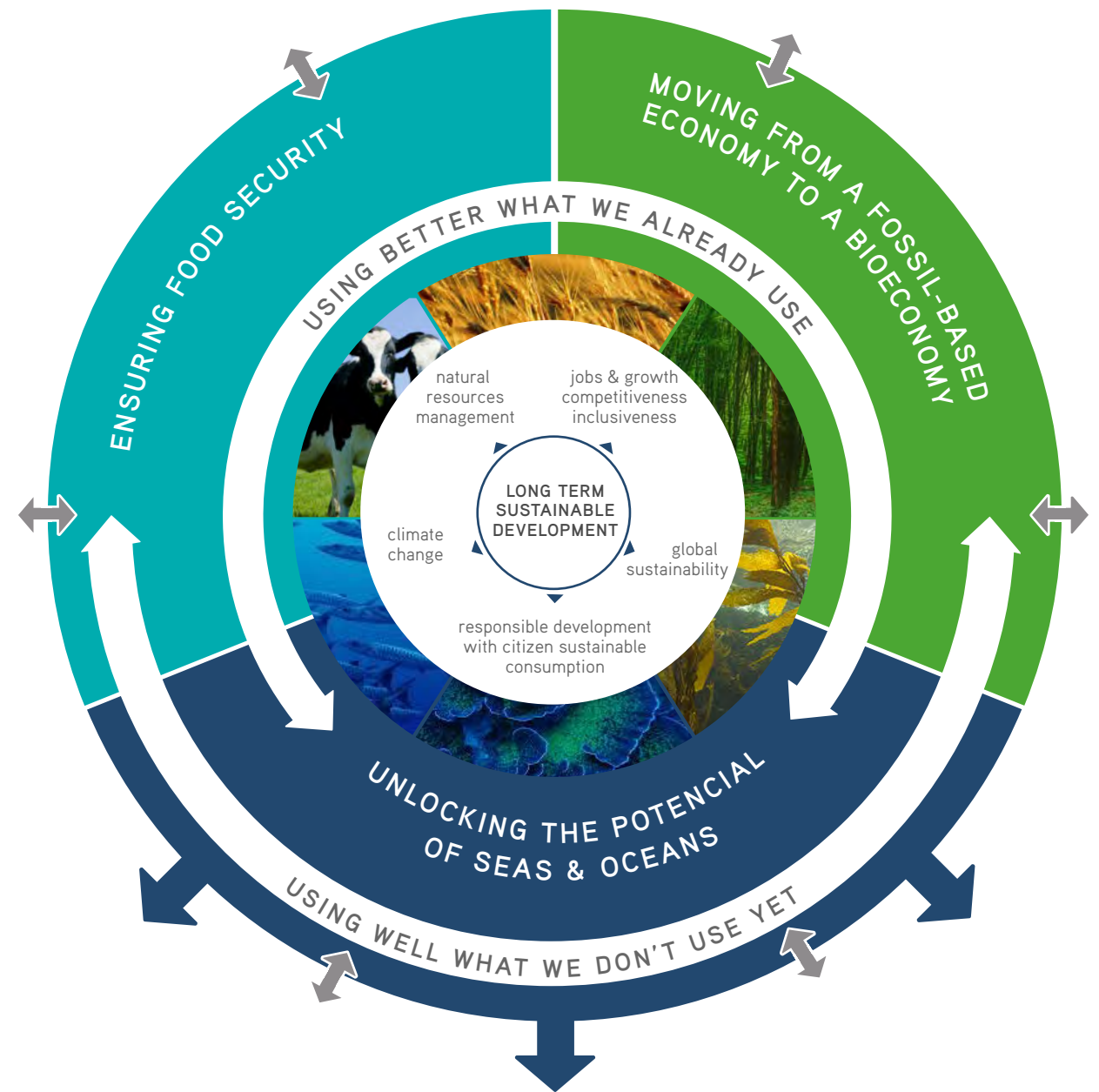
PRESENTATION OUTLINE

1 | TRANSITION TO A BIOECONOMY

The BioEconomy encompasses those parts of the economy that use renewable biological resources from land and sea to produce:

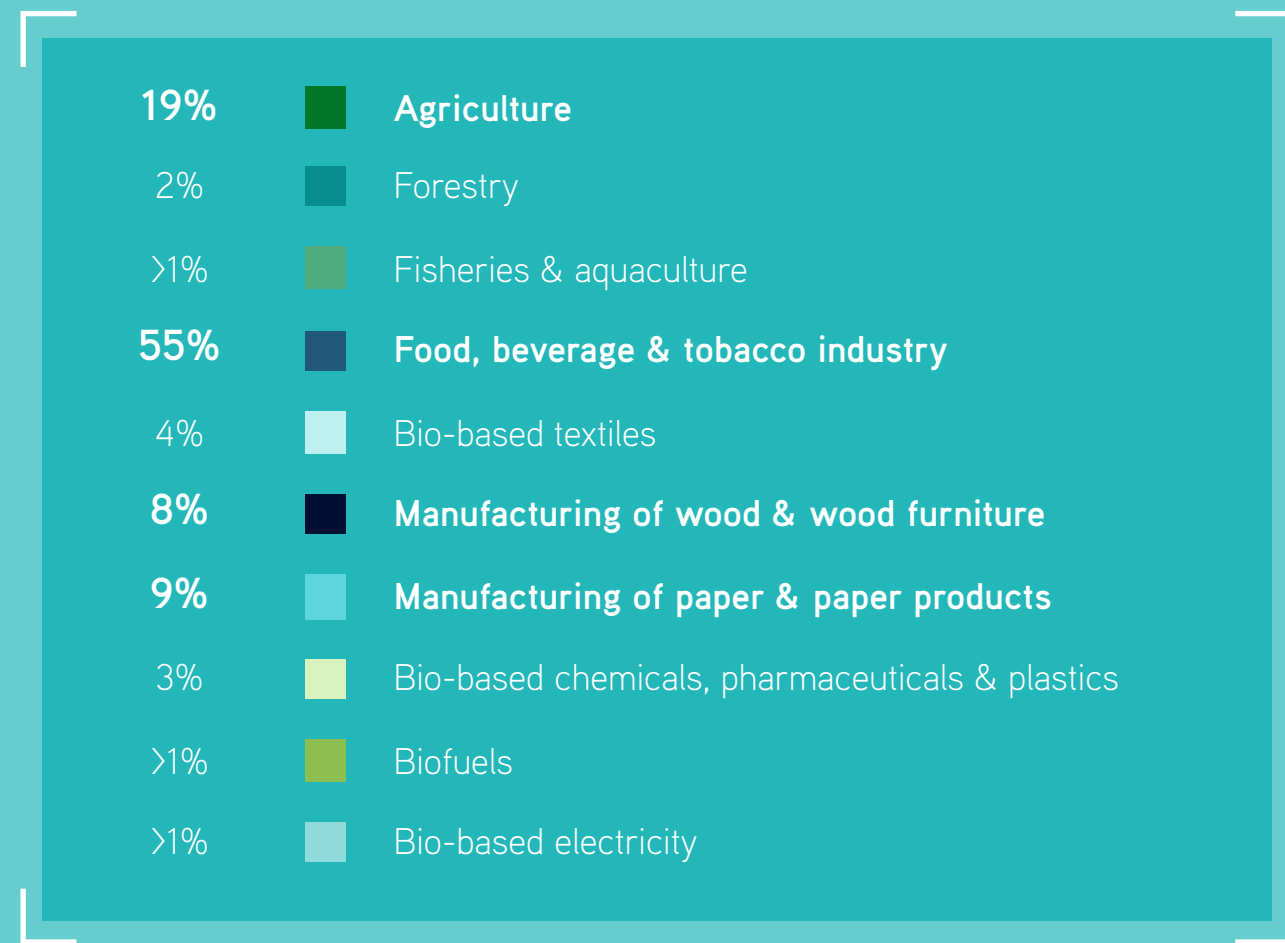
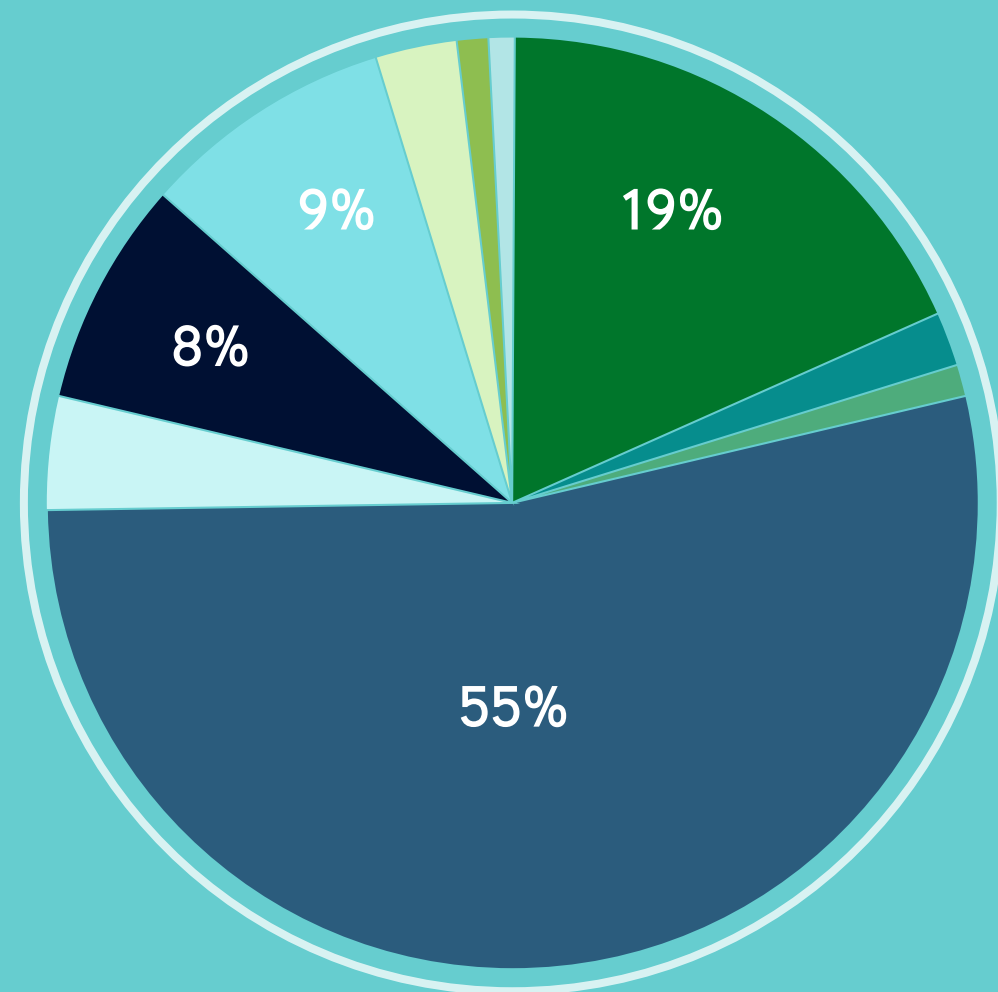
- Food
- Bio-materials
- Bio-energy
- Bio-products

(EU Bioeconomy strategy, 2012)



1 | TRANSITION TO A BIOECONOMY

Turnover in the EU-28 by the bioeconomy sector: in percentage of value (2013).



2 trillion EUR turnover | Employs >17m people

1 | TRANSITION TO A BIOECONOMY

BIO-BASED INDUSTRIES FOCUS (2016):

Feedstock

Fostering a sustainable biomass supply and building new value chains

Biorefineries

Optimising efficient processing through R&D and upscaling in large-scale demo/flagship biorefineries

Markets, products and policies

Developing markets for bio-based products and optimising policy frameworks

1 | TRANSITION TO A BIOECONOMY

BLUE GROWTH – European Commission (COM (2012) 494)
(Brussels, 13.9.2012)

European Commission's initiative for the potential of Europe oceans, seas and coasts for

JOB

VALUE

SUSTAINABILITY

Sectors with high potential for sustainable Blue Growth and to be further developed

Mineral resources

Renewable energy

Biotechnology

Aquaculture (Marine Aquatic Products - BGP)

Coastal and Maritime tourism

Other sectors crucial for value and jobs

Shipbuilding and ship repair

Transport (cargo and ferry)

Fisheries

Offshore oil and gas

1 | TRANSITION TO A BIOECONOMY

European Commission

BLUE GROWTH

71% of the Earth surface is WATER

Why?

Blue Growth is the European Commission's initiative to further harness the potential of Europe's oceans, seas and coasts for:

- Jobs
- Value
- Sustainability

Focus Area

Five sectors with high potential for sustainable Blue Growth are to be further developed:

- Renewable energy
- Biotechnology
- Coastal & Maritime Tourism
- Aquaculture
- Mineral resources

5 SECTORS

other sectors of the blue economy crucial for value & jobs

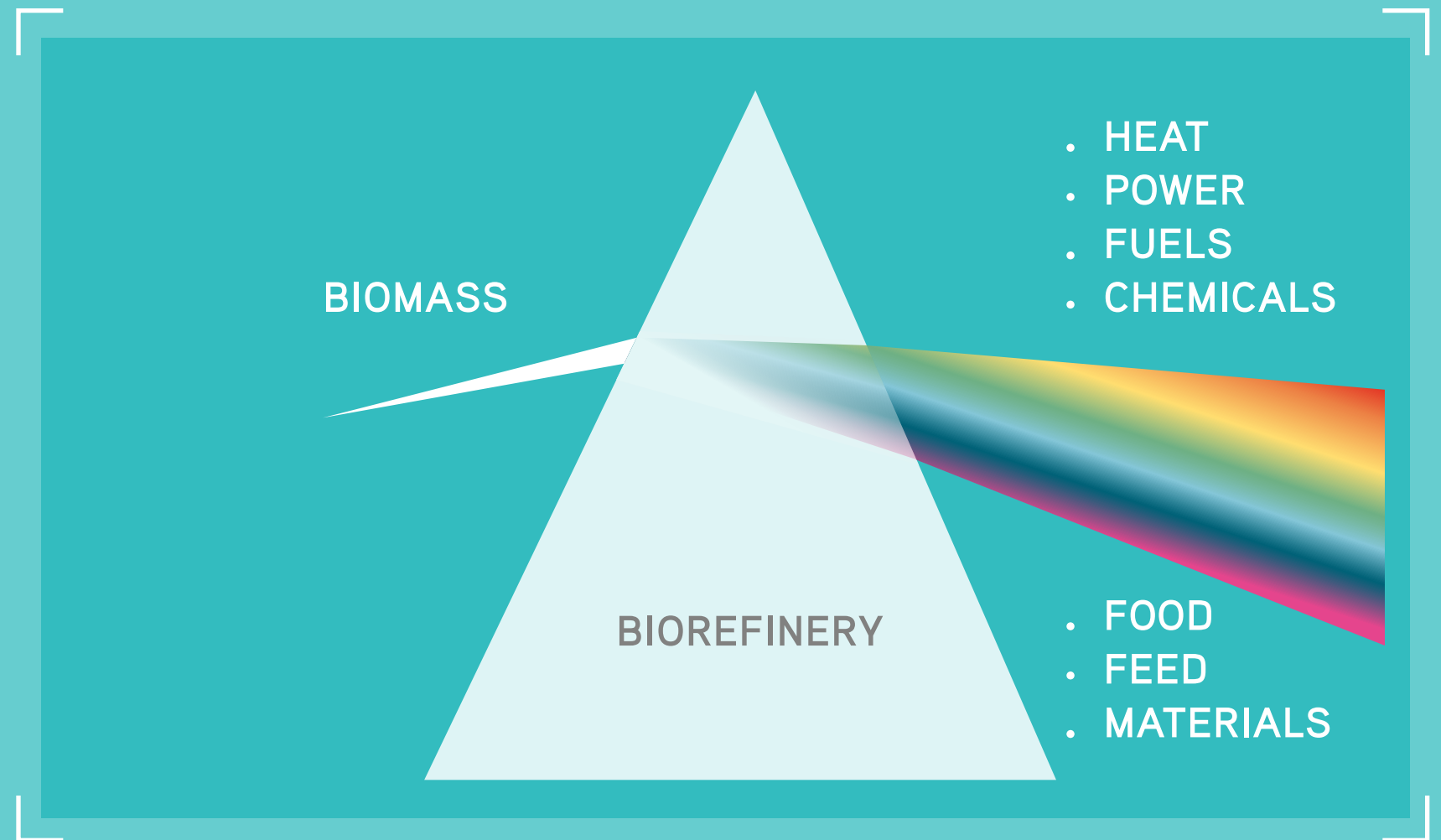
- Shipbuilding & Ship repair
- Transport (cargo & ferry)
- Fisheries
- Offshore oil & gas

2 | WHAT IS A MICROALGAE BASED BIOREFINERY?

BIOREFINERY:

Sustainable and synergetic processing of biomass into marketable food & feed ingredient, chemicals, materials and energy (fuels, power, heat).

(IEA Bioenergy, 2014)

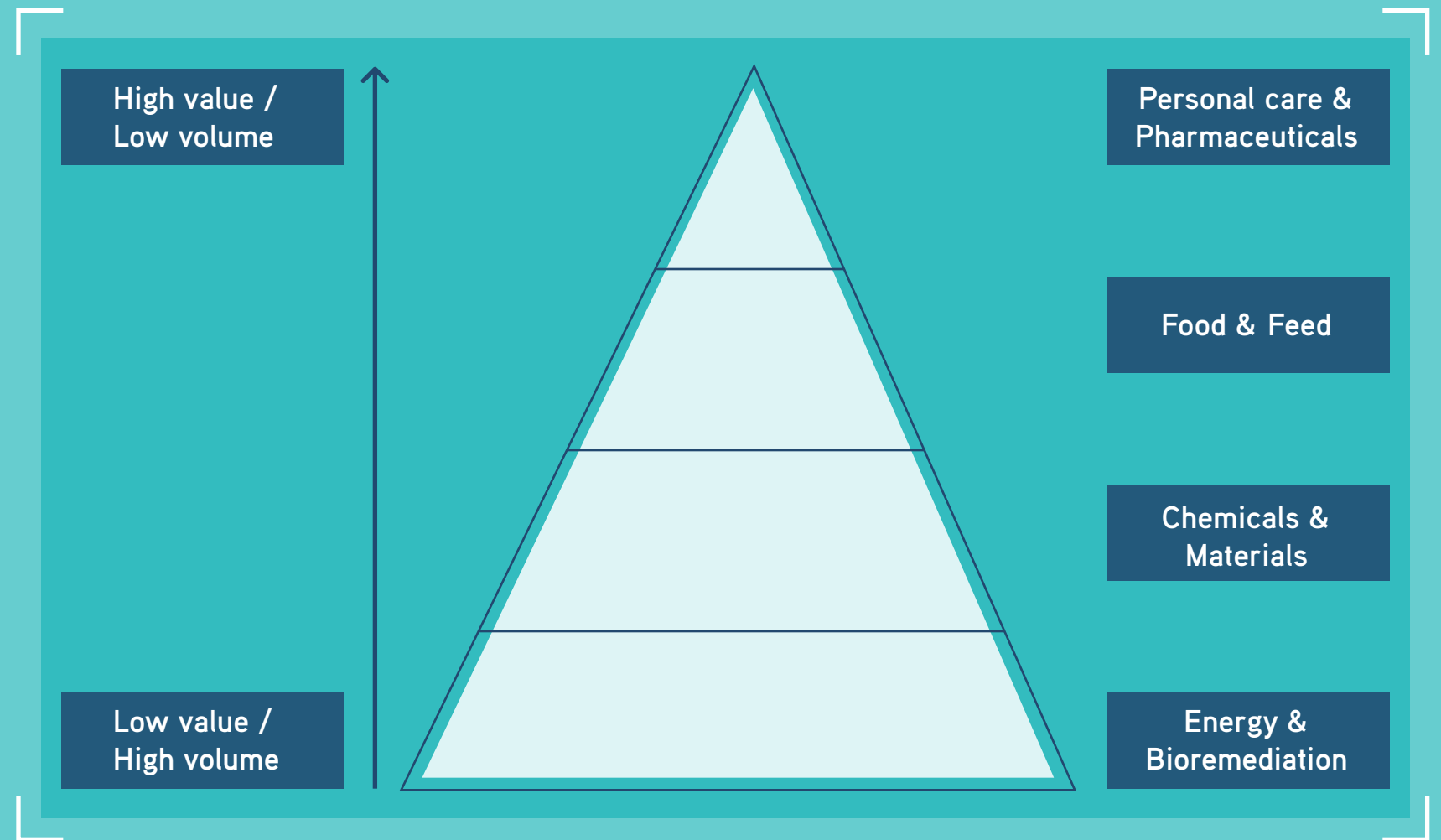


2 | WHAT IS A MICROALGAE BASED BIOREFINERY?

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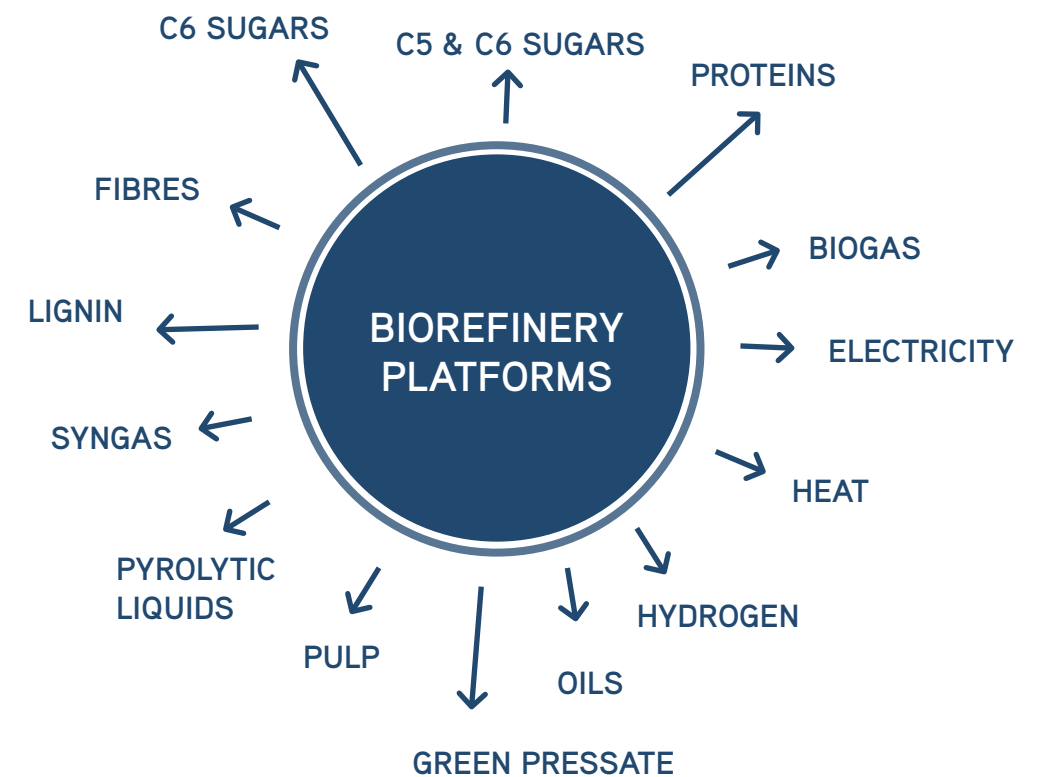


Value pyramid and markets (EnAlgae, 2015).

2 | WHAT IS A MICROALGAE BASED BIOREFINERY?



The features to characterise a biorefinery system (IEA, 2014).



Examples for possible platforms in a biorefinery system (IEA, 2014).

3 | PORTO SANTO BIOREFINERY

STATE-OF-THE-ART: Demonstration Plant (TRL 9)

TYPE OF BIOREFINERY: A 2-platform microalgae biorefinery

LOCATION: Porto Santo, Madeira (Portugal)

OWNER: EEM Biotech, S.A.

OPERATED BY: Buggypower Portugal, Lda.

FEEDSTOCKS: Microalgae

OUTPUTS: Biofuel, food&feed and cosmetics.

NUMBER OF PBRS: 2584

TOTAL VOLUME OF PBRS: aprox. 1100 m³ (seawater)

AREA OF BIOMASS PRODUCTION: aprox. 11000 m²

TOTAL AREA OF THE PRODUCTION SITE: aprox. 14000 m²

NOMINAL PRODUCTION CAPACITY: 60 tons DW/year

MAXIMUM PRODUCTION CAPACITY: 100 tons DW/year



3 | PORTO SANTO BIOREFINERY

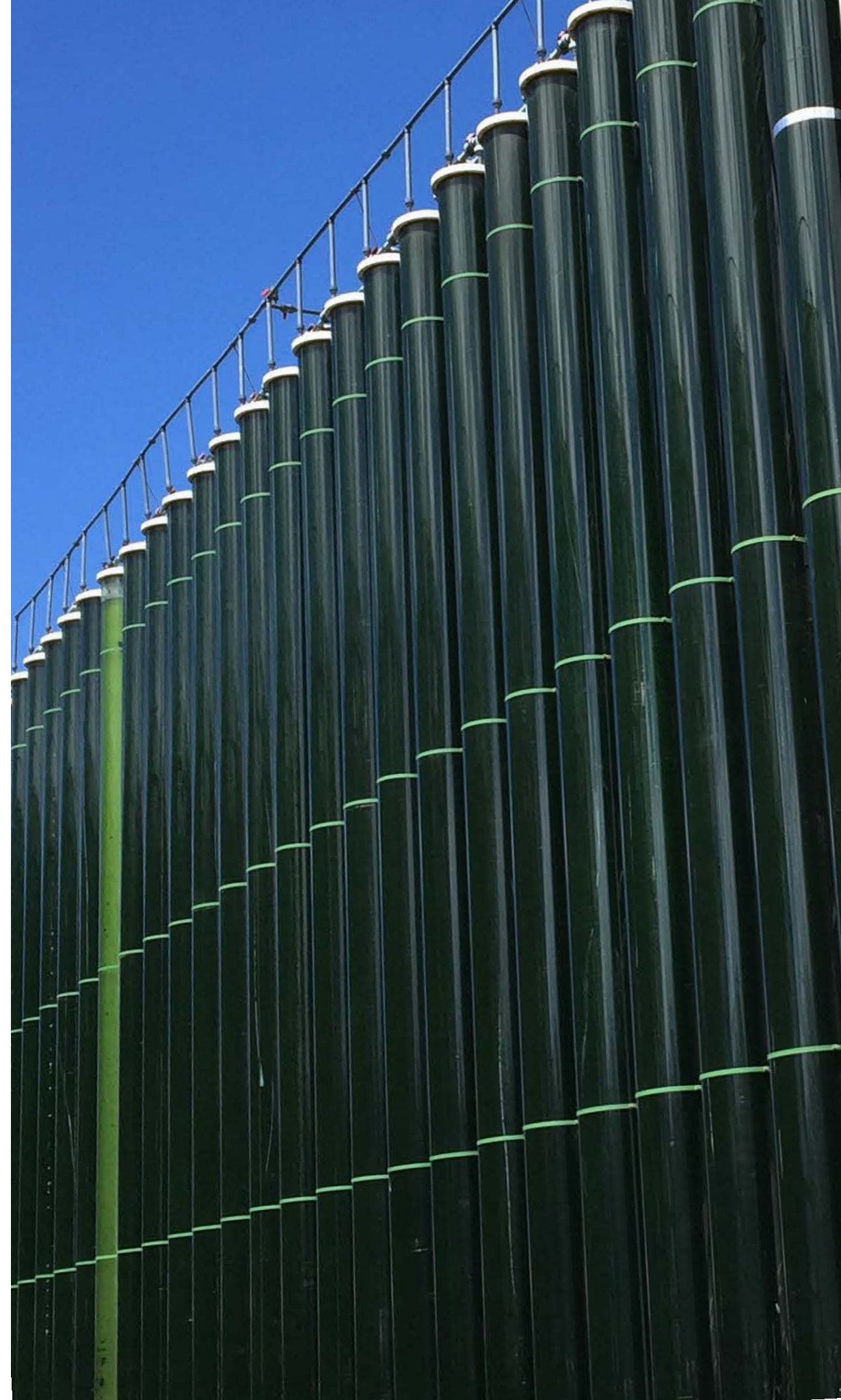
Description:

Porto Santo Unit of CO₂ sequestration through the cultivation of microalgae in closed PhotoBioReactors (PBRs) is a innovative technology developed and designed by Buggypower. The eight meters PBRs of “air-lift” type and arranged in sequence to optimize solar capture is a patented technology that enables the production of biomass of premium quality. This unique technology enables the production of biomass on an industrial scale with commercial viability.

In the process, maximum (premium) quality microalgae biomass production is guaranteed, using only: H₂O, sunlight, CO₂ and nutrients.

Using this innovative technology, Buggypower is producing three species of marine microalgae that are applying to a wide range of potential applications, from biofuel to cosmetics and pharmaceutical, with a special focus on food and feed.

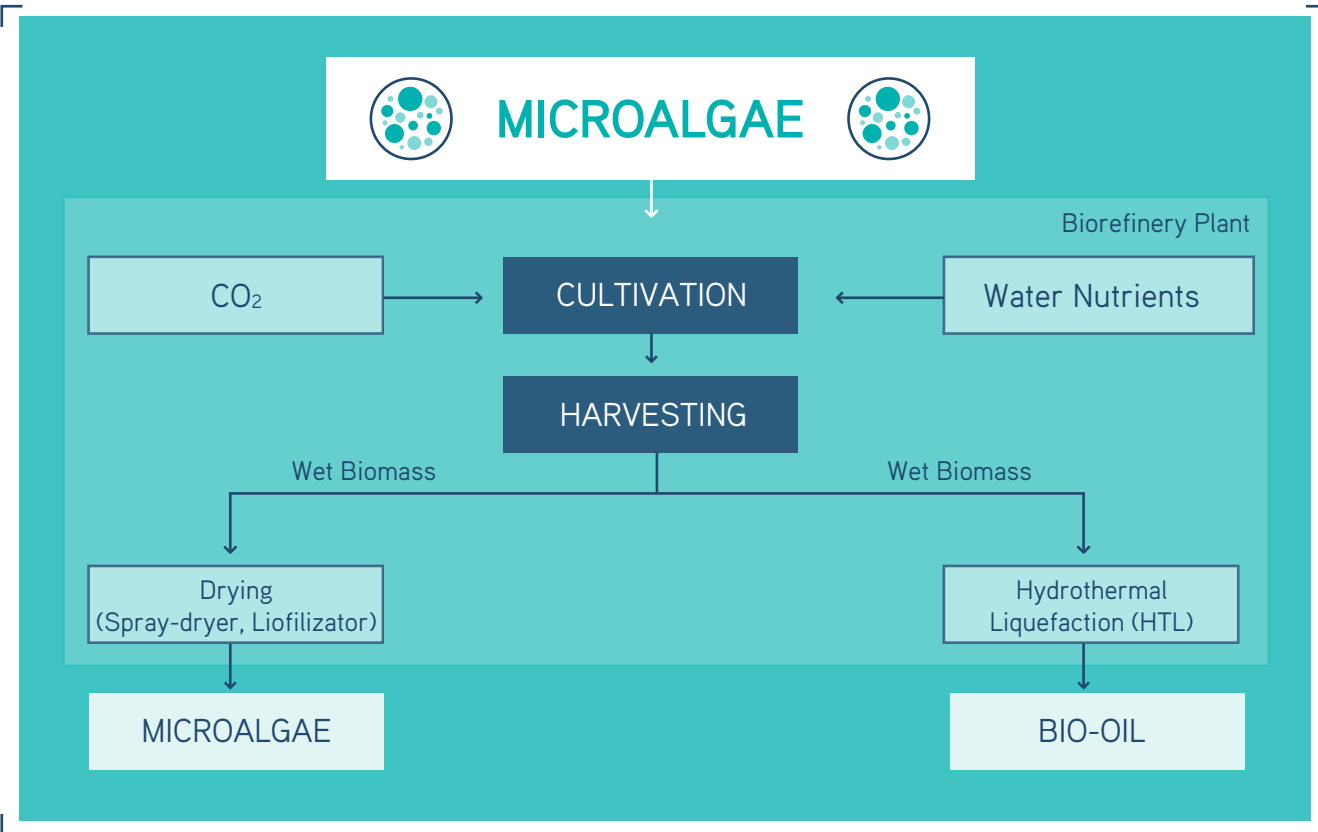
This system allows an economic continuous production process 365 days per year.



3 | PORTO SANTO BIOREFINERY

Description:

This model represents an evolution from the initial one, focused on biofuel, at it encompasses CO2 capture and full treatment of Greenhouse Gases (GHG), capturing CO2 directly from emitting sources and proceeding to its fixation and sink through cultivation of microalgae. This technology is able to fix at least 85% of the CO2 that is used in the cultivation.



PROCESS FLOWCHART



3 | PORTO SANTO BIOREFINERY

Opens systems versus Closed systems
(Xu et al., 2009)

	OPEN SYSTEMS	CLOSED SYSTEMS
CONTAMINATION RISK	High	Low
CO ₂ LOSSES	High	Low
EVAPORATIVE LOSSES	High	Low
LIGHT USE EFFICIENCY	Poor	Excellent
AREA/ VOLUME RATIO	Low	High
AREA REQUIRED	High	Low
PROCESS CONTROL	Difficult	Easy
BIOMASS PRODUCTIVITIES	Low	High
INVESTMENT COSTS	Low	High
OPERATION COSTS	Low	High
HARVESTING COSTS	High	Relatively low
SCALE-UP	Easy	Difficult



3 | PORTO SANTO BIOREFINERY

AIR-LIFT BIOREACTORS ADVANTAGES: (Ratledge and Christiansern, 2006)

- Good energy efficiency
- Good suspended solids carryover (microalgae)
- Good for shear-sensitive cultures (some strains of microalgae)
- Good mass transfer (CO₂ transfer)
- Good heat transfer (thermoregulation)
- Good gas-liquid separation (O₂ removal)

Buggypower PBRs Version 2.0



3 | PORTO SANTO BIOREFINERY

Platform 1 – Microalgae biomass drying



Liofilizator



Spray-dryer

3 | PORTO SANTO BIOREFINERY

Platform 2 – Bio-oil production by HTL

(Development stage TRL5 - Technology demonstration)

HTL CONDITIONS:

Temperature: 300°C

Pressure: 20 MPa

Reaction time: 10 min

CHEMICAL PROPERTIES OF BIO-OIL:

Heating value: 36 MJ/kg



3 | PORTO SANTO BIOREFINERY

BUGGYPOWER AND EUROPEAN COMMISSION STRATEGY

- Buggypower adopts the European Commission initiative.
- Generating high qualification, and not only, permanent jobs – Green Jobs – in the RUP where the unemployment is high.
- Using sea water that does not compete with other water resources to produce normal vegetables (eg. to produce 1kg of maize is necessary 1000 L of freshwater (water footprint)).

— 3 | PORTO SANTO BIOREFINERY

Filme

—○ 4 | PRODUCTS

With many applications, Buggypower is currently developing a wide range of marine microalgae products for the food and feed markets, with leading companies in each sector, thus contributing to the future of mankind through the infinite power of this superfood.

It will also be possible to find Buggypower's marine microalgae on the market with its private label, premium, cosmetics, feed and food that will be part of our daily diet.



4 | PRODUCTS

FOOD



4 | PRODUCTS

FEED



4 | PRODUCTS

COSMETICS



THANK YOU FOR YOUR ATTENTION



Teresa Telo
Buggypower - Production Unit Manager – Porto Santo
ttelo@buggypower.eu



GROW RUP
Interreg Europe



European Union
European Regional
Development Fund

MARTINIQUE, A LAND OF ECONOMIC INITIATIVES

Interregional site visit to Madeira and Açores – Workshop

June 28, 2018

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III- 5. Martinique a place to invest

ECONOMIC SNAPSHOT

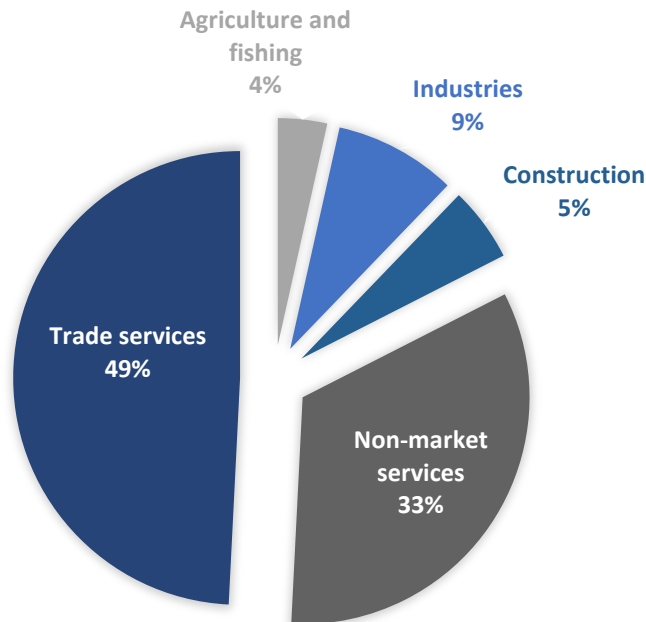
General Indicators

Wealth production	2015
GDP (billion €)	8,8
GDP growth (% constant euros)	1,4%
Unemployment rate	17,6%*
Inflation rate	- 0,2% *
GDP/capita. (in €)	23 200

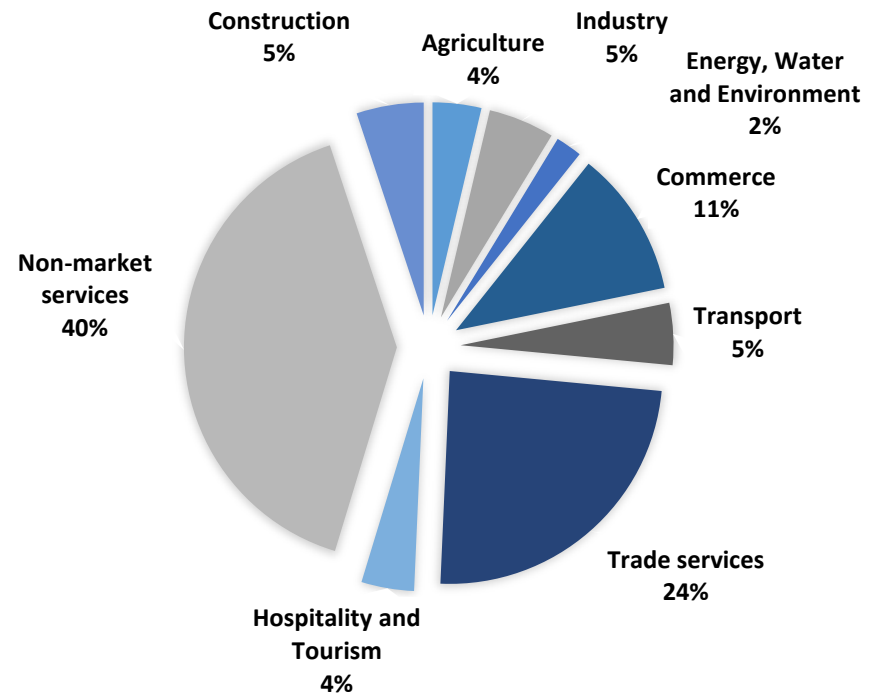
* 2016 data
Source: IEDOM

Sector Indicators

Sector share in value-added (2014 est.) In %



Sector distribution of employment (2015 data)



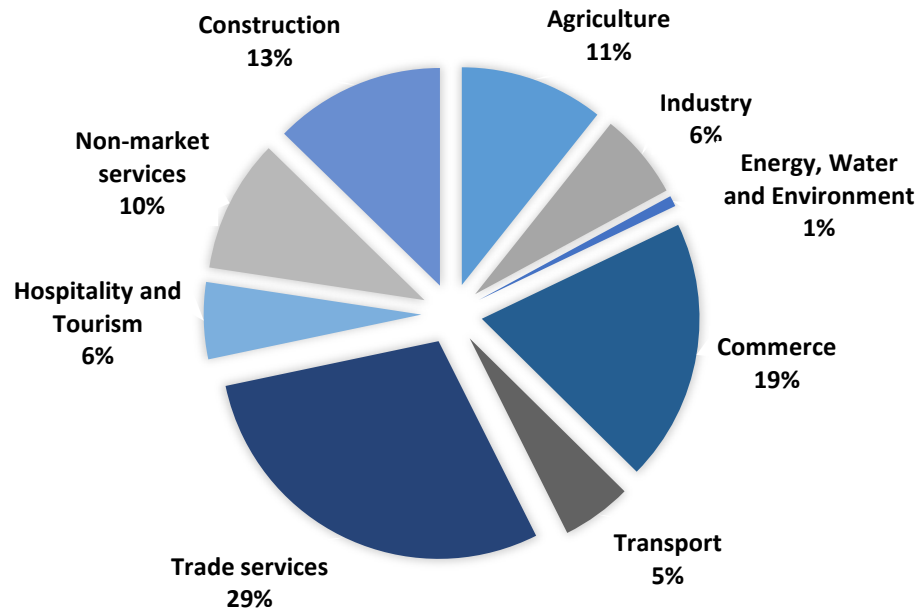
Source: IEDOM Report 2016

Martinican business profile

Predominance of the tertiary sector: 82,5% of the value added (2014)

Total number of companies: 40 555

**Sector distribution in number of companies
(2015 data)**



FOCUS ON BLUE AND GREEN ECONOMY

FISHING AND AQUACULTURE

- Presence of various professional organization (CRPMEM, AFIPAM...) but many informal practices
- 1 031 fishermen : 54,8% are over 50 years old
- Infrastructures: 8 fishing ports – 16 fishing amenities of territorial interest (APID)
- In 2016, Martinique had 793 vessels with 98% of them being equipped for small-scale fishing
- Since the 80s, 2 types of aquaculture: fresh water and sea water
- 6 farms produce 8 tons of cherax (shrimp) and tilapia while production was estimated to 50/60 tons in 1987
- Both sectors need structuration.

ENERGY, WATER AND ENVIRONMENT

- In 2011, Energy and water concentrated 3,4% of the value-added produced in Martinique.
- In 2015, the sectors hire 2% of workers
- Renewable energies account for 6,9% of the martinican energy mix
- 0,8% of companies are involved this sector and 0,9% of company creation concerns energy water or environment in 2015.

THE MARTINIQUE CHAMBER OF COMMERCE IN ACTION

L'esprit
GAGNANT !

The Wining mind

The Martinique CCI

- Public establishment with its own legal personality and financial autonomy
- Over 250 years of existence.
- Since 2010, it is a Territorial Chamber of Commerce and Industry with the responsibilities of a Regional CCI.
- Fields:
 - ❖ Creation and Takeover
 - ❖ Durability and Performance
 - ❖ International development
 - ❖ Sustainable Development
 - ❖ Training and Apprenticeship
 - ❖ Transmission
- Missions: macroeconomic and microeconomic studies, Formulation of local road maps/public action plans for economic development or land use Planning.
- Represents business and economic interests on the local scene.

The Martinique CCI

- Concession-holder of the Port and airport until 2013
- Member of the Supervisory Board



The Fort-de-France Port

- 1 cargo port (including a container terminal)
- 3 Cruiseship ports
- 1 Inter-island Passenger terminal
- 4th French Port in terms of trade volume
- 1 ship repair basin



The Aimé Césaire Airport

- 1 International passenger terminal – 28000 m²
- 1 Cargo terminal – 9400 m²
- 1 area dedicated to general aviation (taxi planes, flying club, pilot school, air services...)
- Passenger traffic: 1 801 083

MARTINIQUE, A PLACE FOR SUCCESSFUL BUSINESSES

MCCI: Our Goals

- **To ensure the digital mutation of the MCCI** in order to cater for the need of proximity service (Update the website, social networks, dematerialization of internal and external procedures etc.)
- **To foster the emergence of martinican ICT jewels** (enterprise hosting, financing, research, training, HR).
- **Take advantage of our implication in the « Village by CA project »** and « Arobase 972 » to establish connections with business accelerators in continental France (like the Station F Project).
- **To develop economic observation and economic intelligence tools** to help decision-making in companies
 - Feasibility study to create an economic observatory
 - Identification of new economic fields with fast-growth potential + studies' issuing (silver economy and ICT)

■ To Redefine Economic activity Areas (ZAE) and town-centers

- Achieve a « digital fastway » in ZAEs
- Build a « trans-area way » with an electric bus between ZAEs, the Port and the airport
- Coordinate and promote the structuration of governance within ZAEs and Town-centers (business associations)
- Conclude the professional dump project.

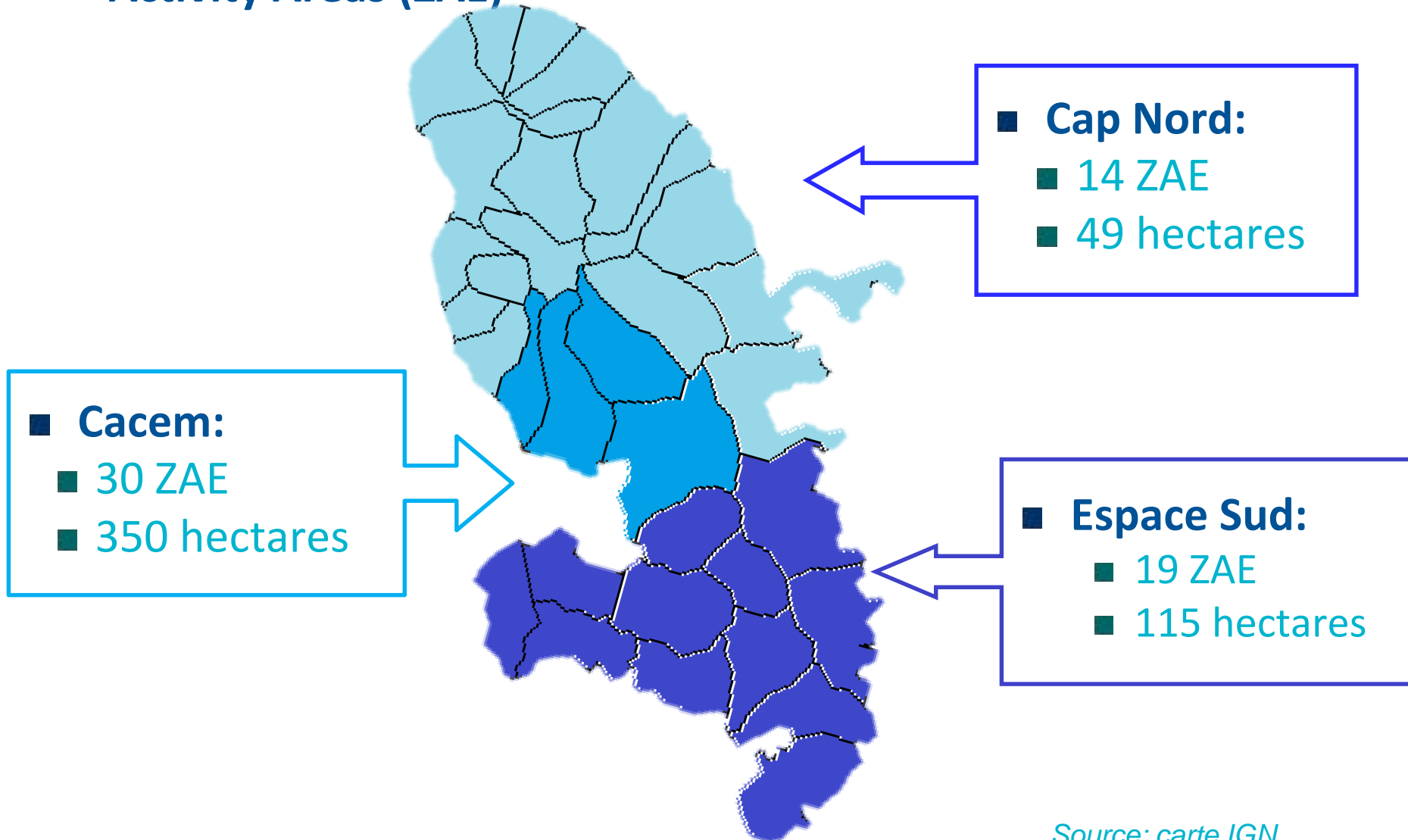
Examples of actions:

- Creation of a website listing all the businesses in Economic activity Areas in January 2018
- Creation of the ZAE federation and monitoring of activities.

■ To Initiate great projects

- Study the opportunity and feasibility for the construction of a North-South Trans-Martinique highway
- Create an experimental Free-Zone area
- Creation of LODEOM 2 (employer charges exemption) with an increased rate for tourism and export.

■ Development and improvement of Economic Activity Areas (ZAE)



Source: carte IGN

Foreign Company assistance



Individual Assistance



- ✓ Domestic market information
- ✓ Regulations (marketing and customs)
- ✓ Import-export statistics
- ✓ Partnership identification
- ✓ Matchmaking planification
- ✓ Tailored assistance on field trips
- ✓ Translation Assistance
- ✓ Aftercare services

Collective Assistance



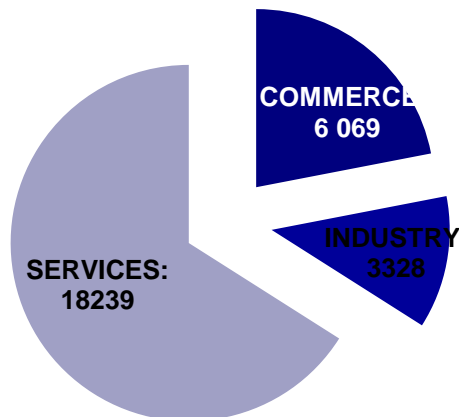
- ✓ Set up a conference on « Doing Business with Martinique » with sector specialists
- ✓ Assistance to organise the logistics of the field trip (accommodation, rooms, transfers...)
- ✓ Identify stakeholders
- ✓ Matchmaking coordination
- ✓ Collective visit planification
- ✓ Collective assistance on field
- ✓ Interpretation services

MARTINIQUE, A LAND FOR ECONOMIC INITIATIVES

Our Strategy

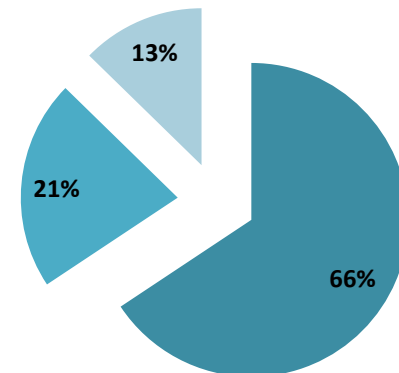
- To Assist our 27 672 businesses' development
- To Boost entrepreneurship
- To Strengthen company competitiveness,
- To Improve business support tools' efficiency,
- To secure project holders in their journey .

Repartition by Category



Repartition by Area

■ CACEM ■ CAESM ■ CAP NORD



■ To Reinforce synergies with other stakeholders involved in the Business Support ecosystem

- Conclude MOUs with main public entities in the framework of strategic alliances.
- Direct efficiently business owners through business support networks.
- Conceive innovative and shared financing tools for company development.

Examples:

- MOU with IEDOM and *Communautés d'Agglomérations*
- Response to a call for proposals « Business support for entrepreneurship in difficult environments » in consortium with FTPE, MEDEF and ADIE.
- Response to a call for proposals with *Pôle Emploi*

AN ENGAGEMENT FOR BLUE AND GREEN GROWTH

Strategy to develop blue and green economy

■ **Develop Organized Mooring Zones (OMZ) and boating in the North and South of the island**

Ex: Completion of the feasibility study for the OMZ in the North of Martinique. Action plan started with Cap Nord.

■ **Achieve the « Eco-parc Lafayette » project, a research facility dedicated to « land and sea » biodiversity.**

- An ecological activity parc to promote regional biodiversity
- An autonomous structure created to design, plan, build, operate and develop this « Ecoparc »
- Mission: set up activities that will lead to job creation around biodiversity (tourism, reseach or training)

Ex: Research on guava waste valorization / creation of a patented guava juice without water and sugar in collaboration with the Biosphere Group and a local Juice producer

Make Green growth a development and performance factor for local companies

- **Promote eco-design of products and services, sustainable innovation and energy efficiency.**

During the Industry promotion week, the MCCI launched a eco-design contest to promote companies with innovative ideas to reduce their packagings' impact on our environment.

- **Mobilize companies around eco-innovative projects (neighbourhood economy, renewable energies...) and allow them a better command of energy efficiency (advantages, warehousing, etc.)**

Information and support of companies engaged in the Quality label on energy consumption, waste management...

- **Negotiate MOUs with significant firms in the energy sector in Martinique.**

Waste management in construction firms

- **Attract research centers and launch experimental projects in the energy sector**

German companies in renewable energies met Martinican companies in the sector to search for possible adaptations of foreign innovations to our territory's specifics.

MARTINIQUE, A PLACE OF EXCELLENCE



MCCI Training

■ Post-secondary education

The EGC Business School :

- 2 409 interns, 120 students (EGC)

The Training center for apprenticeship:

- 540 Apprentices and professional contracts

The Computer Science engineering school SUPINFO Caraïbe

■ Continuous Training

HEC Paris (partnership with MCCI Training center)

University of Sherbrooke (partnership with MCCI Training center)

ESSEC Executive Education (partnership with MC2)

Our Strategy for training

- **Develop a training offer in adequacy with demand,**
- **Prepare the skills of tomorrow**
- **Offer innovative and experimental training adapted to the patrons (youth, employees, executives, managers....)**

■ **Make the MCCI Training center a center of excellence for education and training in Martinique**

- Create synergies and partnerships with other training operators
- Position as a facilitator between training stakeholders.

■ **Analyze and diversify the existing training offer**

- Propose high value-added trainings, through specialized Master's degrees in partnership with significant companies or famous schools.
- Professionalize the digital training offer mixing physical attendance and distant training.
- Develop a premium training offer for executives in collaboration with the EGC
- Facilitate networking by promoting HEC Alumni, a Decision-makers Club, Forums...

MARTINIQUE, A PLACE TO INVEST



- **Create a local economic observatory**

Priority on tourism, construction, Sustainable businesses and Economic Activity Areas

- **Write and share the MCCI's vision of tourism for Martinique**

Rally private companies especially for furnished accommodation, and quality repositories

Participate in the « Rum route » in partnership with CODERUM, Martinique Authority,

Ease access to Martinique for Caribbean patrons (« French Caribbean » label) and emergence of a premium resort

Develop Business tourism

An open door on Europe and the rest of the Caribbean

Martinique is part of the European Union...

- Monnaie : €
- Accès au marché commun européen
- Mobilité des ressources humaines



... And a member of regional institutions



Association of Caribbean States
Asociación de Estados del Caribe
Association des Etats de la Caraïbe

The Unique Entry point for export

Partners with the main stakeholders to support companies' **internationalization**



93 offices in **106** countries



118 CCIFI in 85 countries



66 countries, 34 non-EU members



49 agencies to invest **200 Billion EUR** in company development until June 2019

And also a partner of the main stakeholders in **the Caribbean:**



19 Investment promotion Agencies



9 Trade promotion agencies



15 Chambers of Commerce



7 Industrial associations

Regional Institutions





Adresse: 50 rue Ernest Deproge -97 200 Fort de France

Tel: + 1 5 96 55 28 00

Site internet: www.martinique.cci.fr

email: contact@martinique.cci.fr

Thank you very much!

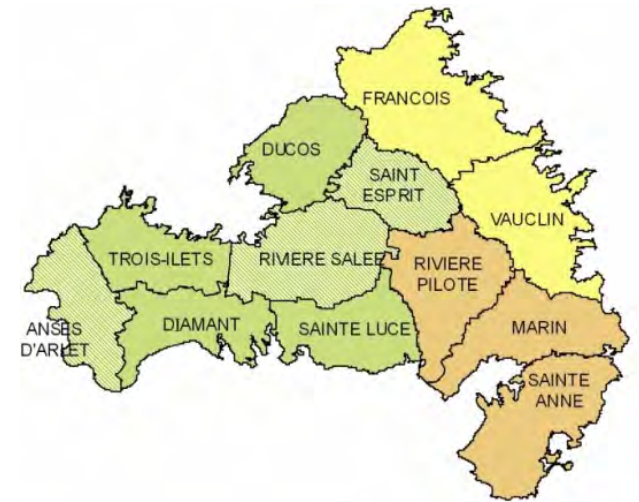


ODYSSEA, a strategy for a sustainable blue growth in the South of Martinique

Interregional site visit – Workshop

June 25th-29th

Espace Sud



12 cities,
409 Km² – 122 225 inhabitants

Economic Development, Tourism, Water, Collection of domestic waste, Tourism, Management of natural spaces , Town policy...

Espace Sud, the tourism hub of Martinique

72% of the hotel rooms

45% of the tourism
facilities

The only golf course of
Martinique



Espace Sud, the tourism hub of Martinique

The biggest port of
the South Caribbean

- 830 berths and a 100 anchorages
- Classified as "Nautical Station" since 1998
- Bearer of the "Blue Flag" label since 2006
- A brand new boatyard (2016)





OUR STRATEGY FOR A SUSTAINABLE BLUE TOURISM



SMART SPECIALISATION ODYSSEA BLUE TOURISM

1. Innovative and eco-friendly investments in order to improve the amenities of and around our ports and marinas
2. The development of thematic itineraries in order to promote the natural and economical assets of our destination through digital mediation
3. The development of a quality plan for our ports of call and tourism sector: services and reception upgrade
4. Eco-mobility
5. Development of a « blue tourism cluster » to gather and get the private sector involved in the project
6. Professional training and employment

Nautical activities, cruise, yachting, scuba diving, beaches, seafood, events, fair, blue and green routes.

ODYSSEA BLUE TOURISM IN MARTINIQUE

MAKE THE SOUTH OF MARTINIQUE THE
FRENCH PORT OF CALL OF THE
CARIBBEAN



2016
1400 RINGS

2026
3000 RINGS



ODYSSEA ECO TOURISM IN MARTINIQUE

Link between the
coastline and the
hinterland



Development
of
agritourism

Cultural
itineraries

Blue tourism
cluster

Environmental
labels

Promotion of
local
products and
cuisine



ODYSSEA CARIBBEAN

BUILD THE THE BLUE TOURISM SECTOR and FIRST BLUE CULTURAL ROAD OF THE CARIBBEAN

2 INTERREG PROJECTS:

ODYSSEA CARAIBES BLUE GROWTH: Martinique, Guadeloupe, French
Guyana, Mexique, Cuba, Colombie

ODYSSEA SUSTAINABLE CULTURAL BLUE ROUTES: Martinique,
Guadeloupe, OECS, Sainte-Lucie





Thank you very much!





GROW RUP
Interreg Europe



European Union
European Regional
Development Fund



AREAM – Regional Agency for Energy and Environment of the Autonomous Region of Madeira

Filipe Oliveira

June 25, 2018



AREAM is a private non-profit association, recognized as public utility, established in 1993, with the mission to promote knowledge, research, innovation and cooperation in the fields of energy and environment.

AREAM's main fields are:

Renewable energy

Sustainable mobility

Environment

Energy efficiency

Climate change

Natural resources

Planning



Since 1993, AREAM has participated and developed around 100 projects and other initiatives, most of which are international cooperation projects focused on research and innovation, in the fields of energy and the environment.



AREAM is involved in H2020 projects, Interreg AA projects, Interreg Europe, Interreg MAC 2014-2020, EEA and Norway Grants Fund for Youth Employment and other projects co-financed by national and regional programmes:

H2020 projects:

- Civitas Destinations
- SOCLIMPACT
- C-TRACK 50

Interreg MAC 2014-2020 projects:

- ADAPTaRES
- ENERMAC

Interreg Europe:

- RESOR

Interreg Atlantic Area projects:

- SEAFUEL
- ARCWIND

EEA and Norway Grants Fund for Youth Employment:

- YENESIS

Other activities:

- Porto Santo Smart Fossil Free Island
- Eco.AP Program (Energy efficiency in the public administration)
- ECEE-RAM (Electricity efficiency in the public administration)
- Energy certification of buildings
- Collaboration with Regional Government and municipalities

For more information about the projects:
<http://aream.pt>

Thank you!

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AREAM – Regional Agency for Energy
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Region of Madeira

Website: <http://aream.pt>



Thank you very much!