GFCM - FISHERIES DATA NEEDS

The fisheries data collection of GFCM, including the implementation of the DCRF and the feasibility phase results for the implementation of quality indicators

GFCM Secretariat

2019 Liaison Meeting

DG Maritime Affairs and Fisheries, Brussels, Belgium, 3-4 September 2019

General Fisheries Commission for the Mediterranean (GFCM)

RFMO established in 1949 under the provisions of Article XIV of the FAO Constitution

OBJECTIVE

- Ensure the conservation and sustainable use, at the biological, social, economic and environmental level, of living marine resources in the GFCM area of competence
- Ensure the sustainable development of aquaculture in the GFCM area of competence

MEMBERSHIP

- **24 Contracting Parties**:
  9 Mediterranean states, 3 Black Sea states, European Union and Japan
- **5 Cooperating non-Contracting Parties**:
  Bosnia & Herzegovina, Georgia, Jordan, Moldova & Ukraine

KEY FUNCTIONS

- Adopt binding Recommendations for fisheries and aquaculture governance
- Contribute to marine spatial planning and level playing field

AREA OF APPLICATION: The Mediterranean Sea and the Black Sea

GFCM fisheries data collection in support of advice

IMPORTANCE OF FISHERIES DATA

A strong and well established collection and submission of fisheries data in the GFCM area of application allows to provide comprehensive, reliable and timely information in support of the GFCM decision making process, based on scientific advice as formulated by its relevant subsidiary bodies.

FISHERIES DATA TO THE GFCM

GFCM receives data from Mediterranean and Black Sea states through different channels:

- In reply to existing GFCM Recommendations (compulsory)
- Through national reports to the Scientific Advisory Committee on Fisheries (SAC) and the Working Group of the Black Sea (WGBS)
- Through Stock Assessment Forms - SAFs (input data being compulsory from 2018)

GFCM fisheries data collection in support of advice
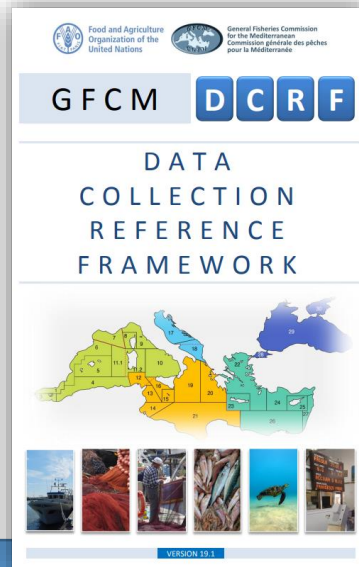## (Data Collection Reference Framework - DCRF)

GFCM fisheries data collection in support of advice
Data Collection Reference Framework (DCRF) and its manual

The DCRF is an instrument supporting the implementation of the mid-term strategy (2017–2020) towards the sustainability of Mediterranean and Black Sea fisheries through the identification and collection of fisheries-related data necessary to improve the formulation of sound scientific advice by relevant GFCM subsidiary bodies.

Comprehensive framework for the collection and submission of fisheries-related data: Catch, Incidental catch of vulnerable species, Fishing fleet, Fishing effort, Socio-economics, Biological information.

The **DCRF manual** (English and French) in support of the Contracting Parties and Cooperating non-contracting Parties (CPCs) of the GFCM to comply with existing data requirements through the provisions of indications.

GFCM fisheries data collection in support of advice
DCRF manual - Priority species

Priority species are identified at subregional level (GFCM subregions) as follow:

Group 1: Species for which assessment is regularly carried out.

Group 2: Species that are important in terms of landing and/or economic values at regional and subregional level, and for which assessment is not regularly carried out.

Group 3: Species within international/national management plans and recovery and/or conservation action plans as well as non-indigenous species with the greatest potential impact.
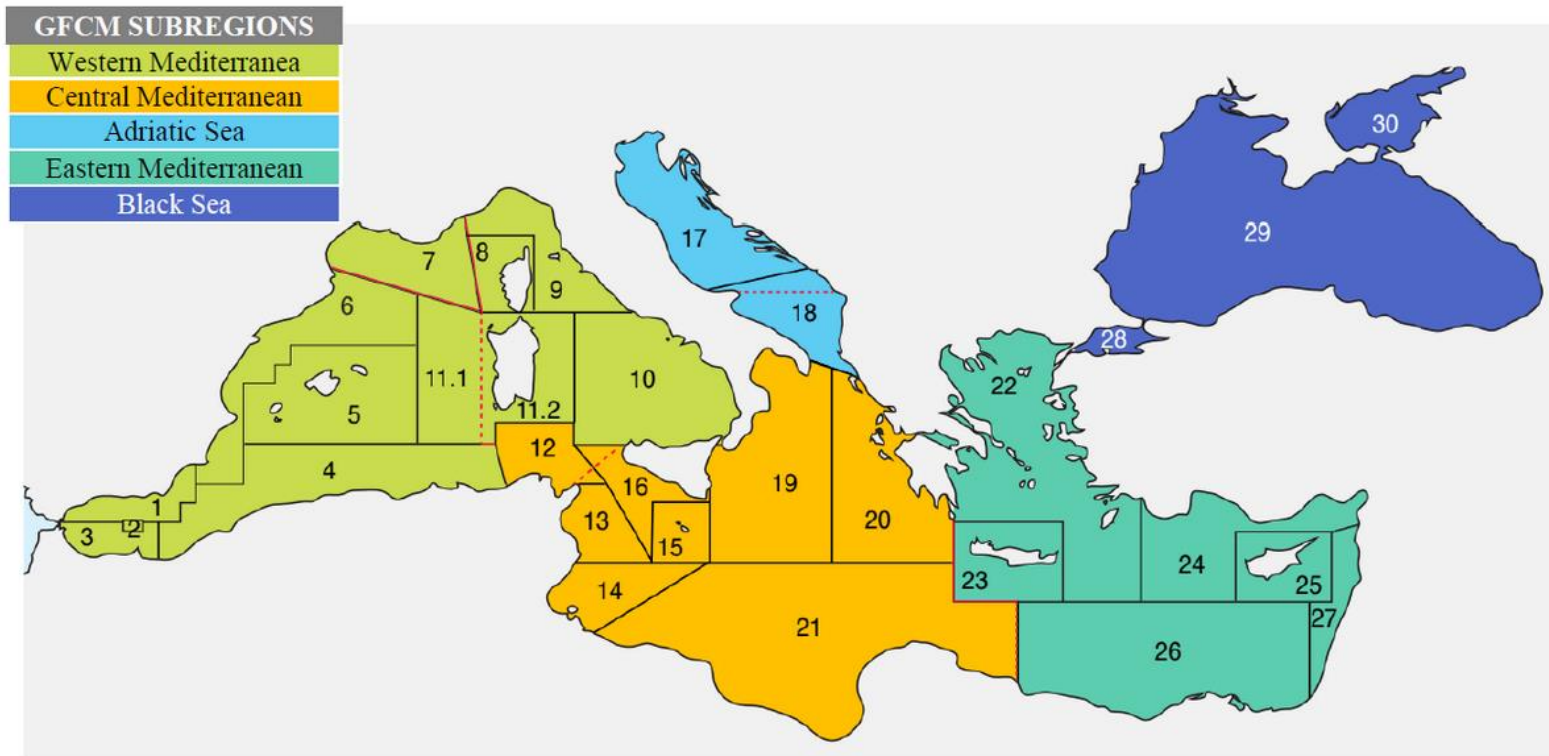
The lists of species identified is a dynamic tool, being subject to changes (i.e. deletion or insertion of species) upon decision by relevant subsidiary bodies of the GFCM (SAC and WGBS).

MANDATORY DATA
(submission by CPCs)

- Fishing effort - CPUE (group 1 and 2)
- Socio-economics - Species value (group 1 and 2)
- Biological information - Length data (group 1, 2 and 3)
- Biological information - Size at first maturity (group 1)
- Biological information - Maturity data (group 1)

GFCM fisheries data collection in support of advice
DCRF manual - Priority species (GFCM subregions)

GFCM SUBREGIONS
- Western Mediterranea
- Central Mediterranean
- Adriatic Sea
- Eastern Mediterranean
- Black Sea

---- FAO Statistical Divisions ---- GFCM Geographical Subareas (GSAs)

GFCM GSAs

01 - Northern Alboran Sea	07 - Gulf of Lion	13 - Gulf of Hammamet	19 - Western Ionian Sea	25 - Cyprus
02 - Alboran Island	08 - Corsica	14 - Gulf of Gabes	20 - Eastern Ionian Sea	26 - South Levant Sea
03 - Southern Alboran Sea	09 - Ligurian Sea and Northern Tyrrhenian Sea	15 - Malta	21 - Southern Ionian Sea	27 - Eastern Levant Sea
04 - Algeria	10 - South and Central Tyrrhenian Sea	16 - Southern Sicily	22 - Aegean Sea	28 - Marmara Sea
05 - Balearic Islands	11.1 - Sardinia (west) 11.2 - Sardinia (east)	17 - Northern Adriatic Sea	23 - Crete	29 - Black Sea
06 - Northern Spain	12 - Northern Tunisia	18 - Southern Adriatic Sea	24 - North Levant Sea	30 - Azov Sea

On the basis of the decisions taken at the 2018 sessions of the Scientific Advisory Committee on Fisheries (SAC) and Working Group of the Black Sea (WGBS), the list of Priority species by GFCM subregions has been updated for the reference year 2019* (the related data will be requested to CPCs in 2020).

*2018 DCRF manual v. 19.1
http://www.fao.org/gfcm/data/dcrf

GFCM fisheries data collection in support of advice
DCRF online platform

The **DCRF online platform** for the fisheries data reporting of National Authorities of respective CPCs to the GFCM in line with the requirements of the following GFCM decisions:

- Rec. GFCM/41/2017/6 (submission of data on fishing activities)

- Rec. GFCM/33/2009/5 (Fleet register)

- Rec. GFCM/33/2009/6 (Authorized vessels)

- Rec. GFCM/30/2006/2 (Dolphin fish fisheries)

- Rec. GFCM/36/2012/1 (Red coral)

The related transmission tools for data as requested by other GFCM decisions will be progressively put at the disposal of CPCs on the DCRF online platform

GFCM fisheries data collection in support of advice

Data submission calendar

Support is also provided to CPCs of the GFCM through:

- the regular update of the **data submission calendar** on the GFCM web site, available on PDF format also (http://www.fao.org/gfcm/data/calendar)

- the release of the **GFCM deadline reminder** (English and French) be sent to CPCs as soon as a deadline for data submission is approaching

DEADLINE	CATEGORY	TOPIC	REF. YEAR	FREQUENCY	FORMAT	TOOL	NUMBER	PARA
01-Jan	Trawl fisheries in the Levant Sea	List of areas and restrictions applied	n	One-shot	Word / PDF	E-mail	42/2018/3	28
	Trawl fisheries in the Ionian Sea	List of areas and restrictions applied					42/2018/4	27
31-Jan	Turbot fisheries in the Black Sea	Fishing activities [1]	n-1	Annual	Excel (free)	E-mail	41/2017/4	31
		Fishing vessels						30-35
		National plans					39/2015/3	19
	Demersals in the Strait of Sicily	National management measures/plans	n		Word / PDF		42/2018/5	25
	Blackspot Seabream (Alboran Sea)	Spatio-temporal restrictions					41/2017/2	9
	European eel	Management plans and measures		One-shot			42/2018/1	21
28-Feb	Blackspot Seabream (Alboran Sea)	Authorized and operating vessels	n	Annual	Excel (free)	E-mail	41/2017/2	12
31-Mar	Fishing activities	Selection fleet segments and species	n-1	Annual	Excel (GFCM)	E-mail	41/2017/6	1
30-Apr	Turbot fisheries in the Black Sea	Fishing activities	n	Annual	Excel (free)	E-mail	41/2017/4	31
	FRA in the Jabuka/Pomo Pit (Adriatic Sea)	Authorized vessels			Excel (GFCM)		41/2017/3	14
		Landing points						15
	Red coral	Authorized vessels	n (n+1)		Excel (GFCM)		41/2017/5	16
		Ports						19
31-May	Fleet	Fishing vessels	n-1	Annual	Excel (GFCM) - Task IV.1-2-3	DCRF platform	33/2009/5	2
							33/2009/6	
	Global figures	National fisheries			Online form - Task I		41/2017/6	1
	Socio-economics	Species value [a]	n-2	Annual/ biennial	Excel (GFCM) - Task VI.2-3-4			
		Operating costs [a]						
		Other economic aspects [a]						
01-Jun	Trawl fisheries in the Levant Sea	Authorized vessels and historical effort	n	Annual	Excel (free)	E-mail	42/2018/3	29
	Trawl fisheries in the Ionian Sea	Authorized vessels and historical effort					42/2018/4	28
30-Jun	Red coral	Fishing activities (catch and effort)	n-1	Annual	Excel (GFCM) - Task VII.5	DCRF platform	36/2012/1	8
							41/2017/5	18
	Catch	Landing			Excel (GFCM) - Task II.1-2			
		Catch data per species					41/2017/6	1
	Effort	Fleet segment			Excel (GFCM) - Task V.1-2-3			
		Fishing gear						
		CPUE						
	IUU	IUU fishing activities [a]	n		Word / PDF	E-mail	33/2009/8	3
	Demersals in the Strait of Sicily	Spatial restrictions					42/2018/5	11
31-Jul	Biological info	Length data	n-1	Annual	Excel (GFCM) - Task VII.2-3.1-3.2	DCRF platform	41/2017/6	1
		Size at first maturity						
		Maturity data						
	Dolphinfish fisheries	Fishing activities			Excel (GFCM) - Task VII.4.1-2		30/2006/2	5
	Incidental catch	Vulnerable species			Excel (GFCM) - Task III		41/2017/6	1
	Turbot fisheries in the Black Sea	Fishing activities [1]	n		Excel (free)	E-mail	41/2017/4	4
31-Aug	Demersals in the Strait of Sicily	Fishing activities	n-1	Annual	Excel (free)	E-mail	42/2018/5	20
	Piked dogfish in the Black Sea	Fishing activities [2]	n-1				39/2015/4	11
30-Sep	Biological info	European Eel	n-1	Annual	Excel (GFCM) - Task VII.6	DCRF platform	41/2017/6	1
	Piked dogfish in the Black Sea	Landing obligation scheme [a]			Word / PDF	E-mail	39/2015/4	8
	Turbot fisheries in the Black Sea	Results of control activities [7]					39/2015/3	19
31-Oct	Biological info	Stock assessment [a]	n-1	Annual	Excel (GFCM) - Task VII.1	DCRF platform	41/2017/6	2
	Small pelagics in the Adriatic Sea	Authorized vessels (updates)	n		Excel (free)	E-mail	37/2013/1	24
		National control programmes	n+1		Word / PDF			30
	Turbot fisheries in the Black Sea	Fishing activities [1]	n		Excel (free)		41/2017/4	31
30-Nov	Demersals in the Strait of Sicily	Fishing vessels	n	Annual	Excel (free)	E-mail	42/2018/5	20
		Landing points (updates)						30
	Socio-economics	Economic and social data	n-1		Excel (GFCM) - Task VI.1	DCRF platform	42/2018/6	2
	Turbot fisheries in the Black Sea	Landing points			Excel (free)		41/2017/4	47
	Blackspot Seabream (Alboran Sea)	Fishing activities	n-1		Excel (free)	E-mail	41/2017/2	12
	Trawl fisheries in the Levant Sea	Changes to the list of designated landing points	n		Word / PDF		42/2018/3	42
	Trawl fisheries in the Ionian Sea	Changes to the list of designated landing points					42/2018/4	42
01-Dec	International scheme (Strait of Sicily)	List of inspectors	n		Word / PDF	E-mail	41/2017/8	2
15-Dec		List of vessels and aircrafts	n					4
31-Dec	Aquaculture	Production statistics	n-1	Annual	Online form	SIPAM platform	41/2017/1	1
		Production centres						
		Market			Excel (GFCM)			

GFCM assessment of compliance

GFCM assessment of compliance

As an RFMO, the GFCM process of assessing compliance with existing recommendations is very formal and complex. To this end a dedicated **Compliance Committee** (CoC) works on annual basis. Non-compliance have implications at the level of national administrations: letter of identification submitted to national authorities (annual **clarification process**). Compliance is only assessed two years after recommendations are adopted.

Before the adoption of the DCRF, compliance on data submissions was difficult to assess, and also the process was slow and not useful in the context of provision of scientific advice in support of management.

GFCM assessment of compliance
Implementation of data quality indicators

2016 | As a part of the process to implement the DCRF, the introduction of tentative **data quality indicators** was agreed by the CoC; once consolidated, these will allow to have a comprehensive assessment of yearly submitted data.

2017 | The **41st session of the GFCM Commission** agreed to apply conformity, stability and consistency indicators for quality checks (with preliminary thresholds) to the data as communicated in 2017 by those CPCs that chose to comply with the temporary Recommendation GFCM/40/2016/2 on the progressive implementation of data submission in line with the DCRF.

In 2017 some preliminary quality controls (completeness and conformity) were directly embedded in the **Excel data reporting forms** on the **DCRF online platform** which were used by those CPCs that followed **Rec. GFCM/40/2016/2**.

GFCM assessment of compliance
Implementation of data quality indicators

2018

At the beginning of <u>2018</u>, a **feasibility phase** on the tentative application of fisheries quality indicators such as timeliness, completeness, conformity (with preliminary thresholds for different data variables), stability (with preliminary threshold equals to 50%) and consistency was initiated by the GFCM Secretariat directly on the **DCRF online platform** by leveraging **specific R packages**.

Subsequent to the decision taken at the forty-second session of the Commission (FAO headquarters, Italy, October 2018), this **<u>feasibility phase was then extended to the fisheries data with reference year 2017</u>**, received by the GFCM Secretariat through the DCRF online platform.

GFCM assessment of compliance
Implementation of data quality indicators

2019

In order to streamline communication flows with CPCs for the exchange of information on data quality assessment, the **DCRF data quality section** was released by the GFCM Secretariat on the online platform directly with country-specific data quality assessment dashboards for each indicators, progressively put at disposal to CPCs with several consultation facilities, such as sort and filter, copy and export as Excel or PDF files.

Feasibility phase for the implementation of fisheries quality indicators
on the DCRF online platform

Feasibility phase for the implementation of fisheries quality indicators on the DCRF online platform

5
Fisheries quality indicators
Timeliness, **completeness**, **conformity**, **stability** and **consistency**

228
National datasets (**66 752** data rows) for the reference year **2017**

Recommendation GFCM/41/2017/6

Application of indicators directly on the DCRF online platform by leveraging **specific R-based package** developed by the Secretariat

Advanced consultation facilities based on country-specific data **quality assessment dashboards** for each indicator

Data quality section on the **DCRF online platform**

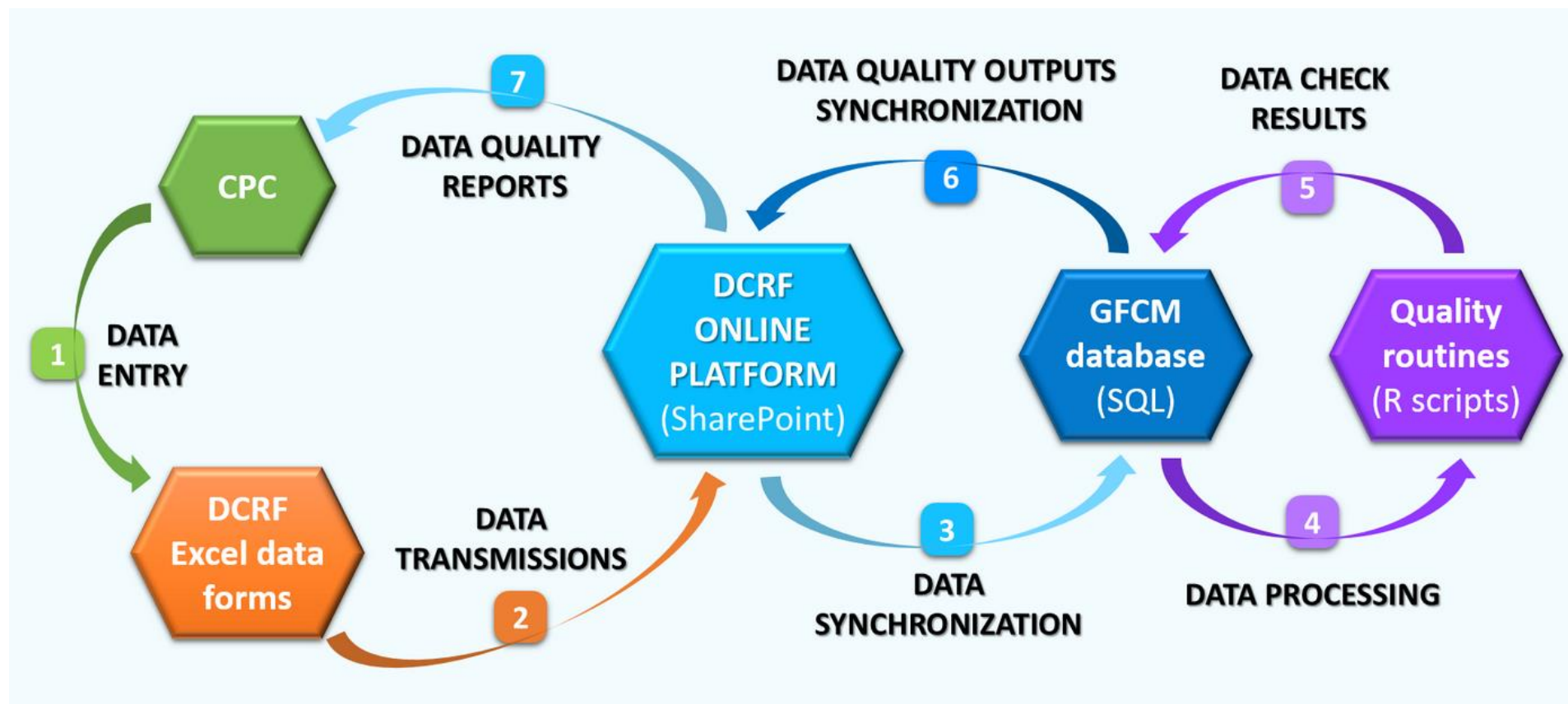# Feasibility phase for the implementation of fisheries quality indicators on the DCRF online platform

DCRF WORKFLOW - CPCs and GFCM Secretariat [Compliance / IT / Statistics]

- ✓ Annual release of advanced data **reporting tools** Excel-based on the DCRF online platform in line with the provisions set in **GFCM recommendations**

- ✓ Official **submission** of national datasets by **CPCs** ("T" transmitted status)

- ✓ Update the **SQL DCRF DB** upon transmission by CPCs

- ✓ Data processing through an **R-based package** developed by the Secretariat (business rules and statistical algorithms)

- ✓ Compilation of **data check results** and generation of CPC-specific online dashboard for each quality indicator (data quality reports)

- ✓ Publication of **data quality dashboards** into a secure repository of the DCRF online platform (synchronization system released by the Secretariat)

- ✓ **Consultation** of data quality reports by **CPCs** through the dashboards for each indicator (online navigation, filtering facility, export to Excel and PDF)

Feasibility phase for the implementation of fisheries quality indicators on the DCRF online platform

DCRF WORKFLOW
(data transmission, storage and quality control)

Feasibility phase for the implementation of fisheries quality indicators on the DCRF online platform

INDICATORS	DEFINITION	CHECKS
TIMELINESS	Data transmission by CPCs meets the deadlines set under relevant GFCM recommendations.	Number of days between the transmission of each data table and the deadline set by relevant GFCM recommendations.
COMPLETENESS	**Mandatory fields** All data transmitted by CPCs contain all mandatory information as required under relevant GFCM recommendations	Percentage of mandatory fields with missing values.
	GSA - Fleet segment If applicable, this completeness issue is identified when not all the combinations GSA-segment, as communicated by CPC at the beginning of the year within the DCRF selection process, are reported in each data table.	Percentage of missing combinations GSA-segment [DCRF selection process]
	Species[1] If applicable, this completeness issue is identified when not all the species, as communicated by CPC at the beginning of the year within the DCRF selection process, are reported in each data table.	Percentage of missing species [DCRF selection process]
CONFORMITY	The data transmitted by CPCs adhere to GFCM standards (codification and format).	Percentage of data rows with anomalous values. This check also includes duplicates.
STABILITY	The data transmitted by CPCs vary within acceptable limits compared with the values of the same variables in the recent past.[2]	Percentage of data rows with values outside the expected range for each data table over time.
CONSISTENCY	The data transmitted by CPCs are coherent with the values of similar variables reported in different data tables for the same reference year.[3]	Number of data rows with incoherent values (data fields) in relevant data tables.

[1] This check is not implemented yet.
[2] For testing purposes, in the context of the feasibility phase, the threshold applied for all variables is equal to 50%.
[3] The data analysis includes checks with similar variables from other official data sources.

Feasibility phase for the implementation of fisheries quality indicators on the DCRF online platform

DCRF data quality dashboard - Overview

GFCM Data Collection Reference Framework   National correspondence ▾   Disclaimer   Contact the Secretariat   DCRF Task Libraries (Secretariat) ▾   ✎ EDIT LINKS

Search this site ▾ 🔍

DCRF Data quality - Dashboards

Feasibility phase / Overview / ▮▮▮▮ / Reference year 2017

This section reproduces the overview of the results of the application of the quality indicators on the data (reference year 2017) transmitted by ▮▮▮▮ through the DCRF online platform in line with Recommendation GFCM/41/2017/6.

Updated on: 12/06/2019

Summary table on preliminary quality assessments of national data submitted to the GFCM

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Search: _____

CPC	Task - Full name of the subtask	Reference year	Data rows (number)	Deadline	Transmission status	Timeliness (days)	Completeness (% GSA-Segment)	Completeness (% mandatory fields)	Conformity (%)	Stability (%)	Consistency (number)
	I - Global figures	2017	1	2018-05-31	T	14		0	0	0	1
	II1 - Catch / Landing	2017	7	2018-06-30	T	-38	0	2	14		7
	II2 - Catch / Catch per species	2017	11	2018-06-30	T	-100	43	0	0		11
	III - Incidental catch of vulnerable species	2017	0	2018-07-31	A						
	V1 - Fishing effort / Fleet segment	2017	7	2018-06-30	T	-38	0	0	0		7
	V2 - Fishing effort / Fishing gear	2017	7	2018-06-30	T	-38		0	0		7
	V3 - Fishing effort / CPUE	2017	7	2018-06-30	T	-38		9	100		7
	VI1 - Socio-economics / Economic and social data	2017	0	2018-11-30	A						
	VI2 - Socio-economics / Operating costs	2017	4	2019-05-31	T	364	43	7	100		
	VI3 - Socio-economics / Species value	2017	4	2019-05-31	T	364	43	0	0		

Showing 1 to 10 of 15 data rows

Previous   1   2   Next

Feasibility phase for the implementation of fisheries quality indicators on the DCRF online platform

TIMELINESS **43%** Datasets communicated after the deadlines
[**36%** of completely missing datasets]

COMPLETENESS **31%** Issues for selection GSA-Segments

6% Issues for mandatory fields

CONFORMITY **16%** Data rows with issues
(wrong codifications, formats or outside thresholds)

STABILITY **35%** Data rows with issues
(values outside the threshold of 50% from 2016)

CONSISTENCY **15 197** Data rows with issues (non-coherent values of variables compared to similar in other tables)

As at 1st July 2019

Feasibility phase for the implementation of fisheries quality indicators on the DCRF online platform

CONCLUSIONS

- ✓ **Differences in data quality** across the array of **data topics** (DCRF tasks/subtasks) and **countries** (GFCM subregions)

- ✓ **Timeliness** is an important issue in terms of responsibility of CPCs in transmitting their national data to the GFCM according to existing obligations

- ✓ **Completeness** presents some problematic situations in its check for the combination of GSA-Segment

- ✓ **Consistency**, the most complex check, presents several critical points in the quality assessment with the highest number of quality issues

Coordinated actions between GFCM and CPCs have to be bolstered in order to ensure joint efforts on completeness and consistency checks particularly.

Feasibility phase for the implementation of fisheries quality indicators on the DCRF online platform

21st session of the Scientific Advisory Committee (SAC), Cairo, Egypt, 24-27 June 2019

The Committee agreed to consolidate the application of quality indicators (timeliness, completeness, conformity, stability and consistency) to the data transmitted by CPCs through the DCRF online platform, including some of the data that were not initially foreseen in the feasibility phase.

SAC WORK PLAN FOR 2019–2021

Workshop on fisheries data submissions and implementation of quality indicators on the DCRF online platform (February 2020)

Thank you for your attention

GFCM Secretariat

2019 Liaison Meeting

DG Maritime Affairs and Fisheries, Brussels, Belgium, 3-4 September 2019