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## **UNDP Submission to**

### **14<sup>th</sup> United Nations Open-Ended Informal Consultation Process on Oceans and the Law of the Sea (UNICPOLOS)**

#### **Topic: Impacts of Ocean Acidification on the Marine Environment**

#### **A roadmap for key ocean sectors to contribute to the mitigation of ocean acidification**

#### **Executive Summary**

As a consequence of continued additions of large volumes of carbon dioxide to the earth's atmosphere via the combustion of fossil fuels, and the dissolution of 25-30% of this CO<sub>2</sub> in the oceans, the pH of surface ocean waters has increased about 30% as reflected in an overall decrease in ocean pH of about 0.1 unit. This is driving ocean acidification at the fastest rate in at least the last 25 million years with associated risks to the long-term sustainability of many marine ecosystems dependent on organisms that fix calcium carbonate in their shells and skeletons, and the sectors and livelihoods that depend on healthy ocean ecosystems.

The ocean-using sector that contributes the most to global greenhouse gas emissions and therefore climate change is international shipping at about 2.7% of global emissions. Under 'business as usual' GHG emissions scenarios, this proportion is projected to grow substantially, to 5% or more of global emissions. Through the IMO, the international community has recently adopted aggressive ship energy efficiency standards (design, operation) which, once implemented, could substantially reduce shipping's global carbon footprint. Estimates of the public costs of an international effort to accelerate implementation of ship energy efficiency standards, of the avoided economic impacts from climate change of implementing the standards, of fuel savings to the industry, and of catalysed private sector investment, provide a strong argument for a concerted effort to transition to a lower carbon shipping sector.

Many coastal and marine habitats, particularly seagrasses and mangroves, fix carbon at rates (on a per hectare per year basis) much greater than for more widely recognized terrestrial carbon sinks such as rain forest. In the aggregate, restoration and/or protection of such 'blue carbon' sinks could sequester 0.4 – 3.0% of present day global CO<sub>2</sub> emissions and make a substantial contribution to climate mitigation while delivering sizeable additional environmental and socioeconomic benefits in areas such as fisheries, storm surge protection, and tourism. Estimates of the public costs, benefits/avoided costs, and catalysed

public and private finance associated with a global scaling up of 'blue carbon' underscore the value and urgency of reaching consensus on best available blue carbon inventory, monitoring, reporting and verification methodologies.

The approximate consonance of the high end blue carbon CO<sub>2</sub> reduction estimate with the projected lower shipping contribution to global emissions under ship energy efficiency implementation scenario suggests that the ocean sectors which contribute to climate change could in effect move towards overall climate neutrality.