



ELEVENTH CONFERENCE OF THE PACIFIC COMMUNITY
(21 June 2019, Noumea, New Caledonia)

AGENDA ITEM NO. 1: OCEAN SCIENCE – A SUSTAINABLE FUTURE FOR THE BLUE PACIFIC

(Paper presented by the Secretariat)

Summary

1. Ocean-related scientific and technical data, analysis and advice, which provides a basis for translating the 'Blue Pacific' into local, national and regional action, is largely absent or inaccessible and plans for collecting such data into the future are fragmented geospatially and not integrated at multiple levels of governance.
2. The importance of ocean science is reflected in the Sustainable Development Goals, and is time critical in the face of climate change impacts that threaten the very existence of the Blue Pacific.
3. The sustainable management of the Pacific region, the only 'ocean continent' on earth, and the region's advocacy at a global level require accessible, fit-for-purpose technical information. The same ocean-related information that underpins, reinforces and progresses the Blue Pacific identity.
4. An integrated regional approach to multidisciplinary ocean-related scientific studies and partnerships with international and regional partners in ocean science will be critical in ensuring a sustainable future for the Blue Pacific.

Recommendations

5. The Conference is invited to:
 - i. endorse the development of a regional strategy for the collection of scientific and technical ocean data and information that will translate the Blue Pacific narrative into regional, national and local action for sustainable management of the Pacific Ocean, and will also inform sustainable management of all oceans around;
 - ii. endorse SPC as the entity responsible for collecting, managing and interpreting the regional datasets that will underpin this work, and the representative Council of Regional Organisations of the Pacific (CROP) agency for implementing activities in this context;
 - iii. endorse an integrated approach to ocean-focused activities, both at the agency level through the Pacific Community Centre for Ocean Science, and at the CROP level through the Marine Sector Working Group, with the Office of the Pacific Ocean Commissioner and other partnerships.

Ocean science – A sustainable future for the Blue Pacific

Purpose

6. This paper highlights how scientific and technical data, analysis and advice will provide a basis for translating the 'Blue Pacific' into local, national and regional action that will contribute to achieving sustainable development in the region.
7. The paper also calls for Conference to advise and guide the Pacific Community (SPC) and other partners on how and where such scientific and technical interventions can maximise the potential of a sustainable future for the Blue Pacific. The Blue Pacific concept captures the collective potential of the region's shared stewardship of the only 'ocean continent' on earth, based on explicit recognition of its shared ocean identity, ocean geography and ocean resources.

Background

8. In 2017, Pacific Leaders endorsed the Blue Pacific as the core driver of collective action to advance the vision of peace, harmony, security, social inclusion and prosperity described in the Framework for Pacific Regionalism (2014).
9. The Blue Pacific is key to the role of Pacific leaders in advocating for the health and protection of the world's oceans, and the conservation and sustainable use of marine resources. This advocacy has already resulted in:
 - Sustainable Development Goal (SDG) 14 (Life below water) being an integral part of the 2030 Agenda for Sustainable Development;
 - Pacific leadership of the global decision-making body of the United Nations Framework Convention on Climate Change;
 - raising the mitigation ambition of Nationally Determined Contributions by 2020;
 - progress towards a legally binding instrument on the marine biological diversity of areas beyond national jurisdictions.
10. Ocean science will be critical in translating the region's advocacy at a global level into regional, national and local action to ensure a sustainable future for the Blue Pacific. National governments, international and regional organisations (e.g. the Office of the Pacific Ocean Commissioner) and Pacific communities require accessible technical information based in rigorous science to make evidence-based decisions for the sustainable management of ocean resources. However, the requisite scientific and technical data is largely absent or inaccessible, and plans for collecting this data into the future are fragmented geospatially and not integrated at multiple levels of governance.
11. The importance of ocean science in this context is reflected in SDG 14, Target A, which seeks to 'increase scientific knowledge, develop research capacity and transfer marine technology ... in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing states...'. Work toward SDG 14.A will contribute to:
 - SDG 2 (Zero hunger) – increasing the contribution of oceans to food security and nutrition;
 - SDG 3 (Good health and well-being) – using ocean-based resources for health research and development (medicines, etc.);
 - SDG 4 (Quality education) – providing tools for managers and enhancing capacity around ocean-linked economic activities, science and technology;
 - SDG 5 (Gender equality) – supporting gender equality in ocean-related activities;

- SDG 7 (Affordable and clean energy) – informing the development of ocean-based energy sources;
- SDG 9 (Industry, innovation and infrastructure) – enabling the transfer of marine technology to increase national innovation capacity.

12. The United Nations has proclaimed a Decade of Ocean Science for Sustainable Development (2021–2030) ‘to support efforts to reverse the cycle of decline in ocean health and gather ocean stakeholders worldwide behind a common framework that will ensure ocean science can fully support countries in creating improved conditions for sustainable development of the Ocean’.¹ The Pacific region is uniquely placed to leverage the power of the Blue Pacific, and its geopolitical context, to become a global leader in catalysing sustainable development action through ocean science.

Ocean identity

13. Ocean-related scientific and technical information underpins, reinforces and progresses the Blue Pacific identity. For example, Cook Islands has declared its entire exclusive economic zone (EEZ) – close to two million square kilometres – as Marae Moana or the Sacred Ocean. Marae Moana is a multi-use marine park, with a 50 nautical mile fishing and seabed mining exclusion zone around each of the 15 islands, which is left for island communities to use. With this declaration, Cook Islands has exceeded the expectations of SDG 14.5, which is to conserve at least 10 per cent of coastal and marine areas by 2020, consistent with national and international law and based on the best available scientific information. Marae Moana will make a positive contribution to the achievement of SDG 1 (No poverty) and SDG 2 (Zero hunger) by ensuring sustainable access to coastal zone resources for Cook Island communities.
14. Marae Moana also speaks to the identity of Cook Islanders, according to the Prime Minister, the Hon. Henry Puna, by ‘protecting species and ecosystems as well as our cultural heritage that we inherit and pass on to future generations’. It is the largest commitment by a single country to integrated management and conservation from ridge to reef, and from reef to ocean, based on objective evidence-based decision-making.
15. The failure of the developed world to adapt and take stronger climate change mitigation measures, including reducing global carbon emissions, threatens the very existence of the Blue Pacific. Cultural, genealogical and spiritual connections to the land and sea are at risk from long-term sea-level rise, the impacts of extreme weather events, saltwater intrusion into freshwater aquifers, loss of coastal wetlands, higher water temperatures and changes in ocean currents, loss of crops from saltwater inundation, and decreases in fish stocks due to acidification. SDG 14.3 specifically calls for enhanced scientific cooperation at all levels to minimise and address the impacts of ocean acidification, which is strongly linked to the achievement of SDG 2 (Zero hunger). However, no CROP agency has a clear mandate to coordinate efforts towards mapping or modelling acidification in the Pacific.
16. Evidence shows that climate migration is already happening in the Pacific and is having security consequences, particularly for migrants. This issue requires a strategic response that builds on existing initiatives, such as the Framework for Resilient Development in the Pacific, and employs a human rights-based approach. The Pacific has the opportunity to set the standard for the way the rest of the world manages climate migration, while continuing to lead global ambition and advocacy for mitigation to avoid falling into the trap of ‘migration as climate adaptation’. The region’s collective objective must be to ensure that Pacific Island peoples can continue to live on their islands in the Blue Pacific, as they have for millennia.

¹ <https://en.unesco.org/ocean-decade>

17. The future of the Blue Pacific requires moving beyond understanding that climate change is a threat to the existence of the region, to understanding the extent, nature and severity of that threat through scientific and technical studies, data and interpretation. Long-term strategic responses require better understanding of the localised effects of climate change, including through:
 - downscaled climate models that are meaningful for small island settings
 - instrumental monitoring of environmental change
 - automated early warning systems
 - quantified risk modelling for evidence-based decision-making.
18. The Pacific must also continue to engage in the ambition to limit global temperature increases to 1.5°C, partly through addressing emissions from the maritime industry. Pacific Island countries need to adopt technology available from global partners to develop new, fuel-efficient, appropriately sized ships, streamlined logistics and 'green' ports. These initiatives could also benefit intra-island shipping, thereby boosting the ocean-based economies of PICTs, also referred to as the 'Blue Economy'.

Ocean geography

19. Pacific Island countries and territories (PICTs) are collective custodians of 20 per cent of the world's EEZs. The scale of this geography, the global recognition of the strategic and economic importance of oceans, and global power shifts have placed the Pacific at the centre of global geopolitics. This gives the Pacific region an opportunity, unique in its history, to leverage its ocean geography in engaging with the world.
20. For PICTs, maritime boundaries are national borders and are critical for governance, security, law enforcement, and natural resource management. Nineteen shared Pacific maritime boundaries have been delimited since 2001, which is a rate of progress unprecedented elsewhere in the world. It underscores the strength of the relationships between countries and partners and the commitment of all parties to progress this work. Of the 48 shared boundaries in the Pacific Islands, 13 now remain to be delimited and declared (as illustrated by the map in Annex 1). The finalisation of these boundaries, and the six high seas boundaries still to be delimited, must be a priority for the Blue Pacific, and will require dedicated scientific and technical input to legal instruments under the United Nations Convention on the Law of the Sea (UNCLOS). This action will meet Pacific Island country commitments to SDG 14.C, which seeks to enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS.
21. A future priority for the Blue Economy, requiring additional scientific analysis and interpretation, is the delineation of extended continental shelves (Annex 1), over which some Pacific Island countries will exercise sovereign rights with regard to the exploration and exploitation of natural resources, including oil and gas deposits and other minerals and biological resources of the seabed.
22. Climate change has brought to the fore fundamental issues for the definition of maritime boundaries that must be addressed regionally and internationally. UNCLOS does not as yet provide absolute certainty over ocean space in the face of climate change. Maritime zones are generated from land features. Therefore loss of, or changes to, those land features may ultimately reduce the size of PICT EEZs. The delineation of maritime boundaries must be a priority to mitigate security threats and resource management conflicts that could have consequences for sovereignty and sovereign rights.
23. SDG 14.2 calls for the sustainable management and protection of marine and coastal ecosystems by 2020, including by strengthening their resilience, and taking action to restore them. This target is closely linked to SDG 13 (Climate action), with oceans acting as a global climate regulator, and to SDG 15 (Life on land), with coastal and marine ecosystems providing habitats and food for terrestrial fauna. High-quality ocean science focused on coastal ecosystems will also make a significant contribution to

the recently announced UN Decade on Ecosystem Restoration, which will encourage investment and efforts to restore damaged ecosystems. Among other benefits, this restoration will increase food and water security and contribute to climate change mitigation and adaptation.

24. The sustainable management of the Blue Pacific, including balancing the needs and opportunities of the multiple sectors operating in the Pacific oceanscape (e.g. fisheries, shipping, seabed mining and tourism), will require ecosystem-based management and marine spatial planning. These require detailed information at various ecological and socio-economic levels, with recognition of their interdependencies, and the use of simulation models and software-based decision support tools to develop geospatial information for marine protected areas, as was done in the declaration of Marae Moana.

Ocean resources

25. Ensuring a sustainable future for the Blue Pacific requires that PICTs understand their oceanic resource base, which is typically poorly measured and mapped compared to land-based resources, as it exists in a fluid, buoyant, three-dimensional environment. Science and technology is therefore critical to understanding oceanic resource distribution. The Pacific's political and community leaders need oceans and climate science that is fit for purpose and effectively communicated for decision-makers at local, national, regional and global levels.
26. Oceanic fisheries are key to the economies of many SPC members. The revenue received by PICTs from foreign tuna fishing fleets is approximately EUR 300 million per year. Approximately 1.6 million tonnes of the main target tuna species (yellowfin, skipjack, bigeye and South Pacific albacore) were caught in Pacific EEZs², making tuna the most significant export for the region. Coastal fisheries are also critical in providing the primary or secondary source of income for up to 50 per cent of coastal households. This key resource is under threat due to unsustainable extraction as a result of technological improvements and illegal, unreported, and unregulated fishing, coupled with poorly managed access to fish stocks and rising demand. Strategic management of a critical resource of this scale and complexity requires detailed scientific monitoring in the context of modelling biomass distributions under different climate change scenarios.
27. Without this scientific and technical data on fisheries, it will not be possible to achieve SDG 14.7, which aims to increase the economic benefits to small island developing states and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries and aquaculture by 2030. Work towards this target will also contribute to achieving SDG 1 (No poverty), SDG 2 (Zero hunger), and SDG 8 (Decent work and economic growth) in PICTs.
28. The region's non-living resource base is also poorly mapped. Mining activity in the form of near-shore dredging and extraction of aggregates has been taking place for some time in areas under national jurisdiction and will become increasingly critical for PICTs investigating the potential of aggradation in adapting to sea-level rise. Exploration of deep-sea minerals and resources is also of interest to some PICTs, both within their EEZs and in zones beyond national jurisdiction in the so-called 'Area', as laid out under UNCLOS and under the provisions of the International Seabed Authority (ISA).
29. Offshore energy resources are also becoming viable as a sustainable alternative to diesel imports. Emerging technologies for wave and tidal energy and ocean thermal energy conversion have been successfully demonstrated in the northern Pacific. Work to achieve SDG 14.7 would contribute to SDG 7 (Affordable and clean energy).

² 2013-2015 average annual catch

30. Blue carbon refers to the carbon stored in oceanic and coastal ecosystems, primarily mangroves and sea grasses, and the soils and sediment in which they grow. These ecosystems are highly efficient carbon sinks, however, there is significant uncertainty in estimates of blue carbon storage at the national scale. Focused scientific study of its distribution, particularly in seagrass communities, is required to harness the economic potential to preserve these resources (e.g. through carbon offsets).

An integrated regional approach to ocean science

31. The Pacific Community Centre for Ocean Science (PCCOS) provides an SPC-wide mechanism for multidisciplinary, multi-sectoral scientific studies and partnerships, and provision of integrated science and technical services to members. Data, technical information and knowledge products to support PICT development of a sustainable Blue Economy will be made available through the Pacific Data Hub, and associated links to PCCOS and the Oceans Portal.
32. PCCOS also serves as a focal point for developing partnerships with international and regional partners in ocean science. Through PCCOS, SPC has strengthened its working relationship with the Intergovernmental Oceanographic Commission including: a) coordinating the preparatory process for the United Nations Decade of Ocean Science for Sustainable Development (2021–2030); b) providing technical expertise to the Executive Planning Group; and c) proposing to become an Associate Data Unit of the International Oceanographic Data and Information Exchange Programme. At the regional level, the Office of the Pacific Ocean Commissioner will be a primary beneficiary of PCCOS scientific and technical data, analysis and advice, which will provide the evidence base for the Commissioner's high-level representation and dedicated attention to ocean priorities, decisions, and processes in the Pacific.

Recommendations

33. The Conference is invited to:
 - i. endorse the development of a regional strategy for the collection of scientific and technical ocean data and information that will translate the Blue Pacific narrative into regional, national and local action for sustainable management of the Pacific Ocean, and will also inform sustainable management of all oceans around;
 - ii. endorse SPC as the entity responsible for collecting, managing and interpreting the regional datasets that will underpin this work, and the representative CROP agency for implementing activities in this context;
 - iii. endorse an integrated approach to ocean-focused activities, both at the agency level through the Pacific Community Centre for Ocean Science, and at the CROP level through the Marine Sector Working Group, with the Office of the Pacific Ocean Commissioner and other partnerships.

