



Baltic  
Data  
Flows



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# Key findings from the HELCOM Map and Data Service End-user Survey

May 2021

## 1. Overview

Activity 2 of the Baltic Data Flows project (BDF) aims to further develop and enhance existing publicly available online platforms providing access to regional datasets. The HELCOM [Map and Data Service \(MADS\)](#) and [Metadata Catalog](#) are targets for this activity. A survey was conducted among users of these services to get feedback on usage along with user interface improvements. The survey also captured how these services meet the needs of end-users by obtaining insight on the purposes for which data is used.

The survey was developed in consultation with partners of Activity 2 (HELCOM, ICES, and Spatineo). The survey was deployed online using the Survey Monkey platform and was made available from **30 March until 16 May 2021 (7 weeks)**. The survey was composed of **23 questions**, [found here](#). The survey was structured around the evaluation of both the MADS and Metadata Catalog with the following sub-categories:

- User profile
- User data needs
- Functionalities
- User interface
- Other services and feedback

The survey was disseminated widely across partner networks, relevant HELCOM Expert Working Groups, and the HELCOM Secretariat. The survey was also promoted on HELCOM social media channels ([LinkedIn](#), [Facebook](#), [Twitter](#)). The survey link was also made available on the homepage of the BDF website, MADS, and the Metadata Catalog. A total of **158 respondents** completed the survey. On average the survey took **5 minutes per respondent** to complete. This analysis is also complemented by relevant data from the **Spatineo Monitor**, an online site monitoring tool that provides usage analytics of the MADS.

## 2. Results

In addition to this report, the data has been summarized and presented into a [Power Bi dashboard](#). The dynamic nature of the dashboard allows users to obtain a detailed level of analysis based on defined points of interest. This has aided the analysis presented in this report along with the summary of data and charts presented in this [Excel document](#).

## 2.1. User profile

Almost 50% of respondents represented only two professional backgrounds; 'National administrations' (25%), and 'Research institutes' (24%) (see figure 1).

Figure 1: What is your background?

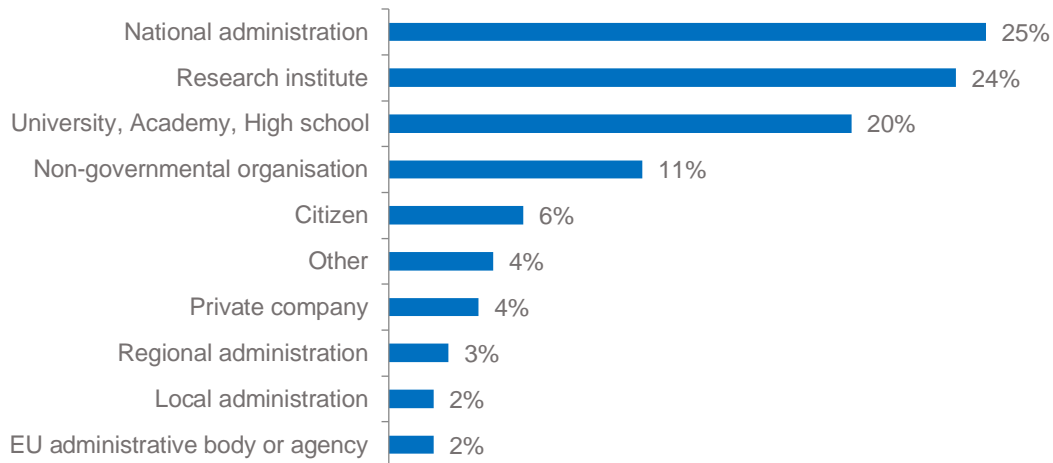
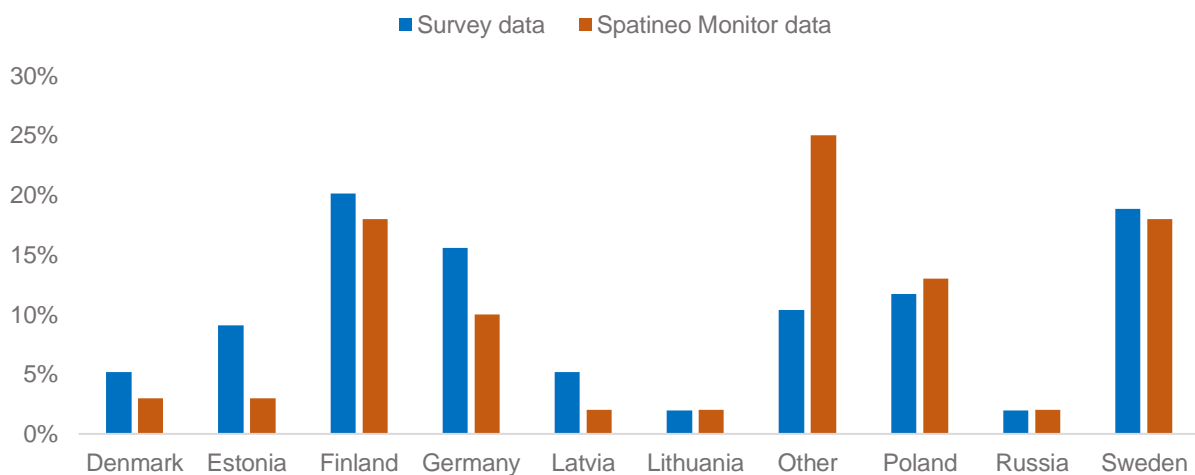


Figure 2 shows that the highest number of respondents were from **Finland (20%), Sweden (19%), and Germany (16%)**, however several other countries outside of HELCOM are also benefiting from the MADS (10%). These findings also partly correspond with the data from the **Spatineo Monitor**, also presented in figure 2, for the reporting month of April 2021 with the top 3 countries of Finland (18%), Sweden (18%) and Poland (13%). However, the Spatineo Monitor reports a higher number of users in countries outside of HELCOM for the month of April (Other, 25%). These countries include the USA, UK, and France with over 100 users. The 'top 3' other countries reported in the Survey include Netherlands, France, and Spain. The Spatineo Monitor indicates that the number of unique visitors to the HELCOM MADS during the month of **April 2021 was 4,641**.

Figure 2: MADS users per country



The Spatineo Monitor started monitoring MADS user traffic in December 2020. From December 2020 to April 2021 there was an **average of 6,070 users per month** to the MADS. However, this figure might be slightly elevated due to interest surrounding the end-user survey throughout March and April.

Almost three quarters of respondents (74%) visited the MADS ‘a few times a year’ (46%) or ‘once a year or less’ (28%). The Metadata Catalog was visited less often with respondents indicating ‘once a year or less’ (58%), or ‘a few times a year’ (30%). Two respondents indicated they use the MADS ‘daily’: one respondent from an NGO in France, the other from a local administration in Lithuania. The same respondent from France also indicated visiting the Metadata Catalog daily.

## 2.2. User data needs

Figure 3 highlights that most respondents use both the MADS and Metadata Catalog for ‘**Research**’ purposes. Each service is used for equal purposes, followed by ‘Environmental monitoring’ in second, and ‘Management, decision-making’ in third. However, over one quarter of respondents (28%) indicated they have not used the Metadata Catalog.

Figure 3: For what purposes do you use the MADS and Metadata Catalog?

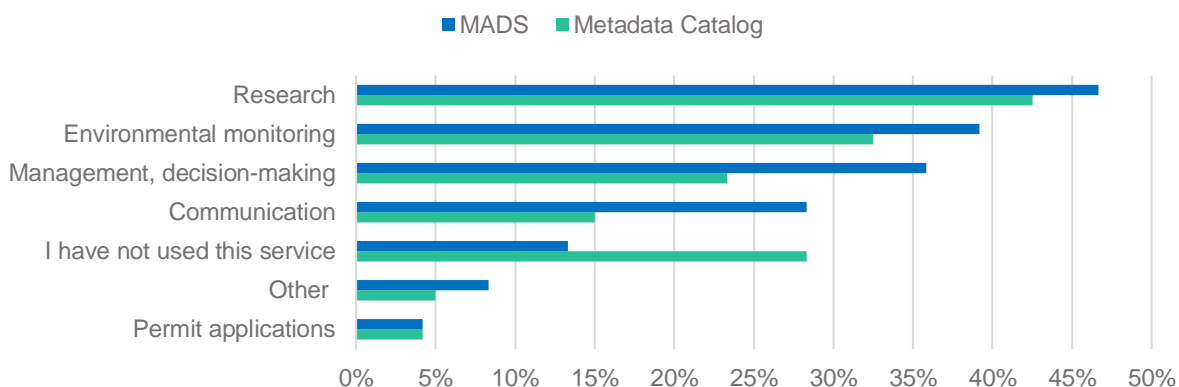
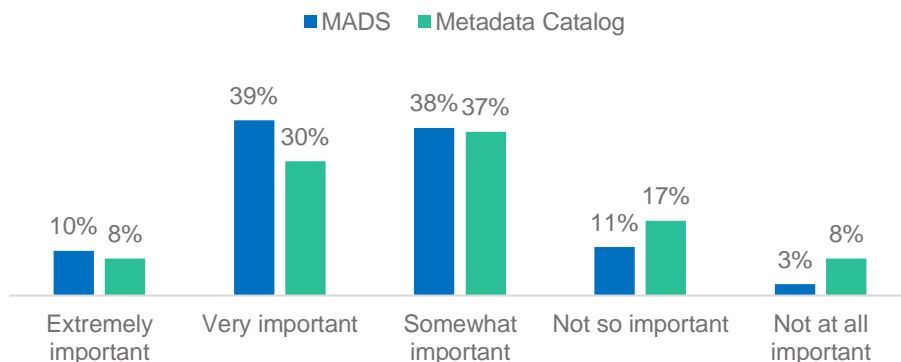


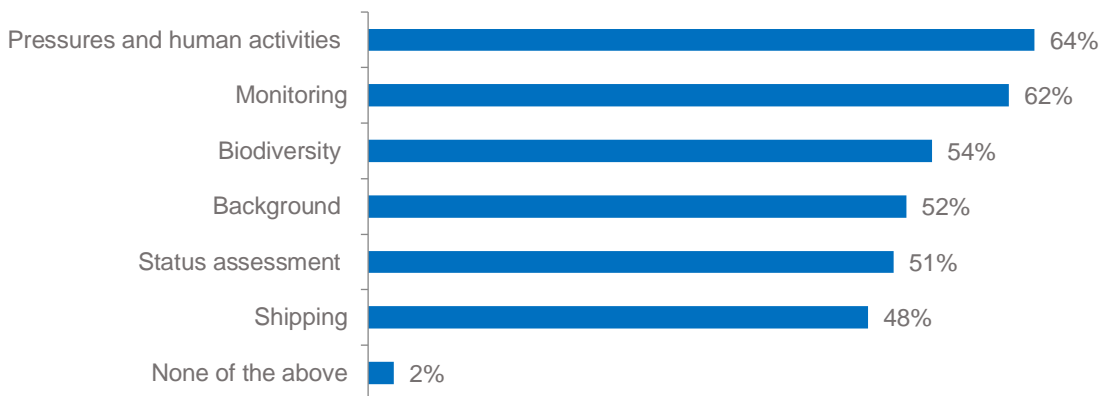
Figure 4 highlights that almost half of respondents (49%) consider the MADS as either ‘**Extremely important**’ (10%) or ‘**Very important**’ (39%). However, these weightings are not given to the Metadata Catalog with only 38% of respondents selecting the same categories. Most respondents consider the Metadata Catalog as ‘**Somewhat important**’ (37%). One quarter of respondents (25%) consider the Metadata Catalog as ‘**Not so important**’ (17%), or ‘**Not at all important**’ (8%). The same 3% of respondents who indicated the MADS is ‘Not at all important’ indicated the same for the Metadata Catalog.

Figure 4: Please evaluate how important the MADS and Metadata Catalog is for your purposes



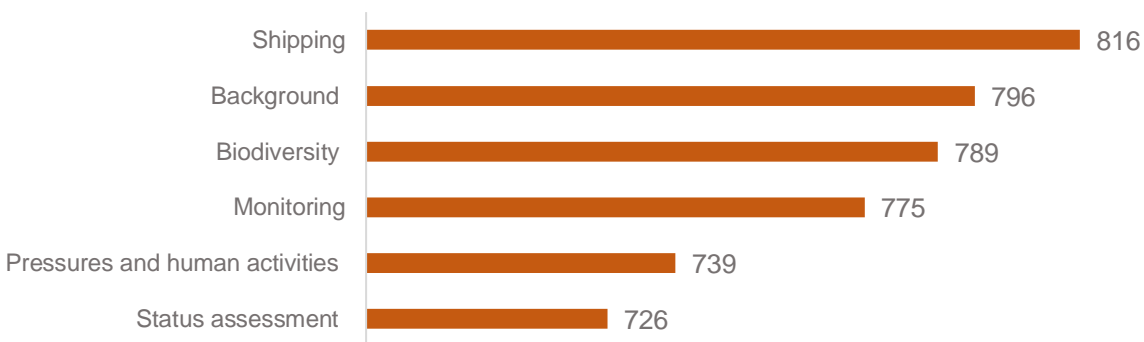
Data layers in the MADS are grouped into 6 services as shown in the 'Y' axis of figure 5. Figure 5 visualizes the response data from question 10 requesting that users indicate one or more service/s that they use. The most popular service selected was '**Pressures and human activities (64%)**'. This service includes distribution of different pressure/human activities effecting the marine environment ([example dataset](#)). This is closely followed by '**Monitoring (62%)**' that includes information on monitoring station networks and boundaries of HELCOM assessment unit areas ([example dataset](#)). MADS services are equally used across users with 94% of respondents indicating they use **2 or more services**, and 10% of respondents stating they use **all services**.

Figure 5: Please specify what service/s you use



The **Spatineo Monitor** records the number of visitors per MADS service by collecting the unique IP address of each user. Data for the month of April 2021 is shown in figure 6. This data does not run parallel to the MADS survey findings. The Spatineo Monitor highlights that '**Shipping**' is the most popular service with 816 unique visitors, followed by '**Background**' and '**Biodiversity**'. However, as data from the survey shows, these services are used almost equally across users.

Figure 6: # unique visitors per month - Spatineo Monitor, April 2021

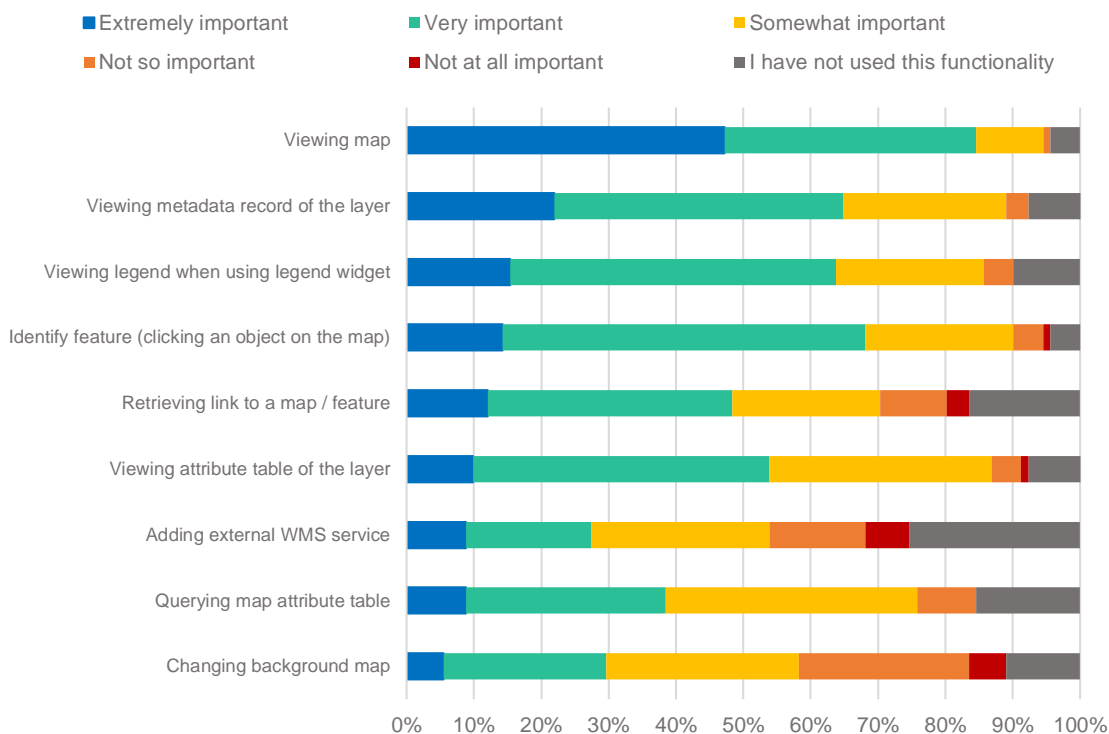


### 2.3. Functionalities

Question 10 required respondents to evaluate each functionality of the MADS. The results are presented in figure 7 sorted from highest to lowest against the 'Extremely important' functionality. Almost half of respondents (47%) indicated that the '**Viewing map**' function was '**Extremely important**'. This was the

only function considered 'Extremely important' weighted against 'Very important'. The remaining functions were all weighted against 'Very important' except the lowest ranked three functions: 'Adding external WMS service', 'Querying map attribute table', and 'Changing background map'. These functions were largely considered 'Somewhat important', or 'Not important at all'. Respondents also indicated if they had not used a specific functionality. **The three functionalities that are less used by users are 'Adding external WMS service' (25%), 'Retrieving a link to a map/ feature' (16%), and 'Querying an attribute table' (15%).**

**Figure 7: Please evaluate the functionalities of the MADS**

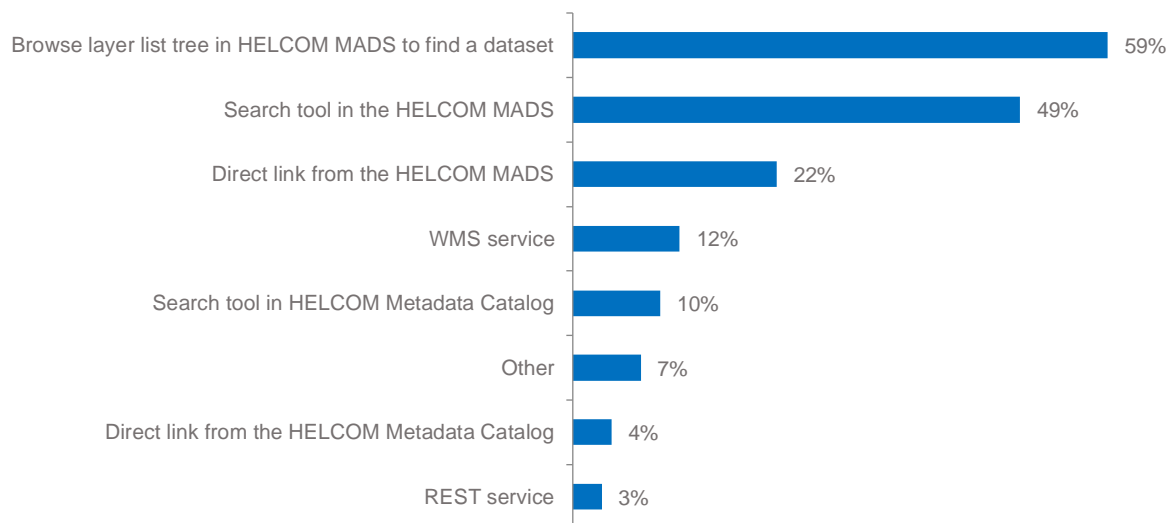


Respondents were also asked to propose other functionalities that would be useful in the MADS. Fifteen respondents provided suggestions as a free text response, for example:

- *It would be nice to see **yearly indicator assessment values**, in addition to assessment period values. Also, see/get information on the indicator average values and ERs, not only GES/ subGES. **Terminology should be uniform across the page**; either fail/achieve or good/not good or some other word pair.*
- *The option to **download all shown layers and data** is the most important feature.*
- *For the people that do not use GIS desktop, the possibility to have a **layout creator** (something to play with the layers, transparency, position, etc.) like in the [UN Biodiversity Lab](#) could be nice.*
- *It would be good if the **monitoring stations could be seen** without clicking the station. Also, the station list would be nice to have as a list.*
- *An **automatic preselection of thematic data** (e.g., data useful for maritime spatial planning or data on biodiversity) that could be somehow grouped or identifiable by user.*

Figure 8 shows how respondents answered as a multiple choice when asked how they access HELCOM datasets. As highlighted, most respondents '**browse the layer list tree**' (59%), or '**use the Search tool**' (49%). Only a small percentage of respondents used the REST Service (3%), and/or used a direct link from the Metadata Catalog (4%).

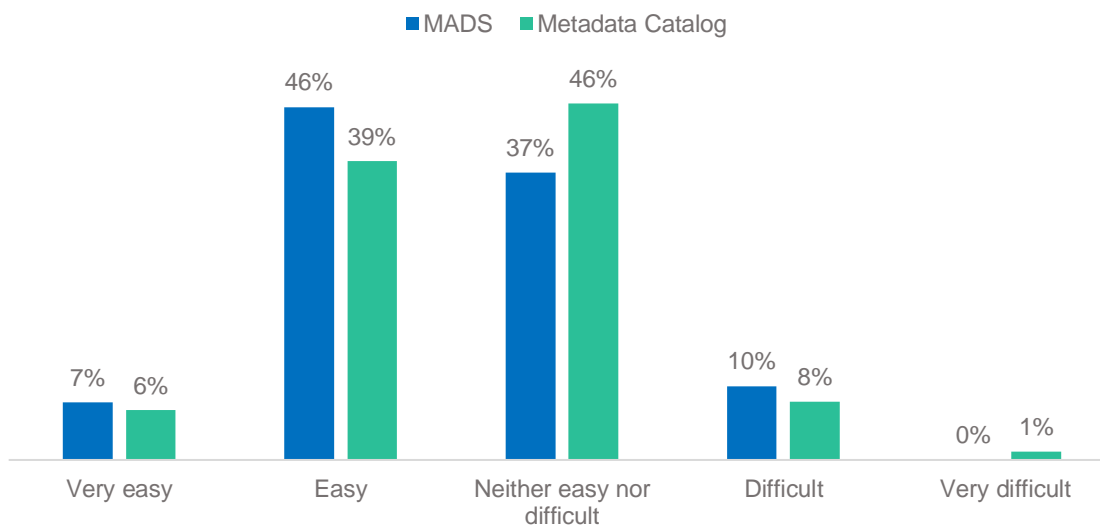
Figure 8: How do you access HELCOM datasets?



Over half of respondents (53%) indicated that it was **'Very easy' (7%)** or **'Easy' (46%)** to find data from the MADS, as shown in figure 9. However, this was less (45%) for the same weightings when respondents answered for the Metadata Catalog. For respondents who answered 'Difficult' or 'Very difficult' the survey collected opinions on why data was difficult to find in both the MADS and Metadata Catalog. Nine respondents indicated as free text. Selected examples are presented here:

- *A little **clumsy** operating system.*
- *Chaotic and **slow web interface**.*
- *The datasets are **not described well**.*
- *Unsure which terms to look-up manually when searching through the layer-tree.*
- *The MADS is **hidden on the main HELCOM web**. It is **usually very slow** and tiresome to look at the maps and select attributes in the map view.*
- ***Hard to find the right data** layer and see what data layers are available.*

Figure 9: How easy is it to find data from the MADS/ Metadata Catalog?



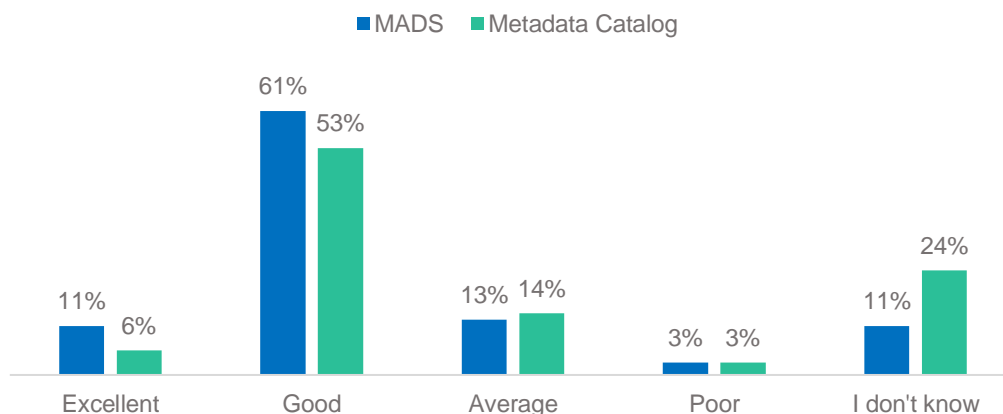
## 2.4. User interface

Most respondents (94%) indicate they have not experienced any 'unexpected behavior (bugs, crashes) of the MADS or the Metadata Catalog'. Respondents who indicated 'Yes' in response to question 15, provided the following clarifications here:

- *Only very view; related to **type of my browser**.*
- **Not loading layers**
- *For example, the unit of Cs-137 in seawater is expressed in Bq/m and not in Bq/m<sup>3</sup>.*

Figure 10 presents response data from questions 16 and 18 that rates the user interface of the MADS and Metadata Catalog. Almost three quarters of respondents indicated '**Excellent**' (11%) or '**Good**' (61%) for the MADS, however these weightings were less for the Metadata Catalog, with a higher percentage of respondents indicating they '**don't know**' (24%).

Figure 10: Please rate the user interface of the MADS and Metadata Catalog



Respondents were also asked how they would improve the user interface of both the MADS and Metadata Catalog. A selection of free text responses for each service are highlighted here:

### MADS

- *Provide **more online services**, like WMS, pp.*
- *Make **navigation easier***
- ***Resolution of the maps/features** when zooming in and out or clicking on the feature*
- *The **legends could use colours** which can be better distinguished, e.g., IMO ships routing guide ATBA and deep-water route cannot be distinguished at all, all features under this entry are pink.*
- ***Simplify it**. Logic of the folder structure is a bit odd.*
- ***More responsive and interactive design***
- *User interface is optimal, but a short **user guide** could be added as a side button on the right side.*

### Metadata Catalog

- ***Do not know the difference** between this and the former HELCOM MADS*
- ***Categorization of data***
- ***Simplify** a bit more, with possibility to expand the fields.*

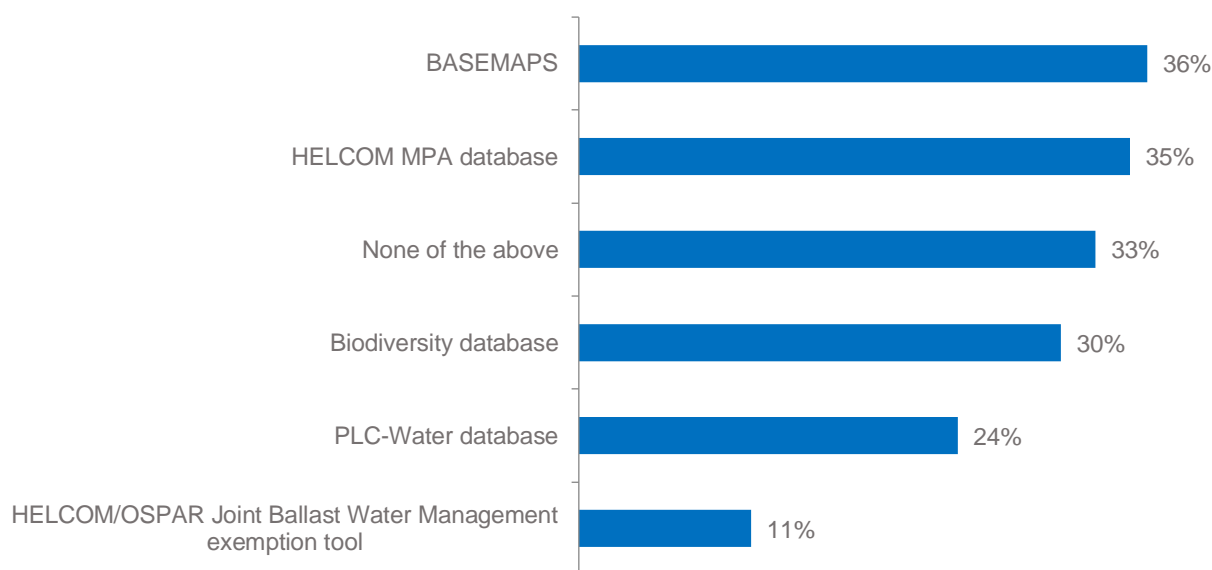
The link between the MADS and Metadata Catalog is considered useful for most respondents with **64%** stating it is useful. However, a relatively high number of respondents (**35%**) indicated they '**don't know**'.

Only 1 respondent indicated the link was not useful and when asked how the link could be improved, no suggestion was submitted.

## 2.5. Other services and feedback

Several other HELCOM data portals, in addition to the MADS and Metadata Catalog, are also utilized by survey respondents. Question 22 asked respondents to select one or more of the HELCOM data portals. As shown in Figure 11, **HELCOM BASEMAPS and the MPA database** were the most popular, however 33% of respondents also selected 'None of the above'. The HELCOM/OSPAR Joint Ballast Water Management exemption tool is rarely used alongside the MADS and Metadata Catalog.

Figure 11: Which other HELCOM data portals do you use?



The final question of the survey allowed respondents to provide general feedback as free text on the MADS and/or Metadata Catalog. This feedback provided was mostly positive statements on the services, with some more constructive suggestions highlighted below:

- *I find it hard sometimes to know what kind of data the HELCOM database offers. I think **training is needed** to get the best picture for the users.*
- ***Integration between the HELCOM ICES tools** (HEAT, the HAZ tools) could be helpful.*
- *Updated data would be appreciated. We would **use it more if new data would be presented.***
- *Conventional munitions dumps should be added as a layer, also interactions with all kinds of munitions (both would require reporting). I did not find fishing effort using static nets or pots and traps. pressures and human activities information is quite scarce. Military training areas should be shown, underwater noise (ICES impulsive noise registry has now data). Commercial fisheries catches are quite old, no information on number of recreational fishers and their effort. Limitations in metadata should be clearly pointed out in metadata catalogue. e.g., harbor porpoise bycatch data is not systematically collected. Otherwise, a false impression arises from the presented data.*
- *Awesome tool to have and get data from. I wish all regional seas conventions had as much data.*
- *Thank you for the work that has been done to ensure the functionality of MADS and Metadata Catalog!*



### 3. Conclusion

Based on findings from the survey the **MADS and the Metadata Catalog are considered useful and important data portals that benefit a variety of end-users for multiple purposes**. In addition, several conclusions are presented here that will inform recommendations for further development:

- The MADS is used more often and considered more important than the Metadata Catalog.
- The six available MADS Services are equally used.
- There are certain MADS functionalities that are considered more important than others and are used more often.
- There are multiple access tools to HELCOM datasets, but most are underutilized, e.g., REST Services, WMS, link from Metadata Catalog, as most users rely on the layer tree and search tool in MADS.
- Data is easy to find in the MADS and the Metadata Catalog, however it is not intuitive for some users.
- The MADS and Metadata Catalog rarely experience unexpected behavior.
- The user interface of both the MADS and Metadata Catalog are considered good, however they would both benefit from a modern upgrade that would introduce more dynamic features.
- The link between the HELCOM MADS and Metadata Catalog is considered fit for purpose however this link is often unclear for some users.
- Other HELCOM data portals, such as BASEMAPS and the MPA database are used alongside the HELCOM MADS and Metadata Catalog.

**Overall users are content with the performance, functionality and service provided by both MADS and the Metadata Catalog.** The large number of survey respondents also indicate that the services are widely referenced and used. This finding is reinforced by monitoring data from the Spatineo Monitor. However, the survey also revealed that **some users were unclear on the purpose of the Metadata Catalog and its role operating alongside the MADS**. In addition, some users are unsure how to adequately use the services and would **benefit from guidance**. These services can be enhanced and developed further to address these conclusions as stated in the recommendations.

### 4. Recommendations

Several recommendations are proposed based on findings from the survey:

1. Develop **training materials** and schedule regular online **training events** for both services to wider user community.
2. Upgrade the user interface of both services to ensure a more **dynamic, simple, and modern user experience**. Update datasets
3. Maintain MADS functionalities that are considered 'Important', e.g., viewing map, viewing metadata record, viewing legend. Improve functionalities that are rarely used or considered less important, WMS service, querying map attribute table. Consider **development of suggested functionalities such as 'layout creator'**.
4. **Reclassify and reorganize Service titles and layers** so they are more intuitive for users. Extract keywords to aid navigation and search of datasets.
5. Promote use of **APIs and other access platforms** to HELCOM datasets, e.g., REST Services.
6. Promote the link of MADS and the Metadata Catalog by **sharing examples of datasets** on external HELCOM channels (website, social media, newsletter).
7. Conduct **performance testing** on MADS and Metadata Catalog to identify any service issues.