

SERIES

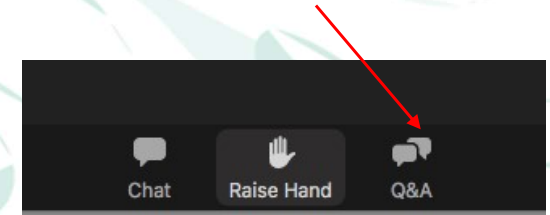


BLUE CARBON MARKET

How to use the platform

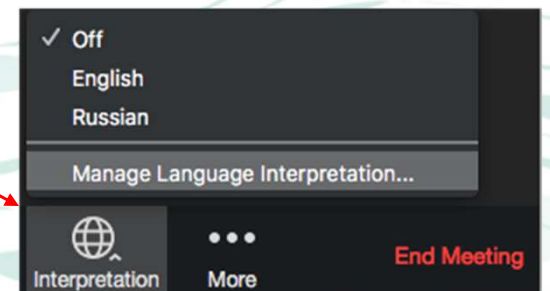
❖ PARTICIPANTS

You can ask questions through the « question box ». The moderators see them and relay them to the speakers who will answer them in the "question and answer" sessions.



❖ TRANSLATION

If you need interpretation please choose the channel below...



❖ SPEAKERS

Think that everyone can see and hear you...and that you are being recorded for future broadcasts! Please turn off your microphones when you are not speaking.

Context & objectives

Series « Blue carbon market »

The aim of this series is to answer the questions most frequently asked about this market.

What are the blue carbon ecosystems ? The blue carbon market is booming, but is it really efficient ? How does it works ? How it can be used to finance restoration project ? Investments progress ?

Context & objectives



ICO SOLUTIONS

Islands, Coasts, Oceans Solutions : Identify and share good initiatives and practices all around the world with our partners



Conservatoire du
littoral

French public institution : acquire parcels of coastline threatened by urbanisation or degraded in order to turn them into restored, developed and welcoming sites that respect the natural balance.



INTERNATIONAL NGO FOR
**MEDITERRANEAN
SMALL ISLANDS**

International NGO : promotion and assistance in the management of Mediterranean island areas by the implementation of concrete actions in the field.



SMILO
SUSTAINABLE ISLANDS

Small Islands Organisation, international NGO : supports small islands of less than 150 km² towards their sustainable development and the sustainable management of their resources (water & sanitation, waste, energy, biodiversity, landscape and cultural heritage).



BLUE CARBON MARKET

- **Today >> 1st Episode : Understand the blue carbon market**
- **June 22th (4:00 PM – UTC+2) >> 2nd Episode : Blue carbon feedback and projects**

Organizing team



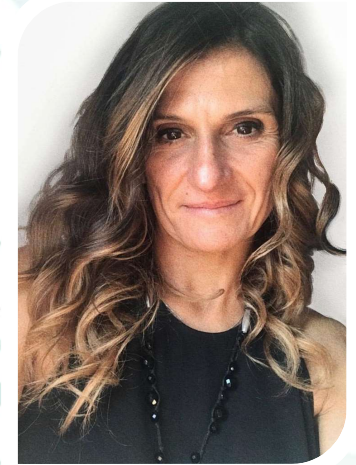
Fabrice Bernard
Moderator
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Conservatoire du littoral



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Isabella Ranieri
Intepreter

Program – Episode 1

Understand the Blue Carbon market

❖ Introduction – Carbon Market

❖ Mathilde Mignot - 10'

○ Q&A – 10'

❖ Blue Carbon ecosystems

❖ Christine Dupuy - 10'

○ Q&A – 10'

❖ Blue Carbon Market

❖ Torsten Thiele - 10'

○ Q&A – 10'

❖ Conclusion

❖ Closing

Speakers



Mathilde Mignot

Group Director - Nature & Tech based Solutions, ecoact



Christine Dupuy

University professor in aquatic ecology at the LIENSs (Littoral Environment and Societies) laboratory.



Torsten Thiele

Founder, Global Ocean Trust Affiliate Scholar, Research Institute for Sustainability - Helmholtz Centre Potsdam



GLOBAL OCEAN TRUST



Speaker



Christine Dupuy

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laboratory.



Speaker



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Affiliate Scholar, Research Institute for
Sustainability - Helmholtz Centre Potsdam



GLOBAL OCEAN TRUST

Speaker



Mathilde Mignot

Group Director - Nature & Tech
based Solutions, ecoact

ecoact
an atos company

Voluntary carbon offsetting as a tool to address existing global gaps

Ambition



Drive global climate ambition to reach the 1.5°C goal

Finance



Enable the development of emission reductions and removal projects

Timing



Accelerate cost-effective emission reductions and removals

The origins: the Kyoto Protocol



Signed in 1997 by 198 countries (COP 3).



Entered into force in 2005 after its ratification by 183 States (including EU in 2001)



The Kyoto Protocol gives the objectives and means to implement the (United Nations Framework Convention on Climate Change (UNFCCC))

It defines 3 main flexibility mechanisms allowing countries to reach their emission reduction targets

Carbon Exchange mechanisms (carbon markets between States)

REGULATORY MARKETS

Clean Development Mechanisms (CDM)

OFFSET MECHANISMS

Joint Implementation (JI)

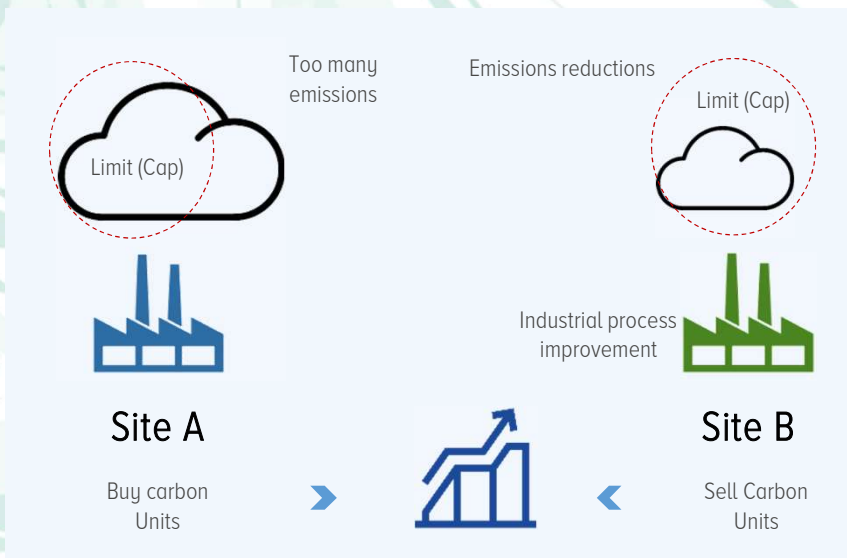
OFFSET MECHANISMS

Gave birth to voluntary markets : Put a price on carbon so that investment follows for a paradigm shift

Development of voluntary markets

Regulatory markets

Ex: Communautary systems of Quotas exchange (EU ETS)



Voluntary Markets

ACTORS
Buying carbon units to offset their emissions



STANDARDS
Approving carbon methodologies and managing registries for transactions



PROJECTS
Generating and selling carbon unites

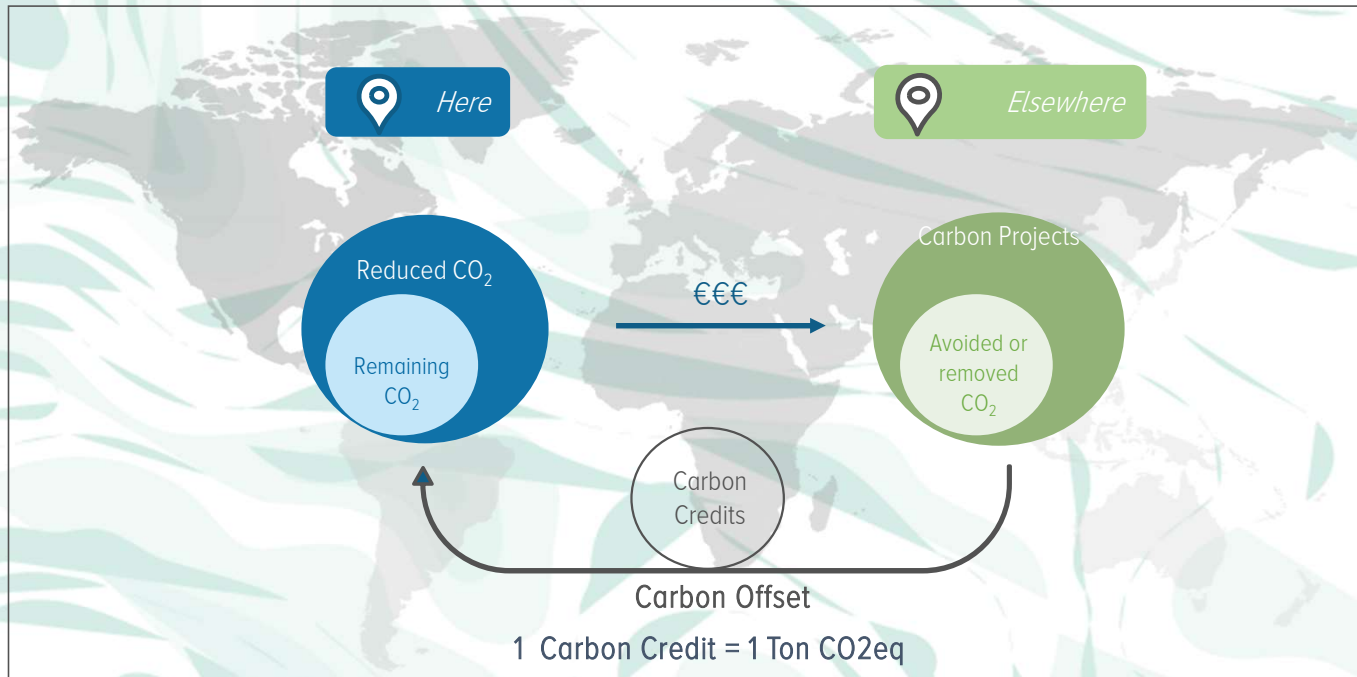


Definition, Principles & Mechanism

'A carbon offset is a reduction in emissions of carbon dioxide or greenhouse gases made in order to compensate for or to offset an emission made elsewhere.' [UNEP](#)

Carbon offsetting is based on the « geographical neutrality » concept :

A CO₂ amount emitted somewhere can be compensated through the reduction or the sequestration of an equivalent CO₂ amount somewhere else



MARKET PLAYERS



Projects Developers

Standards
(GS, VCS, CDM, ACR...)

Auditors
(Designated Operating Entities – DOEs)

Retailers

Buyers
(companies, associations, organizations, territories,
government bodies, individuals...)

Standards



The CDM (Clean Development Mechanism) was the first global, environmental investment and credit scheme of its kind, providing a standardized emissions offset instrument, the Certified Emissions Reduction or CER. Developed by the UNFCCC under the Kyoto Protocol so that emission-reduction projects in developing countries could earn certified emission reduction credits, each equivalent to one tonne of CO₂, the CDM will be discontinued when the Paris Agreement comes into force in 2020.



The [VCS \(Verified Carbon Standard\)](#) Program is the world's most widely used voluntary emissions reduction standard. More than 1300 certified VCS projects have reduced or removed more than 200 million tons of carbon and other greenhouse gases from the atmosphere.



Established in 2003 by WWF and other international NGOs to ensure projects that reduced carbon emissions under the UN's Clean Development Mechanism (CDM) also contributed to sustainable development. It launched its Gold Standard for the Global Goals standard in 2017, enabling climate and development initiatives to quantify, certify, and maximise climate and sustainable development impacts.

Additional standards



Project types : two main categories

Removals

Includes projects that capture and store carbon by **restoring ecosystems** or **funding carbon capture technologies**, physically removing carbon dioxide from the atmosphere.



Reduction/avoidance

Projects that reduce/avoid carbon emissions replacing carbon-intensive technologies protecting natural carbon sinks.

Technology-Based Solutions



Direct Air Capture



Enhanced Weathering



Bioenergy with Carbon Capture and Storage

Nature-Based Solutions (NBS)



Afforestation, Reforestation and Revegetation (ARR)



Improved Forest Management (IFM)

Community-based



Clean water



Improved cookstoves



Fuel switch



Renewable energy



Forest protection

NBS

A market under high scrutiny

The need for guidance

- The scrutiny is increasing around the methodologies, the involvement of local communities and the role of intermediaries.
- External organizations are increasingly influencing buyers' decisions. Market initiatives are raising to define quality:
 - IC-VCM (for supply side quality) : Core Carbon Principles
 - VCMi (for demand side integrity): Claims Code of Practice
- Rating agencies are developing new frameworks to assess projects.
- Digitalization is thriving to improve project monitoring, reporting & verification.

Revealed: more than 90% of rainforest carbon offsets by biggest certifier are worthless, analysis shows

Investigation into Verra carbon standard finds most are 'phantom credits' and may worsen global heating



ic

THE CORE CARBON PRINCIPLES

The CCPs set a global benchmark to ensure integrity in the voluntary carbon market.

- GOVERNANCE**
 1. Effective governance
 2. Tracking
 3. Transparency
 4. Robust independent third-party validation and verification
- EMISSIONS IMPACT**
 5. Additionality
 6. Permanence
 7. Robust quantification of emission reductions and removals
 8. No double counting
- SUSTAINABLE DEVELOPMENT**
 9. Sustainable development benefits and safeguards
 10. Contribution to net zero transition

Thank you.

SERIES



Introduction

Question & Answers

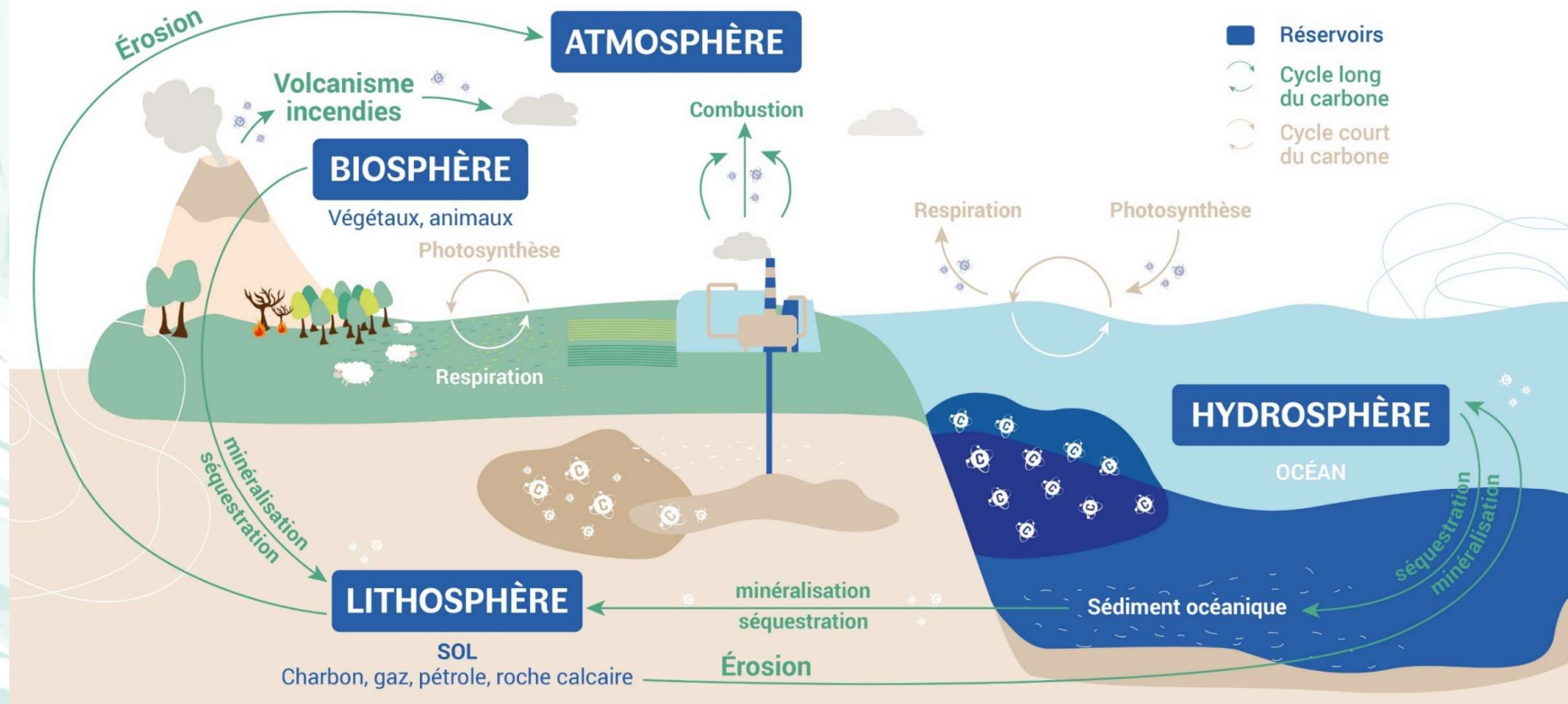
Le littoral et les marais : des écosystèmes clés dans le carbone bleu

Christine Dupuy,
Professeure en écologie aquatique
La Rochelle Université
France



Où est le carbone sur la planète terre?

Le carbone est présent dans tous les endroits de la planète



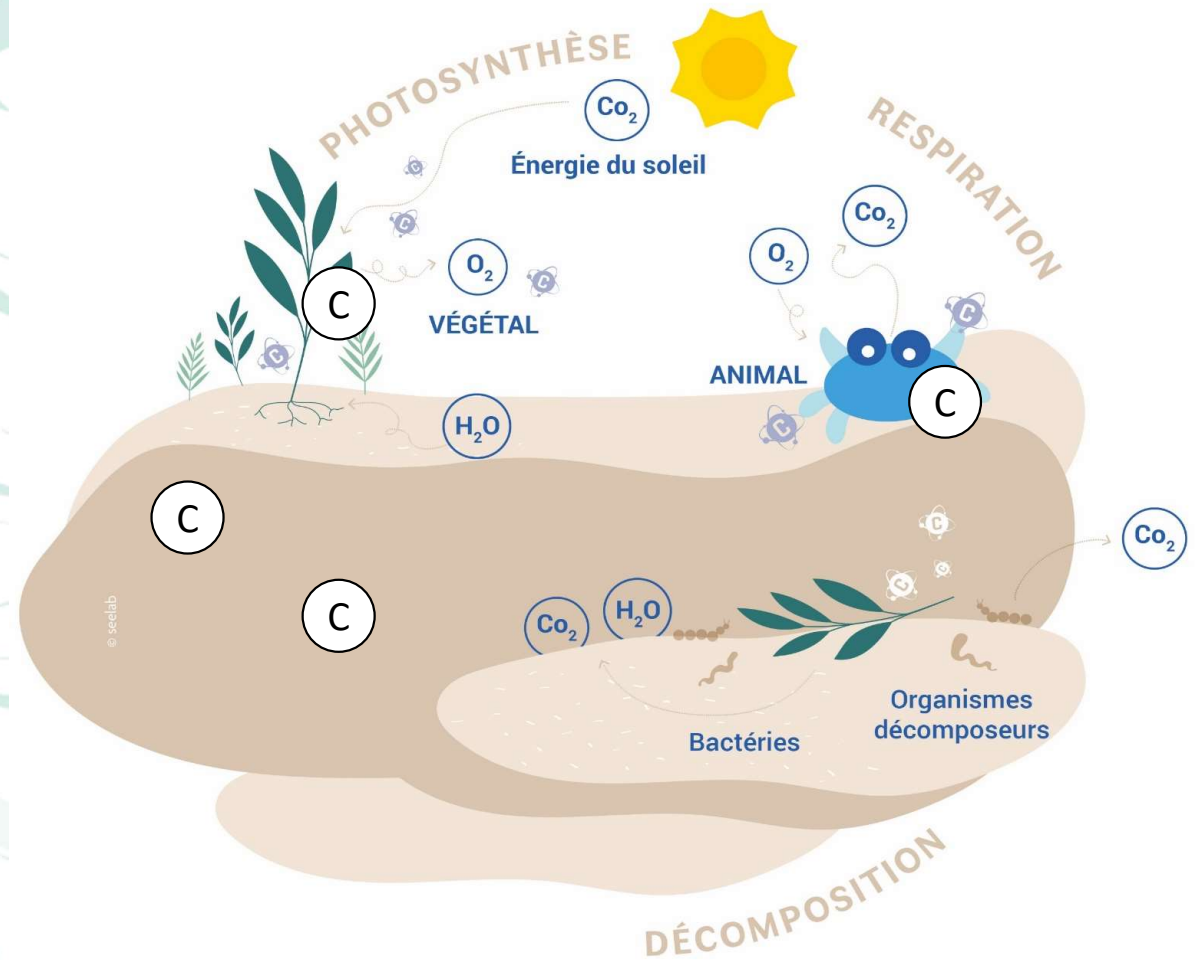
Cycle court du carbone: 1 an à 100 ans

Captation du carbone de l'atmosphère

Transformation du carbone par les organismes vivants (biodiversité)

Séquestration du carbone dans les premiers mètres du sol: zone avec peu ou pas d'oxygène et donc peu de décomposition de la matière organique: Carbone bleu.

(C) Carbone organique (ex. sucres)

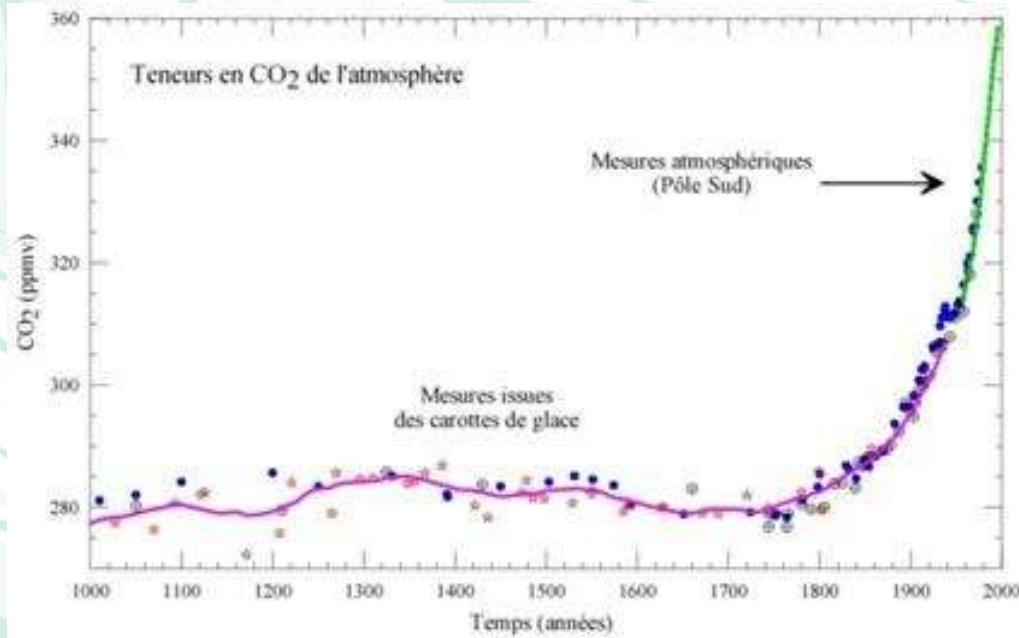


Contexte: Urgence climatique

=> Rapports du GIEC, 2022

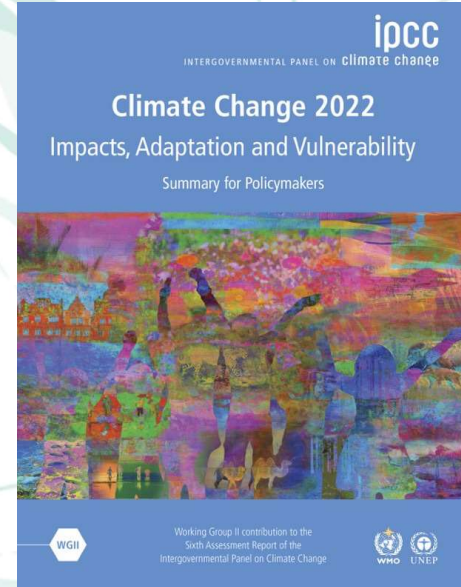
Groupe d'experts Intergouvernemental sur l'Évolution du Climat (IPCC)

Evolution du CO₂



CO₂ de l'atmosphère a doublé depuis l'industrialisation

CO₂: 0,04 % soit 400 ppm dans l'atmosphère



Emission massive de gaz à effet de serre

Originaire de 50% de l'effet de serre

=> CO_2 , **dioxyde de carbone** : combustion des hydrocarbures fossiles, minéralisation (passage du carbone organique (ex. sucres) en carbone minéral) des sols, décomposition des matières végétales mortes suite à la déforestation...

Autre gaz à effet de serre important

=> CH_4 , **méthane** : combustion incomplète du bois, digestion des matières végétales par les ruminants, dégradation anaérobie (sans oxygène) de la matière organique (ex. sucres) dans les sols et les sédiments...

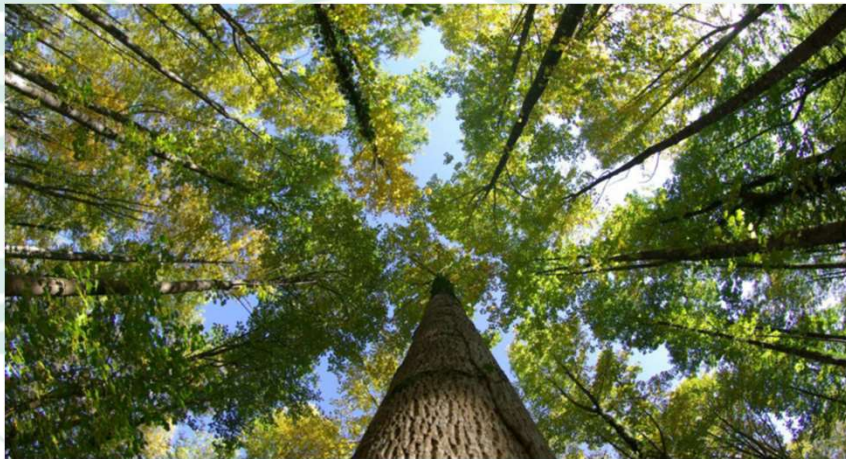
Solutions pour agir sur le CO₂

Constat : Réduire les émissions, c'est possible, mais les supprimer est impossible

Solutions :

- * Décarbonation des énergies
 - > Recherche et développement
- * Nouvelle approche -> émissions négatives

⇒ Exemple: Nos forêts : Puits de carbone naturels (IPCC, 2022) :
carbone vert, carbone brun



Captation et
séquestration
du carbone
atmosphérique
par les écosystèmes

Feuilles



Sol



(Canadelle and Raupach, 2000)

Forte capacité de stockage du carbone du littoral et des marais:
⇒ tout écosystème avec des végétaux

Puits de carbone bleu: Capacité de captation et de séquestration du carbone dans la biomasse vivante et dans les sédiments

Mangroves



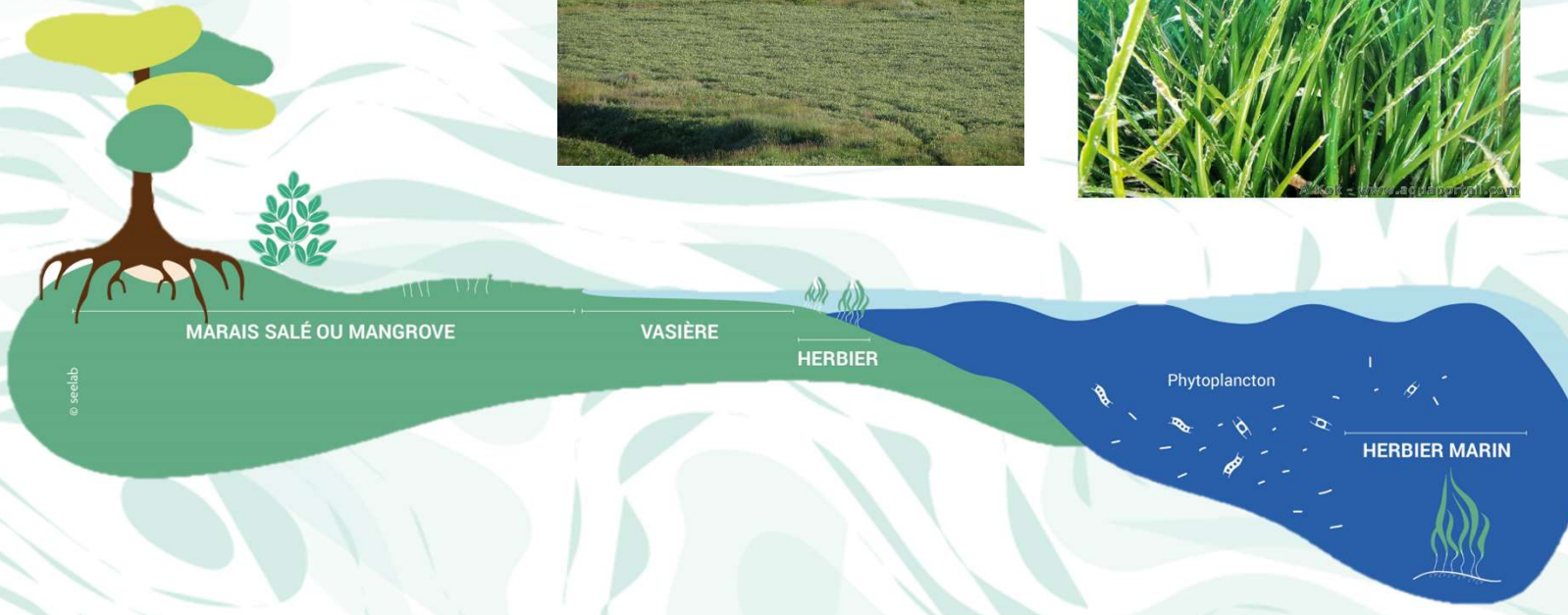
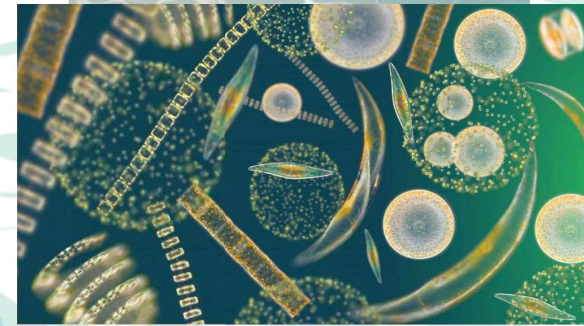
Marais salés



Herbiers marins

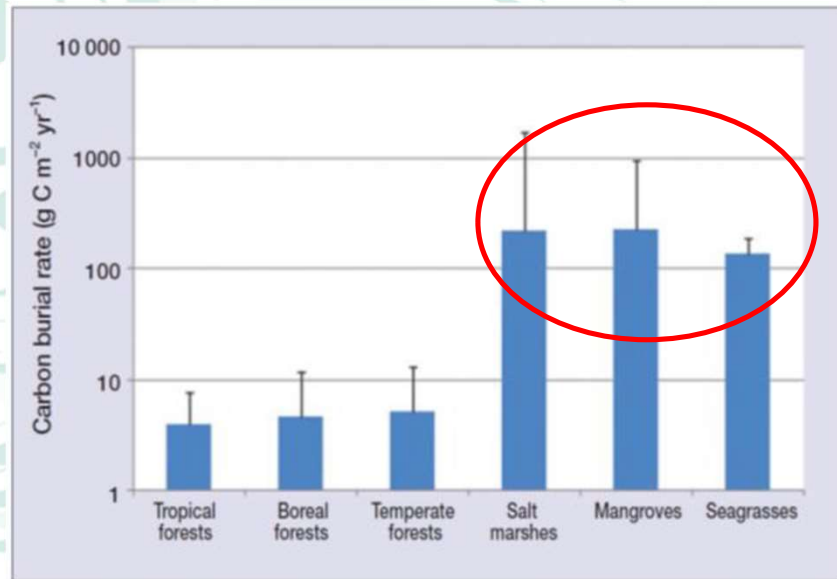


Colonne d'eau
Phytoplancton



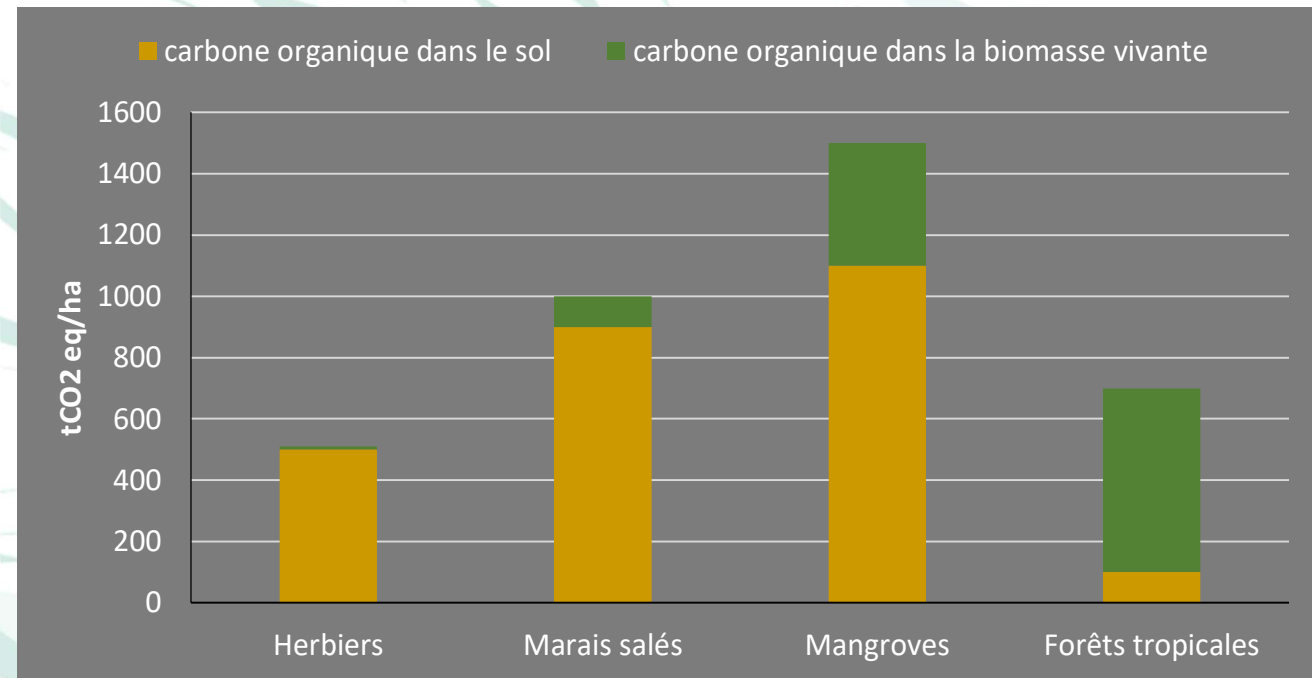
Le potentiel de séquestration des puits de carbone bleu

Taux de séquestration du carbone (en g C/m²/an)



Taux de séquestration de la zone côtière très élevé

Taux de séquestration du carbone (en tCO₂ eq/ha)



MAIS assez variable en zone côtière
=> Mesures nécessaires à l'échelle locale

(Duarte et al., 2013, Mcleod et al., 2011, Nelleman et al., 2009)

Le potentiel de séquestration des puits de carbone bleu



Large variation de la **séquestration** du carbone :

	<u>D'après la bibliographie</u>
• Océan →	0,06 tCO ₂ eq/ha/an
• Marais doux →	1 tCO ₂ eq/ha/an
• Marais salés →	6 tCO ₂ eq/ha/an
• Herbiers marins →	6 tCO ₂ eq/ha/an
• Pré-salés →	10 tCO ₂ eq/ha/an
• Vasières intertidales →	0,06 jusqu'à 44 tCO ₂ eq/ha/an

Séquestration assez variable en zone côtière=> Mesures nécessaires à l'échelle locale

(Duarte et al., 2013, Mcleod et al., 2011, Nelleman et al., 2009, Amann et al. submitted)

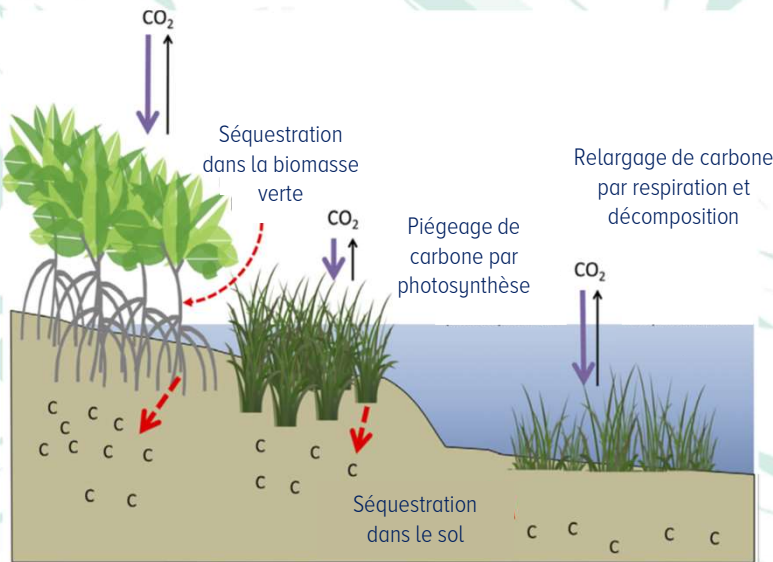
Les éléments clefs d'un bon puits de carbone

Bon état écologique



(Kennedy et al., 2010, Mc Leod et al., 2011, Duarte et al., 2013, Kirwan et al., 2012)

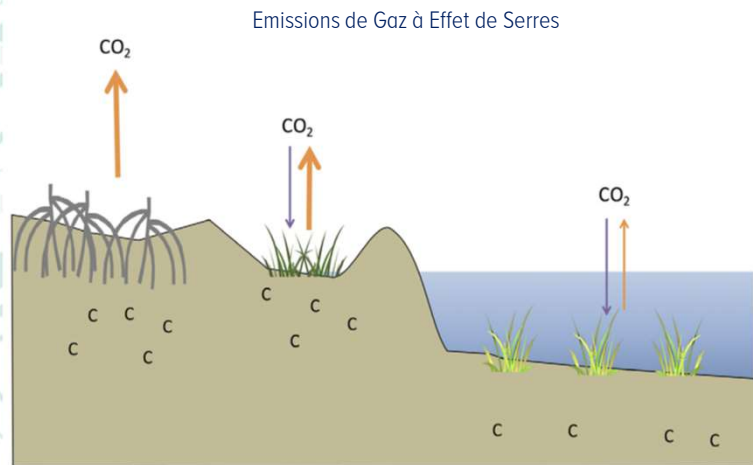
Des milieux fragiles et menacés en zone côtière



En bon état de fonctionnement

=> Les habitats représentent des puits de carbone

Dégradation des milieux



=> Conséquences pour le carbone

↳ potentiel de piégeage du carbone

⇒ Relargage du carbone stocké :

déstabilisation des sédiments, exposition à l'oxygène

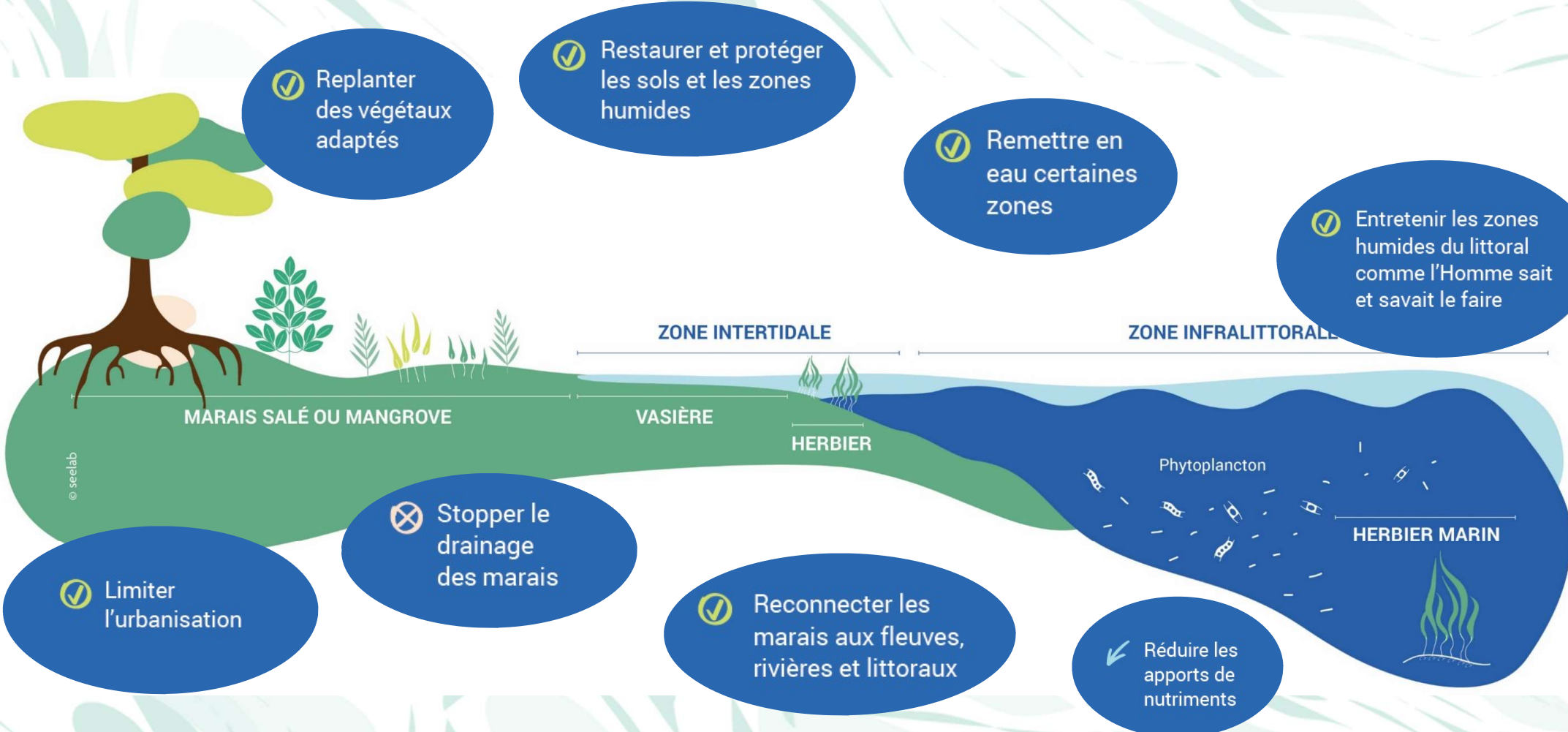
-> activité microbienne -> décomposition

sources de carbone



(Couwenberg et al., 2010 Mcleod et al., 2011, Crooks et al., 2011, Donato et al., 2011, Pendleton et al., 2012, Howard et al., 2017)

Conclusion: Solutions pour maintenir ou augmenter les capacités de séquestration du carbone par les Habitats Côtiers Végétalisés



SERIES



Part I

Question & Answers

Blue carbon market



Torsten Thiele

Founder, Global Ocean Trust
Affiliate Scholar, Research Institute
for Sustainability - Helmholtz Centre
Potsdam



GLOBAL OCEAN TRUST

Setting the Scene

- Blue Carbon: Market
- Blue economy narrative and the green transition
- Blue Finance: opportunities
- Climate, biodiversity, risk and nature-based solutions
- blue natural capital and sustainable blue finance

Blue Carbon

- Coastal ecosystems provide natural carbon sequestration and storage in mangroves, salt marshes and seagrass meadows, providing significant climate change mitigation in the order of 90 MtCyr⁻¹.
- Bertram et al (2021) Nature Climate Change | VOL 11 | August 2021 | 704–709.
- The social cost of carbon (SCC), that is the present value of all climate damage of the emission of an additional ton of carbon, exceeds US\$100 per ton.
- <https://www.nature.com/articles/s41558-021-01089-4>
- This does even value the wide range of co-benefits of ecosystems in terms of resilience, adaptation, biodiversity, water quality etc.

IFC (2023) DEEP BLUE OPPORTUNITIES FOR BLUE CARBON FINANCE IN COASTAL ECOSYSTEMS

- Voluntary carbon markets' issuances exceeded \$1 billion in 2021. Mangrove restoration and afforestation/reforestation commands prices of between \$15 and \$35 per credit.
- “Nested” blue carbon in value chains: the carbon footprint of sectors such as agriculture, aquaculture, and tourism can be substantially reduced through the use of nature-based solutions
- Blue finance: The EU sustainable finance taxonomy, the Green Bond Principles, the Green Loan Principles, and IFC's Guidelines for Blue Finance: supported by transparency provisions on risks posed by environmental degradation, identified by the Task Force on Climate-related Financial Disclosures.
- Insurance and resilience: using natural wetlands to limit storm damage in coastal areas,
- Debt instruments (including bonds): Corporations and governments use green – and more recently blue – bonds focused on nature conservation, restoration, and sustainable use

<https://www.ifc.org/wps/wcm/connect/a51d8bd5-a8e0-4f12-9d9b-b7ba9405d3e0/Deep+Blue+-+Opportunities+for+Blue+Carbon+Finance+in+Coastal+Ecosystems-Optimized.pdf?MOD=AJPERES&CVID=owse2nk>

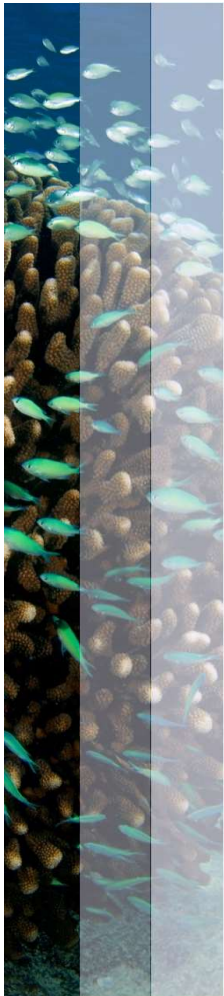
Carbon Markets

- One carbon credit equal one tonne CO₂e of avoided, reduced or removed emissions
- 4.7 Gt Co₂e of carbon credits issued since 2007 (0.5Gt in 2021)
- Compliance markets (Kyoto, Paris Art 6.4 via NDCs, CORSIA)
- Voluntary markets (VCM) based on independent verification (Verra et al)
- Baseline GHG calculation plus achieved mitigation
- Demand: Corporates and others as part of net zero commitments and/or as “offsets”
- Supply: Project developers and others

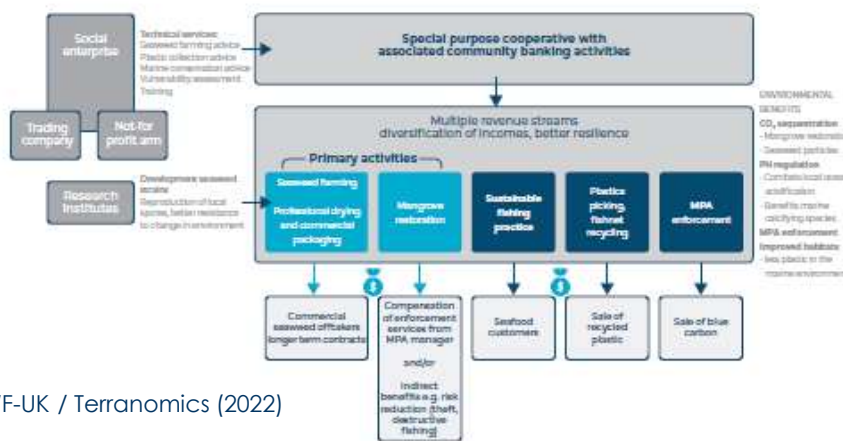
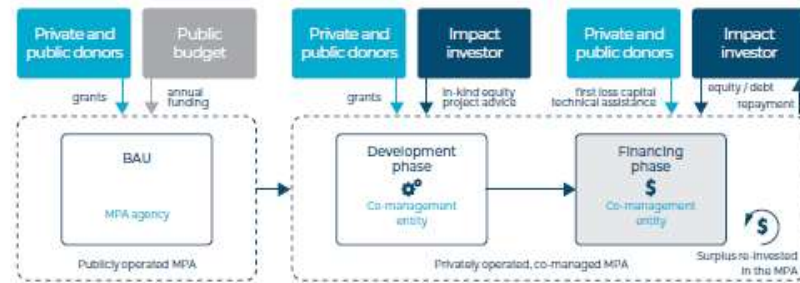
Blue Carbon Markets

- Specific blue carbon credits based standards and methodologies for mangroves (REDD+, Tidal Wetland and Seagrass Restoration, Seascapes etc): Verra, Gold Standard, Plan Vivo etc
- Public frameworks (Australia ERF, Andalusia, France Bas-Carbone)
- A small market to date (1m tons of credits issued in 2021, traded at \$15-30 per ton)
- A complex universe of parties involved, with high transaction cost
- High-quality standards under development, cost and MRV issues
- Latent demand plus increased supply at higher prices expected
- Alternative finance opportunities for blue carbon projects





“...funders must provide [capital] for project design...feasibility, technical assistance, capacity building and...measurement to bring more projects to the bankability stage.”*



* WWF-UK / Terranomics (2022)



and with **BNCFF's Podcasts** on ocean investments



Blue Carbon Markets

- In terms of market design a properly structured, regulated and liquid high quality blue carbon assets market would include safeguards to ensure prices that are commensurate with the SCC.
- Registries and other market bodies created at national and transnational level can help to deliver trading and investment formats.
- Efforts to put these in place need to be urgently concluded and implemented, with the aim to move to mandatory processes by 2025, so as to achieve price signals that are robust and can help to deliver 1.5degrees pathway alignment of corporations and other economic actors.

Perspectives

- Countries need to put in place, and are economically justified to do so, robust measures to protect remaining and restore existing blue carbon ecosystems.
- From an equity perspective, those countries that contribute these benefits to the global common, and those peoples that at a local level help to ensure their quality, deserve support and funding at a significant scale.
- The NDCs under the Paris Agreement provide countries with an opportunity to describe specific blue carbon commitments.
- Carbon emitters need to substantiate their net zero pathways and in the interim provide offset finance.
- Art.6 provides countries with the opportunity to develop transboundary mechanisms.
- Effective compliance markets can benefit from access to high quality credits.

Blue Finance: Introduction

- Blue Finance as narrative, integrating ocean opportunities with sustainable financing
- Particularly important to those companies and areas with
 - strong interdependence with a healthy ocean
 - need to address climate and society issues as well as strategic considerations through innovative ocean solutions
- Key pathways to address the blue finance gap
- Impact assessment to facilitate ocean investment

Oceanpanel Blue Paper on Finance



www.oceanpanel.org/blue-papers/ocean-finance-financing-transition-sustainable-ocean-economy

7 ACTIONS TO PLUG THE FINANCE GAP

- 1** Set up and implement new common guidelines and principles that help define what sustainable investment in the ocean economy would look like.
- 2** Strengthen knowledge, data and capacity in ocean health and finance, particularly in developing countries.
- 3** Create a supportive and inclusive enabling environment.
- 4** Stimulate the pipeline of investible sustainable projects.
- 5** Explore new financing mechanisms and tools.
- 6** Develop best practices to incentivise sustainable behaviour.
- 7** Boost new approaches to insurance.



Sustainable Blue Economy Finance Principles

- Developing Blue natural capital finance standards
- Multiple processes, frameworks, impact assessments
- Integrating Blue carbon finance into Sustainability Taxonomy
- Eg: Sustainable Blue Economy Finance Principles and Standards:
 - global guiding framework for banks, insurers and investors
 - Now hosted by: <https://www.unepfi.org/blue-finance/>
 - Guidance at <https://www.unepfi.org/publications/turning-the-tide/>



Nature and infrastructures

Nature-based Solutions



- Infrastructure investments have a significant impacts on the coastal and marine environment.
- Globally US\$ 94 trillion is forecast to be spent on infrastructure in the next 2 decades.
- Focussing on integrated solutions, including NbS lowers risks and improves project economics.
- Effective partnering with local communities and the private sector is key to innovation, engagement and impact.



© Blue Ventures/G. Cripps



LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Environnement, du Climat
et du Développement durable

Blue Natural Capital Financing Facility – *Supporting the transition towards a sustainable blue economy*



BNCFF
Blue Natural Capital Financing Facility

Blue
Infrastructure
Finance:

**A new approach,
integrating Nature-
based Solutions for
coastal resilience**



Government Offices of Sweden
Ministry of the Environment and Energy



- Innovative businesses that use ocean resources sustainably and responsibly can help to protect marine ecosystems
- Multilateral Development Banks are key proponents of principles, standards and frameworks for Sustainable Finance and promoters of ecosystem standards and NbS
 - <https://financeincommon.org/sites/default/files/2020-11/FiCS%20-%20Joint%20declaration%20of%20all%20Public%20Development%20Banks.pdf>



Driving investment into
coastal livelihoods and blue natural capital through
the Sea Change Impact Finance Facility (SCIFF)



Conclusion

- Blue carbon markets need to be integrated into the just transition to a net-zero and nature-positive economy.
- Blue Finance success relies on public-private partnerships and blended finance solutions to de-risk investments, with robust metrics and monitoring and an enabling regulatory framework.
- Nature-based solutions, including blue Carbon and Blue Natural Capital, help to engage private sector partners, local communities and civil society and offer opportunities to address risks and support resilience.

SERIES



Part II

Question & Answers

SERIES



Conclusion

**Thank you for your attention!
See you soon for the next episode**

Contact us : icosolutions@conservatoire-du-littoral.fr

ICO Solutions Calendar : www.ico-solutions.eu





NEXT

WORKSHOPS

BLUE CARBON

market

- **June 22th (4:00 PM – UTC+2) >> 2nd episode : Blue carbon feedback and projects**