

## The unusual massive beaching of *Sargassum* around Dakar Peninsula (Senegal, Africa) in autumn 2022: opportunity or threat

Bousso, N.C.<sup>1,2,3\*</sup>, Brehmer, P.<sup>3</sup>, Stiger-Pouvreau, V.<sup>4</sup>, Gautier, M.<sup>4</sup>, Kane, C.<sup>1</sup>, Diop, M.S.<sup>2,3,5,6</sup>, Faye, M.<sup>1</sup>, Faye, S.<sup>2</sup>, Balde, B.S.<sup>2</sup>, Sonko, A.<sup>3</sup>, Diedhiou, F.<sup>2</sup>, Quack, B.<sup>6</sup>, Diadhiou, H.D.<sup>7</sup>, Fricke, A.<sup>8</sup>, Aroui Boukbida, H.<sup>9</sup>, Weinberger, F.<sup>6</sup> & Ndiaye, W.<sup>2</sup>

<sup>1</sup>Ecole Supérieure Polytechnique (ESP), UCAD, BP: 5085, Dakar, Sénégal

<sup>2</sup>ISRA, Centre de Recherches Océanographiques de Dakar Thiaroye, CRODT, Dakar, Sénégal

<sup>3</sup>IRD, Univ Brest, CNRS, Ifremer, Lemar, SRFC, Dakar, Sénégal

<sup>4</sup>Univ Brest, CNRS, IRD, Ifremer, LEMAR, F-29280 Plouzané, France

<sup>5</sup>Laboratoire de Botanique et Biodiversité (LBB), Département de Biologie Végétale, UCAD, BP: 5005, Dakar-Fann, Sénégal

<sup>6</sup>GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel (GEOMAR), 24105 Kiel, Germany

<sup>7</sup>Consultant en Pêche et Aquaculture, Freelance, Sipres 5, villa n 21, Cap des Biches, Dakar

<sup>8</sup>Leibniz-Institut für Gemüse- und Zierpflanzenbau (IGZ), Theodor-Echtermeyer-Weg 1 14979 Großbeeren, Germany

<sup>9</sup>Instrumentation, Moyens Analytiques, Observatoires en Géophysique et Océanographie, UAR IMAGO, IRD BP: 1386 Route des Hydrocarbures, Dakar, Sénégal

\*bousso coumba@yahoo.fr

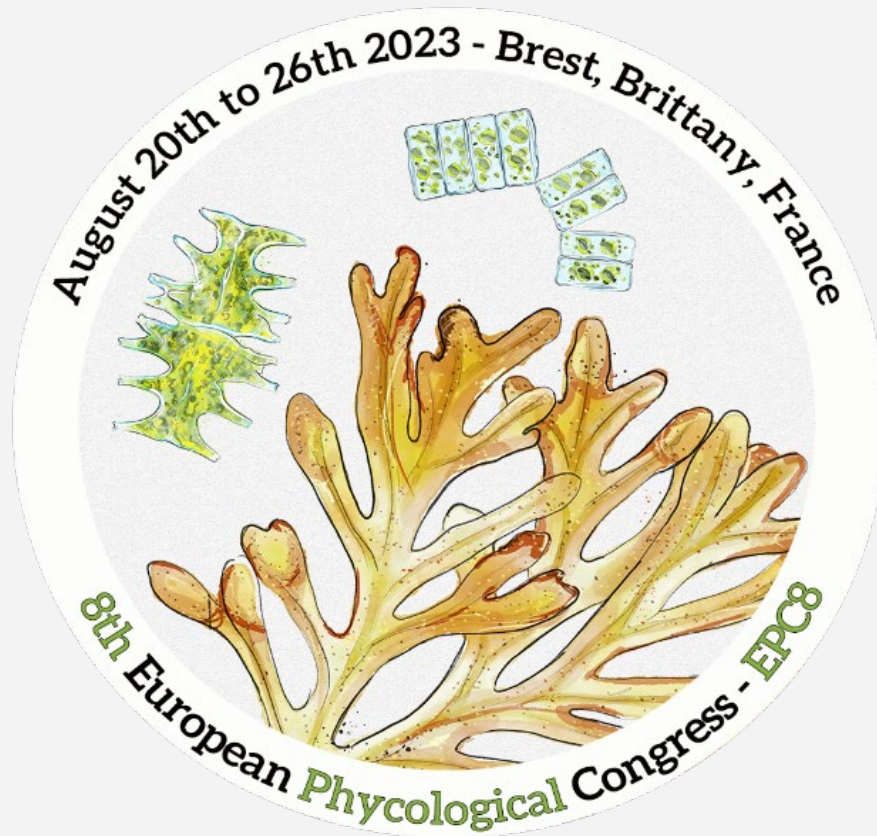
Huge strandings of holopelagic *Sargassum* along the Senegalese coast were observed throughout the summer of 2022. The unusual nature of such stranding has mobilized the community, sparking questions from civic society and industrialists. We report on this *Sargassum* arrival to participate in a global scientific endeavour and to inform local stakeholders. Volunteers reported stranding from north to south of Senegal, harming the coastal life, including turtle fatalities. We analyzed the stranded biomass for taxonomic identity and heavy metal concentrations (As, Cd, Pb and Hg). We differentiated the *Sargassum* collected into six morphotypes based on morphological details. We noticed the presence of the species *S. natans* I, *S. fluitans* III and *S. natans* VIII. Chemical nuclear magnetic resonance (HR-MAS NMR) fingerprintings were obtained to compare morphotypes and sampling sites. In comparison to previous studies throughout the tropical Atlantic Ocean, preliminary analyses revealed low quantities of arsenic and high concentrations of cadmium and mercury in the thalli. For all these heavy metals except lead, the concentrations are higher in *S. natans* I. Arsenic concentrations were variable between sampling sites but lead and mercury concentrations were spatially homogeneous. For agricultural purposes, the maximum values for As and Cd were above some recommended limits. For animal feed, all As concentrations were below the permissible level (40 ppm EU, European Union). Additional analyses are underway to validate these first results and study the biochemical composition of the samples.

## Holopelagic *Sargassum* along a degradation gradient: variation in biochemical composition and impact on potential valorization

Châtelain, B.<sup>1\*</sup>, Stiger-Pouvreau, V.<sup>1</sup>, Bonestève, A.<sup>1</sup>, Gloaguen, N.<sup>1</sup>, Thouard, E.<sup>2</sup>, Dromard, C.<sup>3</sup> & Connan, S.<sup>1</sup>

<sup>1</sup>Univ Brest, CNRS, IRD, Ifremer, LEMAR, F-29280 Plouzané, France

<sup>2</sup>IFREMER, Unité Biodiversité et Environnement de la Martinique, 97231 Le Robert, France



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