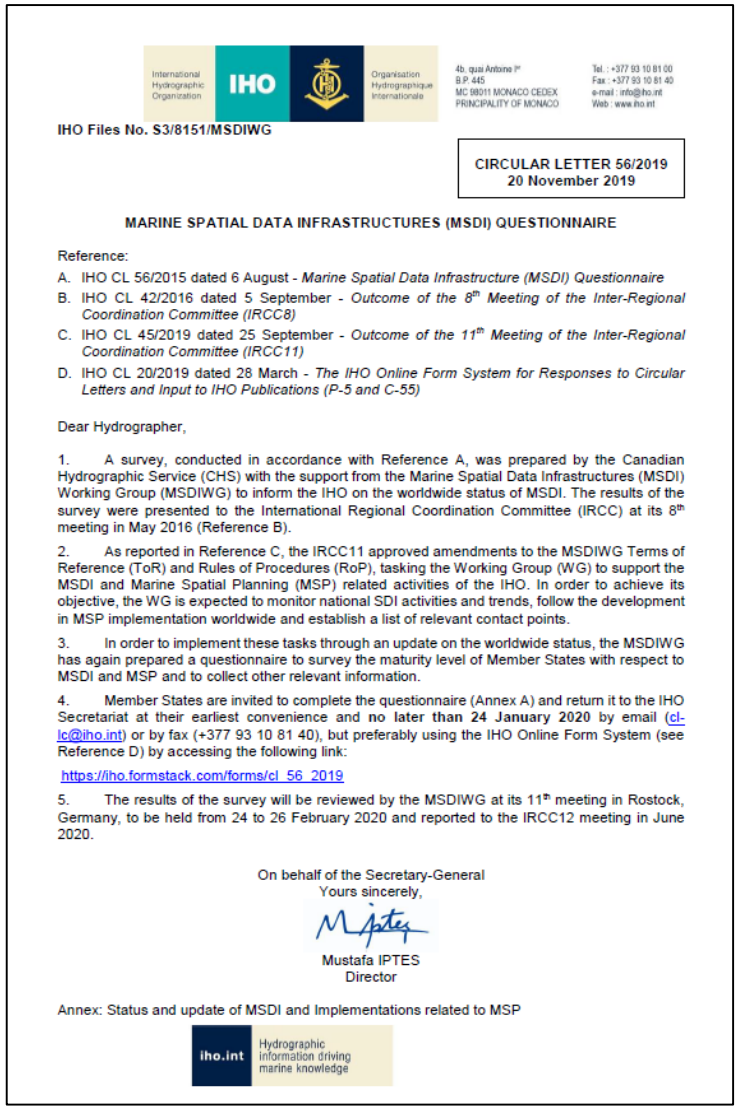
Marine Spatial Data Infrastructures (MSDI) questionnaire

CL56/2019



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IHO Files No. S3/8151/MSDIWG

CIRCULAR LETTER 56/2019
20 November 2019

MARINE SPATIAL DATA INFRASTRUCTURES (MSDI) QUESTIONNAIRE

Reference:

A. IHO CL 56/2015 dated 6 August - *Marine Spatial Data Infrastructure (MSDI) Questionnaire*
B. IHO CL 42/2016 dated 5 September - *Outcome of the 8th Meeting of the Inter-Regional Coordination Committee (IRCC8)*
C. IHO CL 45/2019 dated 25 September - *Outcome of the 11th Meeting of the Inter-Regional Coordination Committee (IRCC11)*
D. IHO CL 20/2019 dated 28 March - *The IHO Online Form System for Responses to Circular Letters and Input to IHO Publications (P-5 and C-55)*

Dear Hydrographer,

1. A survey, conducted in accordance with Reference A, was prepared by the Canadian Hydrographic Service (CHS) with the support from the Marine Spatial Data Infrastructures (MSDI) Working Group (MSDIWG) to inform the IHO on the worldwide status of MSDI. The results of the survey were presented to the International Regional Coordination Committee (IRCC) at its 8th meeting in May 2016 (Reference B).

2. As reported in Reference C, the IRCC11 approved amendments to the MSDIWG Terms of Reference (ToR) and Rules of Procedures (RoP), tasking the Working Group (WG) to support the MSDI and Marine Spatial Planning (MSP) related activities of the IHO. In order to achieve its objective, the WG is expected to monitor national SDI activities and trends, follow the development in MSP implementation worldwide and establish a list of relevant contact points.

3. In order to implement these tasks through an update on the worldwide status, the MSDIWG has again prepared a questionnaire to survey the maturity level of Member States with respect to MSDI and MSP and to collect other relevant information.

4. Member States are invited to complete the questionnaire (Annex A) and return it to the IHO Secretariat at their earliest convenience and **no later than 24 January 2020** by email (cl-lc@iho.int) or by fax (+377 93 10 81 40), but preferably using the IHO Online Form System (see Reference D) by accessing the following link:

https://iho.formstack.com/forms/cl_56_2019

5. The results of the survey will be reviewed by the MSDIWG at its 11th meeting in Rostock, Germany, to be held from 24 to 26 February 2020 and reported to the IRCC12 meeting in June 2020.

On behalf of the Secretary-General
Yours sincerely,

Mustafa IPTES
Director

Annex: Status and update of MSDI and Implementations related to MSP

iho.int Hydrographic information driving marine knowledge

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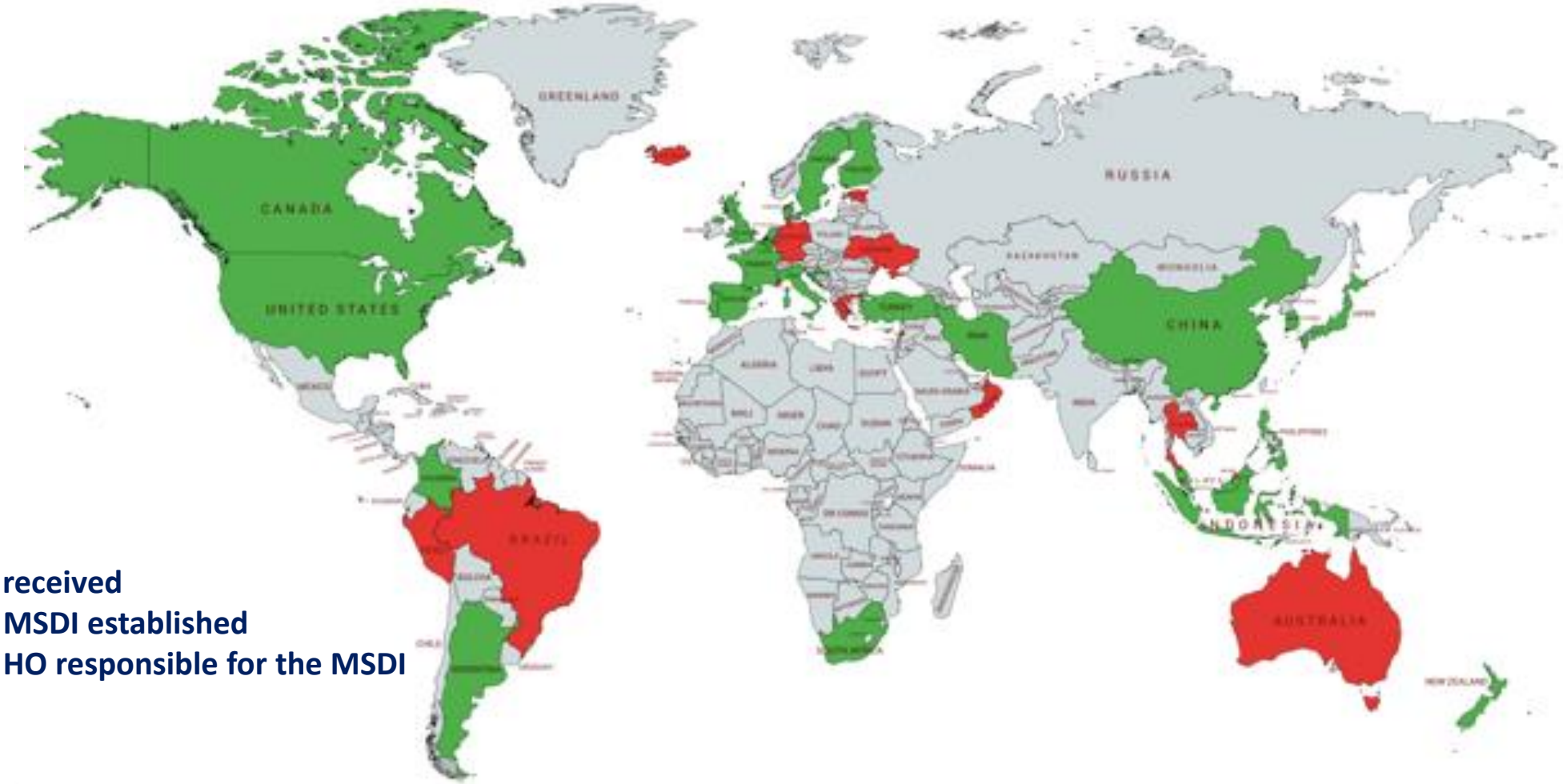
Identification of the Marine Spatial Data Infrastructures (MSDI)

- Question: Is there a MSDI established in your country? Yes/No

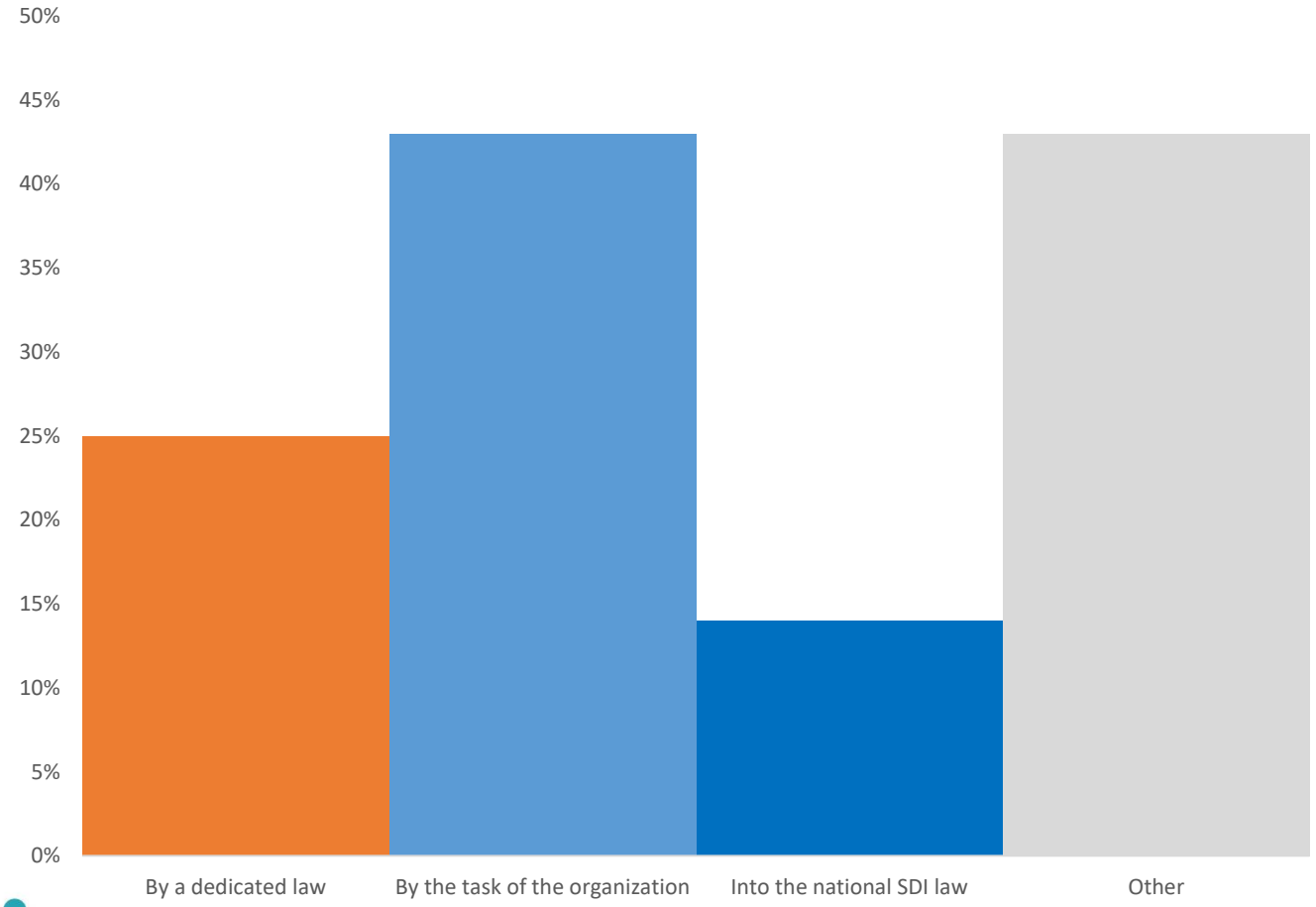


41 answers received
28 national MSDI established
13 national HO responsible for the MSDI

Identification of the Marine Spatial Data Infrastructures (MSDI)

Question: If a MSDI is established, please describe in which way it is established

A total of 28 countries has a MSDI established. The following statistics illustrates, in which way the countries have established their MSDI. As a result of the opportunity to submit multiple answers the total of answers received exceeds 28.



Other:

- Finnish MSDI is a part of national SDI
- Cabinet Decision (Basic Plan on Ocean Policy, (May 2018))
- NHC as National MSDI mandated from Malaysia Centre of Geospatial Data Infrastructure
- An MSP coordinating Committee has been established by Cabinet and a Working Group under the committee is tasked to look at data management
- MSDI is part of the NSDI, governed by a.o. the national implementation of the INSPIRE Directive.
- New Zealand agencies, led by LINZ, are working in partnership towards an Integrated Geospatial Information Framework (IGIF) for NZ which includes the marine dimension.
- Other: National agencies/organizations that are responsible for producing Marine Spatial Data, have undertaken tasks to provide data to, and develop an MSDI. As the United States Marine Charting Authority, NOAA is responsible for collecting foundational MSDI data. This is accomplished by NOAA commissioned data collection or data collection by supporting agencies (National Geospatial Intelligence Agency (NGA), United States Army Corps of Engineers (USACE), etc) and private organizations. The US MSDI is a collaborative effort among Government agencies, private organizations, and the public.
- At organizational level in the IHPT compatible with national and regional level.
- Partially established, limited to NAMRIA Marine spatial datasets only through Maritime Information System (MARIS)
- The Hydrographic Activity Act (Official Gazette No. 68/98; with subseq. Amendments); National Spatial Data Infrastructure Act (Official Gazette 56/13, 52/18)
- ColombiaDecree Law 2324 1984
- Special funding to establish an MSDI.

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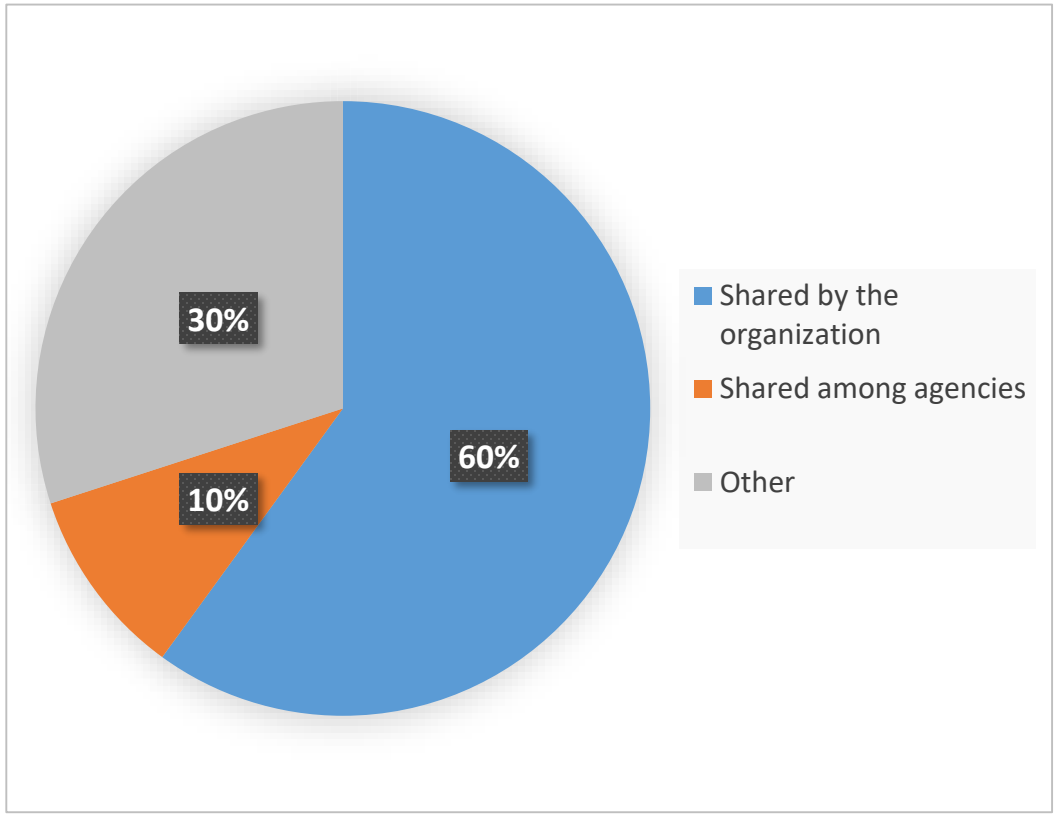
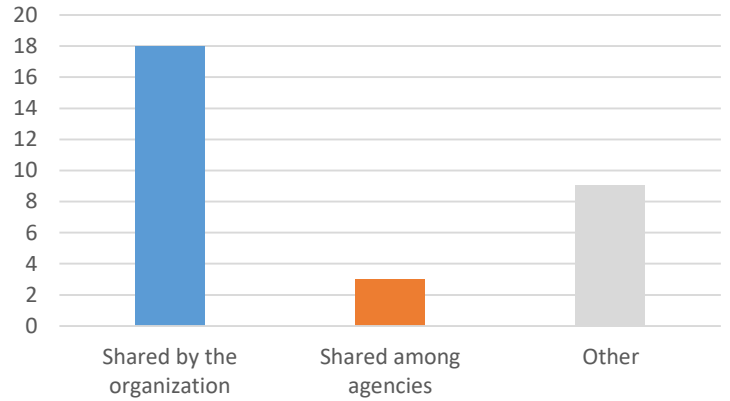
Identification of the Marine Spatial Data Infrastructures (MSDI)

Funding model for your organization

As a total of 30 answers has been submitted the following statistics are only used for creating an overview of the answers received and are not representing the exact dispersal. A total of 30 answers has been received.





Other:

- Government funding
- Funded by Ministry of Defense
- LINZ is funded by Central Government Appropriation
- The Portuguese NSDI is a distributed infrastructure with multi- - participants at national level. Each node is funded by their budget.
- The United States Congress provides funding for NOAA, NGA, and other government agencies participating in MSDI efforts.
- Missing answers

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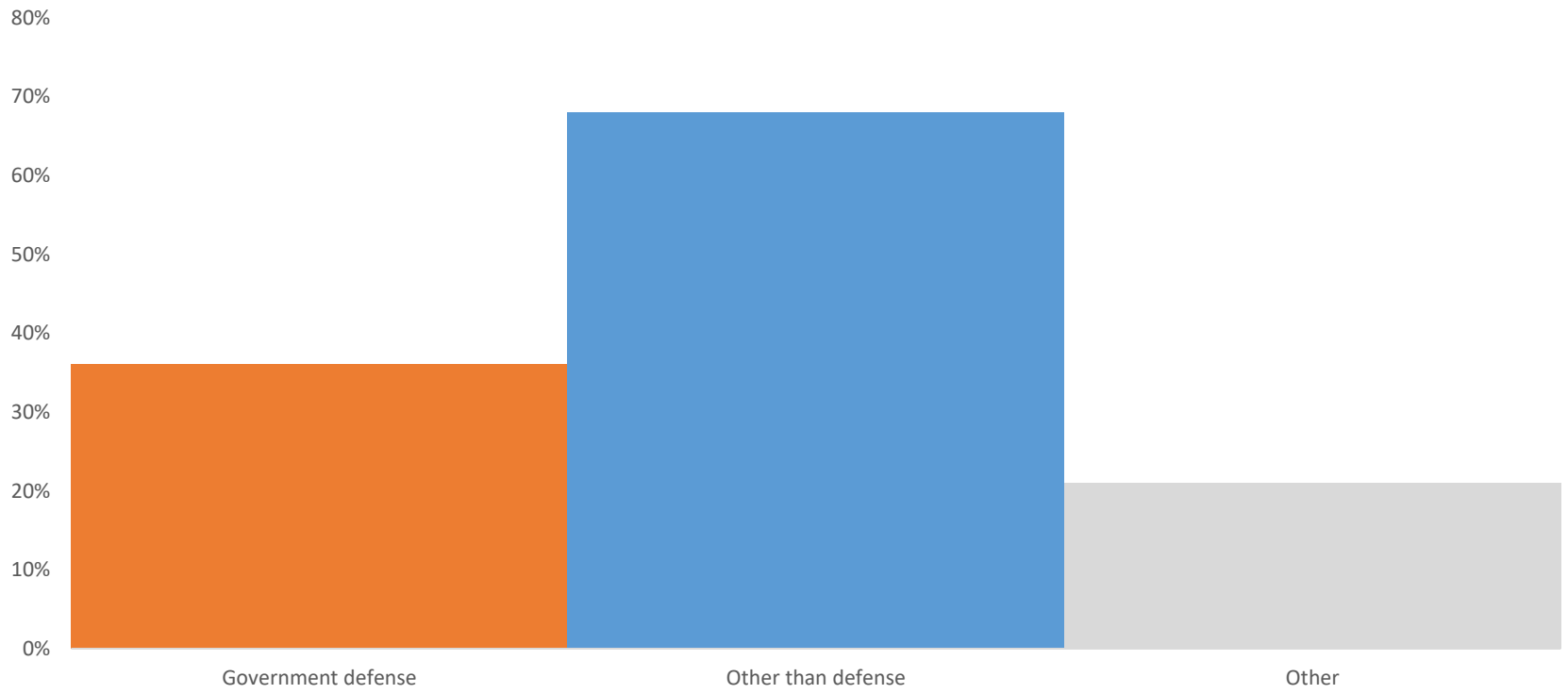
Identification of the Marine Spatial Data Infrastructures (MSDI)

Nature of the funding for the MSDI

A total of 28 countries has a MSDI established. The following statistics illustrates, the nature of the funding for the MSDI. As a result of the opportunity to submit multiple answers the total of answers received exceeds 28.



Other

- Government and through projects under IORA & UNDP
- Within existing Government agency and Research Organization baselines
- NAMRIA General Fund
- A self funding government agency
- A self funding government agency
- Municipalities

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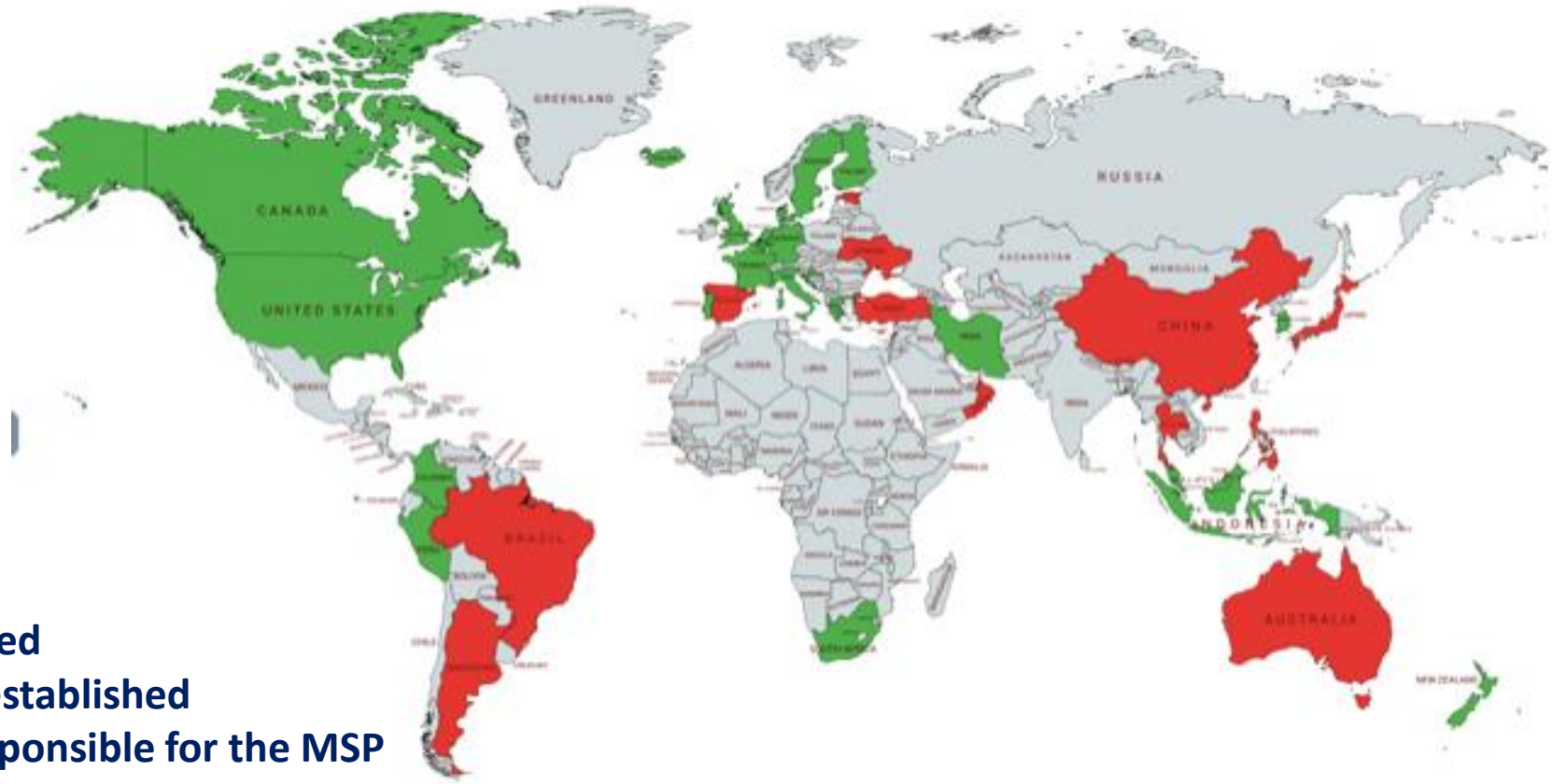
Identification of the Marine Spatial Planning (MSP)

- Question: Is there a MSP established in your country? Yes/No



41 answers received
27 national MSP established
4 national HO responsible for the MSP

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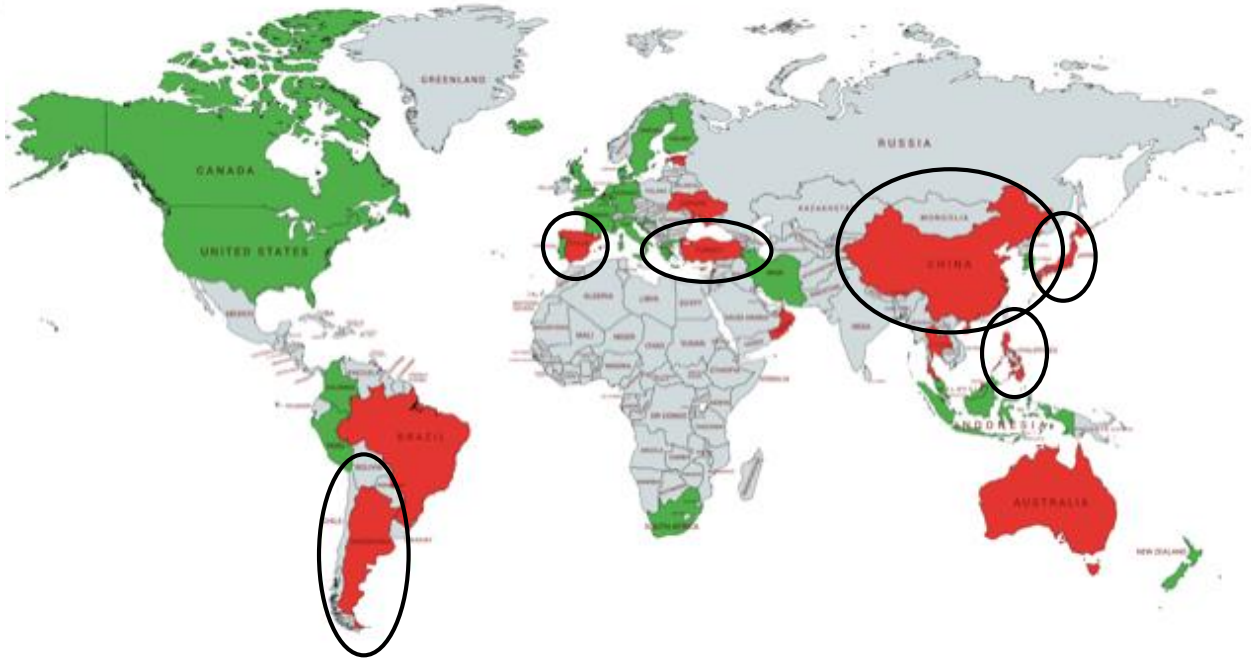
MSDI

MSP



MSDI and/or MSP

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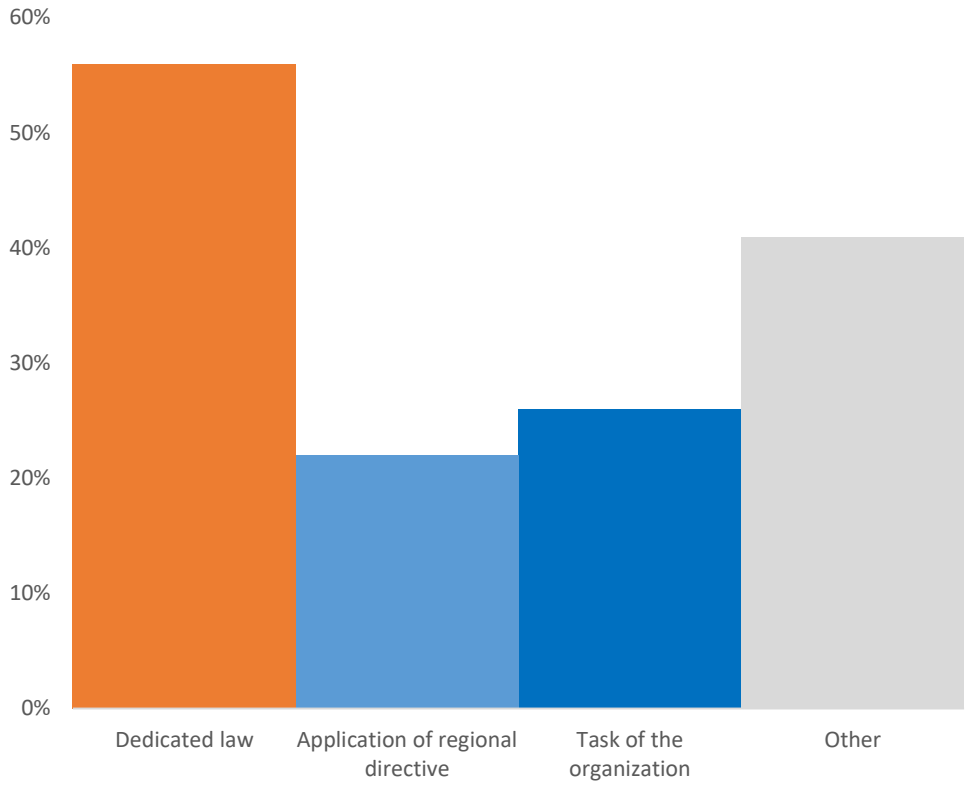
Identification of the Marine Spatial Planning (MSP)

Question: If a MSP is established, please describe in which way it is established.

A total of 27 countries has a MSP established. The following statistics illustrates in which way the MSP is established. As a result of the opportunity to submit multiple answers the total of answers received exceeds 27.



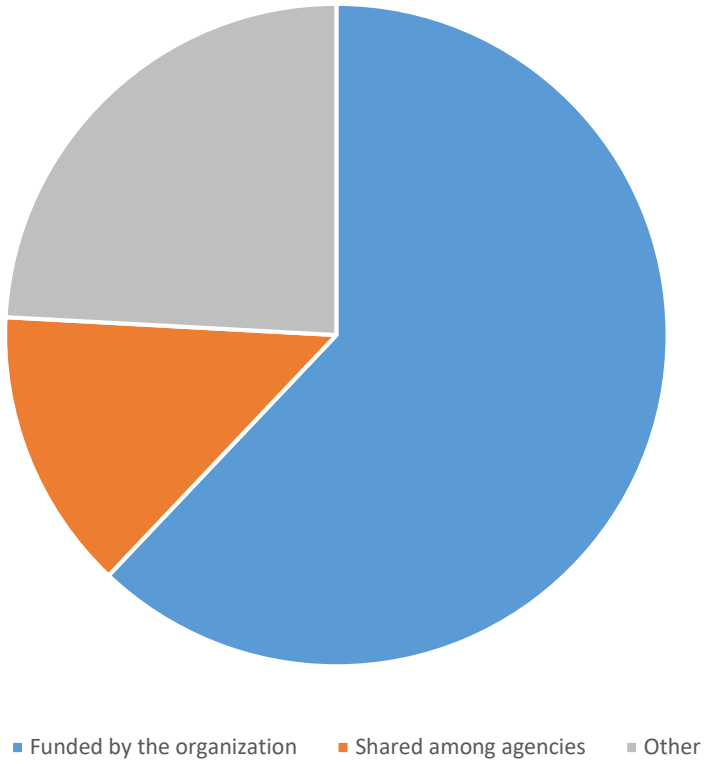
Other

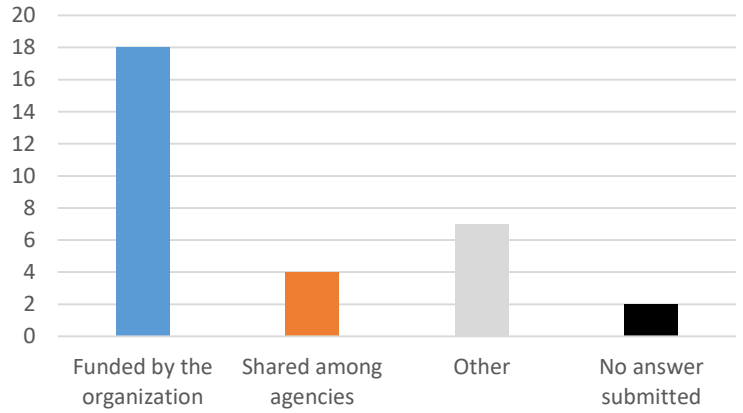
- Marine Spatial Planning is the responsibility of the other (federal) authorities.
- According with the mission of General Maritime Directorate, the establishment of a methodology to carry out the Coastal-marine Zoning based on the evaluation of the conflict level, allocation and co-location between the different uses/activities was made, focused towards the maritime authority vision.nsibility of the other (federal) authorities.
- I.R.of Iran has seven coastal province. MSP is being implemented by PMO so far, Other six provinces
- NZ Marine and Coastal Spatial Planning is fragmented. There is no single national MSP , and no single piece of legislation enabling MSP. There are regional MSP initiatives drawing on numerous different Acts (Resource Management Act, Marine Reserves Act, Fisheries Act etc). In some special cases legislation has been passed for specific regional MSP's e.g Fiordland Marine Management Act 2005.
- Canada's Oceans Act calls for the Minister of Fisheries and Oceans to "...lead and facilitate the development and implementation of plans for the integrated management of all activities or measures in or affecting estuaries, coastal waters and marine waters...."
- Physical Planning Act
- Federal regional planning act
- National Maritime Strategy isn't yet estamblished. In base of the existing law N.4546 (GG101/A/12-June-2018) transposed the Directive 2014/89/EU into the Greek legal system, Greece prepares The National Maritime Spatial Strategy as a prerequisite for the development of Maritime Spatial Plan.
- By invitation of the Intergovernmental Oceanographic Commission, to participate in the MSPlobal Project.
- Presidential Directive and tasks taken on by national and regional organizations.
- Tasks of the Organization: according with the mission of General Maritime Directorate, the establishment of a methodology to carry out the Coastal-marine Zoning based on the evaluation of the conflict level, allocation and co-location between the different uses/activities was made, focused towards the maritime authority vision.
- Cabinet decision

Identification of the Marine Spatial Planning (MSP)

Funding model for the national MSP

As some anwers hasn't been submitted the diagram shows the dispersal of all answers received.





Other

- Government (Defense)
- Shared among ministries, agencies and the federal !states (Bundeslander)
- Operational Programs Cooperation programs within the framework of the European Territorial Cooperation
- The funds are allocated by the Intergovernmental Oceanographic Commission
- For the near coastal areas, the coastal municipalities are responsible for MSP within their jurisdiction
- The United States Congress provides funding for NOAA, which is the lead agency for MSP. Other agencies that are also congressionally funded may provide funds for MSP initiatives (i.e. The Bureau of Ocean Energy Management (BOEM))

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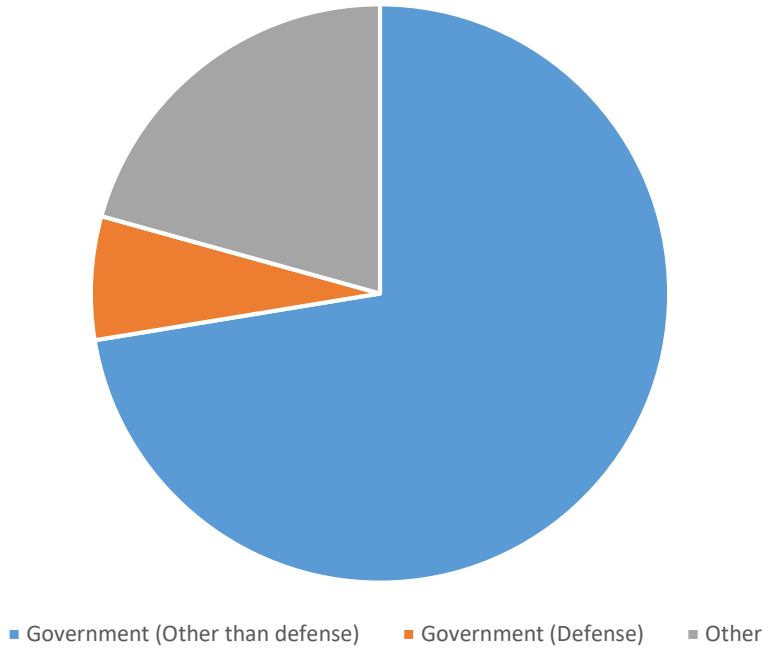
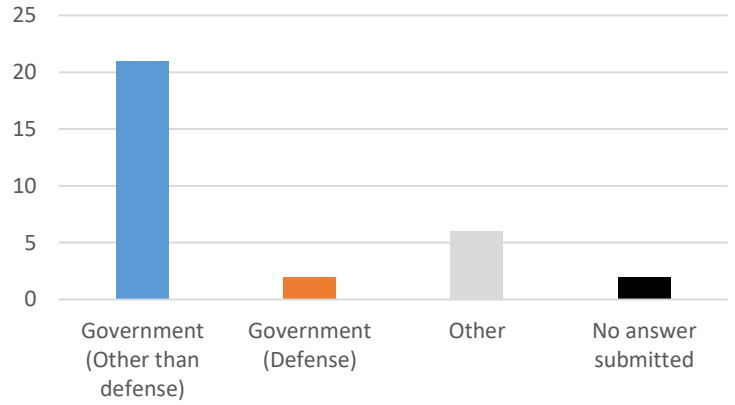
Identification of the Marine Spatial Planning (MSP)

Nature of the funding for MSP

As some anwers hasn't been submitted the diagram shows the dispersal of all answers received





Other

- Ministere de la transition écologique et solidaire
- Government and federal states (Bundeslander)
- European Regional Development Fund (ERDF) & national resources
- UNESCO
- Municipalities within their jurisdiction.

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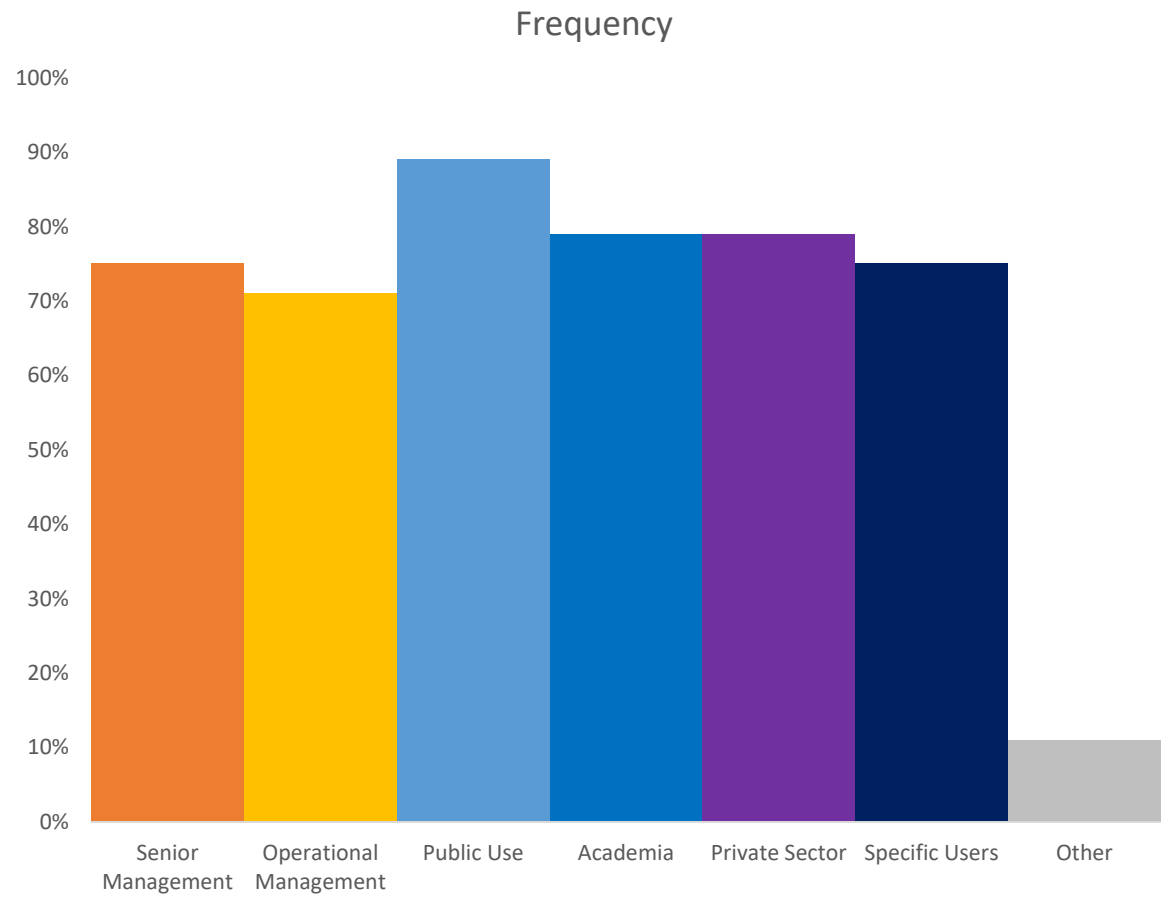
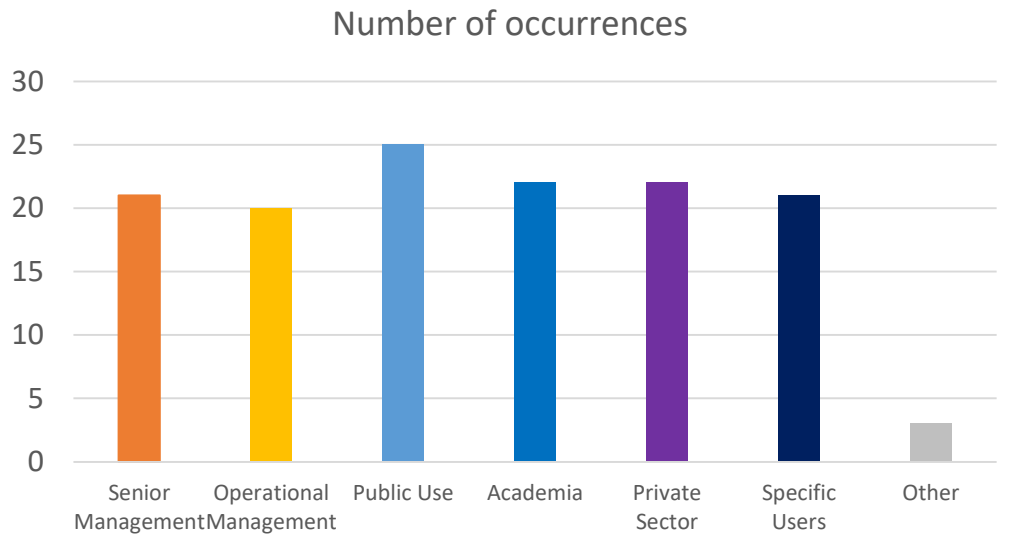
Audience

Question: Who are the target users of the MSDI?





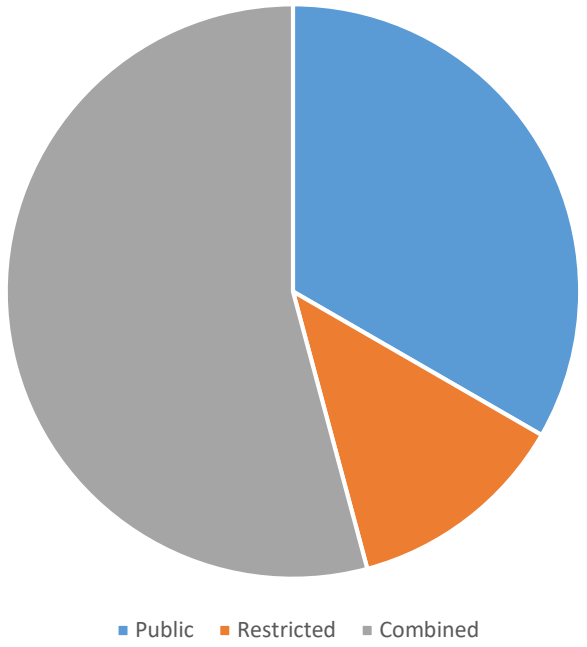
Other:

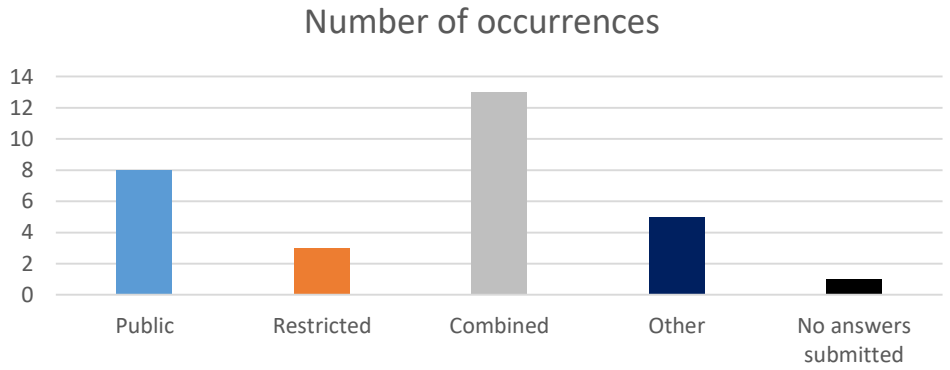
- National Governmental Organizations, Bodies and Institutions and Regional and Local Authorities
- Currently only acces for agencies which co-fund the MSDI (both senior and operational management)
- Because MSDI has not been established, then also the targeted users have not been recognized. However, our understanding is that once MSDI is established, it should be usable for anyone to whom it generates value.
- Public Use, Academia, Private Sector, Specific Users (such as mariners)
- Resticted military used

Audience

Question: Is the MSDI available to the public or is access restricted to a select community?

The submitted answers has been sorted, so the answer ”combined” excludes the oppurtunity of selecting either ”Public” or ”Restricted”. These answers has been erased. The left diagram only shows the dispersal of the answers ”Public”, ”Restricted” and ”Combined” to show how these are distributed.





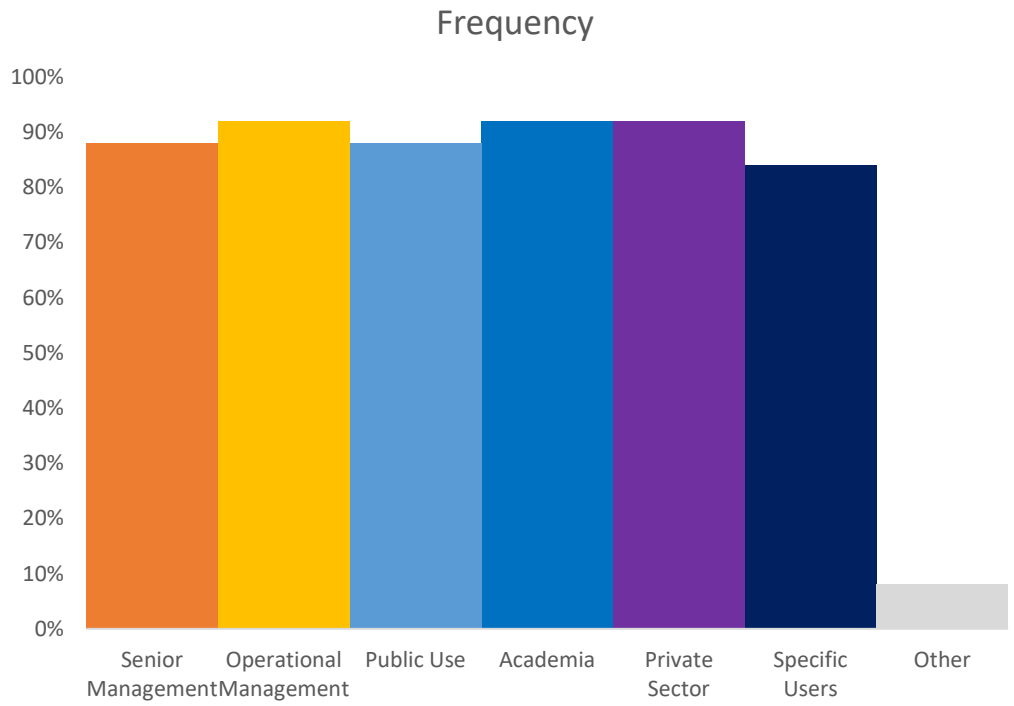
Other

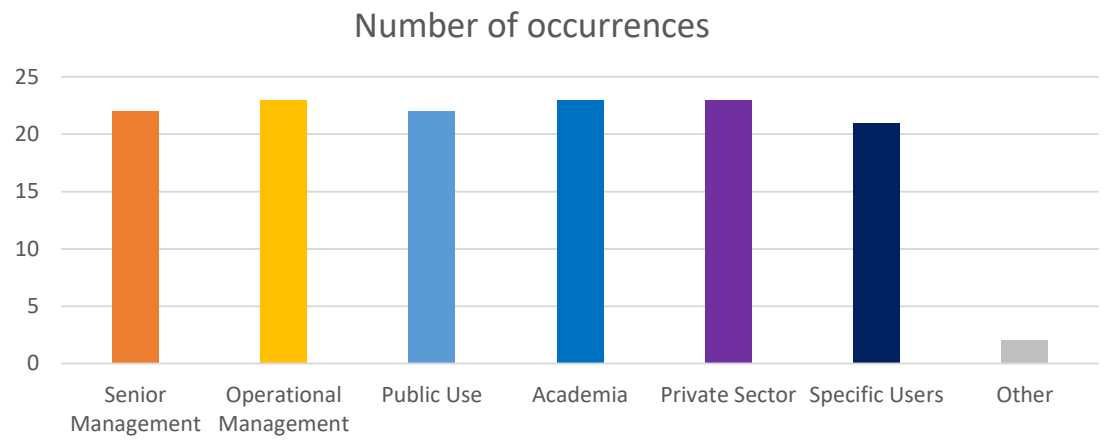
- Restricted but envisaged to provide public access in the near future.
- There is no single MSDI in NZ however our principles and Open Data government policy supports public access of Marine Geospatial Information.
- All IHPT datasets have their one metadata description with specific rules and licence conditions for use and reuse.
- select portions being restricted if they pertain to national security.

Audience

Question: Who are the target users of the MSP?

As two countries with an established MSP haven't submitted any answers, the frequency is calculated based on a sum of 25, as 25 countries has submitted one or more answers.





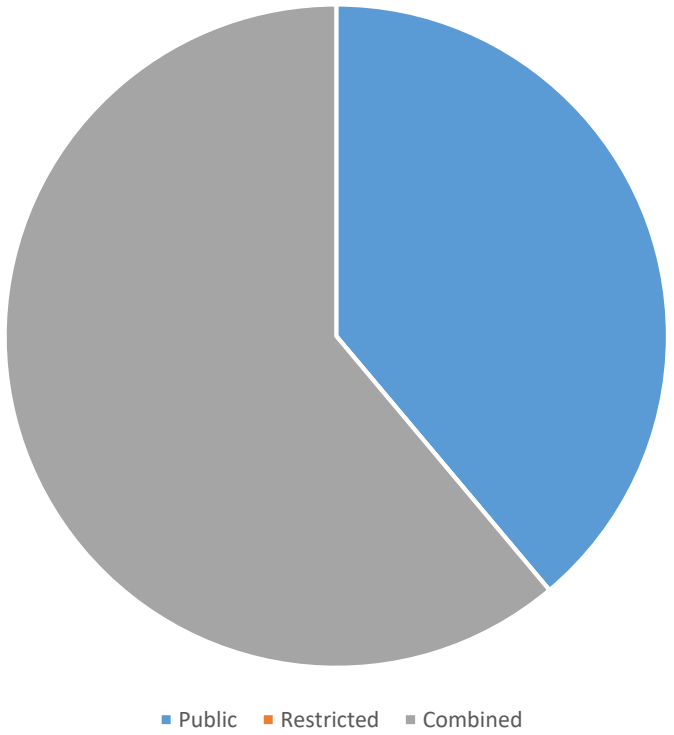
Other

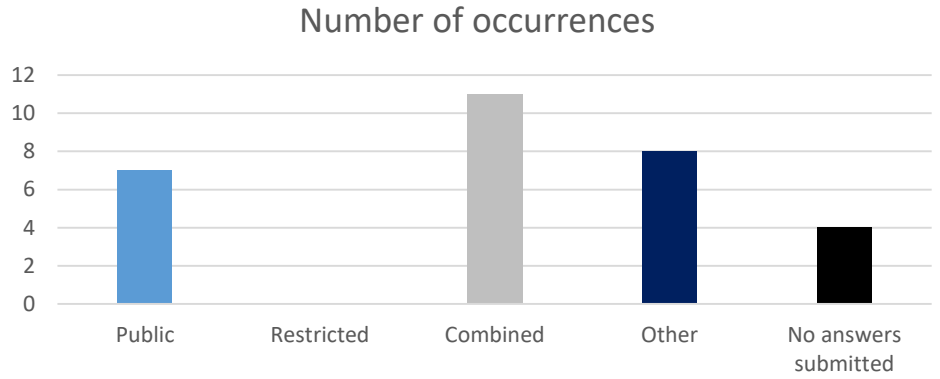
- National Governmental Organizations, Bodies and Institutions and Regional and Local Authorities.
- Initiate institutional coordination between the various authorities at regional, national and local levels, based on the work already done by CPPS and IOC-UNESCO and other project initiatives in the region for the adoption of a transnational roadmap on the MSP and sustainable blue growth for the region.

Audience

Question: Is the MSP available to the public or is access restricted to a select community?

The submitted answers has been sorted, so the answer ”combined” excludes the oppurtunity of selecting either ”Public” og ”Restricted”. These answers has been erased. The left diagram only shows the dispersal of the submitted answers ”Public”, ”Restricted” and ”Combined” to show how these are distributed.





Other:

- The MSP is still under development, but will be available to the public when public consultations starts in june 2020
- Whenever possible, within the framework of the existing mechanism, initiate an institutional coordination dialogue between the different authorities at national, regional and local levels based on the results of EU projects.
- The MSP has a geoportal, their the users could find the metadata with the access and sharing conditions.
- Select portions being restricted if they pertain to national security.
- The Hauraki Gulf MSP is publicly available. Some regional marine spatial plans in NZ maybe restricted.
- Elements of Marine Spatial Plans are available, but work is ongoing to have an accessible and more comprehensive MSP.

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Policies associated with MSDI and MSP and key purpose or objectives

- Question: Describe the governing policies of the MSP. (e.g. policies related to public access, sales, support for a service such as navigation, financial model etc.)

Describe the governing policies of the MSP (e.g. policies related to public access, sales, support for a sevice such as navigation, financial model etc.)
MSP is the responsibility of other federal authorities
In development.
Consolidate the country as a bio-oceanic power according with the Integral Maritime, Fluvial and Harbor Security, preserving the natural environment.
Operational under regulation in force: "Regulation on the physical planning information system"
The Danish Maritime Authority is responsible for establishing Denmark's first maritime spatial plan. The working group on maritime spatial planning has representatives of 12 maritime authorities in Denmark. The working group is expected to have drawn up a first draft for the national maritime spatial plan in 2020. The MSP is to form the basis of the coordination of the many uses of Denmark's sea area in a manner that can support the conditions for sustainable growth in Blue Denmark. The maritime spatial plan is to establish which sea areas in Danish waters can be used for, inter alia, offshore energy extraction, shipping, fishing, aquaculture, seabed mining and environmental protection towards 2030. The maritime spatial plan will create more safety for maritime businesses and better predictability of the uses of the sea and the impact on the marine eco systems. The MSP will be the first legally binding digital plan i Danmark.
More information: https://www.merialuesuunnittelu.fi/en/314/
La MSP est un ensemble d'obligations à appliquer. Pas de financements dédiés. Le Ministère de la Transition Ecologique et Solidaire met en œuvre la Directive planification de l'espace maritime à l'échelle des 4 façades maritimes françaises par l'élaboration de 4 documents de planification stratégiques qui sont les Documents Stratégiques de Façade (DSF). Ces documents comportent un volet environnemental et un volet socio-économique. Le volet environnemental est constitué par la réponse française à la Directive Cadre Stratégie pour le Milieu Marin.
Balance the interests between business, science and the environment, maritime spatial planning acts as a forward-looking planning instrument that regulates the ever-increasing intensity of uses and coordinates user interests and protection claims.
National One Map Policy I.R. of Iran's MSP is the process of analyzing and allocating the spatial and temporal variables of human activities in marine areas to achieve ecologic, economic, and social goals are usually based on a specific strategic process.
Development of the energy sectors of the sea, maritime transport, fisheries and aquaculture, for the conservation, protection and improvement of the environment, including resilience to the impact of climate change, promoting and ensuring the coexistence of relevant activities and uses A Coordinating Committee on Marine Spatial Planning (MSP), including relevant Ministries, Departments and NGOs, has been set up at the level of the Prime Minister's Office. A working Group under the Committee is tasked to look at data management. Data which will be used to elaborate the MSP are uploaded on the E-platform. Data uploaders have the ability to restrict who can view, edit, and manage layers.
Policy Document on the North Sea 2016-2021 including the Netherlands' Maritime Spatial Plan (appendix 2 to the National Water Plan 2016-2021)
NZ has operational regional MSPs supported by regional policies, drawing on parts of different national legislation - the system is fragmented. In some case legislation has been passed for specific regional MSP's e.g Hauraki Gulf Marine Park Act 2000, Fiordland Marine Management Act 2005. Options for implementing a national MSP framework in NZ have been explored:https://www.eds.org.nz/assets/Publications/Healthy%20Seas_FINAL.pdf?k=1149106b1a. There is a growing appetite by both of NZ's leading political parties for integrated legislation in relation to marine spatial planning.
Policies -Lineamientos para el Manejo Integrado de las Zonas Marino Costeras Ministerio del Ambiente Resolución Ministerial Nº 189-2015/MINAM -Guía Metodológica para la Formulación del Plan de M anejo Integrado de Zona Marino Costero Resolución ministerial Nº 208-2019-MINAM -Marine Space Planning Intergovernmental Oceanographic Commission Manuals and Guides Nº53, ICAM Dossier Nº 6
There is currently no MSP in the Philippines
The governing policies of the MSP are the National and European laws about MSP and data acess, sharing and reuse.
We established our system in a way that supports the use by regional offices, marine spatial planning and changing the plan.
Establishment of MSP in Sweden is in an early development phase. Open Data is requsted from the Government.
It will contribute to the achievement of sustainable development in the United Kingdom marine area. Detailed in the following: https://www.gov.uk/government/publications/uk-marine-policy-statement
The same governing policies are in place for MSP as they are for MSDI. MSP is governed by US legislation regarding open access to data more specifically the Foundations for Evidence-Based Policymaking Act, the Geospatial Data Act of 2018, and Executive Order 13840 - Ocean Policy to Advocate the Economic, Security, and Environmental Interests of the United States.

Top 5 governing policies of the MSP

1	**Sustainable growth/balance the interests between business, science and the environment/achieve ecologic, economic, and social goals/preserving the natural environment**
2	**The governing policies of the MSP are the National and European laws about MSP and data acess, sharing and reuse.**
3	**Development of the energy sectors of the sea, maritime transport, fisheries and aquaculture, for the conservation, protection and improvement of the environment, including resilience to the impact of climate change, promoting and ensuring the coexistence of relevant activities and uses**
4	**MSP is the responsibility of other federal authorities**
5	**MSP is in development**

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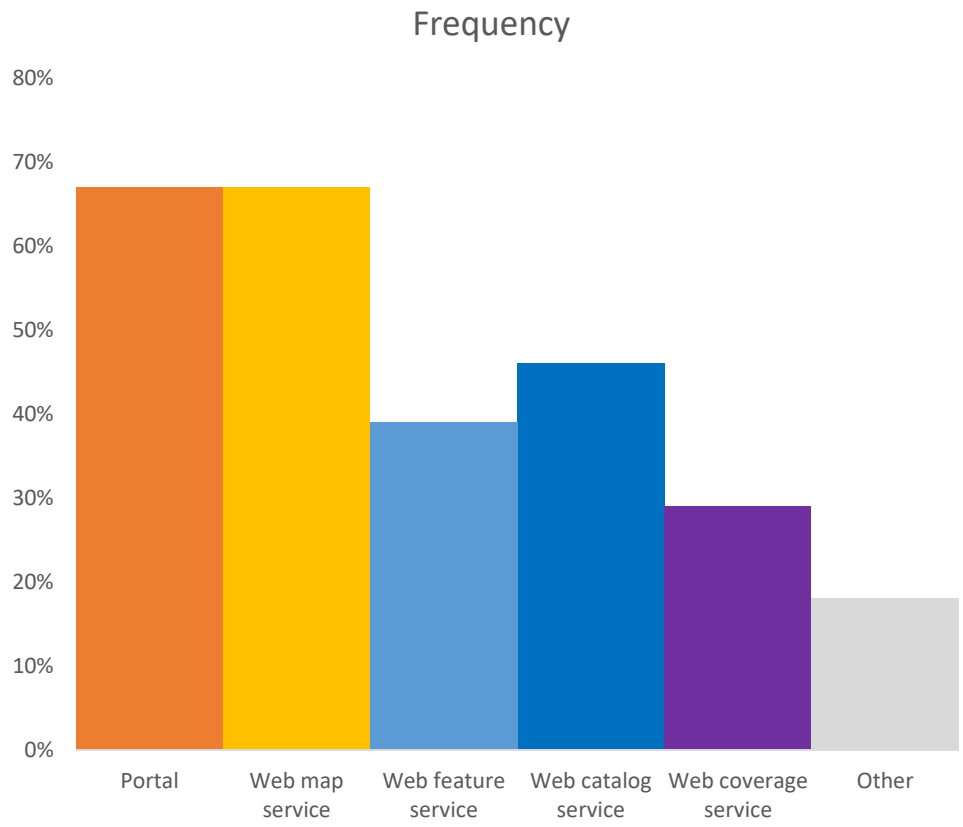
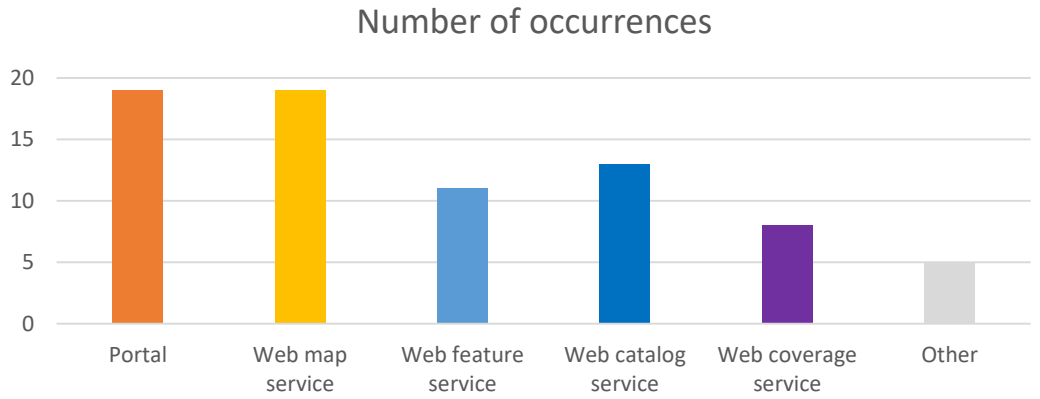
Support Usage

Question: What are the main applications of your MSDI?





Other:

- Data are available for download in shapefile or Geotiff from a web portal which is currently accessible on the Government Intranet System. Documents such as PDF can also be tagged to the layers. However, the uploader can decide whether a dataset can be shared publicly or restricted to allow access to only specific users.
- Portal, 2D and 3D Marine Viewers (search catalogue, geoprocessing services and API, web services (e.g. WMS, WFS, WCS))
- All of the above applications exist within the NZ geospatial information framework. Data.govt.nz is a catalogue of open NZ geospatial information. The LINZ Data Service is the LINZ Data Portal which supports WMS, WFS, Web Catalogue services, Web Map Tile Services. The NZ Ocean Data Network is a data portal which provides public access to NZ Marine Science data.

MSDI Standards Oriented Questions

- Question: Describe the standards used in the MSDI.

Top 5 standards used in the MSDI

1	**OGC Standards**
2	**ISO 19115 series**
3	**IHO**
4	**INSPIRE**
5	**W3C**

Describe the standards used in the MSDI:
It does not respond to any.
OGC, ISO/TC211, IHO
OGC services, W3C, ISO 19115 - 19139 standards, BAG, GeoTIFF
ISO 19115 series and OGC Standards.
National standers 《GB/T 20258-2019 Basci GIS Dictionary》 《GB/Z 34429-2017GIS Image and Grid data》
ISO 19115. Standard Open Geospatial Consortium (OGC)
S-57 vector data; shape
No standards have been used
Following OGC-standards for WMS and WFS. Following Inspire standards for metadata
OGC standards i.e. WMS 1.3/ISO 19128
Pas de MSDI pour la MSP
OGC (WMS, WFS, WCS, SOS ...), ISO (19115, 19139 ...) .. IHO (S57 ...), W3C (RDF, DCAT-AP, XML. ..) INSPIRE (Data Models ...)
OGC/ISO
OGC
INSPIRE
shape files, HOB Files(CARIS), S-57
The Ocean Observatory E-platform is based on GeoNode which uses the Open Geospatial Consortium (OGC) standards. The E-platform also allows metadata in ISO19139 to be ingested.
INSPIRE Implementing Rules based on ISO191XX standards and OGC standards
NZ has adopted the ANZLIC Metadata standard based on ISO 19115. OGC standards including WMS, WFS, WMTS, WCS are also used.
OGC Standards, ISO, IHO and INSPIRE Data Specifications.
- We use national standards that were developed with reference to international standards ISO 19111, 19112, 19113, 19115, 19157, etc. to build up marine spatial data and meta data. - To facilitate the web map service, we use OGC OpenGIS Web Map Service (WMS) 1.3.0, OGC Web Feature Service (WFS) 2.0.2, OFC OpenGIS Web Map Tile Service (WMTS) 1.0.0, and OGC OpenGIS Styled Layer Descriptor (SLD) 1.1.0.
International Standards: 1. IHO (e.g. S-57, S-63, S-52 and S-100 where available) 2. OGC 3. ISO (e.g. ISO19115, ISO19139) National Standards: 1. GeospatialSG Data Standard 2. Other relevant national standards
The standards utilised are national standards for Meta Data

Future Plans

- Question: Please describe the plans for the continued use of development of the MSDI.

Top 4 plans for the continued use of development of the MSDI	
1	**Easy access to data and better data sharing**
2	**Further development of existing systems/softwares and a need for new services → bring systems together**
3	**Improving the quality of data**
4	**More data**

Please describe the plans for the continued use or development of the MSDI:
There is a need to acquire new services and hardware that enable the enhancement and updating of the MSDI, as well as the incorporation of qualified personnel for the fulfilment of this task together with the permanent trainings that the personnel currently working at the MSDI are provided with.
Future plans are to leverage existing portals and infrastructure to make hydrographic and oceanographic data and products openly available through; Geoscience Australia's AusSeabed (ausseabed.gov.au) - in development, and the Australian Ocean Data Network (portal.aodn.org.au). Infrastructure is supported through an Australian government initiative; NCRIS - National Collaborative Research Infrastructure Strategy.
Making hydrographic data web-enabled in order to make it available on the EU INSPIRE Portal
Preparation of different datasets in order to add to MSDI structure (metadata and data).
Acquisition of relevant softwares for MSDI
Formulate national policies about production, access and administration of marine, river and coastal geospatial information.
CHI the strategic orientation is to develop and establish such data management system that will provide data to anyone, anytime, anywhere and anyhow. In that process it will be taken into account all recognized elements of MSDI: business model and data policy, standards, interoperability and technology (ICT) and Data (Geo. Content), as well as relevant int. and nat. regulations.
MSDI is under continuous evaluation and development
DGA has produced a Business Case for further development of the Danish MSDI. The purpose of the business case was to clarify the benefits of and costs associated with the further development of the MSDI. The analysis indicated a strong demand for a further development of the Danish MSDI as a free and open data infrastructure for marine data and showed an annual net benefit of DKK 2 million after implementation of a three-step development plan and a positive net value over an 8 year period. In addition, business cases points to a number of qualitative benefits that were not possible to qualify financially, e.g improving authorities communication of decisions, rules and guidelines; new business opportunities for entrepreneurs; improved data accessibility for research; and improvement of recreational apps and maps aimed at citizens. The plan is to implement step 1 in spring 2020 which involves public access to the MSDI-portal and its almost 100 marine dataset.
Depth data in WCS
Pas de MSDI pour la MSP
Provide more data. Provide Data through SOS. Support S100 Products. Provide INSPIRE-Services. Change the underlying software. Away from a map-oriented to a search-oriented approach.
Greece aims to the development of a National Spatial Data Infrastructure, which will be INSPIRE compatible. Once this is going to be implemented, it will contain a Marine Spatial Data Infrastructure as a subset.
Continue to develop based on MSDI pillars
More cooperation with other marine organizations and encouraging them to join MSDI
In Progress
Enrichment of the datasets and improvement of the system
Setting up MSDI Committee and MSDI Working Group
It is envisaged to provide public access to the Ocean Observatory E-platform.
development of web viewer of Informatiehuis Marien (IHM) towards a general purpose MSDI, usable for MSP.
LINZ will continue to work collaboratively with other agencies and communities (including the NZ Marine Geospatial Working Group) to improve access, interoperability and reuse of Marine geospatial information in line with the UNGGIM Integrated Geospatial Information Framework. Work is currently underway to identify valuable marine geospatial datasets within NZ (a national MGI stocktake), assess the functionality of current data portals, review and recommend national metadata standards. LINZ is working to raise awareness and build capability with the NZ geospatial system.
Currently, IHPT are developing and MSDI upgrade to fully integrate the OGS services and provide API accessible by marine users.
MSDI will be continuously maintained to allow access, download and automatic link (Open API) of marine spatial data that has been standardized and updated to support marine development, environmental preservation, and marine spatial data industries.
GeoSpace-Sea Phase 2 development aims to: 1. Develop end-user applications (e.g. to support MSP at national level); 2. Develop the infrastructure required to provide access to users from Institutes of Higher Learning and the public; 3. Further enable interoperability with Singapore's land-based SDI called Geospace.
The OCIMS portal will reach operational state by 2021
Creation of new WEB services, for example underwater cables, shipwrecks,...
According to the existing financial model there are no plans for further development. There are ongoing discussions to a more open data policy which could change the situation and require a futher development of MSDI in Sweden.
Improving the quality of the existing service and aiming for a larger community. The mentioned Draft National Act is currently being under consideration of the Parliament of Ukraine. Thereupon its approve by the Parliament, the corresponding national authorities, including the SHSU, will commence its implementation. The UKHO is continually improving access to data and services available through the ADMIRALTY Marine Data Portal.
The US MSDI is under continual development. Ultimately we see this as a system of systems. There are multiple data contributors to multiple data systems and the goal of MSDI is to bring these systems together and provide a marketplace for users to access data. MSDI should lead to data being Findable, Accessible, Interoperable, and Reusable (FAIR). Under congressional legislation, the US will continue to provide open data across all sectors in order to advance the economic, security and environmental interests of the US. Continued development and use of MSDI is one of the ways we will do this.

Future Plans

- Question: Concerning MSDI, what were the challenges you faced and what lessons have you learned?

Internat onal Hydrographic Organization

Top 4 challenges concerning MSDI

1	**Designing a portal where all marine data are displayed and accessible. / Migrating data from a custom data schema to international standards**
2	**Coordination and connection between stakeholder / data sharing among stakeholders / Establishment of a strong governance and engagement with stakeholders on the process.**
3	**Establishing a solid structure in terms of standards, technology, metadata.**
4	**The generation of a geographical culture and education regarding geospatial importance**

Danish Geodata Agency

Concerning MSDI, what were the challenges you faced and what lessons have you learned?
The coordination and design of the production scheme were the main challenge. Developing a fully operational and comprehensible Production Plan, both for the users who are experts in the area as well as the public who contact us for the first time. Throughout the MSDI development, the formerly established criteria had to be modified in order to satisfy new needs which were faced, so that the permanent maintenance and updating have become a challenge.
The ability to access feature level data (such as IHO S-10X ENC data)
Establishment of a strong governance and engagement with stakeholders on the process.
There are two main challenges: The generation of a geographical culture and education regarding geospatial importance, and establishing a solid structure in terms of standards, technology, metadata.
Given the ever-changing cycles of technology one of the biggest challenges will be related with the choice of architecture and platforms for MSDI. In very close relation with ICT challenges it is also recognized need for permanent education and training for the staff involved on all levels.
Migrating data from a custom data schema to international standards
As the business case clearly showed, there are major gains in designing a portal where all marine data are displayed and accessible. However, one must be prepared to keep focus on governance, coordination and standardization, as this is a major and important task.
Normal challenges concerning new systems
Pas de MSDI pour la MSP
Convince data holders to make their data freely available. The many different data sets. The mass of data. The complexity of an SDI (if you have more than 20 datasets). Cannot be developed and operated by Hydrographers and Scientists who operate their own system, you need experts. Needs many resources. Work processes must be automated as far as possible.
Coordination and connection between stakeholder
Difficulties in convincing organizations to join MSDI and cooperate to complete MSDI
The challenges are rappresented by the internal coordination between the Ministries' departments
Distributed databases structure for data harmonization with other agency
Integration of Dataset to be used into one source. All the data will be converted into HOB File to be populated into NHC Database
· Technicalities in setting up a geospatial database · Skill gaps in data management and GIS · data sharing among stakeholders · Personal data is usually requested when registering on an MSDI or when providing a complete metadata e.g. data owner, metadata owner or point of contact. In this regard, the administrator needs to abide to the Data Protection Act and develop appropriate terms of use and register as a data controller.
(1) Fragmented tasks and responsibilities over several gouvernment organizations; (2) focus of NSDI on the land side; (3) oceanographic and marine biological data is not always considered spatial data, resulting in use of nonspatial data standards; (4) competing projects on the European level (EMODnet); (5) IHO standards are unknown to NSDI community; (6) internal bureaucratic and financial hurdles; (7) implementation strategy is a mix of bottom up developments and top down gouvernance
There is no single organisation with the mandate or resources to implement a national MSDI in NZ. NZ requires a pragmatic and collaborative approach which will grow the value of NZ Marine Geospatial Information within available resources.
The data harmonization processes to fully comply the interoperability requirements define at INSPIRE/IHO.
The multi data specifications compatibility requirements. For example: s-100 data model specifications and INSPIRE data specifications
A lot of marine spatial data is serviced through MSDI, but only a few services are active. We learned that we need to analyze the needs of public and private users on MSDI before the service.
1. From the open-tender experience, a collaboration of service providers was needed to meet the requirements of a national MSDI. 2. A national MSDI end-user application exercise is a platform to engage stakeholders and potential data providers, and to recognise the benefits of a national MSDI.
Funding remains a challenge and often there is a high turnover of personnel responsible for management and maintenance thereof
Creation of products and services through open source software
See above.
Balancing simplicity with functionality.
• Interoperability with other National Geospatial Agencies • Intellectual Property Restrictions (arrangements with suppliers to use their data for non-navigational purposes) • Lack of national legislative support • Lack of demand signals from the geospatial industry
The biggest challenge was coming to the understanding that MSDI is not just one centralized data warehouse or portal, yet a collaboration across multiple agencies, and organizations to bring data together to benefit all sectors (government, private, public).