

BLUE CARBON

FIRST LEVEL EXPLORATION OF NATURAL COASTAL CARBON IN THE ARABIAN PENINSULA (WITH SPECIAL FOCUS ON THE UAE AND ABU DHABI)

A RAPID FEASIBILITY STUDY 2011

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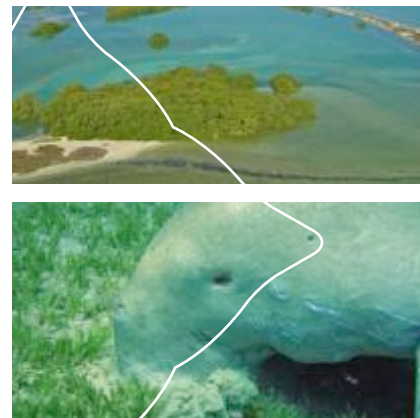
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***“Our mangroves are an important
part of our natural ecosystem; their
survival is key to the sustainability
of our emirate.”***

H.E Razan Khalifa Al Mubarak
Secretary General
The Environment Agency – Abu Dhabi (EAD)



PREFACE

Marine coastal ecosystems, from coral reefs to mangrove forests, deliver essential goods and services to many people throughout the Arabian Peninsula. Vital services include the prevention of coastline erosion caused by wave action and ocean currents, nurseries for many fisheries as well as amenity and recreational services that support lucrative coastal tourism. Yet, these services continue to face threats through water pollution, un-sustainable development and fishing practices and climate change.

Some coastal ecosystems, including mangrove forests, seagrass meadows and saltwater marshland, are gaining increased attention for the carbon stored in their biomass and sediments – a recent concept termed “Blue Carbon”. Research indicates that Blue Carbon ecosystems have the potential to hold vast stores of carbon and are important for nature-based approaches to climate change mitigation. Conversely, when disturbed, these ecosystems may be significant sources of greenhouse gas (GHG) emissions.

Blue Carbon - First Level Exploration of Natural Coastal Carbon in the Arabian Peninsula is part of the evolving work on the challenges and opportunities facing the region in the transition to a sustainable, low-carbon, resource efficient economy.

The Arabian Peninsula and particularly coastal areas of States in the Arabian Gulf are closely tied to Blue Carbon ecosystems through cultural heritage, their role as nursery grounds for fisheries, and through coastal development. The importance of mangrove ecosystems in the UAE is already strongly acknowledged, with the total area of mangroves increasing through many afforestation efforts. Seagrass meadows are recognised for their importance as habitat for threatened sea turtles and dugongs, and salt marshes are known as vital rest stops for many international migratory bird species.

The climate change mitigation service that these valuable ecosystems provide in the Arabian Peninsula is currently being explored with a view to ensuring better management of Blue Carbon that will safeguard existing stores of carbon, reduce emissions and maximise the potential of coastal marine ecosystems for removing carbon from the atmosphere.

H.E. Razan Khalifa Al Mubarak

Secretary General
The Environment Agency – Abu Dhabi (EAD)



FOREWORD

The lack of quality, quantifiable environmental data has proven a major hindrance to the global process of achieving sustainable development. The result is that throughout the world socio-economic and environmental decision makers are being challenged to make vital decisions without the necessary data and information.

Blue Carbon - First Level Exploration of Natural Coastal Carbon in the Arabian Peninsula is part of an AGEDI initiative to explore Blue Carbon in a local, national and regional setting. This report showcases Blue Carbon for the region and identifies preliminary opportunities in advancing coordinated environmental and climate change policy.

Blue Carbon is a new concept with high environmental data demands. A coordinated approach in the assimilation of existing Blue Carbon data, the creation of new data, and in the management and access of data needs to be explored. AGEDI is openly working with partners and stakeholders throughout the world on these and other Blue Carbon issues.

Cathrine Armour

AGEDI Program Manager

SUMMARY

Healthy natural coastal ecosystems, such as mangrove forests, saltwater marshlands and seagrass meadows provide a vast array of important co-benefits to coastal communities around the world, including throughout the Arabian Peninsula. These benefits include ecosystem services such as a rich cultural heritage; the protection of shorelines from storms; erosion or sea-level rise; food from fisheries; maintenance of water quality; and landscape beauty for recreation and ecotourism. In a “Blue Carbon” context these ecosystems also store and sequester potentially vast amounts of carbon in sediments and biomass.

There are risks and uncertainties that need to be considered when advancing Blue Carbon in the region. The carbon stored in coastal ecosystems can be lost through the impact of climate change itself and changes in land use both along the coast and further inland. There is still uncertainty about the amounts sequestered in each Blue Carbon ecosystem – research is required to generate these data and reduce the uncertainty. Methodologies

a balance between coastal livelihoods and carbon management policies. It is crucial that other ecosystem services are not compromised or sacrificed through an unsustainable approach to secure carbon gains.

The multiple benefits of potential Blue Carbon investments include improved livelihoods, with the opening of employment opportunities in areas

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