



**UNITED  
NATIONS**

**EP**

UNEP/MED WG.566/6



**UNITED NATIONS  
ENVIRONMENT PROGRAMME  
MEDITERRANEAN ACTION PLAN**

**UNEP**

10 May 2023  
Original: English

Meeting of INFO/RAC National Focal Points

Rome, Italy, 7-8 June 2023

**Agenda item 5: Data policy Annex – Data flow Annexes**

**Data Policy Annex on Barcelona Convention Reporting System (BCRS) data flow**

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## Introduction

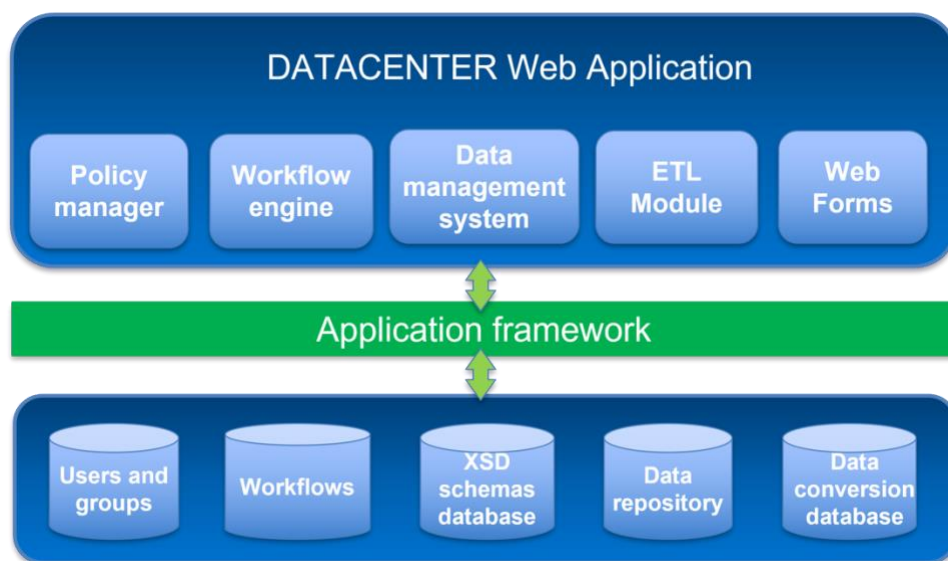
This document describes in details references and procedures tied to BCRS data flux with respect to the adopted Data Policy (UNEP/MED IG.25/27, Decision IG.25/10). It could be considered as a guideline to fulfill reporting duties for Contracting Parties focusing on data flux structure, data types, access levels, data sources, data formats, data quality, data licenses, metadata, data sharing practices and restriction.

## Summary of data management aspects

### *Brief description of the structure*

The Barcelona Convention Reporting Info System (BCRS) is an infrastructure to support reporting activities under article 26 of the amended Barcelona Convention and several articles of different Protocols of Mediterranean Action Plan. Article 26 of the Barcelona Convention stipulates that the Contracting Parties shall transmit to the Secretariat reports on (a) the legal, administrative or other measures taken by them for the implementation of the Convention, the Protocols, and the recommendations adopted by their meetings, (b) the effectiveness of the measures referred to sub-paragraph (a) and problems encountered in the implementation of the instruments as mentioned above. The Reporting Info System is the infrastructure which provides tools to support the report activity. The main target of the system is allowing collection, storage, management and process of Reporting data. Reporting data is the textual and numerical data regarding the implementation of the Barcelona Convention and its Protocols that the Contracting Parties are requested to provide to the Secretariat on a biannual basis. The collection, management and processing of reporting data are at the core of the Reporting Info system and reporting activities.

The architecture of the BCRS is shown in the figure:



A brief description of the individual components of the architectural scheme follows:

*Policy manager:* it interacts with the users database (Info RAC LDAP), manages users permissions and profiles (e.g. Country reporter-Data provider, MAP FP, Processor, etc.);

*Workflow engine:* manages the life cycle of reported data from the initial submission step to the final publication step, passing through the validation, update and finalization steps;

*Data management system (DMS):* main repository for data and reports delivered by the countries or CPs. It is organized with a folder structure for each country/CPs where the data or reports can be uploaded and available to others;

*ETL Module:* this module transforms data coming from XML deliveries, merges and transforms them into different formats (e.g. csv, excel files, mdb access, web services, etc) and makes it available for the data dissemination and publication phase;

*Web Forms:* allow data reporters to deliver validated data in XML format using online, easy to use and friendly webforms. A standard web browser with Javascript support is necessary.

The data are managed by INFO/RAC. The Reporting Info system has four access levels. INFO/RAC have access to all contents.

MAP components can access to public contents and can download the zip folder officially released by each CP and not yet published.

The Reporter of each CP can access, in addition to the public contents, to the specific section of the CP he/she belong to. Finally general public can access to all the data released to public by CPs.



The workflow, which allow allows the Contracting Parties to submit the data related to national reports (Barcelona Convention, Prevention and emergency protocol, Offshore protocol, Dumping protocol, LBS protocol, Hazardous Wastes protocol, SPA&BD Protocol, ICZM Protocol), starts accessing to Reporting system webpage from this url: <https://idc.info-rac.org/bcrs>

To access the reserved sections and proceeds entering data through the webform, **login is required**.

The workflow finishes when the Reporter (for each CP) officially releases the data. Only the files released to public are visible to all other CPs.

#### *Data types*

BCRS data types are basically two: the **XML file** as output of the reporting data in the webform and the **HTML format** for visualizing the data entered in the webform.

BCRS data are then accompanied by corresponding and valuable metadata.

In reason of the adopted data policy also BCRS data, once published, are normally exposed as Open Data (see paragraph about Data licenses for more details). Openness of the data depends on the access rights granted to the specific user. Before data are released to public, data is visible only to INFO/RAC (for management purposes), protocol NFPs at country level and the Contracting Parties users to which the data belongs. Once the reporting workflow process is completed and data is published data can be downloaded for anyone.

Nevertheless, some data access is restricted for some different reasons (legal, privacy, research or conservation matters, basically). For these occurrences availability and openness of data will be evaluated in a case-by-case exchange between INFO/RAC and the data owner that will lead to the definition of specific restriction measures concerning data sharing.

*Data management common practices among different access levels*

Every **2 years** the Contracting Parties must submit a new report based on the signature and ratification of the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols.

The BCRS, developed by INFO/RAC, ensures availability of latest data and maintenance of long-term series, starting from the 2016-2017 reporting cycle. The scientific validity of the data is ensured by each CP.

*Data collection*

BCRS support reporting for the data flows related to the Barcelona Convention. It meets the obligations established by each protocol approved by COP.

*Data sources*

Each CP is expected to report data on each signed and ratified Protocol. Expected data for each protocol is described as follow:

**Barcelona Convention:** *The Contracting Parties to the Barcelona Convention agree to individually or jointly take all appropriate measures in accordance with the provisions of the Convention and the Protocols in force to which they are party to prevent, abate, combat and to the fullest possible extent eliminate pollution of the Mediterranean Sea Area and to protect and enhance the marine environment in that Area so as to contribute towards its sustainable development. They cooperate in the formulation and adoption of Protocols, prescribing agreed measures, procedures and standards for the implementation of this Convention.* ”

**Prevention and Emergency Protocol:** The 2002 Prevention and Emergency Protocol, which was adopted on 25 January 2002 in Malta and entered into force on 17 March 2004, is the regional instrument setting out the main principles of cooperation when dealing with threats to the marine environment, the coasts and related interests of the Contracting Parties posed by accidental releases or by accumulations of small, operational discharges, of oil or other harmful substances.

**Offshore Protocol:** taking action to protect the Mediterranean Sea and to prevent against accident and pollution from offshore activities.

**Dumping Protocol:** The Contracting Parties to this Protocol (hereinafter referred to as "the Parties" shall take all appropriate measures to prevent, abate and eliminate to the fullest extent possible pollution of the Mediterranean Sea caused by dumping from ships and aircraft or incineration at sea.

**LBS Protocol:** The objective of the LBS Protocol, as stipulated in Article 1, is to take all appropriate measures to prevent, abate, combat and eliminate to the fullest possible extent pollution of the Mediterranean Sea Area caused by discharges from rivers, coastal establishments or outfalls, or emanating from any other land-based sources and activities within their territories, giving priority to the phasing out of inputs of substances that are toxic, persistent and liable to bioaccumulate.

**Hazardous Waste Protocol:** The Protocol on the Prevention of Pollution of the Mediterranean Sea by Transboundary Movements of Hazardous Wastes and their Disposal was adopted in 1996 and is in force since 2008. The overall objective of the Hazardous Waste Protocol is to protect human health and the marine environment against the adverse effects of hazardous wastes.

**SPA and BD Protocol:** The SPA/BD Protocol is the Mediterranean's main tool for implementing the 1992 Convention on Biological Diversity, as regards the in situ sustainable management of coastal and marine

biodiversity. The Protocol envisages three main elements in order to ensure the safeguard of biological diversity in the Mediterranean:

1. The creation, protection and management of Specially Protected Areas (SPAs)
2. The establishment of a list of Specially Protected Areas of Mediterranean Importance (SPAMIs)
3. The protection and conservation of species

In order to meet these objectives, the following aspects are developed:

- Conservation of types of marine and coastal ecosystem that are typical of the Mediterranean;
- Protecting habitats that are in danger of disappearance or are necessary for the survival, reproduction and restoration of threatened or endemic species;
- Protecting sites of scientific, aesthetic, cultural or educational interest;
- Development and implementation of management plans;
- Setting up and promoting Specially Protected Areas;
- Conservation of species that are threatened of extinction, endangered, or to be managed;
- Sustainable use of biological resources

**Integrated Coastal Zone Management Protocol:** The Protocol on Integrated Coastal Zone Management in the Mediterranean, (ICZM Protocol) was adopted in 2008 and entered into force in 2011.

The ICZM Protocol provides the legal framework for the integrated management of the Mediterranean coastal zone. Under the Protocol, Parties are called to take the necessary measures to strengthen regional cooperation in order to meet the objectives of integrated coastal zone management. Such measures include those aimed at protecting the characteristics of certain specific coastal ecosystems (e.g. wetlands and estuaries, marine habitats, coastal forests and woods and dunes), those aimed at ensuring the sustainable use of the coastal zone, and those aimed at ensuring that the coastal and maritime economy is adapted to the fragile nature of coastal zones.

Validation of data uploaded by CPs will be done by National Focal Points.

#### *Data formats and data quality*

BCRS ensures the standardization of the data collected by the CPs through the use of a webform. The webform is consistent with the approved guidelines.

During the reporting activities the user can control the data already entered in the webform by choosing between XML (Original) or HTML format.

The data entered in BCRS can be downloaded at any time during the reporting activities as a zipped envelope containing 5 files:

- README.txt: this file contains the documents included in the envelope;
- metadata.txt: this file contains the descriptive information about the envelope;
- history.txt: this file contains log of activities executed since the envelope creation until the moment of the download;
- xml file: the file containing the data entered in the NBB webform;
- feedbacks.html: it is now empty, because quality controls have not yet been implemented, but could be implemented in the future.

The National Focal Point of each CP guarantees the quality of transmitted data through the official release procedure.

#### *Data licenses*

According to the Data Policy, approved during the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols at their 22nd Meeting

(UNEP/MED IG.25/27, Decision IG.25/10, p. 353), data must be as open as possible, respecting the constraints imposed by local legislation, sensitivity of data, and copyrights. For files “released to public” by the protocol NFP the principal Open Data license individuated by the policy is Creative Commons Attribution (CC-BY). Nevertheless, if data is originally shared by the data owner (which corresponds in most of the cases with data creator) with a less restrictive license (like CC-0 or Public Domain) it is necessary to transmit this license while data is shared following the workflow summarily described in Figure XXa (specific case of data owner coincident with the Country). Other, more restrictive, licenses are still available to use and correspond to specific access level of the users or sensitivity of data themselves. Figure XXb shows all the possible licenses from the open ones (bright green zone) to the classic copyright (in red), which denotes closed data. Given what is stated in the data policy, the usage of “out of bright green” licenses is regulated and it must be appropriately motivated in a participative process that involves data owner, eventual data provider (if any), and the subject responsible for data sharing (such as INFO/RAC). For more references on which cases represent an exception to the general open data rule see the UNEP/MED IG.25/27, Decision IG.25/10 (Data Policy) at Section 4, Article 36.

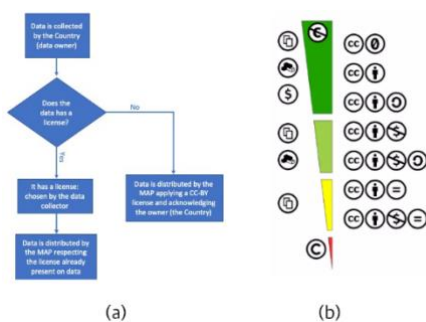


Figure XX – License attribution fluxes for data (a); available licenses for data from bright green (open data) to red (closed data) (b).

### *Data Embargo periods*

According to the BCRS Data policy, data is normally made available to the public when the file is officially “released as public”.

Embargoes are enforced at the dataset level and can be requested if data is matter of innovative research which is currently under development (i.e. during data analyses phase or the writing of a results paper). For embargoed datasets, the basic metadata is publicly viewable, but the datasets themselves are not. Basic metadata include geospatial coordinates of the survey area, sampling period, site name, dataset type, current end date of embargo, and responsible researchers’ names (point of contact).

Every embargo dataset will have one or more access managers, usually the original data generator or data uploader. Access managers or designated persons can access their embargoed data in BCRS, using single-sign-on system. Access will be enabled by the system admin and data will be identified via a unique persistent identifier (PIDs).

The embargo process is not automatic; embargoes must be requested by the contributor(s) of the relevant data.

Embargoes are temporary and last for a predefined period. Normally, an embargo lasts two years after a dataset has been uploaded to the system, or until scientific publication connected to data is published, whichever happens first.

Embargoes will be automatically lifted after two years unless the data generators require further extension. Up to two-year extensions can be requested.

### *Production of metadata and other relevant documentation*

All files uploaded to BCRS are provided with basic metadata, containing the descriptive information about the envelope. The reporter is required to compile the descriptive fields related to load of contaminants, before proceed with the reporting procedure. It is important to fill in all fields (title, description, period, coverage) so that the metadata information is complete.

## Data metric policy

### *Workflows for different access levels*

Authentication, authorization, and accounting (also called AAA) is the architecture behind the InfoMAP System to manage intelligently controlling access to UN Environment Programme/MAP resources, enforcing policies, and providing the information needed to use for services. These three elements are considered important for effective network management and security.

The three pillars to control security and right of actors are:

- The Authentication is the process of ascertaining that somebody really is whom they say they are.
- Authorization refers to rules/permissions that determine who is allowed to do what.
- Accounting is about keeping track of the resources used for financial or auditing purposes.

Authentication technology provides access control for systems by checking if a user's credentials match the credentials in an authorized user database or in data authentication server. Users are identified with a user ID, and authentication is performed when the user provides a correct credential (password) which matches with the user ID in the database. Each authenticated user can access and manage data domains, based on the user's configured role within the System. Each role has a set of corresponding permissions inside the System, in order to manage, edit and view specific data.

The user, in general, is any entity (physical person or organization) that interacts with the BCRS system. The BCRS is composed of different components for the data flows. Each user, according to its role, has a set of corresponding permissions within the BCRS system.

The structure of the profiles and their associated rights in the BCRS are:

- **Contracting Party users:** all the data collection may have a different composition of a national role, in order to guarantee a correct management of the environmental information, two different levels have been designed:
  - o **Protocol NFP** (national entities responsible for the public release of the data)
  - o **Protocol user** (also called Reporter): users compiling the protocol webform, the metadata field and validating the data entered in BCRS.
- **MAP Component users:** Users which are staff of MAP Secretariat and Component; for each of them, there is a different role in the System due to the competence and role of the activities carried out in the different data flow and data assessment. A possible subdivision is the following:
  - o Coordination Unit (CU) is the supervisor of the overall of the protocols in the system.
  - o INFO/RAC is the administrator of the overall of the BCRS system. INFO/RAC holds all rights in order to protect data and system security, however INFO/RAC will not manage the dataset, unless it is required by the owner.
  - o RAC is the MAP component involved in the connected protocol data collection as well as in data aggregation in order to prepare specific evaluation layers or environmental products and quality assurance. They can view a great part of data but doesn't have the role to manage if it isn't required.



- Anonymous users: They represent users who are not authenticated and only have the possibility to search and view metadata and data publicly available.

*Interactions according to data granularity and access*

This part of the document describes the granularity of permission in managing data based on the user's configured role within the NBB System.

		Data Production	Data Consultation	
		Upolad data	Download data not yet "released to public"	Download data "released to public"
Contracting Party users	Protocol NFP			
	Protocol user			
MAP Component users	CU			
	INFO/RAC			
	RAC			
MAP Partners				
Anonymous users				

LEGENDA
available
only for CP to which protocol user/NFP belong to
only for CP to which protocol user belong to
not available