Commonwealth Marine Economies Programme

Funded by
UK Government

Enabling safe and sustainable marine economies
across Commonwealth Small Island Developing States

Papua New Guinea
Country review

PROUD TO SUPPORT
COMMONWEALTH
HEADS OF GOVERNMENT MEETING
LONDON 2018

Centre for Environment Fisheries & Aquaculture Science

UK Hydrographic Office

National Oceanography Centre
NATURAL ENVIRONMENT RESEARCH COUNCIL

Foreign & Commonwealth Office

The CME Programme is designed to support sustainable, growing marine economies that create jobs, drive national economic growth, reduce poverty, ensure food security and build resilience against forces of nature. Funded by the UK Government and delivered by a partnership of world-leading marine organisations from the UK, the programme aims to ensure marine resources in Commonwealth SIDS are better understood and managed.

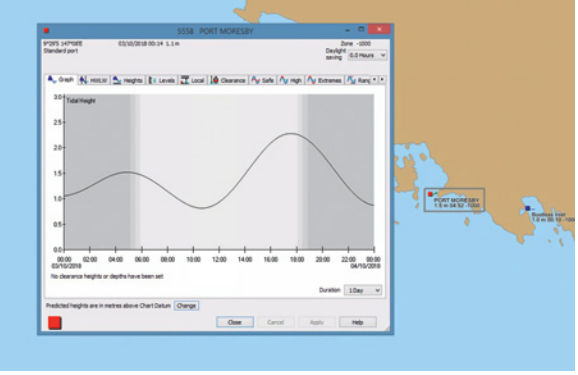
This review highlights opportunities where the UK can apply and leverage its world-leading expertise to make significant, cost-effective and lasting positive impacts on each country.

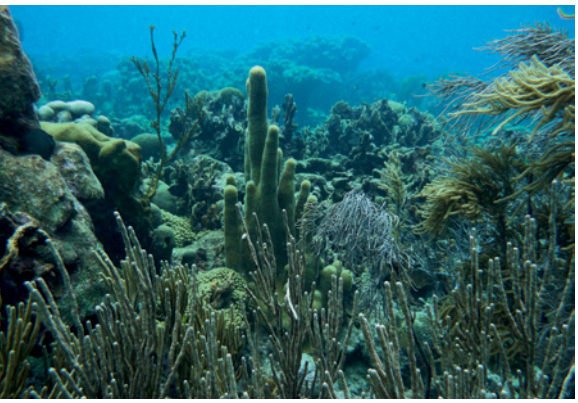
Relevant strategic plans

International – Papua New Guinea is subject to international requirements and obligations as listed under the UN Convention on the Law of the Sea; Safety of Life at Sea; Conservation of Biological Diversity (Aichi Targets); the SIDS Accelerated Modalities of Action (SAMOA) Pathway; and the 2030 Agenda for Sustainable Development (including Sustainable Development Goals; 2 – Zero hunger; 9 – Industry, innovation and infrastructure; 13 – Climate action; 14 – Life below water).

Regional – The two main regional organisations delivering geospatial outputs that operate in the Pacific are the Pacific Community (SPC) and the Secretariat of the Pacific Regional Environment Programme (SPREP), both of which are active in Papua New Guinea. The regional objectives of both organisations are outlined in their 2016-2020 and 2017-2026 Strategic Plans respectively, with relevant goals including: sustainable economic development; strengthened resilience to climate change; healthy and resilient island and ocean ecosystems; improved waste management and pollution control; and the commitment to, and best practice of, environmental governance.

National – National strategies for enabling the safe and sustainable development of Papua New Guinea's marine environments include; the National Strategic Plan (2010-2050); a Roadmap for coastal fisheries and marine aquaculture
for Papua New Guinea (2017-2026); and the Papua New Guinea Policy on Protected Areas. The Asian Development Bank (ADB) have also supplied funding for the Maritime and Waterways Safety Project, which will undertake around 12 hydrographic surveys per year using survey contractors. The Primary Charting Authority responsibilities of Papua New Guinea are fulfilled by Australia.





Challenges faced

Management of coastal and marine environments – The lack of up-to-date, modern data has a number of impacts on the successful management of Papua New Guinea's marine estate and coastal protection. In fisheries management there is a paucity of information on catches and numbers of ships.

Data collection capabilities – Papua New Guinea has very limited local capabilities to collect large-scale marine science or mapping data without outside assistance.

Climate change impact assessment – Papua New Guinea's marine environments are vulnerable to the impacts of climate change through factors such as ocean acidification, sea-level rise and invasive species. Understanding, quantifying and monitoring those factors and their effects on local marine ecosystems is essential for developing appropriate risk mitigation and coastal planning strategies.

Protection and preservation of the marine environment – Maintaining the health and biodiversity of marine ecosystems within Papua New Guinea is key for environmentally sustainable development. In particular, the protection and preservation of coral reefs is of critical importance from both an environmental perspective and for their role in the tourism sector, and there is a need for more habitat/species data to facilitate development of new and manage existing protected areas, and a refinement of this information to support sensitivity mapping of features. Characterisation of the impacts of marine pollution on the health of the marine ecosystems and water quality is needed to help improve wastewater management practices, and to identify regions most at risk. Plastic pollution has been identified as a particularly important issue but little detailed information exists to enable management (including distribution).

Similarly, there is an increasing interest in the biosecurity of aquaculture products and concerns around the human health impacts of the fish-borne biotoxin ciguatera.

Natural and environmental disasters – Papua New Guinea's location means it is vulnerable to a range of hazards, including earthquakes, volcanic eruptions, tsunamis, flooding and storms. Marine infrastructure and environments need to be better protected from the impact of storms and other natural hazards, and resilience built into coastal systems as a mechanism for mitigating these risks.

Training and capacity building – Improved awareness, skills and knowledge are required across marine sectors to enable Papua New Guinea to implement integrated ocean governance. There is also a need to increase both national and regional cooperation through the sharing of assets and knowledge in order to help reduce costs and improve decision makers' understanding.

Papua New Guinea – Activities and benefits

By providing data, training, advice and support, the CME Programme is designed to help address economic and environmental needs, leaving a lasting legacy of self-sufficiency in marine management.

Programme activities are split across six core themes, though potential action is not identified in every category in all Small Island Developing States.

Priority projects identified for Papua New Guinea include:

Marine data collection for environmental resilience, and safe and efficient trade (core output 1)

Activity – High quality hydrographic data collection, alongside use of satellite derived bathymetry in certain areas, with provision for later augmentation for habitat mapping, leading to new modern editions of navigational charts, improved compliance with international obligations and data supplied to local states to inform onward management of the marine environment. Areas of highest priority include areas around D'Entrecasteaux Islands and Louisiade Archipelago.

Benefits – Improving overall safety of navigation – reducing risk to lives and the environment. Enabling ships to reduce their under keel clearance with confidence, therefore reducing costs and thereby increasing profit. Informing coastal development and protection. Helping encourage cruise ships to visit.

Monitoring and risk assessment to increase climate change resilience (core output 2)

Activity – Installation of Ocean Acidification sensor equipment, including training, support and service.

Benefits – A state-of-the-art monitoring system will be established that provides real-time biogeochemical data to scientists and other stakeholders nationally and internationally, and directly supports UN SDG 14.3 'Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels through indicator 14.3.1 'Average marine acidity (pH) measured at agreed suite of representative sampling stations'.

Activity – Assess the impacts of climate change (including ocean acidification) on key sectors and ecosystems. Define knowledge gaps.

Benefits – To enable the development of adaptation plans to reduce the impacts of climate change on the economy.

Decreasing pollution and improving human health (core output 3)

Activity – Determine the distribution, concentration and impacts of pollutants (including plastics) on the key coastal ecosystems.

Benefits – To advise on priority actions to remove or reduce pollution.

Sustainable fisheries development (core output 4)

Activity – Support relevant regional agencies in the assessment of stocks.

Benefits – To enable sustainable exploitation of capture fisheries.

Science infrastructure development, training and knowledge exchange (core output 6)

Activity – Work with key maritime staff to develop local hydrographic governance.

Benefits – Key elements of governance in place in line with IHO Phase 1 compliance, reducing potential barriers to international trade.

Activity – Collaborations with regional universities to support studentships and training.

Benefits – Legacy of further education and training around ecosystem management.

Programme outputs

If all of the potential activities were to be delivered, the CME Programme, working with key departments in Papua New Guinea, would result in the following development of marine capacity by the end of the scheduled Programme.

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Limited, or no, characterisation of physical parameters in marine and maritime sectors.	The physical parameters of the key marine and maritime environments and sectors are mapped and quantified.	The physical parameters are analysed in terms of the biological, sociological and economic context, resulting in a more in depth appreciation of their vulnerabilities and opportunities/ limitations for sustainable use.	Defensible policy is produced for the marine and maritime sectors that details consideration for the sustainable development of the ocean economy.	Full competency in undertaking the previous phases is developed and sustained across multiple sectors, leading to the safe and sustainable development of marine and maritime economies.

Output 1 – Marine data collection for environmental resilience and safe and efficient trade.

Output 2 – Monitoring and risk assessment to increase climate change resilience.

Output 3 – Decreasing pollution and improving human health.

Output 4 – Sustainable fisheries development.

Output 5 – Natural capital assessment.

Output 6 – Infrastructure development, training and knowledge exchange.

Expected impact

Through delivering these activities, outputs and benefits the CME Programme would help to facilitate:

Output 1 – Adherence to the UN convention on the Law of the Sea and Safety of Life at Sea; Reduction in the cost of imports and increase in the profitability of exports; Reduction in the risk of maritime accidents and damage to the environment.

Output 2 – Identification of communities and environments vulnerable to the impacts of climate change; Integration with regional and global hazard monitoring networks; Informed coastal management and planning decisions through delivery of a Pacific Climate Change Report Card.

Output 3 – Characterisation of the dispersion of sewage and industrial outfalls and their effects on water quality; Identification and prioritisation of pollution control mechanisms; Improved health of humans and marine ecosystems.

Output 4 – Reduced pressure on existing fish stocks and marine environments through collaborations with Pacific partners.

Output 5 – Enhanced awareness of the social and economic value of marine ecosystems; Quantification of the cost/benefit ratio of existing policy options, supporting decision making.

Output 6 – Confidence and ability to make sound independent decisions regarding the development of marine environments; Access to state-of-the-art marine equipment, models and techniques; Development of national and international networks.

Strategic outcomes

By better understanding and managing the marine resource potential within Papua New Guinea the CME Programme will help create jobs, drive national economic growth and reduce poverty through:

Prosperity – Diversifying revenue potential by opening up new economic opportunities.

Sustainability – Ensuring all marine and maritime activities are environmentally safe and sustainable.

Security – Making infrastructure and human capital resilient to natural disasters and climate change.

Legacy – Building the capacity of national authorities to plan and optimise their marine spaces.

Commonwealth Marine Economies Programme

The CME Programme is being delivered on behalf of the UK Government by a partnership of world-leading marine expertise.

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