Data Management for Marine Spatial Planning

DATA SHARING PROTOCOL FACT SHEET

Marine Spatial Planning (MSP) is a tool for the sustainable management of the oceans and coastal areas so that we achieve a balance and harmony among various stakeholders involved in conservation, fisheries, shipping, energy development, tourism and others. The success of MSP relies on data, which includes different aspects such as biological, ecological, socio-economic, and infrastructure. Effective sharing of these data is therefore important. Effective data sharing will promote as well as be enhanced through MSP Governance structures and principles that include transparency, inclusivity, adaptive management, and ecosystem-based approach.

Background and Purpose

Marine Spatial Planning (MSP) stands at the forefront in the management and sustainable use of the diverse resources of our oceans and coastal areas.

For informed decision-making and collaborative governance and in order for the marine stakeholders to jointly address the complex and often competing interests associated with ocean and coastal management, a wide range of data is required.

The main sources of this data are government agencies, local and international research institutions, the private sector and other groups implementing activities related to the ocean space and blue economy.

The data includes reports, interviews, direct observations, surveys, expert insights and findings field experiments, among others. This Data Protocol aims to promote collaboration among public, private and non-governmental organizations, and other stakeholders on data acquisition, derivatives, copyright considerations, and securing data storage for the successful management of ocean space.

It establishes protocols that govern the handling of essential ecological, socio-economic, cultural, and infrastructural data for MSP and sets forth data standards, formats, and metadata requirements.

The Protocol adheres to the legal and regulatory framework that governs data management ensuring that data-sharing practices are in line with legal requirements, relevant laws and regulations. The system provides for access to data through a data clearing house mechanism. The clearing house allows different degrees of data access, effectively managing the requirements of confidentiality, security and the requester's position which are necessary for responsible, transparent, and efficient data-sharing practices in the field of ocean space management.

Challenges of Data Sharing

MSP faces significant challenges in the initial preparatory phases due to the increasing amount and complexity of the datasets essential for the process. Despite the exponential growth of data, a substantial amount of information, typically of a non-sensitive type, remains inaccessible to the planning teams. The main challenges envisaged are lack of a framework for data sharing and diverse and multiple institutions that are custodians of data relevant to MSP. In some cases, data is not stored in a consistent or logical manner. To address these challenges, a robust data sharing and management plan is critical.

Objective of data sharing protocol

- To enhance integrated resource management
- To support inclusive governance and stakeholder engagement
- To optimize sustainable development and environmental conservation
- For efficient resource allocation and conflict resolution
- To promote research, analysis, and policy development
- For compliance with legal and ethical standards
- For capacity building and knowledge exchange

Policy and Legal Framework Governing Data Sharing

In implementing this protocol, all the stakeholders will be guided by key policies and legislation addressing matters such as data generation, data privacy, statistics, blue economy development and management, data protection, copyright, and access to information.

The pertinent laws and regulations to enable data sharing in MSP are discussed under the following broad categories:
a) Legal framework relating to MSP
b) Legal framework relating to the use of data
c) Policies relating to the use of data

Key policies and legislations for MSP include:
- United Nations Convention on the Law of the Sea (UNCLOS)

UN 2030 Agenda for Sustainable Development Goals:
- High-Level Panel for a Sustainable Ocean Economy
- 2050 Africa Integrated Maritime Strategy
- Kenya Vision 2030
- The Constitution of Kenya, 2010
- Maritime Zones Act (CAP 371)
- Environmental Management and Co-Ordination Act, 1999
- Wildlife Conservation and Management Act, 2013
- Fisheries Management and Development Act, 2016
- The Kenya Coast Guard Act, 2018

Data sharing is governed by the following key policies and legislations:

- The Constitution of Kenya

- The Statistics Act No. 4 of 2006

- The Data Protection Act (2019)

- The Copyright Act Cap 130

- The Access to Information Act No. 31 of 2016

- The Electronic Transactions Act (2006)

- The Computer Misuse and Cybercrimes Act (2018)

The Data Sharing Framework
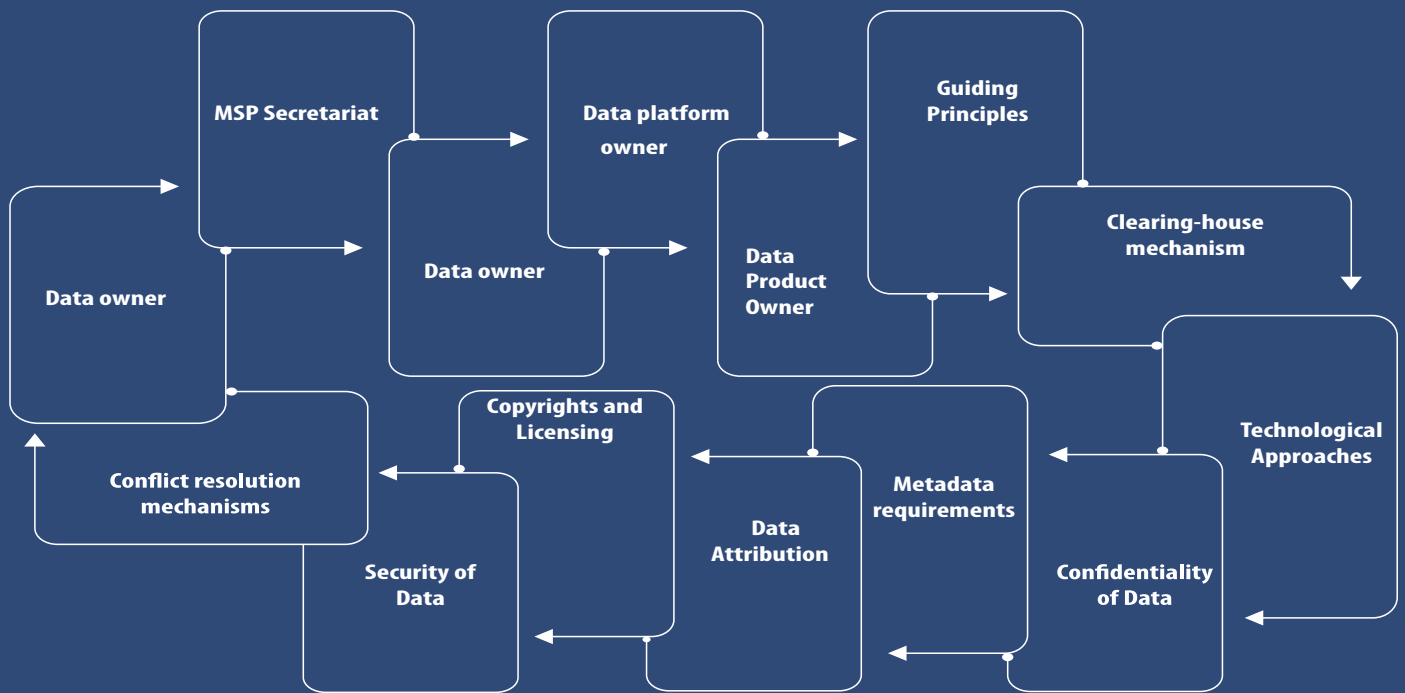
Clearing house mechanism provides secure access to data

The MSP Data Protocol provides for access to data through a data clearing house mechanism. The clearing house alows different degrees of data access, effectively managing the requirements of confidentiality and security, which are necessary for responsible data-sharing.

Data Sharing Framework

Data Controller

The MSP secretariat has been mandated to collect, analyze, publish and disseminate MSP data. Any party wishing to receive and use the MSP data must first enter into an agreement with the MSP Secretariat and will, where the data is personal, be a controller of that personal data in accordance with the requirements under the Data Protection Act.

The terms and conditions on which MSP secretariat will permit the Recipient to receive and use data on a particular occasion and for a particular purpose will be set out in a separate Data Sharing Agreement entered into between MSP secretariat and the Recipient.

Only refined data, void of identifiable markers, will be relayed to stakeholders. Variations in data requirements will be accommodated. Personal data or data in a less aggregated form must be requested from the original data controller.

Data owner

Each MSP stakeholder who originates information is recognized as the data owner. Data owner can also be the data creator or the data user.

Stakeholders classified as data owners are responsible for availing original data into the data platform. All data owners and the MSP secretariat will maintain joint ownership of the data.

Data platform owner

The data platform owner plays an important role of coordinating information flow between the data owner and the data product owner and managing this relationship. As data platform owner, MSP Secretariat will also be responsible for maintaining transparency and contractual agreements between data owners and data product owners.

Data product owner

The Data product owner is responsible for developing products from data or analyzing the data and developing data products out of it. He is also considered as the data decoder, compiler or a consumer in the sense that he uses, changes the way the data was and uses (consumes) it.

As the data steward, the MSP secretariat is are responsible for making data findable, accessible, inter-operable, and reusable on a long-term basis. It will be expected to negotiate with stakeholders on data provision, storage, usage and sharing.

Guiding Principles

The Protocol will ensure quality, reliable, and sustainable mechanisms for validation, curation, stewardship and sustained archiving of data. The protocol recommends implementing technology that will allow broad participation and sustainability adapted to diverse data types, practices and software applications.

Once data and information are available online, steps will be taken to make it easily discoverable, openly available (accessible) and readily usable (inter-operable, reusable).

For data that are protected, confidential or otherwise sensitive, metadata would be shared - as far as possible - which describes their data holdings without compromising privacy, security, cultural heritage.

Clearing-house mechanism

The Protocol establishes a robust clearing-house mechanism to ensure the quality, reliability, and sustainability of data validation, curation, stewardship and long-term archiving. This mechanism serves as the backbone for facilitating data sharing.

Technological approaches

The protocol emphasises harnessing modern information technology to facilitate seamless data access and use including the utilizatioeveraging web-based portals and social media platforms. This enables a wide range of stakeholders, irrespective of their technical proficiency, to effortlessly access, explore and derive insights from the data. Additionally, the integration of social media platforms provides an avenue for rapid dissemination of information, making data updates and insights accessible to a broader audience.

Confidentiality of Data

The protocol places emphasis on anonymized data.

The integration of anonymized data, particularly when amalgamated with information from different agencies, emerges as a cornerstone for safeguarding against identification of individuals.

Metadata requirements

The protocol underscores the importance of attaching comprehensive metadata to all shared data to enhance its value and reliability.

The protocol also sets a minimum standard for metadata inclusion, which encompasses key elements essential for understanding the data's origins, collection and analysis methodologies, quality and usage parameters.

Data attribution

The protocol acknowledges the importance of proper data attribution. It endorses mechanisms and practices to ensure that data creators and contributors receive rightful recognition using Digital Object Identifiers (DOIs), which offer unique and persistent identifiers for datasets, enabling clear referencing and accountability.

Copyrights and Licensing

The protocol acknowledges the fundamental principle that the primary producer of data holds the copyright to the materials, irrespective of whether this fact is explicitly declared or not. When data is shared for the specific purposes of MSP, the protocol acknowledges the application of a Creative Commons (CC) license to the shared material. Through this strategic step the protocol ensures that users engaging with the data within the MSP framework can do so with clarity and confidence, knowing the permissible extent of their usage.

Security of Data

The Data Sharing Protocol places paramount importance on ensuring the security of data, irrespective of its nature or purpose. It outlines stringent security measures to safeguard the sanctity of shared data. Such data is stored on secure servers protected by multiple security measures such as firewalls, intrusion detection systems, and encryption.

Conflict resolution mechanisms

Cognizant of the diverse nature of potential conflict in data sharing for the MSP process, this protocol recommends the application of different conflict resolution mechanisms including negotiation, mediation, arbitration, conciliation and collaborative problem-solving.