

# CARBONCAP

Carbon Capture Ltd.



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## INTRODUCTION

- Carbon Capture Ltd ('CarbonCap') is part of a Group of Companies that is based in Singapore and have been active over the last two decades in Africa in various sectors, namely: energy, mining, agriculture and carbon.
- CarbonCap has been formed in view of developing carbon-projects using nature-based solutions, regenerative agriculture and renewable energy in order to meet the net-zero goal of developing carbon-projects using nature-based solutions, regenerative agriculture and renewable energy in order to meet the net-zero goal.
- CarbonCap aims to help other corporates in their decarbonization journey. The Group commenced business in 1998 in various sectors including Mining, EPC, Trading and in 2012 in Renewable Energy and green Agriculture particularly in Africa as well as other parts of the world.



**AF POWER**



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## INTRODUCTION

- CarbonCap intends to become a leading Global Carbon offset producer by developing Nature Based Solutions extensively to develop into a large-scale carbon origination and generation company, with a focus on a wide range of natural and semi-natural ecosystems on land and in the sea, and the sustainable management of aquatic systems and working lands.
- CarbonCap aims to develop projects using a holistic approach from design, implementation, management and monitoring of the carbon projects by or in partnership with Indigenous peoples and local communities through a process that will fully respect and champion local rights, socio-economic outcomes, and generate local benefits as well as uplift local communities and populations.



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## Nature-based Solutions

- Nature-based solutions (NbS) provide roadmaps for solving the societal challenges that involve working with nature to deliver benefits for people and biodiversity.
- NbS include the protection, restoration or management of natural and semi-natural ecosystems, the sustainable management of productive land and seascapes, or the creation of novel ecosystems such as urban 'green infrastructure'.
- Well-designed NbS can contribute to tackling climate change and biodiversity loss, whilst supporting many other sustainable development goals, but poorly designed schemes can have adverse impacts.
- At CarbonCap, we present four evidence-based guidelines for delivering successful, sustainable NbS with long term benefits for people and nature





# Examples of Nature-based Solutions



**Restoring and  
protecting  
forests and  
wetlands in  
catchments**



**Bringing  
nature into  
cities**



**Coastal  
habitat  
restoration**



**Sustainable/  
Regenerative  
agriculture**

# Regenerative Agriculture

- Regenerative Agriculture is a holistic land management practice that leverages the power of photosynthesis in plants to close the carbon cycle, and build soil health, crop resilience and nutrient density.
- Regenerative agriculture improves soil health, primarily through the practices that increase soil organic matter. This not only aids in increasing soil biota diversity and health but increases biodiversity both above and below the soil surface, while increasing both water holding capacity and sequestering carbon at greater depths, thus drawing down climate-damaging levels of atmospheric CO<sub>2</sub> and improving soil structure to reverse civilization-threatening human-caused soil loss.
- Research continues to reveal the damaging effects to soil from tillage, applications of agricultural chemicals and salt-based fertilizers, and carbon mining. Regenerative Agriculture reverses this paradigm to build for the future.



6 Core Principles of  
REGENERATIVE AGRICULTURE

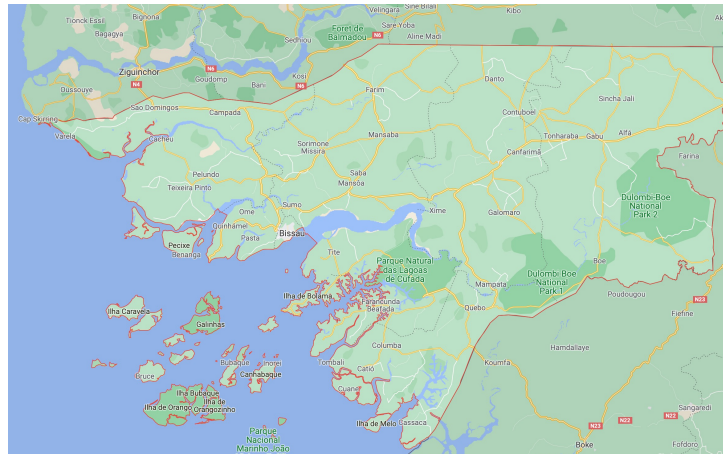


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## FIRST CARBON PROJECT DESTINATION – GUINEA BISSAU

- In 2020: Strafor – an Agricultural industry that has acquired ~70,000 Ha of land.
- CarbonCap aims to develop a carbon project on ~65,000 Ha of the land is still pristine
- CarbonCap has received an in-principle approval from the Government to protect the pristine land and regenerative agriculture to be performed on remaining 5000 Ha.
- CarbonCap aims to develop carbon project using nature-based solutions and regenerative agriculture techniques





A vibrant underwater photograph of a coral reef. The foreground is filled with diverse coral species, including branching corals in shades of red and orange, and large, rounded brain corals in brown and tan. Numerous small, colorful fish are scattered throughout the scene, swimming near the coral. The background shows the deep blue water with sunlight filtering through the surface, creating a shimmering, textured effect. The overall scene is a rich and detailed representation of a tropical marine ecosystem.

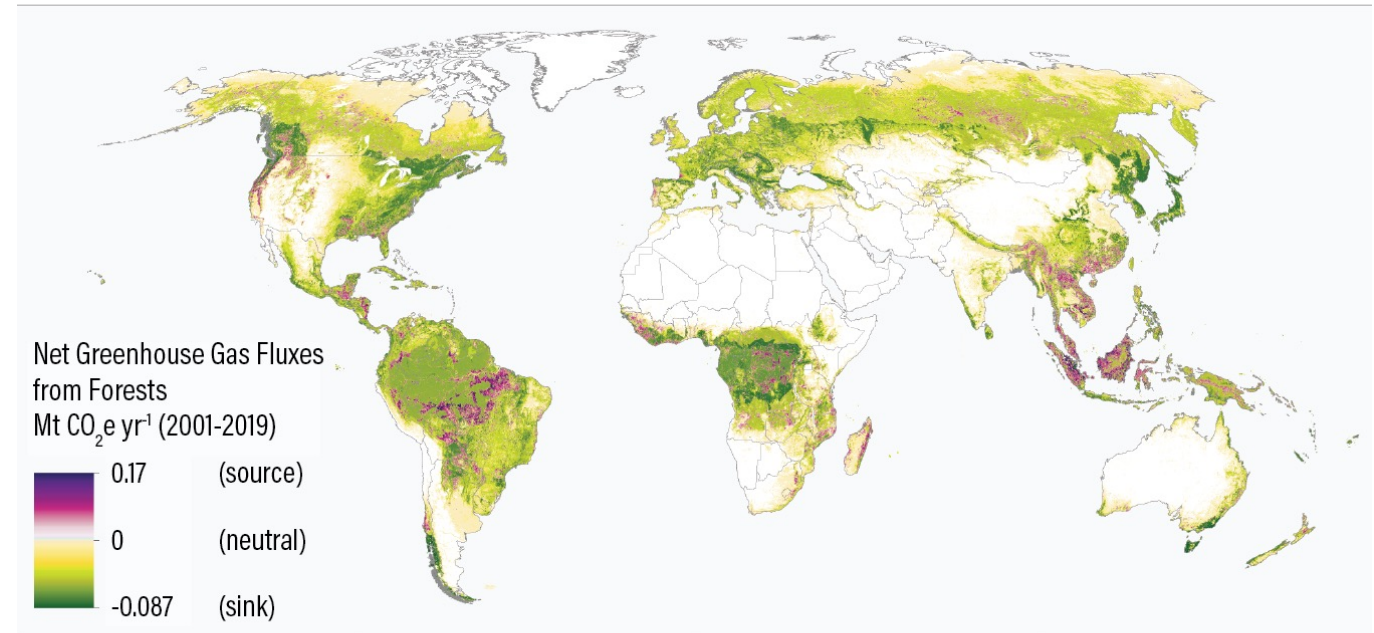
# Tropical Ecosystems



# Different ecosystems for Carbon projects under CarbonCap

Forests: Carbon Sinks or Carbon Sources?

Ecosystems	Ranks (approx.)
Tropical Peatlands & Mangroves	1
Grasslands	2
Tropical forest	3
Regenerative agriculture	4



Source: Harris et al. 2021  
20.01.21

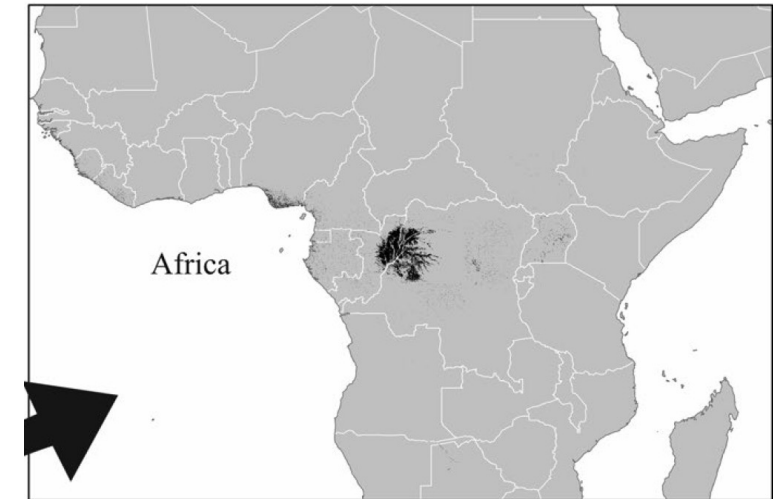
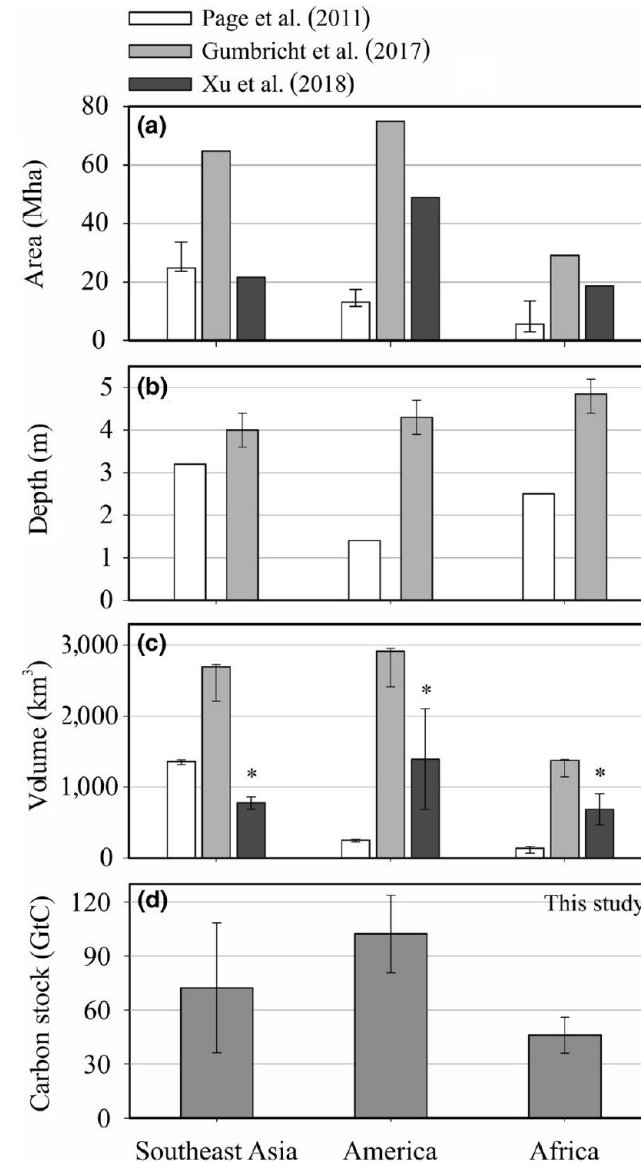


WORLD RESOURCES INSTITUTE

**Huge potential in Africa for**  
**(1) Conservation projects**  
**(2) Restoration & Agriculture**

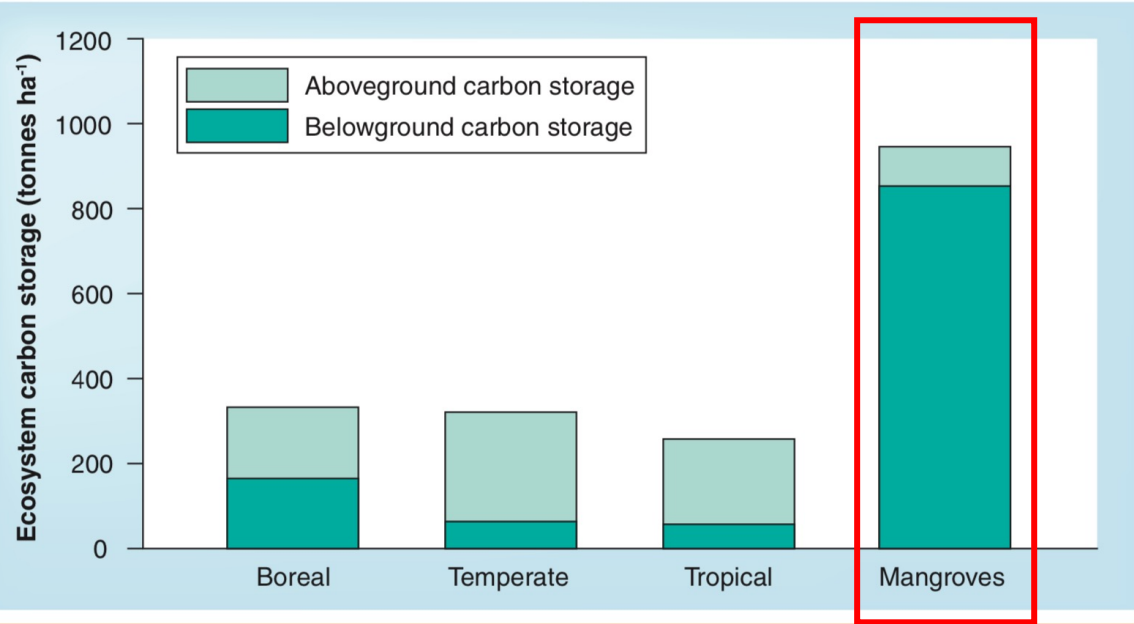
# Tropical peatlands

Based on the new peat extension and depth data, we estimate that tropical peatlands store 152–288 Gt C, or about half of the global peatland emitted carbon



**FIGURE 1** Estimated peat area (a), depth (b) and volume (c), presented by Page et al. (2011), Gumbrecht et al. (2017) and Xu et al. (2018) of tropical peatlands. (d) Estimated carbon stock (Gt C) in tropical peatlands. Error bars are minimum and maximum estimates when available. \*Values estimated using peatland area from Xu et al. (2018) and mean depth from Gumbrecht et al. (2017) and Page et al. (2011)





**Figure 1. Differences in whole-ecosystem carbon stocks among boreal, temperate and tropical terrestrial forests, and subtropical and tropical mangrove forests.**  
 Reprinted with permission from Macmillan Publishers Ltd: *Nature Geoscience* [21] © (2011).  
 Mangrove data taken from supplementary data [102] in [21], and [48,50–54].

**Table 2. Global contribution of mangroves and other coastal habitats to carbon sequestration in the global coastal ocean.**

Habitat	Area (10 <sup>12</sup> m <sup>2</sup> )	Sequestration rate (gC m <sup>-2</sup> year <sup>-1</sup> )	Global carbon sequestration (Tg year <sup>-1</sup> )
Mangroves	0.14 (0.5%)	174	24 (14%)
Salt marshes	0.22 (0.8%)	150	33 (20%)
Seagrasses	0.3 (1.1%)	54	16 (10%)
Estuaries	1.1 (4.0%)	45	50 (30%)
Shelves	26 (93.6%)	17	44 (26%) <sup>†</sup>
Total			167

<sup>†</sup>Assumes that depositional areas cover 10% of total shelf area [9].  
 Data from [41,60–62].

Source: Alongi D M, 2012

# Mangroves (Tropical)

- Mangroves sequester huge (~800 tonnes per ha) of belowground carbon
- Mangroves’ contribution is ~14% of global carbon sequestration



# Tropical Grasslands

Grasslands cover approximately 25% of the Earth's land surface (approximately 3.4 billion ha) and contain **roughly 12%** of the terrestrial carbon stocks

Four land cover classes of grassland are mainly found:

- herbaceous closed- open cover;
- closed-open evergreen shrub cover;
- closed open and deciduous shrub cover; and
- sparse herbaceous and shrub cover.





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