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Espaces maritimes et interfaces

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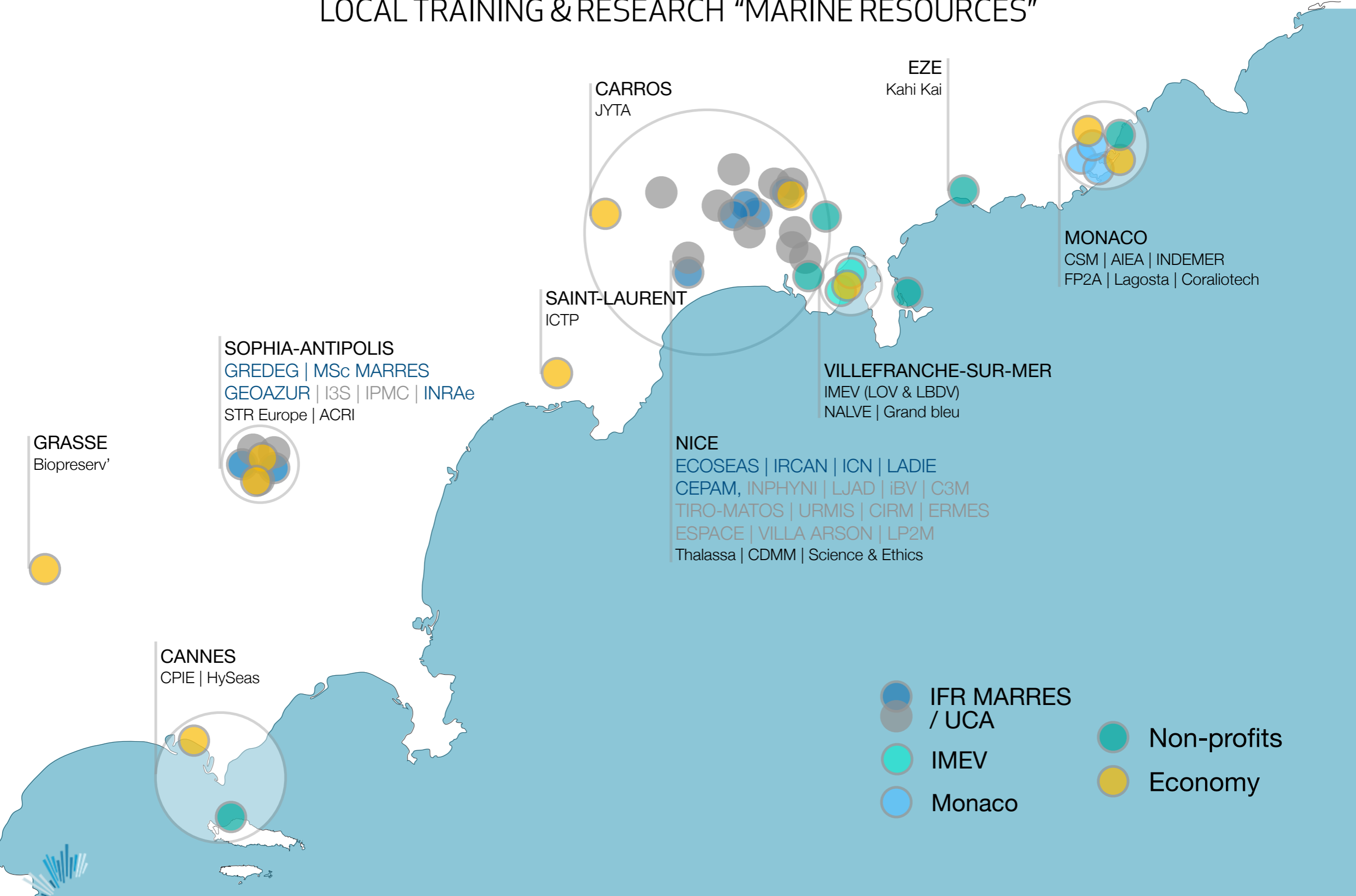
Training & Research to study, preserve and value
marine resources for well-being and health



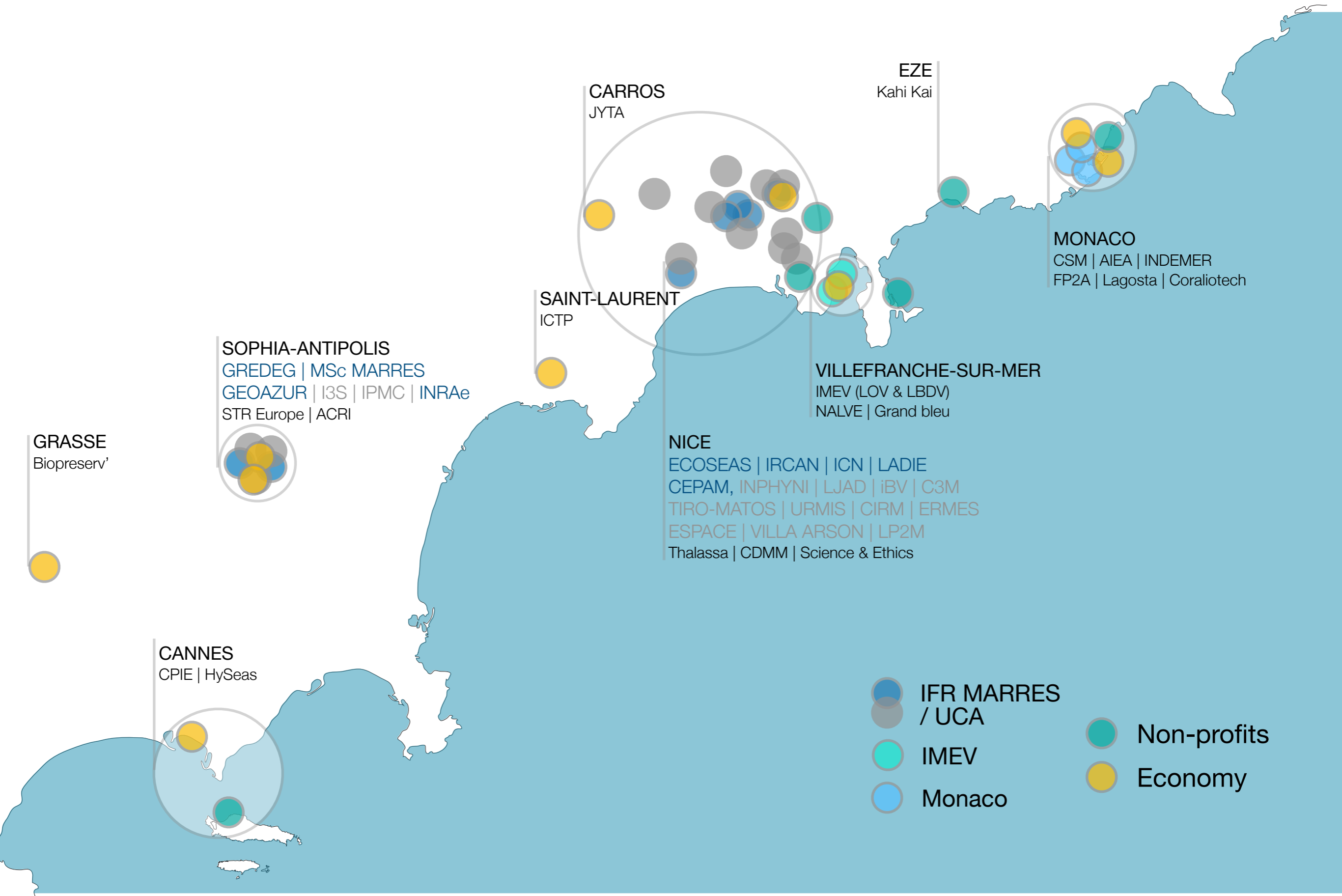
UNIVERSITÉ CÔTE D'AZUR



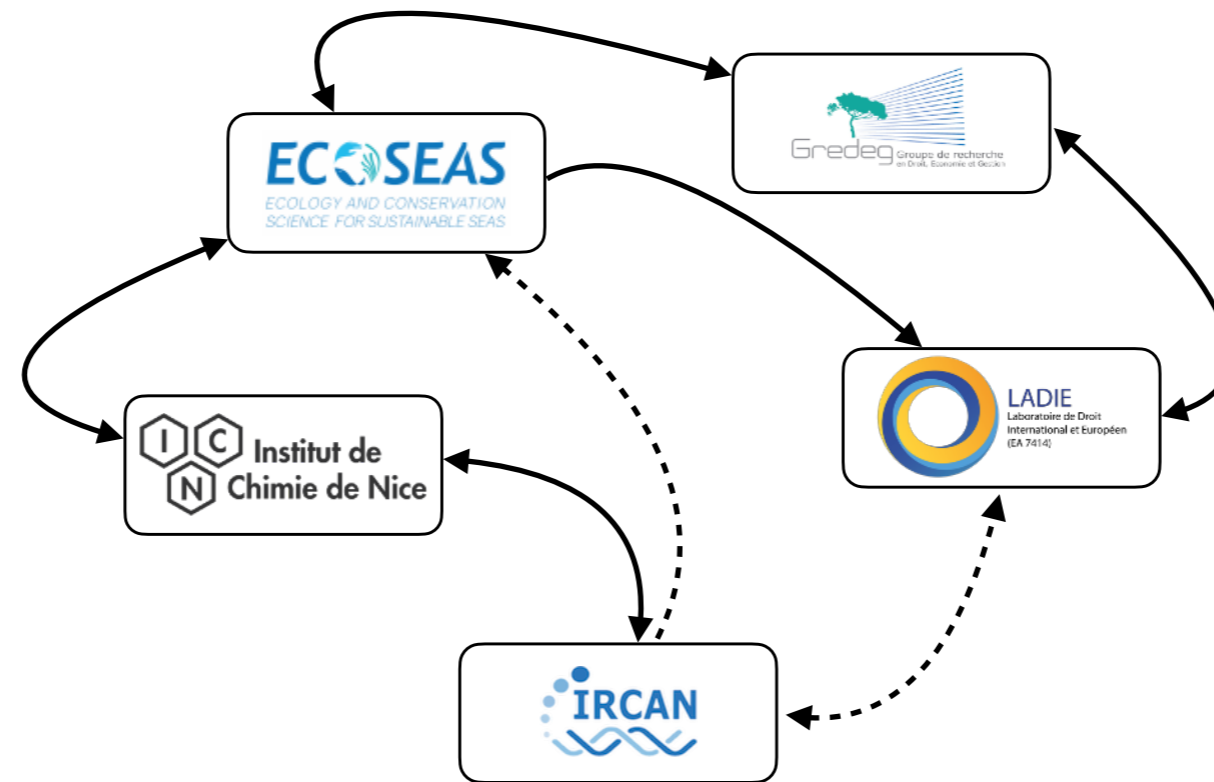
LOCAL TRAINING & RESEARCH "MARINE RESOURCES"



- IFR MARRES / UCA
- IMEV
- Monaco
- Non-profits
- Economy



UCA TRAINING & RESEARCH DYNAMICS IN "MARINE RESOURCES"



2018

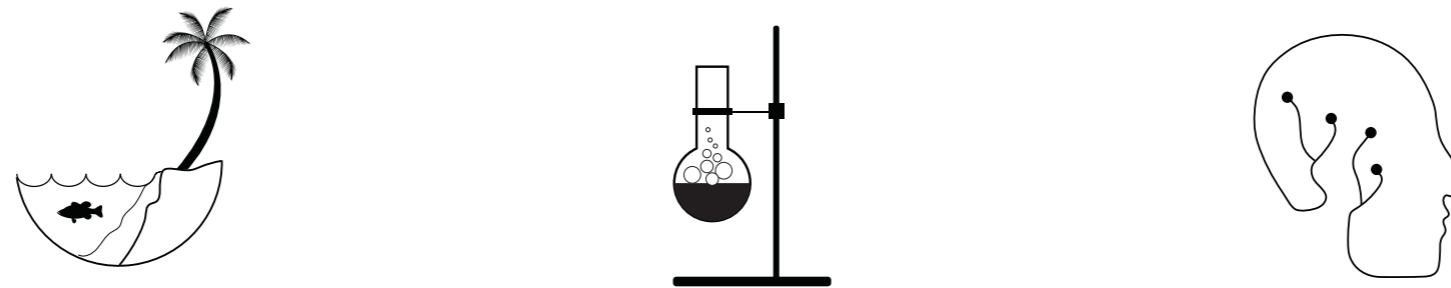


2020

MISSION OF THE IFR MARRES



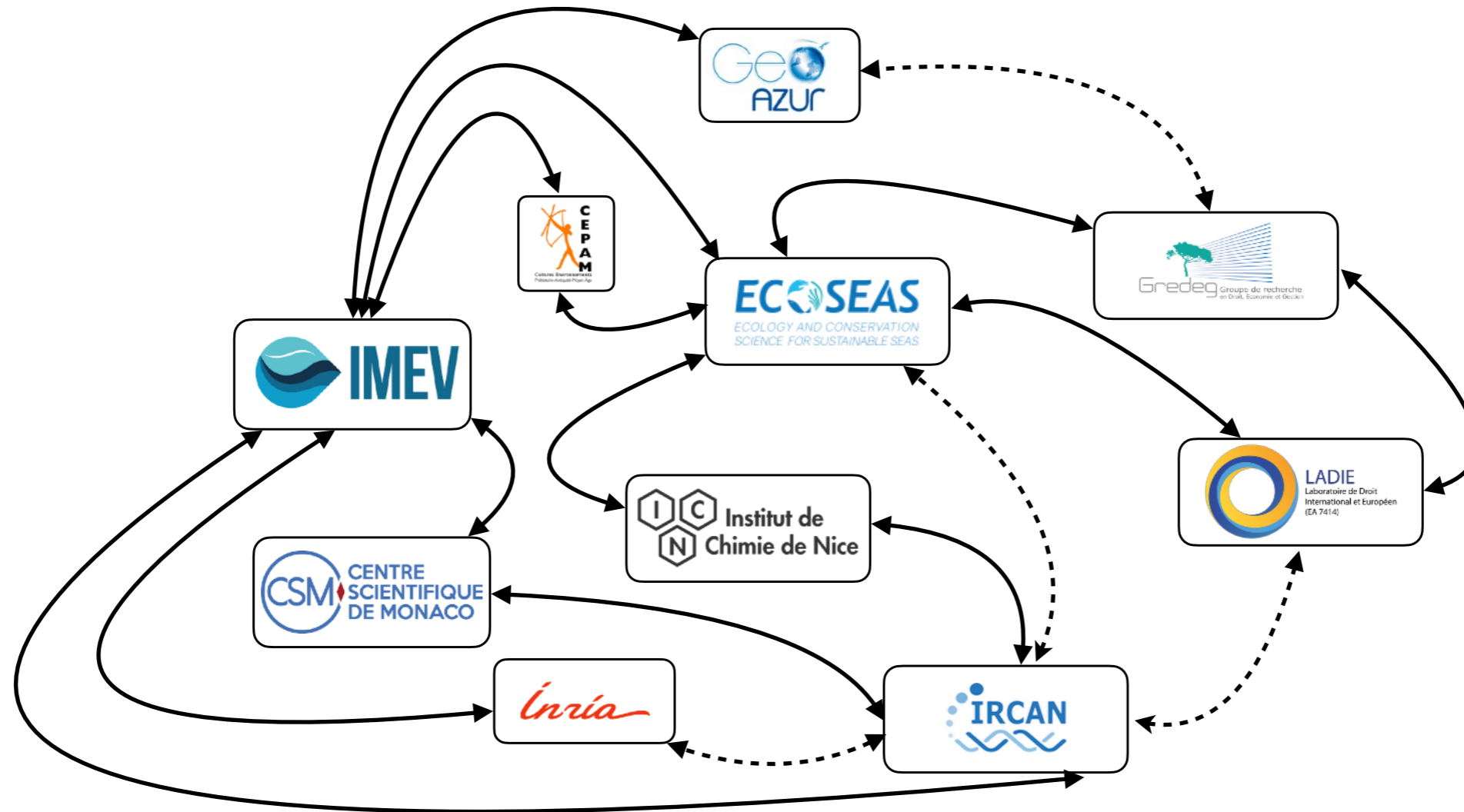
FROM ECOLOGY, BIOLOGY AND THE CONSERVATION OF MARINE RESOURCES,
TO WELL-BEING AND HEALTH



STRUCTURING "MARINE RESOURCES" RESEARCH WITHIN UCA & SITE
FOSTER TRANSVERSAL, INTERDISCIPLINARY & AMBITIOUS COLLECTIVE RESEARCH
VALUE THIS RESEARCH WITH SOCIO-ECONOMIC PARTNERS & LOCAL AUTHORITIES



TRAINING & RESEARCH DYNAMICS IN "MARINE RESOURCES"



MSc
MARRES



Federative Research Institute
MARINE RESOURCES



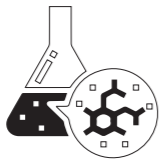
UNIVERSITÉ CÔTE D'AZUR



INTERDISCIPLINARY EXPERTISE - LOCAL, NATIONAL & INTERNATIONAL



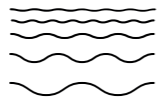
Biology



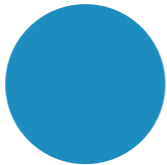
Chemistry



Health



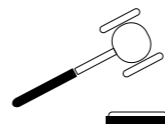
Environnement



Ecology



Conservation



Law



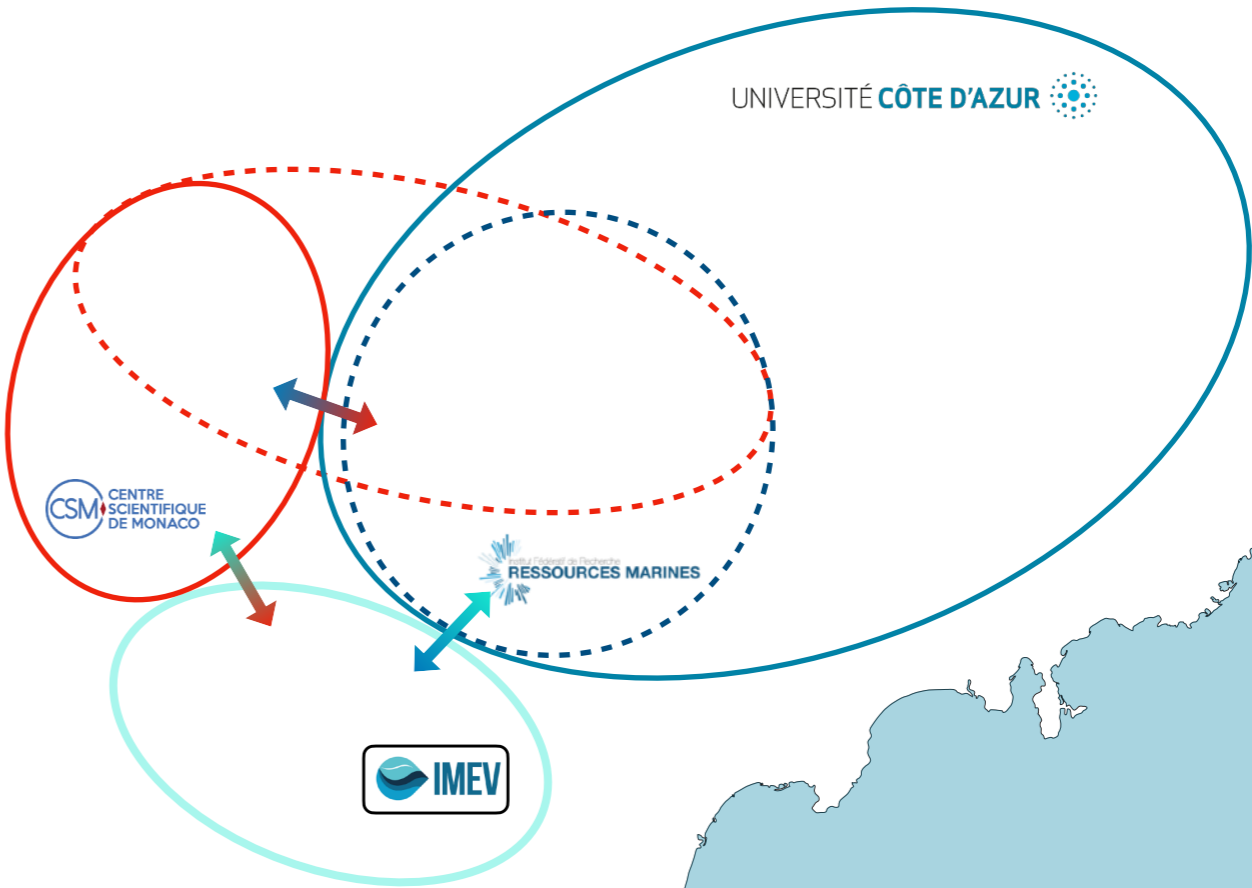
Economy



Geology



Archeology



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MÉTROPOLE NICE CÔTE D'AZUR



REGION SUD PROVENCE ALPES CÔTE D'AZUR

Integrated management and sustainable development of marine resources for health & well-being

Axe 1 Ecology & integrated Management

Aim 1 Environmental assessment

Aim 2 Management / decision-making

Aim 3 Innovation for conservation

Axe 2 Sustainable valuation

Marine Natural Products **Aim 1**

Marine Bioinspiration **Aim 2**

Innovation for research / society **Aim 3**

Axe transversal 1 - Facilities & Services (existing or to be developed)

Axe transversal 2 - Training by research

Axe transversal 3 - Economic impact & acceptability

Axe transversal 4 - Science and Society

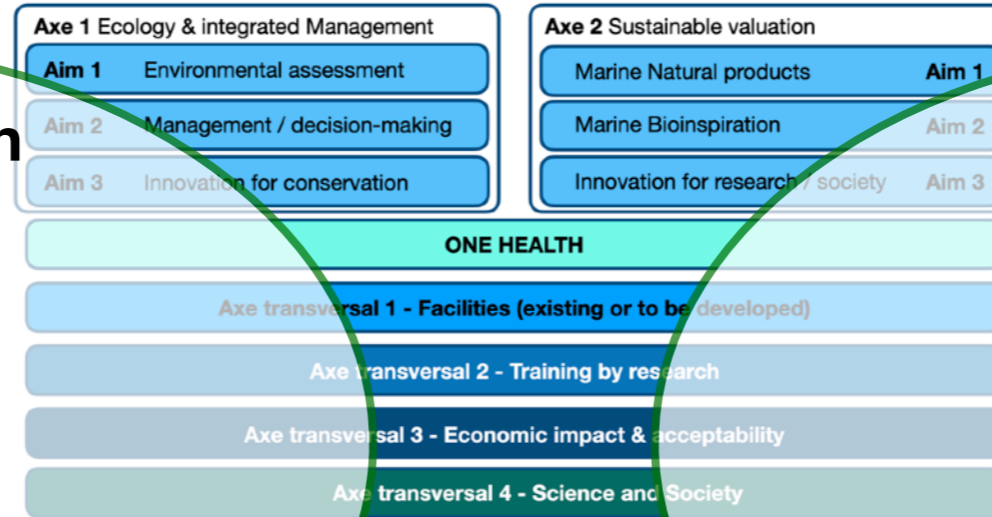
ONE HEALTH

DEVELOPMENT OF AMBITIOUS RESEARCH PROJECTS



Integrated management and sustainable development of marine resources for health & well-being

Conservation
MPA Nice



Innovation

BlueLeaf (MSc MARRES)
Viridis (2023)
Blue (2024)
UCA Cosmetics (2025)

INALVE

Marem Biotech (2023?)

MÉTROPOLE
NICE CÔTE D'AZUR

MÉTROPOLE
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UNIVERSITÉ
CÔTE D'AZUR
FONDATION

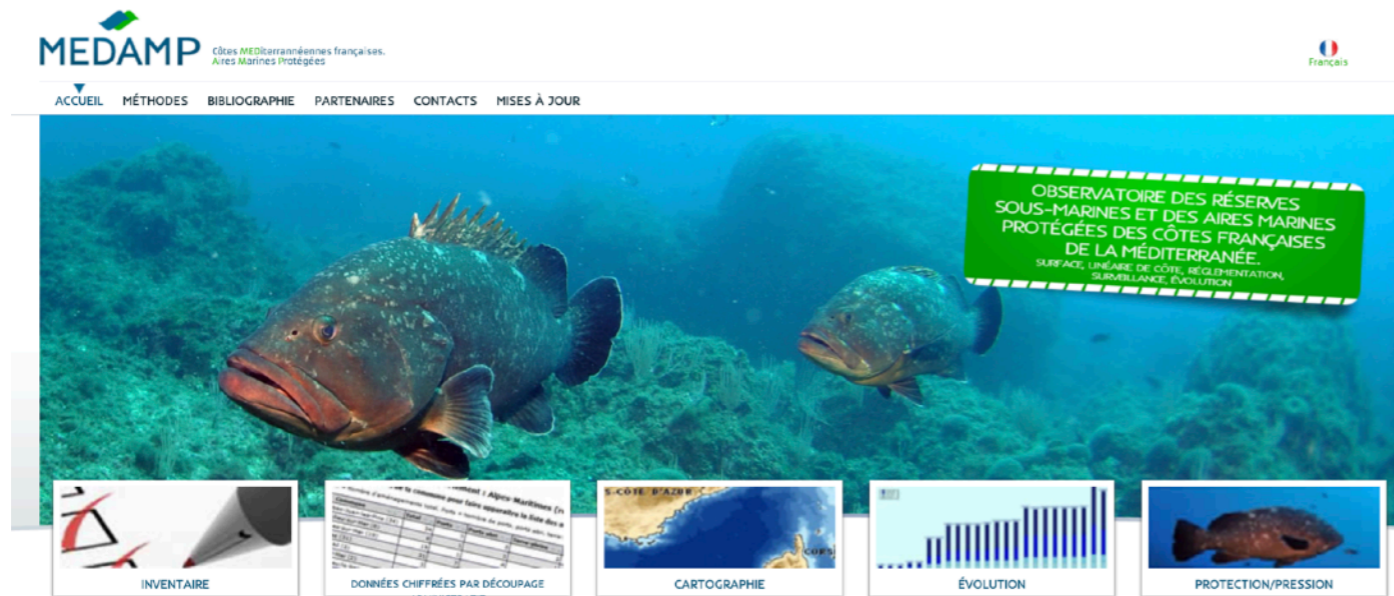
MÉTROPOLE
NICE CÔTE D'AZUR



GESTION INTÉGRÉE DES RESSOURCES MARINES (MARE)



PI: Cécile SABOURRAULT - ECOSEAS



Nouvelle AMP (Baie de Nice) - MNCA

AXE 1- Préservation/restauration de la biodiversité (ECOSEAS, ICN, LJAD/INRIA)

AXE 2 - Valorisation économique des ressources durables (GREDEG, ECOSEAS, ITCA, ICN)

AXE3 - Gestion durable, indicateurs juridiques et économiques (LADIE, GREDEG, ECOSEAS)



TARA PACIFIC EXPEDITION



TARA Consortium

80 scientists
18 laboratories, 8 countries



Sampling

40 sites: 3 coral species
10 samples/species/site
+ fish, plankton, water...

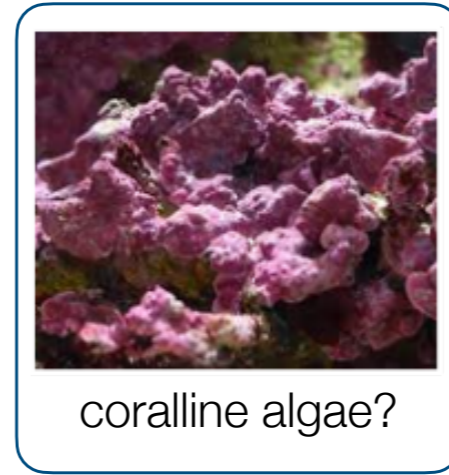
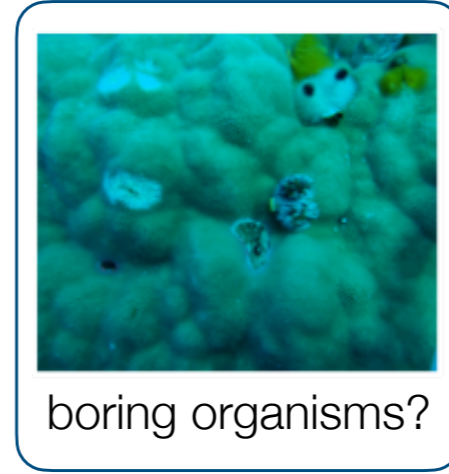
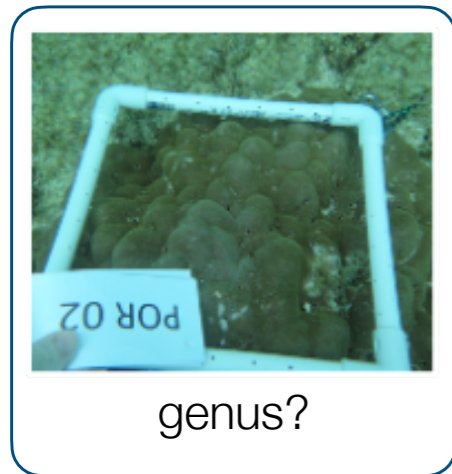
Multi-omics, physiological,
contextual & historical data



57 000 samples; incl. 900 coral (meta)genomes and associated data (past & present)

- Evaluate the state of coral reefs through an integrative approach
- New predictive tools for reef health
- Evolution of stress-response / longevity mechanisms

IMAGE ANNOTATION TO DEVELOP ADDITIONAL DATASETS



Manual annotation

11 420 images ~ 4 months



AI annotation

11 420 images ~ few seconds



PhD : Megan CLAMPITT

STRONG CONNECTION TRAINING & RESEARCH



Megan CLAMPITT (2020) - CORALS & AI
IRCAN / MSI



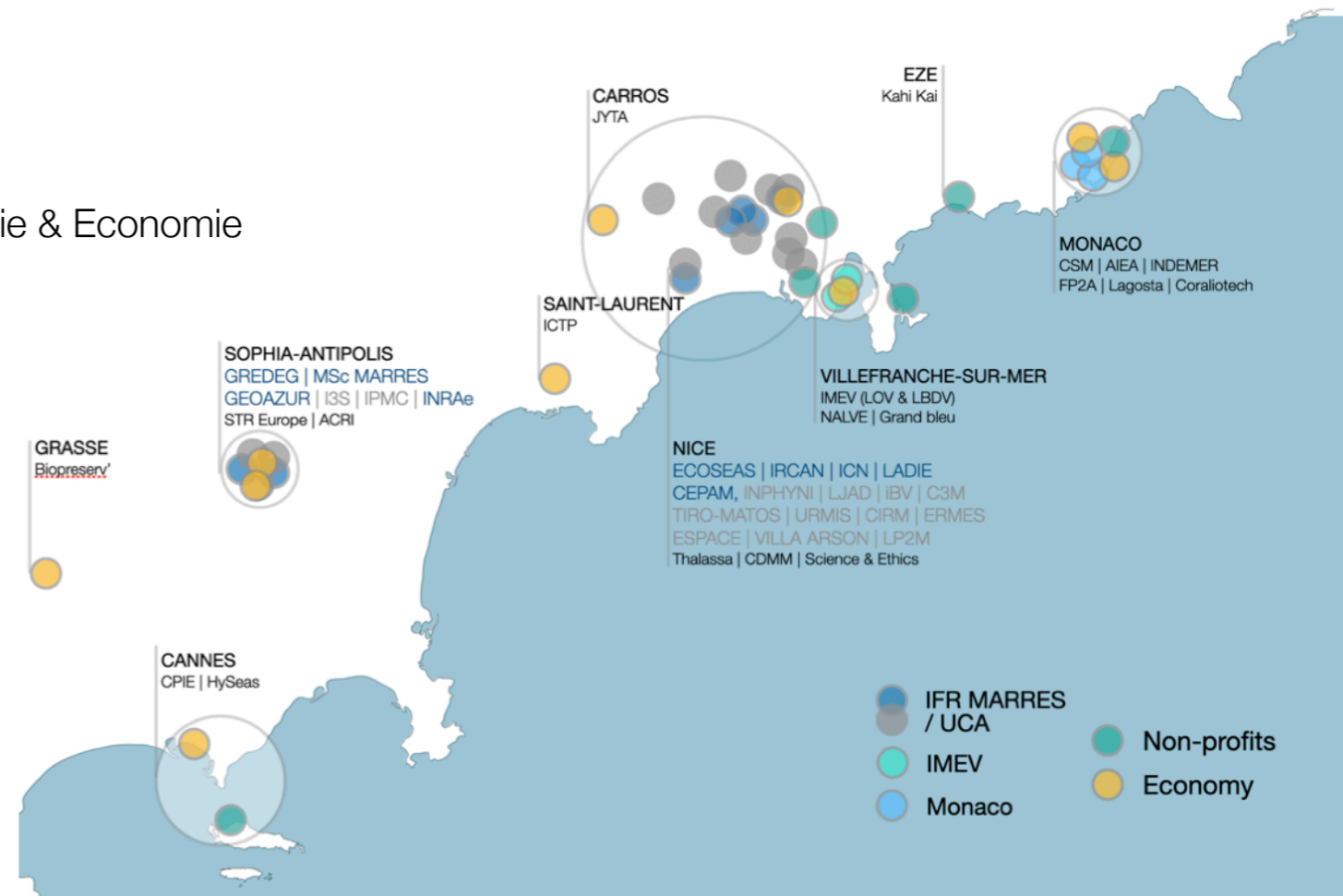
Kylian BURGI - AI & Species Detection
ECOSEAS / INRIA



Julie MARTY-GASTALDI - MPA Ecologie & Economie
ECOSEAS / GREDEG



Keyla PLICHON - CORALS & Health
IRCAN





Institut Fédératif de Recherche

RESSOURCES MARINES

Thank you for your attention

Espace maritime et interfaces **combiner protection des océans et développement durable**



Séminaire Hydrosphère

Académie 3 – Université Côte d'Azur
30 janvier 2023 - Nice

Christophe Mocquet

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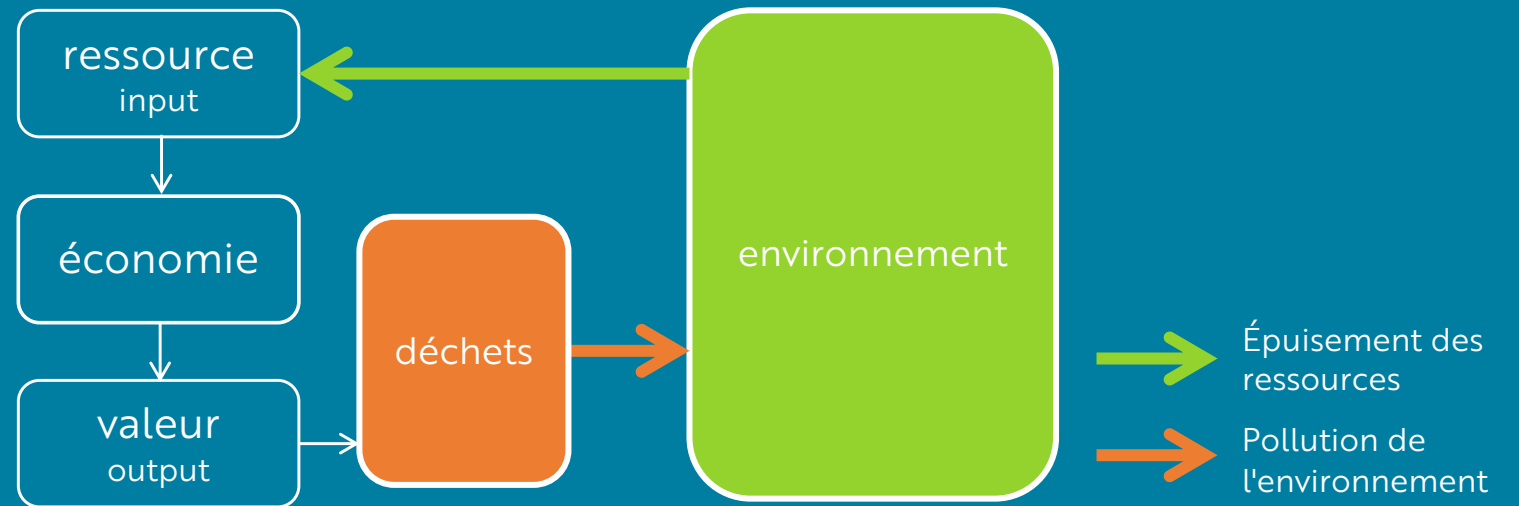
Espace maritime et interfaces

Combiner protection des océans et développement durable

Une longue histoire



adapté de Boulding 1966

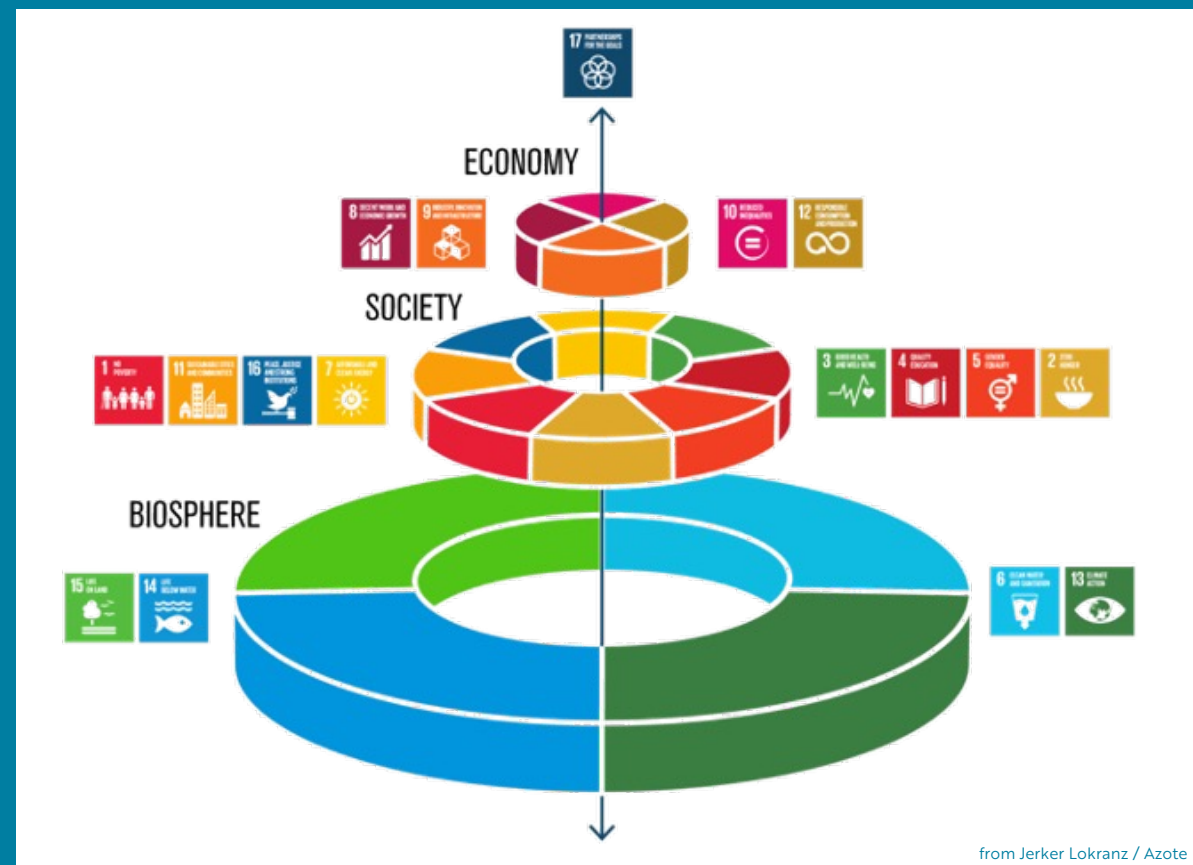


Christophe Mocquet christophe.mocquet@univ-cotedazur.fr

Espace maritime et interfaces

Combiner protection des océans et développement durable

UN SDGs: les objectifs de développement durable de l'ONU



from Jerker Lokranz / Azote

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Espace maritime et interfaces

Combiner protection des océans et développement durable

L'interdisciplinarité de la conservation marine



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Espace maritime et interfaces

Combiner protection des océans et développement durable

Succès



BLUE
SEEDS

Blue finance



coral
GUARDIAN

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Espace maritime et interfaces

Combiner protection des océans et développement durable

Cas d'étude: les herbiers marins



Urquart 1824, Weycott et al. 2009, Terrados & Bodrum 2014, Nordlund et al. 2018

Services d'approvisionnement

2

Services de régulation



Services culturels

.3

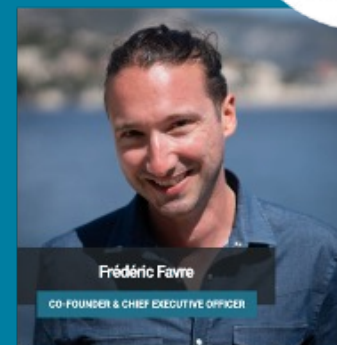
Campagne et al. 2015

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Espace maritime et interfaces

Combiner protection des océans et développement durable

Cas d'étude: les herbiers marins



Christophe Mocquet christophe.mocquet@univ-cotedazur.fr

Besoins



SCIENCE

Evaluation des SE

- ▶ quantifier séquestration carbone



CONSERVATION

améliorer la gestion des SE et de la biodiversité

- ▶ protection et restauration



INNOVATION

promouvoir un cadre institutionnel, générer des incitations

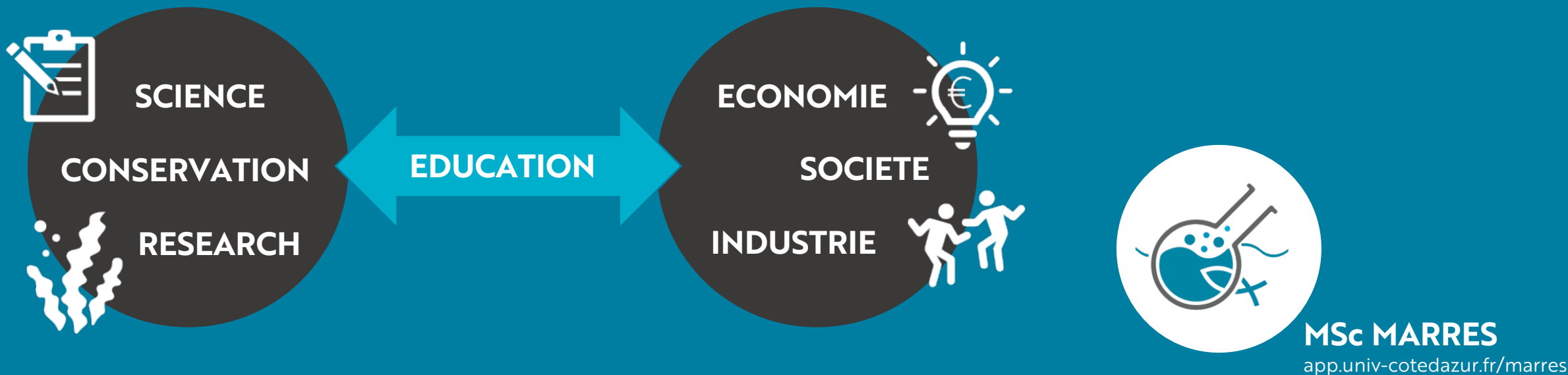
- ▶ marché carbone

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Espace maritime et interfaces

Combiner protection des océans et développement durable

L'Enseignement Supérieur comme passerelle



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