

Commonwealth Marine Economies Programme

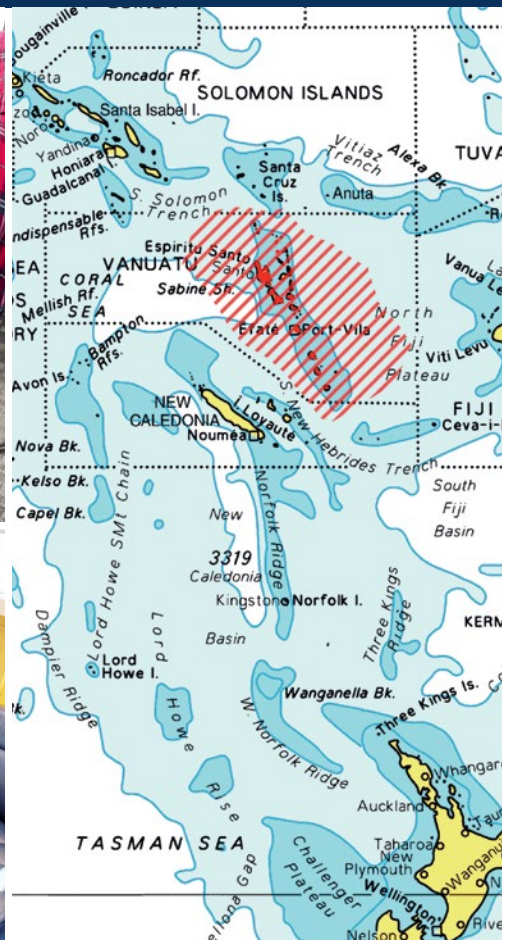


Funded by
UK Government

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

Vanuatu

Country review



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 – Vanuatu 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 Vanuatu. 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. The Pacific Regional Navigation Initiative (PRNI) builds upon the LINZ led project in Vanuatu under which hydrographic surveys were conducted of four key Vanuatu cruise ship destinations. Under the PRNI, SPC will lead the development of hydrographic governance and a legacy data audit.

National – National strategies for enabling the safe and sustainable development of Vanuatu's marine environments include; the National Ocean Policy (2016); National Invasive Species Strategy and Action Plan (2014-2020); National Water Strategy (2009-2018) and the National Integrated Coastal Management Framework and Implementation Strategy (2010). National plans are also in place to re-establish a hydrographic unit, to develop priorities and improve and capitalise on national hydrography.

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 Vanuatu's marine estate and coastal protection, and presents additional risk and costs to shipping. Fisheries management is currently under development in Vanuatu with an increasing focus on FAD fisheries. There is an interest to understand the impacts and opportunities of this fishery and for staff to gain access to training to maximise the benefits and enable



adequate monitoring. 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. For the protection of biodiversity there is a need for 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.

Coastal pollution (including plastic) was identified as a key issue but little detailed information exists to enable management (including distribution). There is a need to develop capacity in spatial planning and data management, and evaluate data to understand the cost and benefits of different policy options. In relation to climate change there is a need for trained staff and data to understand and mitigate impacts on the coast through sea-level rise.

Data collection capabilities – Vanuatu has stated an intention to re-establish its Hydrographic Unit, but they currently lack the equipment to be able to survey to fully modern standards, and lack sufficient resource to fully meet the national requirements for seabed mapping.

Climate change impact assessment – Vanuatu’s marine environments are vulnerable to the impacts of climate change through factors such as ocean acidification, sea-level rise, extreme weather events 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 Vanuatu is fundamental for environmentally sustainable development. In particular, the protection and preservation of seagrass ecosystems and 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 greater understanding of the Blue Economy, 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 improve human health through the identification of regions most at risk. Plastic pollution has been identified as a particularly important issue but little detailed information exists to enable management (including distribution).

Natural and environmental disasters – Vanuatu is at risk from tropical cyclones, with Cyclone Pam affecting ~71% of the country’s population in 2015 and resulting in USD \$449.4m of damage and losses (equivalent to 64.1% of GDP).

The storm was the strongest cyclone on record to make landfall in the South Pacific, and completely destroyed some communities and inflicted extensive damage to housing, agriculture and health facilities across the islands. 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 Vanuatu 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.

Vanuatu – 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 Vanuatu 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 priority 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.

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

Activity – Mapping of key ecosystems (e.g. seagrass) areas for small and large-scale habitat maps.

Benefits – To enable decision makers to determine sustainable development priorities. Understand the importance of the ecosystems as storage for blue carbon.

Activity – Creation of Habitat Maps for the Tanna, south-west bay region.

Benefits – The need for protection and conservation of seagrass areas has been highlighted as well as determination of areas of infestation of COTS and areas of coral bleaching.

Activity – Quantification of triggers, frequency and impact of marine geohazards for Vanuatu.

Benefits – This study will enhance the understanding of risk to a site of interest for potential jetty construction posed by marine hazards. It has broader relevance to other South Pacific islands and nearshore/offshore infrastructure.

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

Activity – Enable assessment of impacts of climate change 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.

Activity – Enable effective sea-level monitoring to aid environmental resilience.

Benefits – To advise on infrastructure build and development of coastal defences.

Activity – Regional Climate Change Report Card.

Decreasing pollution and improving human health (core output 3)

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

Benefits – To advise on priority actions to remove or reduce pollution and reduce risk on human health in coastal areas.

Activity – To model the dispersion, extent and impact of pollutants (including plastics, sewage contamination etc) on coastal communities.

Benefits – To provide information for the prioritisation of actions to reduce or mitigate coastal pollution and improve resilience of coastal habitats.

Activity – To advise on the development of a water quality monitoring programme for Vanuatu.

Benefits – A functional, long-term monitoring programme to provide information for baseline assessments and future decision making.

Activity – To provide input into State of the Marine Environment Reporting.

Benefits – Development of baseline understanding and assessment of water quality issues in the Pacific.

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 – Provision of modern seabed mapping equipment to the Government of Vanuatu.

Benefits – In line with those described under Output 1, but will allow for these benefits to be maintained into the future and additional mapping to be undertaken in areas of secondary priority.

Activity – Train departmental staff in water quality and pollution monitoring, habitat mapping and species monitoring design and implementation.

Benefits – To enable integrated assessments of the services provided to the local economy and human health.

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 Vanuatu, 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.

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; Improved health of humans and marine ecosystems through detailed mapping of high risk areas leading to the identification and prioritisation of pollution control mechanisms.

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, with specific focus on the ecosystem services provided by coastal habitats such as seagrass. 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 Vanuatu 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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