

Data Gap Assessment MSP in Belize

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COMMUNICATION AND VISIBILITY MATERIAL ON THE DATA GAPS AND NEEDS ASSESSMENT TO INFORM MSP, INTENDED AS INFORMATIONAL CONTENT FOR DISSEMINATION AMONG BSOP STAKEHOLDERS AND THE GENERAL PUBLIC IN BELIZE AND FOR SHARING WITH THE CRFM'S KNOWLEDGE MANAGEMENT AND INFORMATION SYSTEM AND THE BROADER REGIONAL NETWORK.

CONTENT MATERIAL (IN PDF FORMAT) FOR:

1. A webpage to be hosted on CZMAI's website presenting information on the data gaps and needs assessment to inform MSP, intended for technical and general audience;
2. Social media trivia content delivering questions and answers on the data gaps and needs assessment to inform MSP, intended for a general audience.

1. Content for a webpage to be hosted on CZMAI's website presenting information on the data gaps and needs assessment to inform MSP, intended for technical and general audience.

Data Gap and Needs Assessment to Inform MSP in Belize

WHAT IS MARINE SPATIAL PLANNING?

Marine Spatial Planning (MSP) is a public process of analyzing the spatial and temporal distribution of human activities, habitats and natural resources in marine areas in order to designate specific use zones to achieve ecological, economic and social objectives that have been specified through a political process.



MSP is a practical way to create and establish a more rational use of Belize's marine space and the interactions among users, to balance demands for development with the need to protect the environment, and to deliver social and economic outcomes in an open and planned way. This is done through the development of a Marine Spatial Plan.

[Photo of community engagement with stakeholders from ocean space]

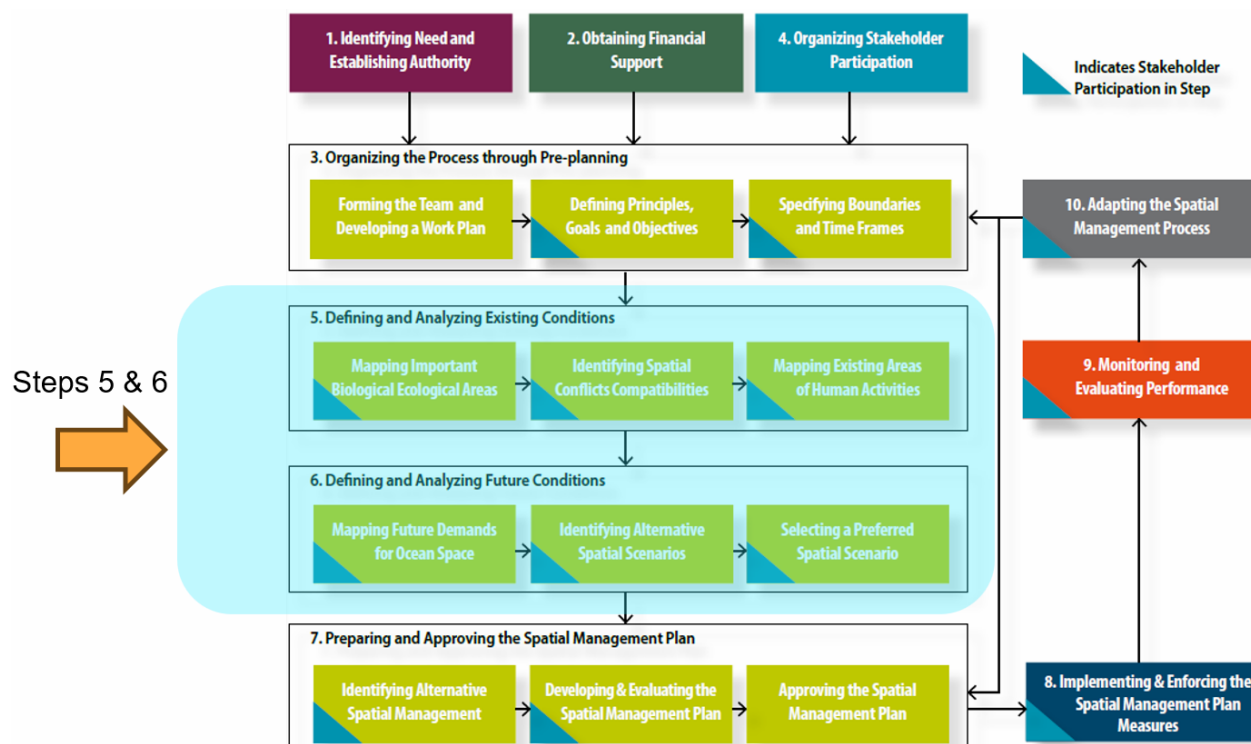
WHO IS INVOLVED IN

As part of its commitments under the Blue Loan Agreement, Belize is obligated to produce a Marine Spatial Plan that brings together multiple users of the sea – including energy, industry, government, conservation and recreation – to make informed and coordinated decisions about how to use marine resources sustainably. The Coastal Zone Management Authority and Institute has been designated the MSP lead coordinating agency. Belize's MSP is known as the Belize Sustainable Ocean Plan (BSOP).



HOW IS THE MARINE SPATIAL PLAN OR BSOP DEVELOPED?

MSP uses spatial data to prepare maps that show a more comprehensive picture of the marine area – identifying where and how an ocean area is being used and what natural resources and habitats exist but that also depict zones or areas for managed use and planned or future uses. MSP involves a variety of steps which include:



Steps in the MSP process, highlighting the steps where spatial data is needed (From Ehler and Douvere, 2009).



WHY IS DATA IMPORTANT TO MSP?

To develop a marine spatial plan, it is important to first define and analyze existing conditions and then define and analyze future conditions. This involves assessing the status of the coastal

Data should be up-to-date, objective, reliable, relevant and include biological and ecological features, distribution of human activities along with oceanographic and other physical environmental features.

The data needed for MSP must take into consideration what data is already available to meet MSP objectives so that gaps may be identified and filled in time to meet planning objectives.

To provide a comprehensive assessment of where Belize is currently in terms of data availability and data gaps, AND technical capacity needed for data collection, storage and analysis for MSP, the following stakeholder-driven consultative and analytical approach was followed.



1

A list of essential data needed for MSP was compiled based on MSP best practices, by reviewing BSOP related documents, and by reviewing the data needs identification process used in similar countries' MSP.

2

A hierarchy of data categories was developed based on Lightsom *et al* (2015) and using the BSOP categories. This allowed for all categories to be examined for data availability and gaps. The list of data needed for MSP from step 1, was aligned to these categories.

3

Information on MSP data and capacity gaps, and priority data and capacity needs in Belize, was collected from key stakeholders using online surveys, one-on-one meetings, examination of local data centres, focus group discussions and a validation workshop.

4

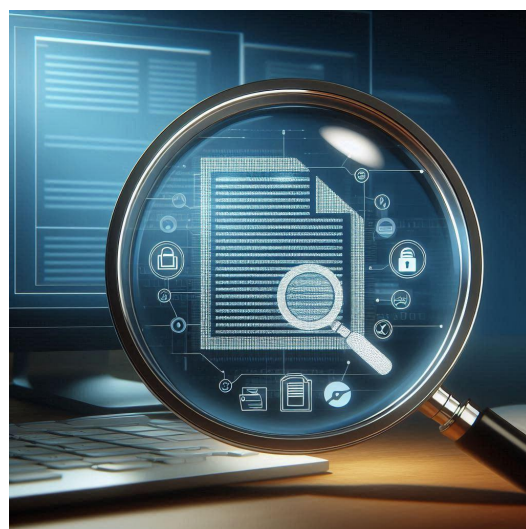
A Microsoft Excel data catalog for marine and coastal data was developed with relevant metadata (e.g. spatial and temporal extent) for each dataset and analyzed to examine gaps and priorities for MSP. The data catalog is available for download ([here](#)) as a separate file.

[Can insert a picture here from the validation workshop with the caption: “Stakeholders validating the data catalog at workshop in CZMAI’s conference room on 9 August 2024”]

MAIN FINDINGS

Data Needs and Gaps: Belize has considerable data on various marine ecosystems and human activities. A total of **229 datasets** were identified as relevant for Marine Spatial Planning (MSP) in Belize. These datasets span multiple categories, including governance, infrastructure, living resources, non-living resources, and ocean uses.

Out of the 229 identified datasets, 137 datasets (or 60%) are already available. These datasets cover areas such as fisheries, marine biodiversity, and



habitat mapping. The remaining 92 datasets (40%) were identified as gaps, meaning that these datasets are currently unavailable or incomplete. These gaps are particularly prominent in emerging sectors like deep-sea minerals, offshore renewable energy, and biopharmaceuticals. Data availability by category was as follows:

While progress has been made in collecting data for traditional sectors, significant gaps remain in newer and emerging sectors to support comprehensive marine spatial planning in Belize.

Priority Data Gaps: As highlighted by stakeholders, these data gaps include essential datasets on biodiversity, land tenure, hydrography, and coastal geomorphology. For emerging sectors, there is an urgent need for baseline data to support future development, such as in marine renewable energy and biopharmaceutical exploration.



priority

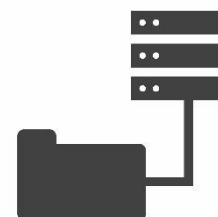
Significance of Data Gaps: Data gaps could delay Belize's progress toward achieving its conservation and development goals, particularly in effectively conserving and managing 30% of its marine territory as marine protected areas (MPAs) by 2026. Without a complete picture of marine biodiversity and activities on habitats and species, Belize may have difficulty to create effective management plans that fulfill its obligations under the BLA.



out of 7 datasets
10 out of 14 datasets
s: 47 out of 75
sources: 12

One of the key challenges lies in Belize's limited technological capacity and human resources to manage and analyze the data. Furthermore, the high cost of acquiring the remaining data represents a significant barrier to comprehensive planning.

Resources and Strategies needed to Close Gaps: The Belize Marine Spatial Planning (MSP) Data Gaps and Needs Assessment provides key recommendations for addressing gaps identified throughout the assessment. It offers strategic approaches (i) institutional arrangements, (ii) capacity building, (iii) data sources and collection, and (iv) collaboration to ensure Belize can effectively implement MSP:





Capacity Building: The report stresses the importance of investing in human capacity for managing spatial data in areas such as metadata standards, data integrity, data portals. There is also a need for technical expertise and analysis, particularly for specialized subject areas such as population dynamics and habitat coverage.

Data Sources and Collection Methods: The report provides recommendations for improving data collection methods and filling priority data gaps. This includes developing sharing protocols to ensure that stakeholders can access data they need, without bureaucratic hurdles. Creating a list of definitions for all datasets relevant to MSP will also be important.

Collaboration: Collaboration between government and non-governmental organizations, and international partners will be critical in gathering missing data and share technical expertise. The report emphasizes that international cooperation will be critical in closing data gaps and building technical capacity. Partnerships with regional and international organizations, such as The Nature Conservancy (TNC) and the Regional Fisheries Mechanism (CRFM), have already produced

2. Content for social media trivia content delivering questions and answers on the data gaps and needs assessment to inform MSP, intended for a general audience.

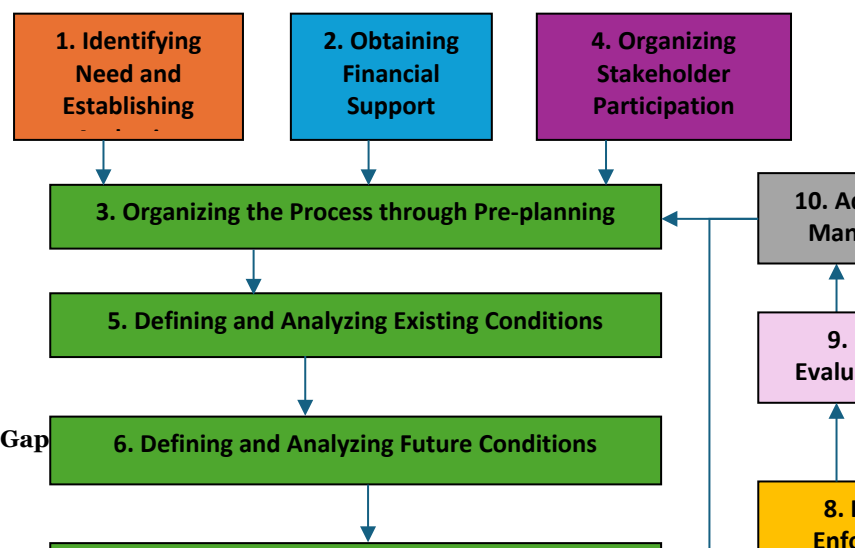
Title: What is Marine Spatial Planning and why is data so important?

Question 1. What is Marine Spatial Planning (MSP)?

Answer: MSP is a public process of analyzing the distribution of human activities, habitats and natural resources in marine areas, across space and time, to establish specific use zones for achieving ecological, economic and social objectives in an open and planned way.

Question 2. How many steps are there in the MSP process?

Answer: 10 Steps



Question 3. What two steps of the MSP process depend on analyzing data to inform decision making regarding use of the blue space?

Answer:

Step 5 – Defining and Analyzing Existing Conditions

AND

Step 6 – Defining and Analyzing Future Conditions.

Question 4: What are two types of data outputs obtained in step 5?

Answer:

- Inventory and maps of important biological and ecological areas
- Inventory and maps of existing human activities and pressures
- Maps of possible conflicts and compatibilities among existing human uses
- Maps of possible conflicts and compatibilities between human uses and nature

Question 5: List and describe two data gaps for Belize that can affect the MSP process?

Answer:

Coastal Geomorphology

The landforms that develop and persist along the coastline of Belize and their influence on the development and evolution of the coast, littoral zone, beaches, nearshore and offshore environments is an area lacking in suitable data.

Hydrography

Complete bathymetric data showing underwater features for the entire extent of Belize's seas and exclusive economic zone is an outstanding need and priority for planning and development of the maritime area.

Land Tenure

An updated land tenure dataset, including leasehold, freehold and public lands, is necessary to properly plan for multiple and future uses of Belize's coastal space.

Biodiversity Hotspots

A good understanding of biodiversity resources (species richness and abundance) as well as biodiversity status (threatened or otherwise) is needed across ALL Belize's habitats and ecosystems in the blue space, but especially deep reef and pelagic ecosystems of the EEZ.

Future Scenario Projections

Best practice guidelines from the Inter-governmental Oceanographic Commission of UNESCO recommends looking to future scenarios to decide present day use of the ocean. Priority future uses for Belize's blue space include mariculture, biopharmaceuticals and offshore renewable energy.

Long-term Research Data

MSP requires a long-term commitment to data collection, management and analysis. But long-term data, over many decades, needed to understand the significance of human impacts, are frequently not available when MSP is initiated. Establishment of long-term research data to inform implementation of the BSOP is crucial.