



COASTAL ECOSYSTEM-BASED MITIGATION AN OVERVIEW

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International Union for Conservation of Nature

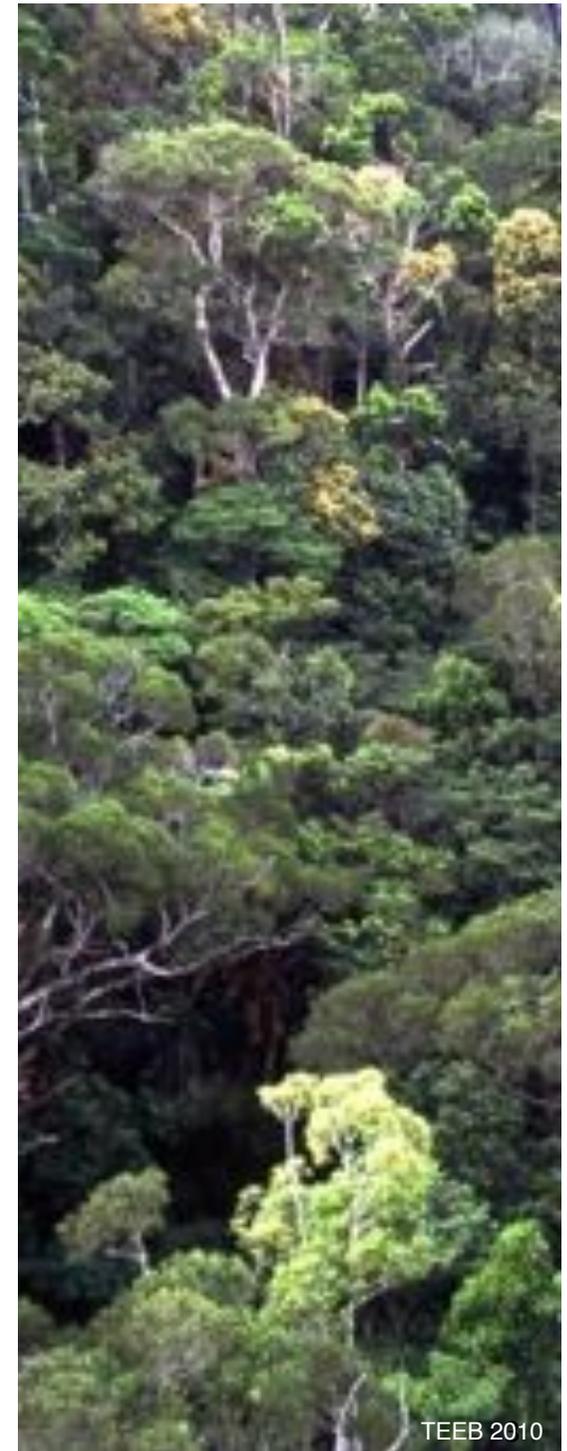


TEEB 2010

Tropical forests store a fourth of all terrestrial carbon
Capture 4.8 Gt CO₂ annually, or a sixth of emissions

“Halving deforestation generates net benefits of
about USD 3.7 trillion including only the avoided
damage costs of climate change “

(Eliasch Review 2008)



Oceans cover 71% of Earth's surface

Providing food, livelihoods, trade, protection, enjoyment

Climate regulation:

=> currents, sea ice, evaporation, clouds

=> store most of the sun's energy, act as a heat buffer

=> absorb 50% of atmospheric CO₂ every year





Nature-based solutions

Cost-effective, economic, scalable and safe approaches on land

What about the “climate wedge” of marine and coastal ecosystems?

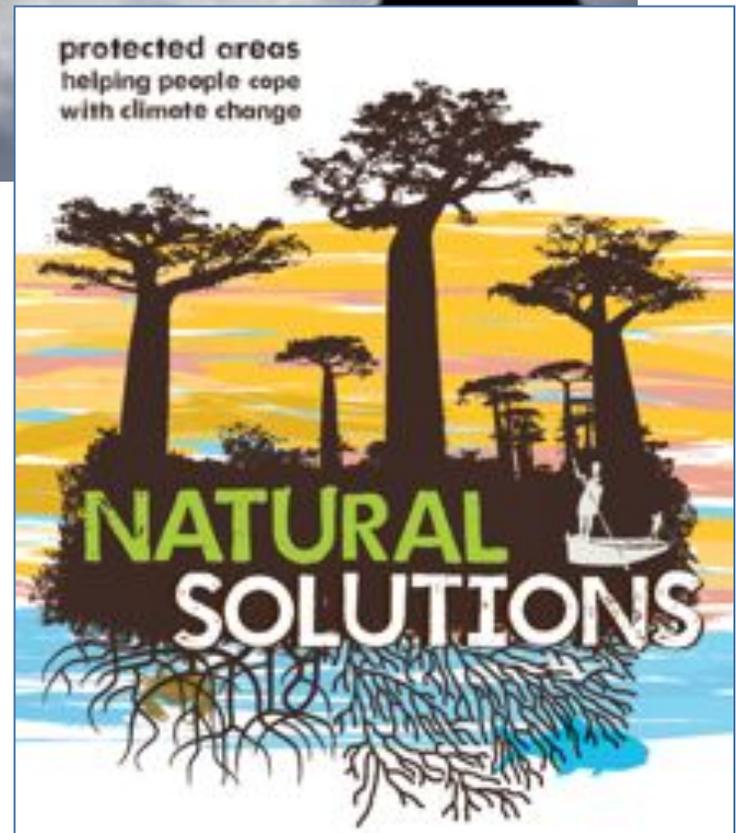




The Management of Natural Coastal Carbon Sinks

Edited by Dan Laffoley and Gabriel Grimsditch

November 2009





WB, IUCN and ESA PWA

8-page brief released at
UNFCCC CoP 16,
Cancun, November 2010

Full report to be released
in February 2011

Capturing and conserving natural coastal carbon

Building mitigation, advancing adaptation



THE WORLD BANK

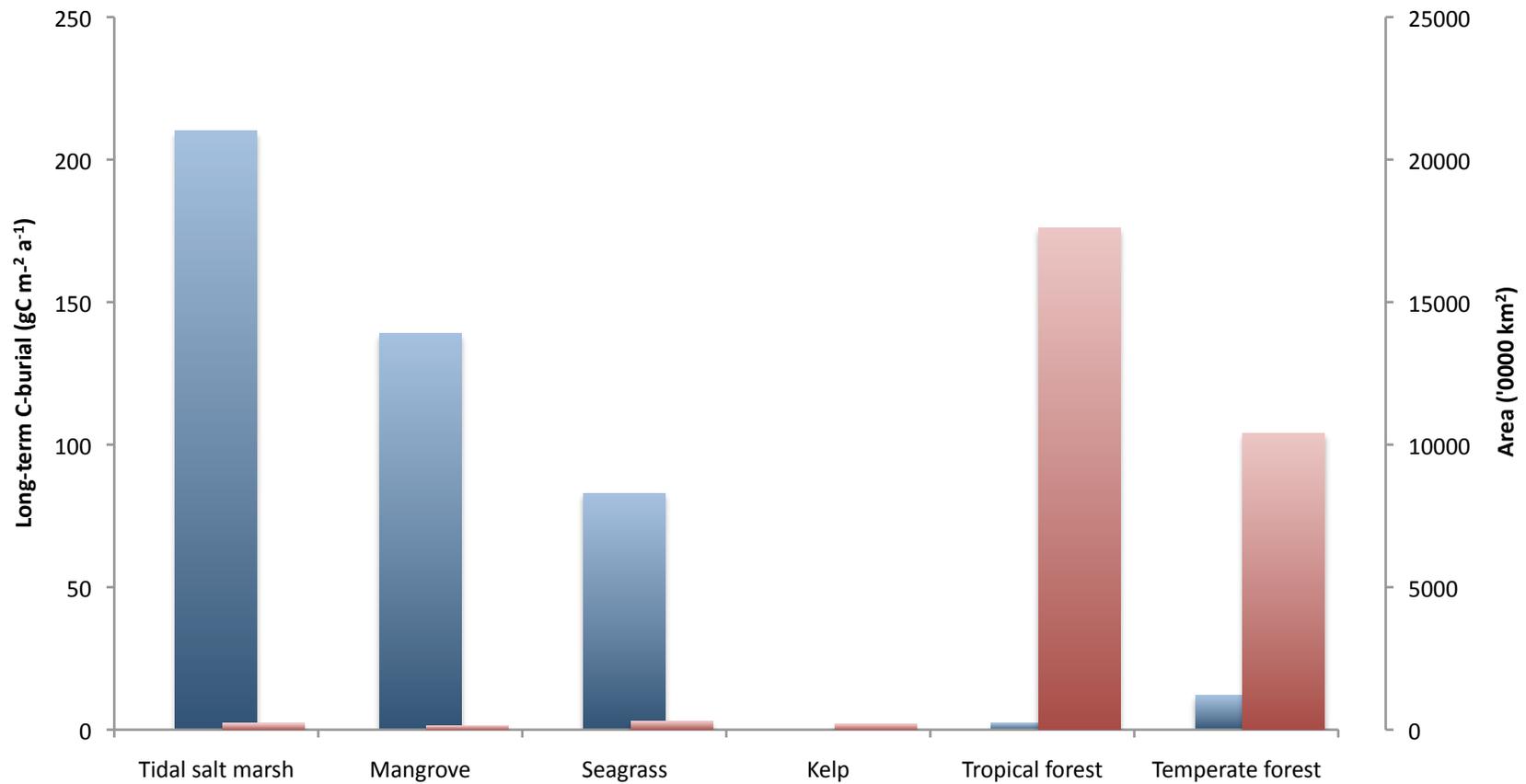


ESA PWA

November 2010

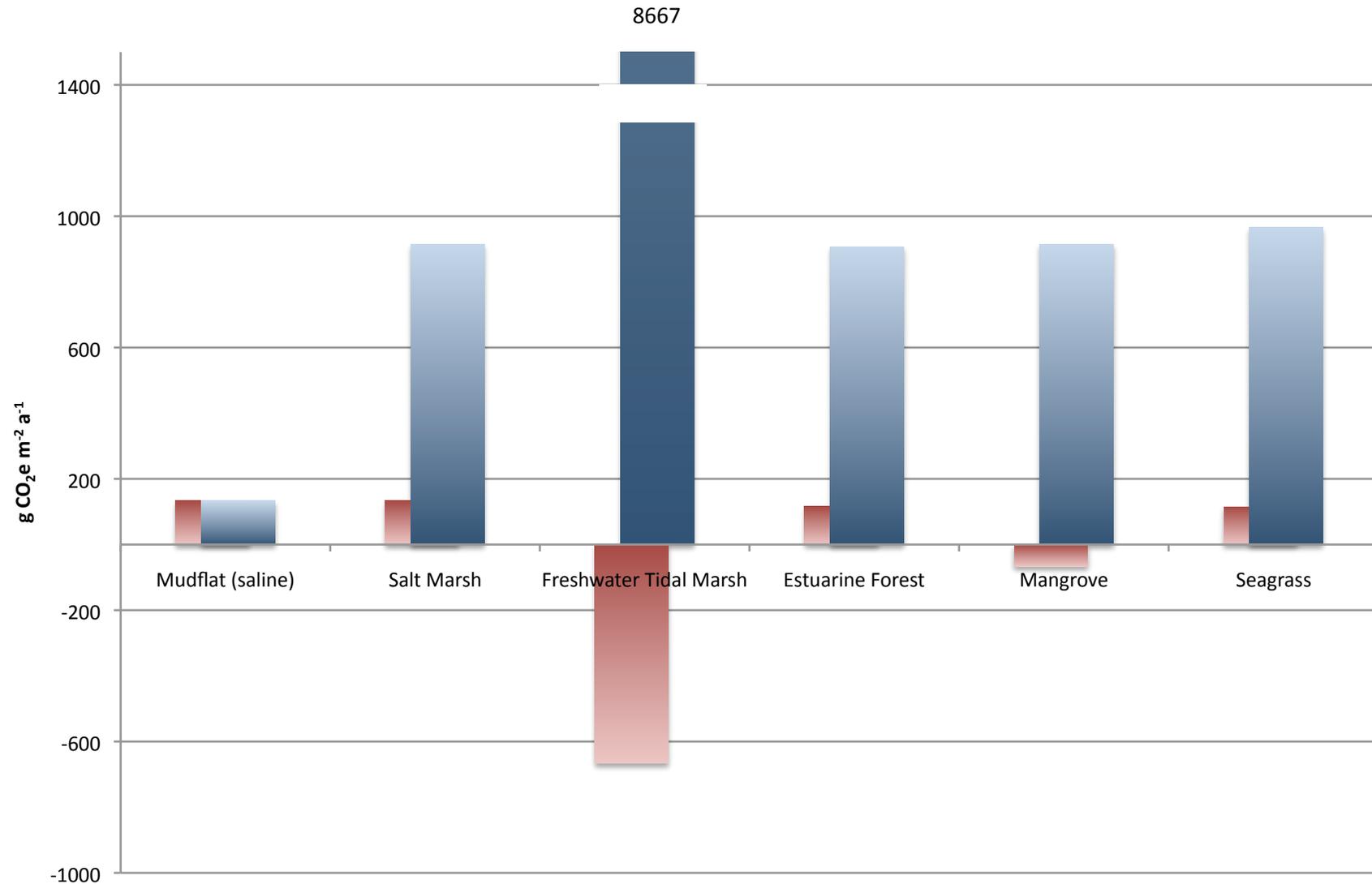


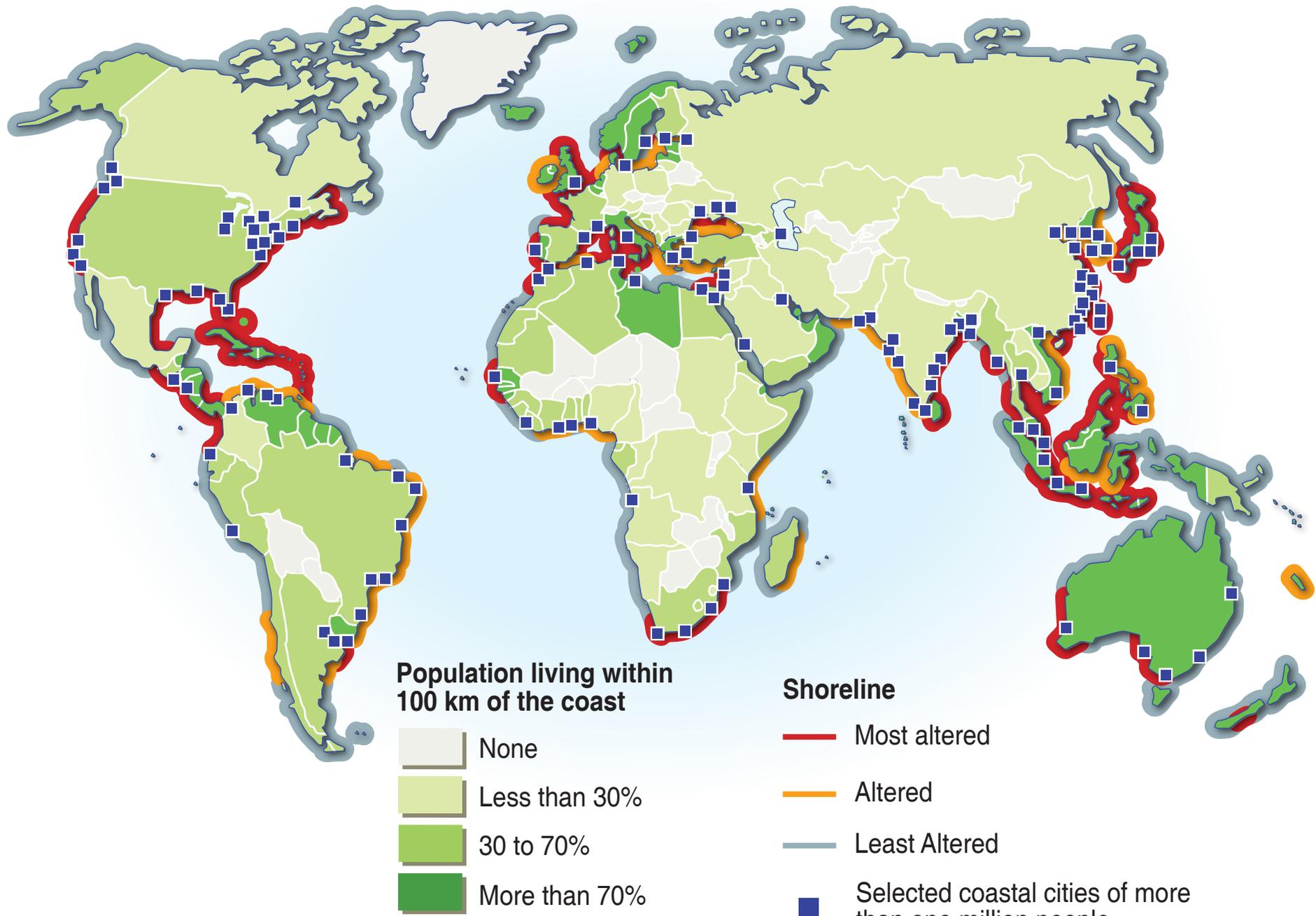
Carbon burial and ecosystem area





GHG balance in coastal ecosystems

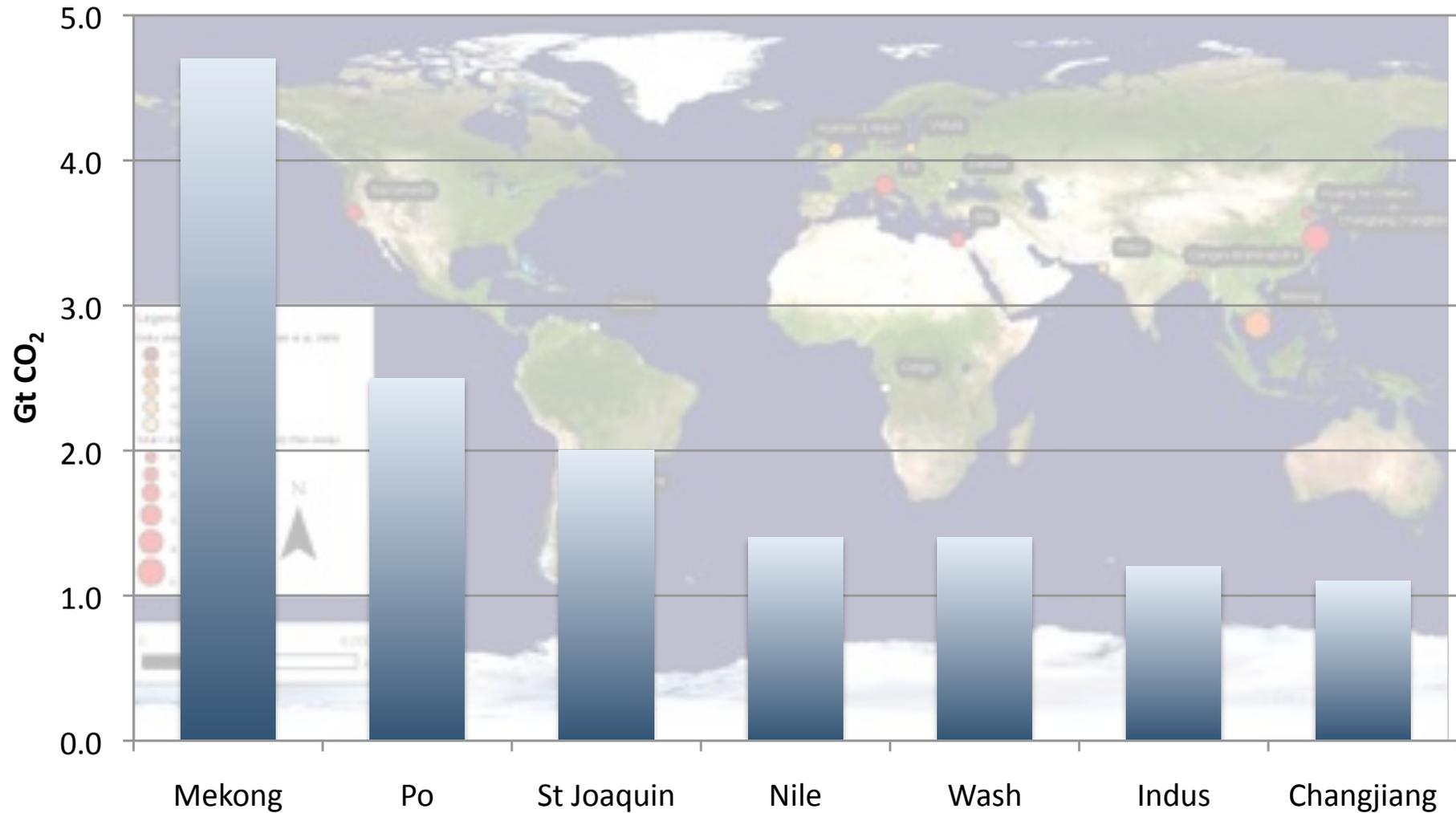




Source: UNEP/GRID-Arendal



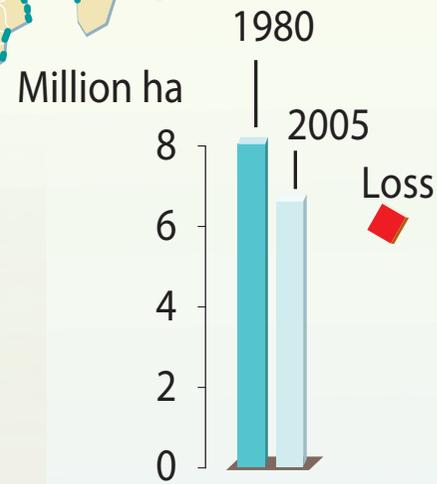
Emissions from delta conversion



Sources: Crooks et al in press; Rojstazcer and Deverel 1993, 1995, Deverel and Leighton 2010. NASA MODIS



Clearance of 35,000 km² mangrove between 1980 and 2005 has resulted in continuing annual release of 0.175 giga tons CO₂ per year





The total global seagrass area has been reduced by

at least 29%, or

51,000 km²

Rate of loss increased by an order of magnitude in past 40 years

(Waycott et al 2009)



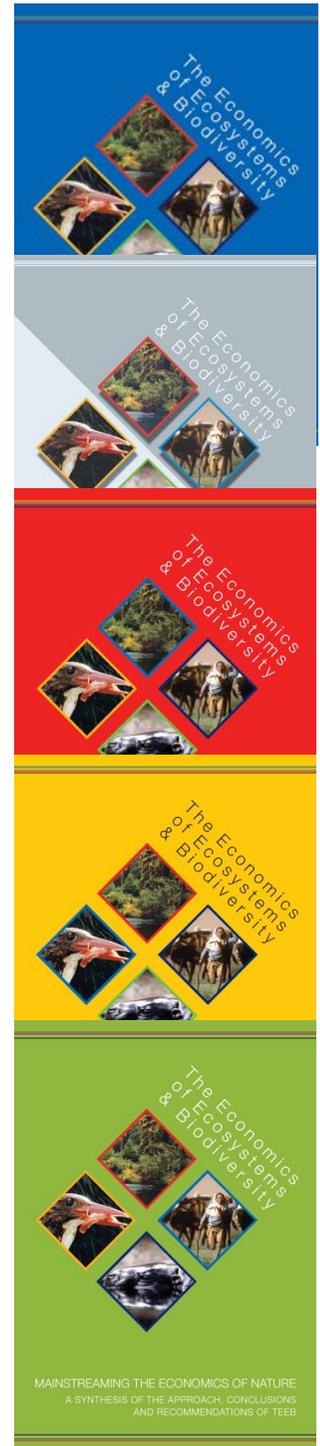
TEEB Recommendations

“It is usually cheaper to avoid degradation than to pay for restoration, but both are relevant in the context of climate change”

=> Mitigation policy needs to reflect biodiversity costs and benefits

=> Adaptation finance needs to consider the compelling economics of using ecosystem restoration

=> Ecosystem conservation and restoration should be evaluated and pursued in support of mitigation and adaptation





Blue carbon offsets

Mangroves for Fiji: Participating businesses aim at completely offsetting their carbon emissions by planting mangroves

WetCarbon / Danone Fund for Nature CSR programme

- Mangrove replanting offset demonstration project in Senegal
- Project pipeline - CDM or VCS standards





Obstacles

Some science gaps

Lack of simple and specific carbon accounting protocols

Shortcomings in international and national policy frameworks

Lack of financial incentives





Research

Quantification and mapping of carbon pools and flux in coastal and marine environments

Impact of land use and management on carbon pools and flux

Economic and socioeconomic analyses

Offshore/pelagic systems and processes





Offshore carbon pools and sinks

Fish: 15.4% of new CaCO_3 production in surface ocean

Benthic echinoderms: more CaCO_3 to permanent sinks than forams

Whales: population decline of >90% has reduced carbon in standing biomass and carbon sinking through whale falls





Methodologies

**ACTION PLAN
TO GUIDE
PROTOCOL
DEVELOPMENT**

RAE / National Blue Ribbon Panel:
*Action Plan for the development of a greenhouse gas offset
protocol for tidal wetlands restoration and management*

IUCN, Ramsar Convention, Danone Fund for Nature:
*“Afforestation and reforestation of degraded tidal forest
habitats”* draft methodology submitted to the CDM board

=> towards amended IPCC guidance and guidelines that
encompass coastal wetlands including soil carbon



August 2010





Policy opportunities

Create incentives for restoration or disincentives to drain/damage coastal wetlands within UNFCCC

SBSTA: Expand work program

“KP II”: Include coastal wetlands in ‘wetland management’, enable LULUCF CDM projects

Develop a financial, REDD-like coastal mechanism, including incentives for soil-based carbon storage and sequestration





Policy opportunities

Include conservation and management of coastal wetlands in NAMAs and REDD+ strategies, plans and measures

US national legislation

Clean Energy Partnerships Act 2009: inclusion of “wetlands” and “vegetated marine coastal habitats” under eligible offset projects

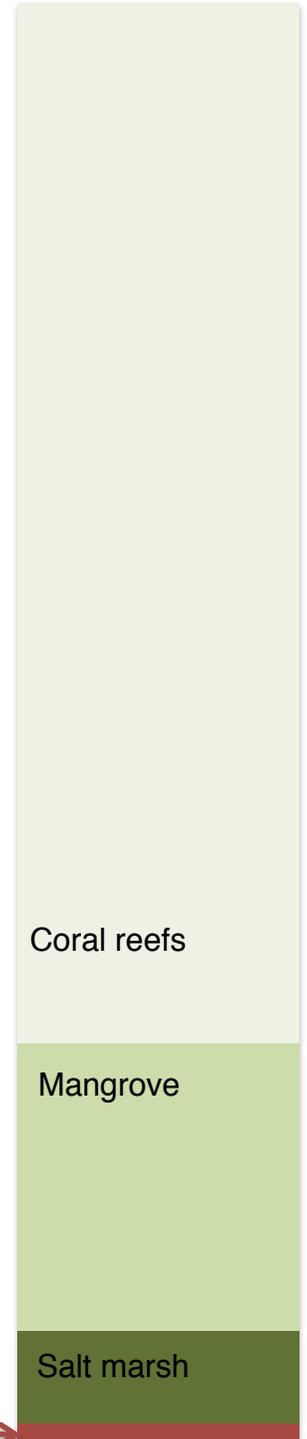
American Power Act supports measures to enhance the ocean’s natural carbon function

Coral reefs

Mangrove

Salt marsh

Seagrass





Global Marine and Polar Programme

www.iucn.org/marine

