Study of holopelagic *SArgassum* responsible of massive beachings: Valorization & Ecology on Caribbean coasts

Valérie STIGER-POUVREAU

LEMAR UMR 6539 – IUEM - UBO

Plan

- The consortium;
- Aims;
- Objectifs;
- Management of the project;
- Research questions addressed;
- Results expected;
- Added value/dissemination/perspective for development

The consortium – 14 partners

- **10 Academic partners:**

LEMAR-UBO (Brest), MIO-IRD (Marseille),
BOREA-UA (Guadeloupe), BOREA-Ucaen,
L3MA-UA (Martinique), Ifremer (Martinique)
IRDL-UBS (Lorient), LBCM-UBS (Vannes),
UWI-The Barbados, CINVESTAV-Merida (Mexico)

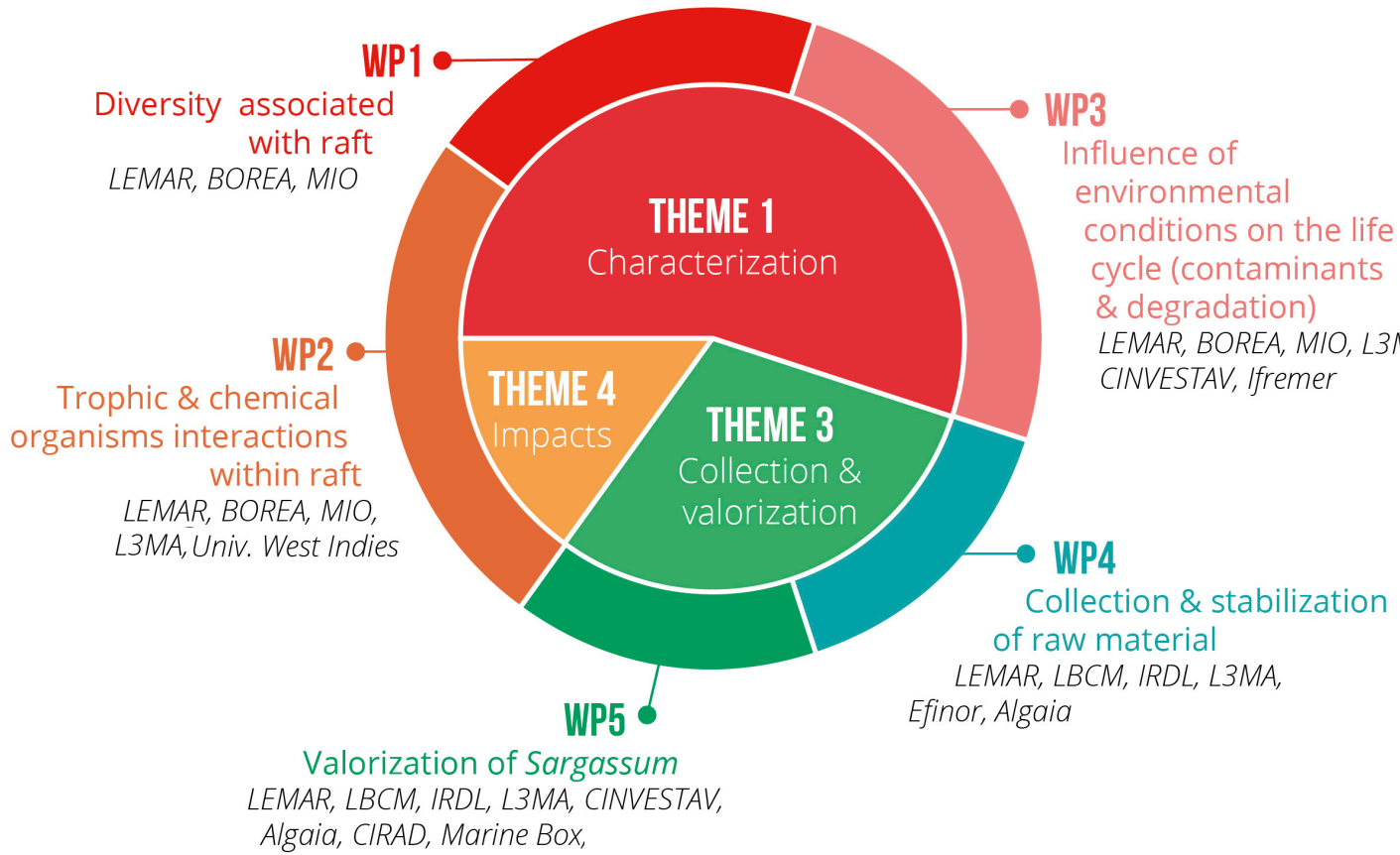
- **4 industrial partners:**

EFINOR (La Hague), ALGAIA (Saint Lô)
CIRAD (Martinique), TMB (Martinique)

Aims of the study

- To better know the diversity and the functioning of floated *Sargassum*, along the drift of the rafts to their beaching
- To understand the capacity of *Sargassum* to live in pelagic life, to concentrate some contaminants and to study the degradation process in beached *Sargassum*
- To collect and valorize the huge biomass of *Sargassum* in 2 sectors of applications: agriculture (biopesticides) and biomaterials (cardboard)

Management of the project



Research question addressed

- Which organisms live with *Sargassum*? How this diversity varies along the tropical Atlantic Ocean and throughout the degradation processes?
- What is the biochemical composition of *Sargassum*? Which adaptative strategies the species developed to persist in pelagic life? What is happened during the degradation of the beached *Sargassum*?
- Which environmental parameters influence the capacity of the alga to develop rafts and mostly, to concentrate arsenic along rafting ?
- How to collect and how to find a value from this huge biomass of *Sargassum*? Two sectors of applications are prospected with an innovative biorefinery model: agriculture and biomaterials

Results expected

- Fundamental results (WP1,WP2,WP3)
- Applied results (WP4,WP5)
- Creation of a network: Project linked to 2 others projects: ORIGINS, FORESEA,

  + CORSAIR?

  => ANR awarded
- Diffusion to several audiences: Master students, young public but also Institutions and general public

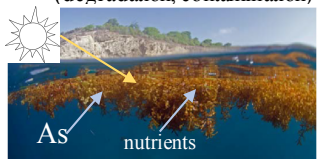
Added value/dissemination/ perspective for development

Ecology of *Sargassum* rafts

WP1 Associated diversity

WP2 Foodweb, interactions

WP3 Ecophysiology, Dynamics (degradation, contamination)



Collection & valorization

WP4

WP5

Biostimulant Biopesticides

Cardboard Bioplastic

Recommandations & Capacity building

Management of beachings (France, Mexico, Barbados)

Quality of raw material:
- decontamination
- stabilization

Solutions for the Environment

Local new jobs

Novel species for aquaculture & applications

Management of impacts

Characteristics of thalli: buoyancy, ageing, Arsenic concentration

Dissemination to ≠ audiences (DEAL, ADEME, stakeholders, CAR-SPAW, General public, Education)

Exchange of teachers/students within the various Master's courses

Funding Agencies

- Fundamental research:
  - ANR
  - CR 971
  - CT Martinique
- Applied research:
  - ADEME
  - 2 partners on their own fundings

Thanks for your attention