



PREFACE

The most crucial, climate-combating coastal ecosystems are disappearing faster than anything on land and much may be lost in a couple of decades.



If the world is to decisively deal with climate change, every source of emissions and every option for reducing these should be scientifically evaluated and brought to the international community's attention.

The burning of fossil fuels is generating levels of what one might term 'brown' and 'black' carbon in the atmosphere and unless checked may take global temperatures above a threshold of 2°C. Dramatic reductions are possible by accelerating energy efficiency measures and boosting the deployment of cleaner energy generation and renewables such as solar, wind and geothermal. Over the past few years science has been illuminating other sources of emissions and other opportunities for action. Deforestation for example now accounts for close to 20% of global greenhouse gas emissions.

In a matter of weeks, governments will meet in Copenhagen where there is an urgency to Seal the Deal on a new and forward-looking agreement. Part of that package of measures needs to include 'green' carbon – the carbon stored in the globe's forests and their soils and especially in the tropics. Financing a partnership for Reduced Emissions from Deforestation and forest Degradation (REDD) can play an important role in keeping that green carbon where it belongs while also assisting the development and employment objectives of developing economies by giving an economic value to these vital ecosystem services.

Science is now also telling us that we need to urgently address the question of 'blue' carbon. An estimated 50% of the carbon in the atmosphere that becomes bound or 'sequestered' in natural systems is cycled into the seas and oceans – another example of nature's ingenuity for 'carbon capture and storage'. However, as with forests we are rapidly turning that blue carbon into brown carbon by clearing and damaging the very marine ecosystems that are absorbing and storing greenhouse gases in the first place.

This in turn will accelerate climate change, putting at risk communities including coastal ones along with other economically-important assets such as coral reefs; freshwater systems and marine biodiversity as well as 'hard' infrastructure from ports to power-stations. Targeted investments in the sustainable management of coastal and marine ecosystems – the natural infrastructure – alongside the rehabilitation and restoration of damaged and degraded ones, could prove a very wise transaction with inordinate returns.

This report, produced by some of the world's leading scientists and in collaboration with the FAO and IOC-UNESCO, finds that the most crucial, climate-combating coastal ecosystems cover less than 0.5% of the sea bed. But they are disappearing faster than anything on land and much may be lost in a couple of decades. These areas, covering features such as mangroves, salt marshes and seagrasses, are responsible for capturing and storing up to some 70% of the carbon permanently stored in the marine realm.

If we are to tackle climate change and make a transition to a resource efficient, Green Economy, we need to recognize the role and the contribution of all the colours of carbon. Blue carbon, found and stored away in the seas and oceans, is emerging as yet another option on the palette of promising opportunities and actions, one that can assist in delivering a bright rather than a dark brown and ultimately black future.

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