Oceans and the law of the Sea
Report of the Secretary-General
Part II - Main recent developments relevant for oceans and the law of the sea

Contribution by the secretariat of the United Nations Framework Convention on Climate Change
7 August 2015

The following describes undertaken or on-going activities under the UNFCCC that are relevant for the implementation of specific provisions of the General Assembly resolution 69/245 on Oceans and the law of the sea from June 2014 to July 2015.

Summary

The oceans play an essential role in the climate system and, already at the current level of global warming, climate change has significant impacts on them. According to the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC): over 90 per cent of the heat accumulating in the atmosphere due to the greenhouse gas effect is stored in oceans leading to their warming and hypoxia; oceans absorb about 28 per cent of man-made CO_2 which resulted in their acidification; and oceans accumulated excess water from melting ice sheets which resulted in sea level rise. IPCC also found that additional magnitudes of warming will only increase the risk of severe, pervasive and irreversible impacts, including on oceans.

Many activities under the UNFCCC are relevant for the areas of action identified in the General Assembly resolution 69/245, in particular for section III 9 on oceans and climate change and ocean acidification. The most important work undertaken in the reporting period relates to the preparation for adoption later this year of the Paris climate agreement, which is expected to provide the foundation for future action on addressing climate change, including on adaptation, mitigation, finance, technology development and transfer, capacity-building and transparency of action. The 2013–2015 review of the adequacy of the long-term global goal of limiting global warming below 2°C above pre-industrial levels addressed key aspects relating to the warming and acidification of oceans and the corresponding impacts on, for example, marine ecosystems, costal zones, food security, livelihoods and sustainable development.

Other relevant activities aimed at: further strengthening the observation system, including its oceanic domain; continuation of the dialogue between policy makers and the scientific community on emerging scientific information regarding oceans and identification of gaps in knowledge and of future research needs; ecosystem based adaptation and ecosystems with high carbon reservoirs; and loss and damage, including from slow onset events such as sea level rise and ocean acidification. UN-Oceans delivered a comprehensive statement at the opening plenary of 42nd session of the Subsidiary Body for Scientific and Technological Advice (SBSTA).[1]

Specific activities

The 2013-2015 review
The structured expert dialogue (SED) on the 2013–2015 review of the adequacy of the long-term global goal of **limiting global warming below 2°C above pre-industrial levels**[2] convened its third and fourth meetings. The SED completed its work and a final report was made available for consideration by SBSTA 42.[3]

The report, which summarised key aspects of the dialogue in ten messages, addressed, for example, aspects relating to shifts in biogeographical distributions of marine organisms, global and regional ocean acidification for various emissions scenario, the decreasing of the oxygen levels in oceans and its impacts on animal life, sea level rise and impacts of climate change on vulnerable ecosystems, including on warm-water coral reefs and the Arctic sea ice ecosystem. It stressed that, with respect to

[1] See <http://unfccc.int/bodies/sbsta/items/9022.php>.
[2] See <http://unfccc.int/7521.php>.
[3] See <http://unfccc.int/resource/docs/2015/sb/eng/inf01.pdf>.

ocean-related risks, adaptation "buys time", but is very limited for some systems, such as the polar regions and coral reef systems.

Research and systematic observation of the climate system
SBSTA 41 reemphasized the importance of **systematic observation** for the UNFCCC process at large and the continued need to secure funding to meet the essential needs for national, regional and global climate observations under the Convention on a long-term basis. It considered a report on progress made in the implementation of the 2010 updated Global Climate Observing System (GCOS) Implementation Plan and an updated report on Progress made by space agencies providing global observations in their coordinated response to relevant needs of the Convention provided by the Committee on Earth Observation Satellites. SBSTA encouraged Parties to actively engage in the review of the GCOS status report and to support the development of the new implementation plan, including on aspects related to ocean observation and acidification.[4]

The GCOS secretariat, in collaboration with the IPCC and the UNFCCC secretariat, organized a workshop on enhancing observations to support preparedness and adaptation in a changing climate – learning from the AR5. At this workshop participants identified several areas that could benefit from reconsidering or broadening of the essential climate variable (EVCs)[5] or development of sector-specific climate variables to complement the ECVs. In particular, the limitations of ocean and coastal data were raised repeatedly and, specifically, the need for collaboration, through the Intergovernmental Oceanographic Commission and the Global Ocean Observing System, to expand the measurement of the Southern oceans.[6]

The **research** dialogue of the SBSTA convened its sixth and seventh meetings.[7] Matters of relevance to oceans addressed during these events included:

- Information gaps in AR5 and emerging research findings on oceans (e.g., distribution in heat uptake and ocean temperature, differences between 1.5 ° and 2 °C in terms of extreme events, ice sheet changes, mass balance and sea level, and ocean heat, dynamics, atmospheric pressure) and downscaling of global models for regional climate modelling (e.g., experience form CORDEX and the Caribbean);
- Findings of AR5 and other studies on the polar regions (e.g., warming and polar amplification, permafrost, and sea ice changes, and ecosystem impacts of ocean warming and acidification).

The secretariat, under the guidance of the SBSTA Chair, organized a workshop on technical and scientific aspects of ecosystems with high-carbon reservoirs, which provided information on the greenhouse gas emissions and removals from coastal and marine ecosystems such as mangroves, tidal salt marshes, wetlands and seagrass meadows.[8] SBSTA 40 considered the report of this workshop and encouraged the research programmes and organizations to continue sharing experiences, knowledge and views on these matters, including on capacity-building elements, in particular in developing countries, and invited the IPCC to take note of this work in its future work.[9]

Nairobi work programme on impacts, vulnerabilities and adaptation to climate change
As regards **adaptation knowledge support**, SBSTA 40 requested the secretariat to prepare a synthesis report based on information submitted by Parties and Nairobi work programme (NWP) partner organizations on methods and tools for, and good practices and lessons learned relating to, adaptation planning processes addressing ecosystems, human settlements, water resources and health, and good practices and lessons learned related to processes and structures for linking national and local adaptation planning.[10] This report provides examples of work undertaken on ecosystem based approach adaptation, including on conducting coastal ecosystem valuation based on the studies of coral reefs and mangroves conducted at national and subnational levels in five countries: Belize, the Dominican Republic, Jamaica, St. Lucia, and Trinidad and Tobago.

[4] FCCC/SBSTA/2014/5, paragraph 38.
[5] See <https://www.wmo.int/pages/prog/gcos/index.php?name=EssentialClimateVariables>.
[6] See <http://unfccc.int/8764.php>.
[7] See <http://unfccc.int/6793.php>.
[8] See <http://unfccc.int/ 7797.php>.
[9] FCCC/SBSTA/2014/2, paragraphs 62–67.
[10] See <http://unfccc.int/documentation/documents/advanced_search/items/6911.php?priref=600008090#beg>.

Loss and damage associated with climate change impacts

The Conference of the Parties (COP) recognized the need to strengthen international cooperation and expertise in order to understand and reduce **loss and damage** associated with the adverse effects of climate change, including impacts related to extreme weather events and slow onset events[1112]. COP 19 (December 2013) established the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts, and an Executive Committee to guide the implementation of the functions of the Mechanism.[13] Action area 3 of the initial two-year workplan of the Executive Committee, adopted at COP 20,[14] focuses on matters related to enhancing data on, and knowledge of the risks of slow onset events and their impacts, and identifying ways forward on approaches to address slow onset events associated with the adverse effects of climate change with specific focus on potential impacts, within countries and regions.[15] The Executive Committee will convene its first meeting in September 2015.

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[11] Decision 1/CP.16.

[12] Slow onset events include sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification.

[13] Decision 2/CP.19.

[14] FCCC/SB/2014/4, Annex II.

[15] See < http://unfccc.int/8805.php>.