

Commonwealth Marine Economies Programme

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



Centre for Environment, Fisheries and Aquaculture Science (Cefas)
Pakefield Road
Lowestoft
Suffolk
NR33 0HT
United Kingdom
www.cefas.co.uk



UK Hydrographic Office
Admiralty Way
Taunton
Somerset
TA1 2DN
United Kingdom
www.gov.uk/ukho



National Oceanography Centre (NOC)
European Way
Southampton
Hampshire
SO14 3ZH
United Kingdom
www.noc.ac.uk

Commonwealth Marine Economies Programme



Funded by
UK Government

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

Grenada case study

About the CME Programme

The UK Government is supporting the development of Commonwealth Small Island Developing States' (SIDS) marine economies through the Commonwealth Marine Economies (CME) Programme.

Through the provision of world-class multi-disciplinary marine expertise, the programme aims to support the creation of prosperous, secure and resilient states to unlock the huge marine resource potential within their exclusive economic zones (EEZs).

The CME Programme aims to help SIDS in-scope to:

- Expand trade capacity and security by accurately charting ports and shipping lanes
- Identify and assess critical ecosystem health so they can be maintained for economic benefit
- Provide information to model disasters and climate change impacts to improve resilience
- Train SIDS to acquire and optimise information to ensure programme legacy

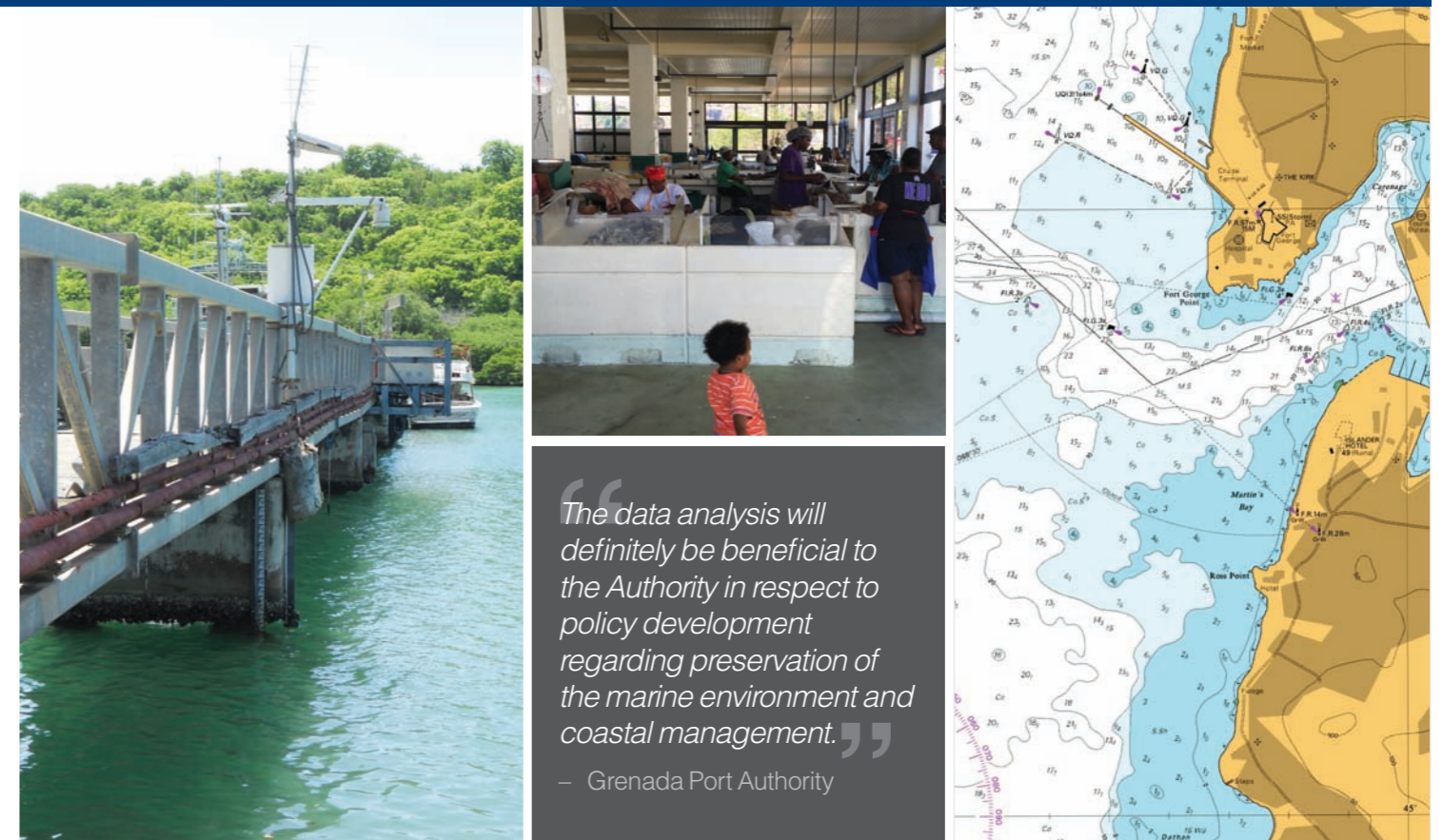
This will enable countries to realise their potential in a sustainable manner that conserves their oceans and marine resources in accordance with United Nations Sustainable Development Goals.

Planned strategic outcomes include:

- **Prosperity** – Diversifying economies by opening up new ocean economy opportunities
- **Sustainability** – Making existing and new ocean economy activities sustainable
- **Security** – Making infrastructure and human capital resilient to natural disaster / climate change
- **Legacy** – Building capacity of national authorities to plan and optimise their marine spaces

For more information on the Commonwealth Marine Economies Programme, please contact us via:

www.gov.uk/guidance/commonwealth-marine-economies-programme
CME.ProgrammeEnquiries@fco.gov.uk | @CME_Prog

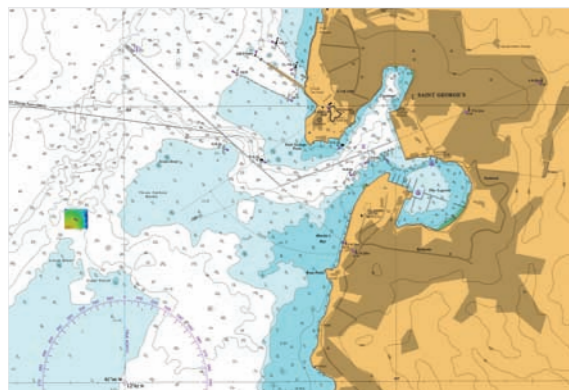


“The data analysis will definitely be beneficial to the Authority in respect to policy development regarding preservation of the marine environment and coastal management.”

– Grenada Port Authority

Priority projects

- Encouraging safe and efficient trade and infrastructure
- Helping to improve environmental resilience against forces of nature
- Supporting sustainable fisheries, aquaculture and tourism industries
- Improving natural capital assessment and understanding of the marine environment
- Helping to meet international obligations and commitments



The opportunity

Grenada's marine area is 75 times larger than its land mass – offering significant potential for long-term social and economic development when managed in a sustainable manner. Updating and improving maritime information and data will help Grenada to better utilise its marine resources to achieve sustainable economic growth and development.

Key areas to benefit from the CME Programme

Tourism is one of Grenada's main economic sectors – accounting for 6% of GDP and providing work for 9% of the employed population. It is reliant on cruise ship tourism, coastal hotels and beaches, scuba diving and other water-based leisure activities. The CME Programme is providing information and tools to help sustainable marine tourism develop and grow in the future.

Navigation – improved hydrographic data will ensure that navigational charts and publications can be brought up to date. This will support greater navigational safety and encourage more and larger cruise and cargo ships to visit Grenada. This improved navigational information will also help to reduce the human, environmental and financial risks of accidents and incidents at sea.

Transportation – as an island nation, more than 90% of goods are transported by sea, including food, manufactured goods, machinery, chemicals and fuels. An increase in shipping and development of ports, harbours and other infrastructure projects are vital to future economic growth.

Fisheries – Grenada's fishing industry currently provides food and livelihoods for many people in rural areas. With better data, it will be possible to identify suitable areas for new fisheries, and to improve the management of important spawning and nursery grounds.

Conservation – seabed habitat maps provide information about the identification and distribution of important ecological features and marine habitats – helping the government to better monitor and manage its unique marine environment, including designated marine protected areas.

Coastal protection and planning – seabed mapping also provides valuable data which can be used to improve resilience against the forces of nature, such as climate change, tsunamis, storm surges and other natural disasters. This data can be used to prevent further erosion and damage, and to determine suitable sites for construction.

The detailed seabed maps are also a key component of being able to place a monetary value on marine ecosystems – taking into account their benefit to the local economy and communities. This information can support planning by allowing trade-off assessments and evidence-based decision making.

International obligations – improved hydrographic data and navigational charts will help Grenada meet its international maritime obligations and commitments, including the Safety of Life at Sea (SOLAS) Convention and elements of the Implementation of the IMO Instruments Code (IIIC).

Hydrographic surveys support improved charting

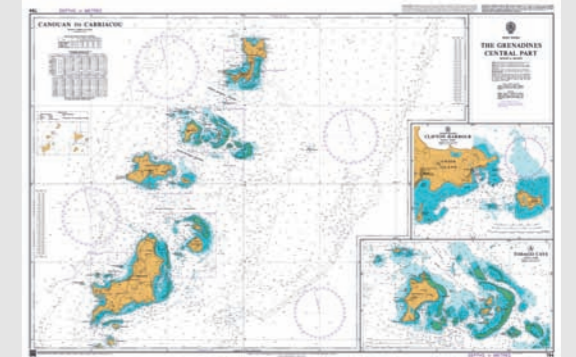
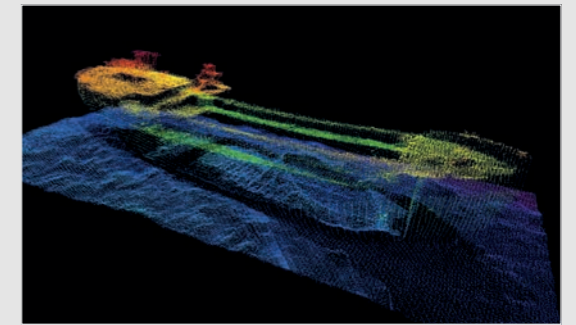
The UKHO conducted surveys of key areas around Grenada to gather seafloor features and depths data. The information collected will be used to improve navigation and sustainable development of the marine economy.

In early 2016, the UKHO conducted acoustic surveys, using boat-mounted sonar to target locations such as busy shipping routes and environmentally sensitive areas.

This was followed in December 2016 by aircraft-mounted light detection and ranging (lidar) surveys, carried out across all shallow water areas surrounding the islands. The surveys covered coastal features as well as surrounding depths of up to 40 metres. They also captured some of the highest resolution and largest bathymetric lidar surveys ever commissioned.

The data will be used to update official navigational charts and publications for the area, supporting safer navigation. The Grenadian government has indicated that it will also use the data to plan the development of new port infrastructure, which will help to promote trade in a sustainable manner – one of the key aims of the CME Programme. The data will also be used for coastal protection and disaster modelling.

The survey data also forms the basis for the seabed habitat maps produced by Cefas and the NOC, described below.



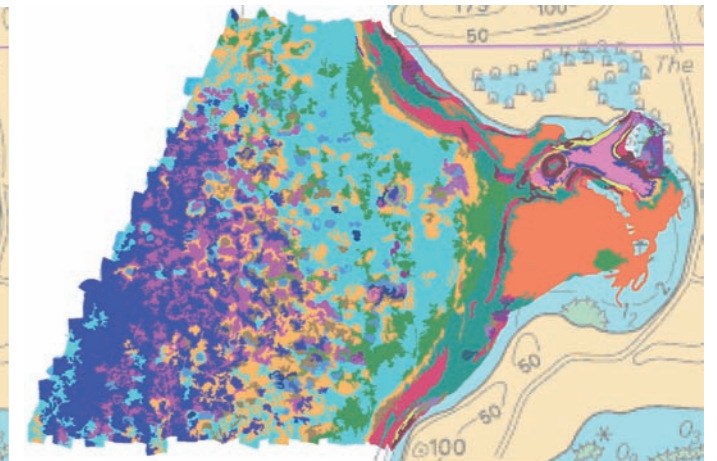
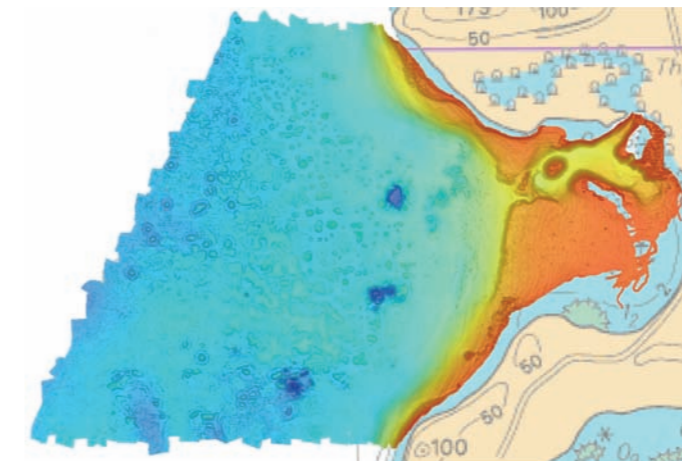
Producing multifunctional seabed maps for marine management

Cefas and the NOC have produced marine habitat maps of the seabed around Grenada, identifying the diverse range of habitats. These maps will be used to inform marine conservation.

Grand Anse Bay was chosen due to its environmental sensitivity and its importance to navigation and tourism. The processing of depth measurements (bathymetry) was done by UKHO, and acoustic response measurements (backscatter) by the NOC.

This information was added to by detailed underwater video exploration at 51 sites of particular interest. Cefas biologists analysed the underwater imagery to identify the rich and diverse marine life encountered, and to assess the health of the coastal habitats such as coral reefs and seagrass beds.

Below left: Carricou bathymetry - Tyrrel Bay, Carriacou, Grenada
Below right: Carricou habitats - Tyrrel Bay, Carriacou, Grenada



Together with the latest image analysis methods, Cefas and the NOC produced customised seabed habitat maps. These maps can be used to support fisheries management, environmental monitoring, and planning of industrial operations. They will also enable national decision makers and local stakeholders to manage natural resources for sustainable development, while also protecting the marine environment. Grenada Port Authority, for example, will use the maps to inform marine preservation and coastal management. An important element of the programme is also the development of Guyana's own hydrographic capabilities – ensuring that surveying of the area is maintained and monitored in future.