



Food and Agriculture
Organization of the
United Nations



General Fisheries Commission
for the Mediterranean
Commission générale des pêches
pour la Méditerranée

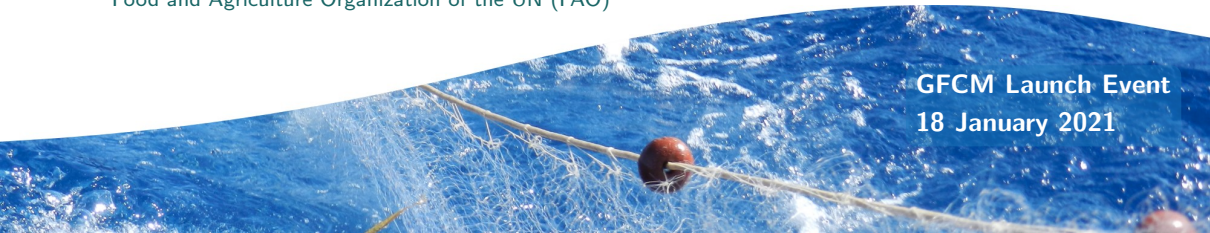
Stock Assessment Results (STAR)

New organization of GFCM stock assessments

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General Fisheries Commission for the Mediterranean (GFCM)
Food and Agriculture Organization of the UN (FAO)

GFCM Launch Event
18 January 2021



Overview

Areas to improve *labor-intensive tasks, risk of errors*

unreliable data flow, unavailable time series

STAR design *stock assessors submit data, they are stored in one place*

quality-controlled products, future extensions

Implementation *Excel template, SQL database, automated Table of Advice*

New framework *streamlined automation of tasks, reduced risk of errors*

guaranteed data flow, new collection of time series



Stock assessments

In a nutshell

Estimate current (and historical) levels of exploitation and stock size

Provide a quantitative basis for biological advice, with a focus on long-term yield and stock size

Results

Current F and B

Reference points

Current status relative to reference points

Time series of recruitment, stock size, catches, exploitation level, and effort

Short-term forecast

Other results: N at age, F at age, other

Draft advice

From assessment results to advice

Time series of recruitment, stock size, catches, exploitation level, and effort



Recent F and B



Current F and B (calculation depends on whether model is VPA type)

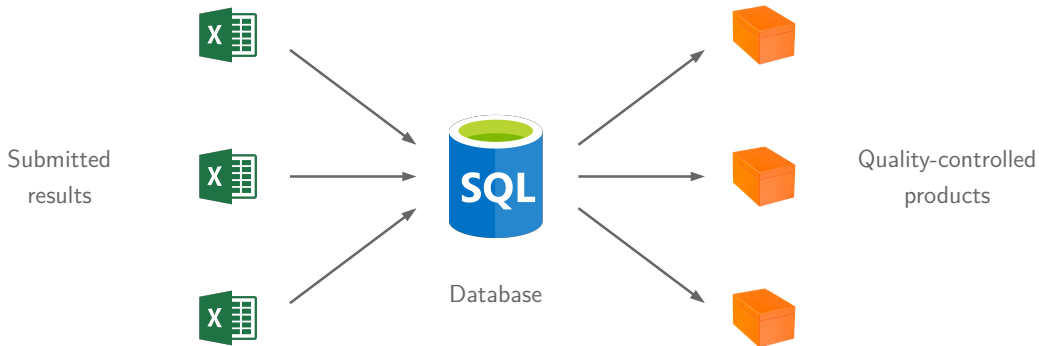


Quantitative status ⇐ Reference points



Draft advice ⇐ Forecast

STAR framework



STAR data container



star_template.xls

Plain style

- ▶ no macros
- ▶ no hidden features

Structure

- ▶ sheets to separate different parts
- ▶ formulas to calculate stock status and advice
- ▶ table objects to export to other software

Excel formulas

Time series of recruitment, stock size, catches, exploitation level, and effort



Recent F and B



Current F and B (calculation depends on whether model is VPA type)



Quantitative status ⇐ Reference points



Draft advice ⇐ Forecast

O101

X ✓ fx

Stock Assessment Results (STAR)

version 2021-01-15

The purpose of this Excel workbook is to submit the results of a GFCM stock assessment to the STAR database

The information in this file will also become the information included in the Table of Advice produced at the end of a session of the GFCM WGs on Stock Assessment

The submitted information is organized in four sheets:

- 1) Metadata
- 2) Summary
- 3) Forecast
- 4) Other tables

The formatted advice appears on the Advice sheet

Further information about STAR can be found at

<https://github.com/gfcm/star>

Readme

Metadata

Summary

Forecast

Other

Vocabularies

Advice



star_template.xlsx - Excel

FileHomeInsertPage LayoutFormulasDataReviewViewTell me what you want to do...Arni MagnussonShare

O101

	A	B	C	D	E	F	G	H
4	Stock Information	Scientific Name	GSA 1	GSA 2	GSA 3	GSA 4	GSA 5	
5								
6								
7		Select up to five GSA areas						
8								
9		Assessment Information						
10	Assessment Year							
11	Validation Status							
12	Year Benchmarked							
13	Assessment Method							
14	Expert Group							
15	Contact Person							VPA-Type Model
16								
17								
18								
19		For Advice Table			Family	Reference Point	Value	
20	Quantitative Status (F/Ftarget)				F or E target			
21	Quantitative Status (B/Btarget)				B target			
22	Quantitative Status (B/Bthreshold)				B threshold			
23	Quantitative Status (B/Blimit)				B limit			
24	Stock Status Text (Exploitation)							
25	Stock Status Text (Stock Size)							
26	Scientific Advice							Forecast Included
27	WG Comments							
28								

ReadmeMetadataSummaryForecastOtherVocabulariesAdvice

Ready90%

O101

	D	E	F	G	H	I	J	K	L	M
10										
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34										

VPA-Type Model

Current F and B are calculated as average of last 3 years when the assessment model is VPA-type

Family
F or E target
B target
B threshold
B limit

Reference Point	Value

Current F
Current B

Forecast Included

O101

X ✓ fx

	A	B	C	D	E	F	G	H	I
1	Table Information								
2	Type of confidence intervals			(if lower and upper limits are supplied)					
3	Recruitment Unit		thousands						
4	Stock Size Indicator #1								
5	Stock Size Unit #1		tonnes						
6	Stock Size Indicator #2								
7	Stock Size Unit #2		tonnes						
8	Catches Unit		tonnes						
9	Exploitation Unit								
10	Fishing Effort Unit								
11									
12									
13									
14	Recruitment			Stock Size Indicator #1			Stock Size Indicator #2		
15									
16	Year	Rec_lower	Rec	Rec_upper	Stock1_lower	Stock1	Stock1_upper	Stock2_lower	Stock2
17									
18									
19									
20									
21									
22									
23									
24									

All time series below must be filled in if available

Recent B

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O101

X ✓ fx

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Forecast input and results must be included, if a short-term forecast analysis was run																
2																	
3	This part of the STAR template is still under development, but please try to paste																
4	the forecast table(s) below in the format that it has been presented in the past																
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O101

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Stock assessors are invited to use this sheet to submit additional tables from the stock assessment																
2																	
3	For example, age-specific results (N at age, F at age), fitted values, residuals, etc.																
4																	
5	This sheet is a free-format general container, where any rectangular area like this...																
6																	
7	Numbers at age																
8																	
9	Year	3	4	5	6												
10	1990	3.14159	3.14159	3.14159	3.14159												
11	1991	3.14159	3.14159	3.14159	3.14159												
12	1992	3.14159	3.14159	3.14159	3.14159												
13																	
14	...can be used to archive important results from the analysis																
15																	
16	When using this sheet, it's best to delete these comments and example first :)																
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star_template.xlsx - Excel

FileHomeInsertPage LayoutFormulasDataReviewViewTell me what you want to do...Arni MagnussonShare

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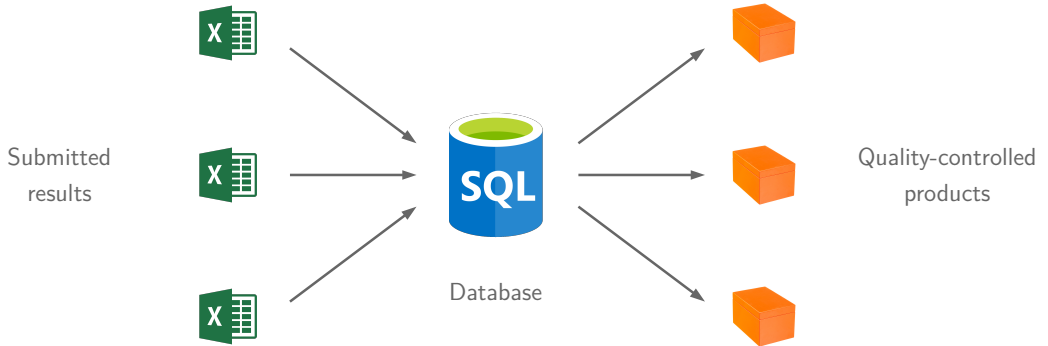
	A	B	C	D	E	F	G
1	https://gfcml.sharepoint.com/sites/DCRF/Lists/Ref_Species/AllItems.aspx			http://www.fao.org/gfcm/data/maps/gsas/en/			
2	Scientific Name	English Name		GSA	Subarea Name		Validation Status
3	Acanthocardia tuberculata	Tuberculate cockle		1	Northern Alboran Sea		Quantitative
4	Acipenser gueldenstaedtii	Danube sturgeon(=Osetr)		2	Alboran Island		Qualitative
5	Acipenser stellatus	Starry sturgeon		3	Southern Alboran Sea		Preliminary
6	Acipenser sturio	Sturgeon		4	Algeria		
7	Aequipecten opercularis	Queen scallop		5	Balearic Islands		
8	Alepes djedaba	Shrimp scad		6	Northern Spain		
9	Alloteuthis media	Midsize squid		7	Gulf of Lion		
10	Alloteuthis subulata	European common squid		8	Corsica		Confidence Interval
11	Alopias superciliosus	Bigeye thresher		9	Ligurian Sea and Northern Tyrrhenian Sea		90%
12	Alopias vulpinus	Thresher		10	Southern and Central Tyrrhenian Sea		95%
13	Alosa alosa	Allis shad		11.1	Western Sardinia		SE
14	Alosa alosa, A. fallax	Allis and twaite shads		11.2	Eastern Sardinia		2 x SE
15	Alosa caspia	Caspian shad		12	Northern Tunisia		
16	Alosa fallax	Twaite shad		13	Gulf of Hammamet		
17	Alosa pontica	Pontic shad		14	Gulf of Gabes		
18	Alosa spp	Shads nei		15	Malta		
19	Ammodytes spp	Sandeels(=Sandlances) nei		16	Southern Sicily		Boolean
20	Ammodytes tobianus	Small sandeel		17	Northern Adriatic Sea		Yes
21	Anguilla anguilla	European eel		18	Southern Adriatic Sea		No
22	Antimora rostrata	Blue antimora		19	Western Ionian Sea		
23	Aphia minuta	Transparent goby		20	Eastern Ionian Sea		
24	Arca noae	Noah's ark		21	Southern Ionian Sea		
25	Argentina sphyraena	Argentine		22	Aegean Sea		

ReadmeMetadataSummaryForecastOtherVocabulariesAdvice

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O101							
	A	B	C	D	E	F	
1	GSA	Species	Method	Current Levels	Reference Points	Quantitative Status	Stock Status
2	1,2,3	Acanthocardia tuberculata	SS3	Fc = 0.33, Bc = 1337	Fmsy = 0.3, Bpa = 1000	F/Ftarget = 1.11, B/Bthreshold = 1.34	The current exp
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Summary



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Implementation *Excel template, SQL database, automated Table of Advice*

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Summary

Stock Assessment Results (STAR) is a new framework to organize GFCM stock assessment results.

It streamlines and automates the **information flow** from stock assessments to scientific advice, strengthens **quality assurance** and **data dissemination**.

The central part of the framework will be STAR database, scheduled to launch in 2021. It will serve as a foundation to provide a variety of quality-controlled data products related to the management of fisheries in the Mediterranean and the Black Sea.