LOG17-007: Communication from the United Nations Office of Legal Affairs

Executive Summary

The Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report[1] identified that human induced warming of atmosphere and ocean is unequivocal. Climate change has impacted natural and human systems across all continents and the oceans. Sea level has risen. The risk of extreme events and their intensity has increased. Arctic sea ice has declined. Ocean acidity has increased. With 93% of heat attributed to global warming and 28% of anthropogenic CO_2 emissions ending up in the oceans,[2] oceans have acted as the most important mitigation factor of climate change thus far.

Furthermore, sea level rise will continue for centuries even if the global mean temperature is stabilized. The decline of arctic sea ice could lead to new trade routes and access to regional resources for exploitation and tourism but would seriously impact arctic ecosystems.[3]

The United Nations Framework Convention on Climate Change (UNFCCC),[4] Article 4.1 (commitments) states ³ $ll Parties shall promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases (GHGs), including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems´

Scientific aspects of oceans are discussed under the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA),[5] most recently highlighted are verification of deep ocean warming to 2000m which is impacting sea level rise and ecosystems health,[6] regional variations in sea level rise with a consequence for planners;[7] and, possible slowdown of the deep ocean circulation with a serious impact on the planet, including nutrient supply for Pacific, Atlantic and Indian ocean ecosystems; heat uptake; and the ocean¶V F D S D F L W \ W R function as a CO_2 sink.[8]

The Paris Agreement[9] mentions oceans in the preambular paragraphs[10] 1 R W L Q J W K H L P S R U W D Q F H R L Q W H J U L W \ R I D O O H F R V \ V W H P V yet clear what the role of the Ocean will be in implementing Article 4.1 to achieve the long-term temperature goal of Article 2 and peak GHGs as soon as

possible and then rapidly reduce emissions, according to the best available science, so as to achieve carbon neutrality in the second half of th

At the research dialogue several issues linked to oceans, including observation (e.g. temperature and heat content, acidification, oxygen depletion, sea level rise, sea ice) and impacts on marine ecosystems, coastal zones, ecosystem services and slow onset events at different warming scenarios have been addressed. For example:

At RD7[15] (May 2015) new findings on how oceans absorb heat presented by the Chair of WGI ahowinga n increased uptake of heat at different layers in the ocean in the last 5 Q -4(n t)-s on h 5 Q yat e

Vulnerability and adaptation under the Intended Nationally Determined Contributions (INDCs)

The below list contains a general overview of ocean-related information contained in the adaptation components of INDCs of Parties to the UNFCCC. The information provides examples contained in the INDCs for the topics of interest. It does not reflect all vulnerabilities and adaptation measures expressed in the INDCs related to the ocean.

1. Science, data collection and awareness raising:

   Global climate models do not accurately reflect temperature increase because the entire region is represented only as ocean in grid boxes. (ATG);

   Capacity is required to set up an observation and monitoring system, including for the ocean (BEN);

   This is a lack of capacity of, i.a., oceanographic services (GNB)

   Urgent technical work is needed to assess impacts of different CO2 levels on risks including ocean acidification and sea level rise (NRU)

   Research is needed to better understand changes in i.a. ocean currents (SYC)

2. Overview of existing legal and policy frameworks;

3. Action aimed at fostering climate resilient sustainable development of oceans and seas;

4. Ocean-based adaptation actions/Ocean-

Will affect productivity of fisheries and majority of population and economic activities (tourism), and cause loss and damage to key infrastructure located on coasts (BRB).

Sea level rise and costal erosion threaten fisheries infrastructure (MRT);

Threatens saltwater intrusion into groundwater reserves and coastal erosion (NRU);

Threatens coastal communities with flooding and fishing grounds (e.g. wetlands, coral reefs, and mangrove areas) (SOM)

(iv) Melting ice in Polar regions - Environmental /biodiversity

i. Social and economic

(v) Extreme weather events - Environmental

Extreme weather is identified as a key climate risk by ca. 100 countries, while ca. 50 countries highlight risks posed by storms.

Many Parties highlighted extreme weather in its different forms such as stronger wind and rain, cyclones, typhoons, hurricanes, sea surges, sandstorms and heatwaves.

i. Social and economic

Bangladesh is particularly susceptible to cyclones bringing heavy rains from the Indian Ocean (BGD).

Most of economic activity is concentrated on the coasts. Therefore, extreme events on the coast threaten economic growth (MRT);

Tropical cyclone Nargis caused the loss of 138,000 lives in 2008 (MMR);

In 1999 Hurricane Lenny reduced the capacity of the Roseau) L V K H U L H V & R P S O H [W R W K H H [W H Q W W K D W D \ H D U ¶ V F D W and much revenue was lost (DOM).

Hurricane Ivan caused a loss of 8% of GDP (JAM).

2.

be lost by 2035 and >50