



Submission by the Government of the Republic of Fiji

The Fijian Government welcomes the opportunity to submit its views on possible topics and considerations for the 12th session of the Research Dialogue (RD-12) to be held in conjunction with SBSTA 52.

Everyone on this planet is dependent on the oceans in one way or the other. However, increasing concentrations of anthropogenic greenhouse gases are having a significant impact on our oceans. The Intergovernmental Panel on Climate Change Special Report on Oceans and Cryosphere (SROCC) has provided new insights into how our oceans are changing, how they may become in future and what are needed to overcome the ocean and climate change challenges.

The joint IPCC and SBSTA Special Event on the IPCC SROCC held in conjunction with SBSTA 51 helped parties to understand the key messages in the report. However, further dialogue is needed between the scientific community and policy makers to understand the ocean-climate nexus. A more robust discussion is needed to understand future research needs to improve interpretation of ocean-climate interlinkages.

The ocean also provides critical services to climate including absorbing heat, carbon and regulating both the world's oxygen and on reduction targets are adjusted to cater for the new realities. Any significant change in these core services will severely impact our ability to fulfill the Paris Agreement targets. It is important that the UNFCCC is informed of the status of the ocean's capacity to service climate and ensure that urgent ocean adaptation is targeted to mitigate impacts and emissions.

We are seeking a dialogue which will enhance the understanding of the Ocean-Climate Nexus to better understand the impact of climate change on oceans and the tipping points and feedbacks in the Earth system, including but not limited to:

- Projections, tipping points in physical and biological aspects of the ocean and associated changes in ecosystem services provided by the oceans, and uncertainties for land ice stability and sea level rise feedbacks in the ocean climate system: How soon will we pass tipping points for Greenland and Antarctic ice melting? What is the rate of increase, including the upper limits, between now and the end of the century, through 2300 and 2500?
- Uncertainties in projections of oceanic changes, especially catastrophic ice shelf failure and consequences for extreme sea level rise and effect (including economic, cultural and human health effects) on coastal and near-coast communities;

- Role of tides, storm surges and waves in sea-level extremes, noting that Fiji and our Pacific neighbors are already experiencing Historical Centennial Extremes according to the IPCC SROCC report;
- Current and projected challenges of intensifying tropical cyclones, deoxygenation, marine heat waves, changing ocean productivity and circulation patterns.
- Risk cascades and the limit to adaptation for Big Ocean States noting the limits to adaptation identified in the IPCC SROCC Summary for Policy Makers;
- Understanding of sub-surface properties of the ocean, ocean chemistry and biological productivity changes;
- Linkages between the ocean and climate, such as ocean-based mitigation options, ocean-relevant adaptation needs and options, the impacts of climate change on the ocean and the economies and communities that rely on its health, and the scale of climate action that is necessary for ocean health;
- The ability of the ocean and coastal ecosystems, i.e. fisheries, coral reefs, sea grass and mangroves, to continue to support the multi-faceted blue economy highlighting challenges for fisheries, coastal adaptation and relocation, tourism, and carbon markets.
- Science insights into the opportunities and challenges for decarbonization of marine transport, shipping and fisheries;
- Risks and benefits of the full range of geoengineering activities under active discussion and their impacts on ocean biophysics, biodiversity, and ocean functionality;
- Current state of knowledge on vulnerability of human societies to ocean climate change and the limits of the adaptive response of humans and human communities to these expected ocean changes;
- Use of novel “scenario planning” techniques to fully consider future ocean scenarios given alternative development and emissions pathways;
- Role of ocean biodiversity and trophic structure in maintaining carbon flux dynamics throughout the ocean and the ocean’s ability to cycle and sequester carbon under accelerating climate change;
- Effect of ocean disturbance (deep sea mining; shallow water and deep water bottom trawling, etc.) on carbon release from soft bottom ocean sediments and the effect on the efficacy of global emission targets; and
- Importance of different emission scenarios on ocean temperature (average, extremes, and severity and frequency of ocean heat waves) on corals and coral reef community viability.