



GENERAL FISHERIES COMMISSION FOR  
THE MEDITERRANEAN  
COMMISSION GÉNÉRALE DES PÊCHES  
POUR LA MÉDITERRANÉE



SAC GFCM  
Sub-Committee on Stock Assessment

## SCSA Assessment Forms

> Enter <



|   |                                |
|---|--------------------------------|
| Tool designer<br>(GFCM consultant)                                | <b>Federico De Rossi</b>       |
| FAO backstopping officer for SCSA                                 | <b>Jordi Lleonart</b>          |
| SCSA coordinator  | <b>Constantina Karlou-Riga</b> |
| GFCM Bio-Statistician   | <b>Matthew Camilleri</b>       |
| GFCM Deputy Executive Secretary /<br>Adviser fisheries management | <b>Abdellah Srour</b>          |

## SAC GFCM - Sub-Committee on Stock Assessment (SCSA)

**PLEASE READ CAREFULLY BEFORE STARTING THE DATA ENTRY**

### Macro - Security settings

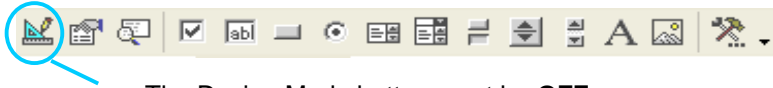
In order to ensure the proper full working of this Data Entry System, **the macros must be allowed to run.**

To change the security settings, please go to: **Tools > Macro > Security** and then select the **Medium** level. Close and re-open the file.

Now you are ready to start by clicking on the Cover button!

### Control toolbox settings

To visualize the **Control toolbox** go to: **View > Toolbars > Control toolbox**



The Design Mode button must be **OFF**.

### WARNINGS



Please do not try to **Delete, Rename, Move** or **Copy** any Excel Worksheets.



Right now it is not possible to **Print** the completed worksheets only.



Once the data entry process is completed, the **file size** will be increased significantly. Before sending it by email, please compress the file by using any zip tool available in your pc.

### Colours and symbols meaning

#### WORKSHEETS

Green ► Not compulsory sheet

Orange ► Compulsory sheet

Red ►  Not completed sheet

Bright green ►  Completed sheet

#### CELLS

Black asterisk ► \* Compulsory sheet/field

Turquoise ►  Compulsory field not yet completed

White ►  Free cell

Light green ►  Cell with the scroll-down menu

Light yellow ►  Auto-complete cell

### Excel shortcuts

**Ctrl + C** Copy

**Ctrl + V** Paste

**Ctrl + X** Cut  
**Ctrl + Z** Undo  
**Ctrl + P** Print  
**Alt + Enter** Line break within a cell

For more detailed information about Excel shortcut and function keys, please refer to the Microsoft website. > [CLICK HERE](#) <

**SAC GFCM**  
**Sub-Committee on Stock Assessment**

**SCSA Assessment Forms Release 2 (2007) beta version**

Since the SAC, and SCSA, inception (1999) a set of assessment forms were made available to scientists in order to provide a common framework to present assessments.

It has been decided to present a new release of these forms to facilitate their use. We took advantage of these upgrade to modify and amend some aspects. We would like to receive comments and suggestions from the users in order to improve the forms.

The structure of this new release is basically the same. The differences are:

- Migration from Word to Excel
- Some fields (yellow) are filled automatically
- Some sheets have been added
  - o A cover sheet with title, authors, species and GSAs
  - o A new sheet "other" allowing to include assessments based on methodologies other than the usual ones.
  - o An abstract sheet to be included (copy/paste) in the SCSA report
- It is more clear what sheets or fields are compulsory to fill
- The sheets for direct methods have not been yet upgraded

**Excerpts from the presentation of 1<sup>st</sup> version of the assessment forms (1999), however the sheet "other" can be used in such a case**

Each assessment consists of several sheets. Each assessment will take, at least, one sheet of paper numbered "0" (Sheet #0) and will also include no less than one copy of sheets "B", "P1" and "P2a" (now using the current "operational units" terminology). It is not compulsory to fill out any of the other sheets that make up this assessment form, but the person in charge is supposed to fill out some of them: otherwise no assessment is actually made. There may be more than one copy in several cases. Sheets "D" (diagnosis) and "Z" (conclusions and recommendations) should be considered as essential too.

| Sheet | Title                                    | Contents  | # of sheets                           | Priority                  |
|-------|--|---|---------------------------------------|---------------------------|
| 0     | Preliminary basic data on the assessment | Species, person in charge, date and code. All the sheets that belong to the same assessment share this code.        | 1                                     | Indispensable             |
| B     | Biology of the species                   | Biological parameters used in the analyses (it is assumed that only one set of parameters is used).                 | 1                                     | Indispensable             |
| P1    | General information about the fishery    | Catches by gear and associated fleet.   | 1 or more                             | Indispensable             |
| P2a   | Fishery by Operational Unit              | Time series for the operational in question, including structure by size (or age).                                  | At least as many as the OU numbers    | Indispensable             |
| P2b   | Fishery by Operational Unit              | Accompanying species and regulations applicable to operational unit.  | At least as many as the OU numbers    | If available              |
| G     | Indirect methods: global model           | Description of model, data, parameters and results of each analysis.  | As many as used in the analysis       | If available              |
| A1    | Indirect methods: VPA, LCA               | Description of model used and of general results of an analysis.  | As many as used in the analysis       | If available              |
| A2    | Indirect methods: data                   | Description of data used by gear for the analysis in A1.  | As many as used in the analysis by OU | If available, requires A1 |
| A3    | Indirect methods: results of VPA         | Detailed description of results by gear, structured by size or age.   | As many as used in the analysis by OU | If available, requires A1 |
| Y     | Indirect methods: Y/R                    | Description of model, data, parameters and results.   | As many as used in the analysis       | If available              |
| Other | Other assessment methods                 | Description of model, data, parameters and results of other assessment methods not included in the previous sheets. | 1                                     | If available              |
| D     | Diagnosis                                | Synthesis of results of analyses and diagnosis on the state of resources.   | 1                                     | Indispensable             |
| Z     | Objectives and recommendations           | Set the objectives to be attained and recommendations for their attainment.   | 1                                     | Indispensable             |

|   |          |  |             |              |
|---|----------|--|-------------|--------------|
| C | Comments | At the option of the person in charge. | Unspecified | If available |
|---|----------|--|-------------|--------------|

# SAC GFCM

## Sub-Committee on Stock Assessment

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|              |           |                  |             |              |                   |
|--------------|-----------|------------------|-------------|--------------|-------------------|
| <b>Date*</b> | <b>19</b> | <b>September</b> | <b>2008</b> | <b>Code*</b> | <b>ANE1708San</b> |
|--------------|-----------|------------------|-------------|--------------|-------------------|

**Authors\*** Santojanni A.<sup>1a</sup>, Cingolani N.<sup>1a</sup>, Donato F.<sup>1a</sup>, Colella S.<sup>1a</sup>, Belardinelli A.<sup>1a</sup>, Giannetti G.<sup>1a</sup>, Leonori I.<sup>1b</sup>, Sinovcic G.<sup>2</sup>, Marceta B.<sup>3</sup>

**Affiliation\***  
 1a CNR-ISMAR-SPM, Fish Population Dynamics Unit, Ancona (Italy), a.santojanni@ismar.cnr.it  
 1b CNR-ISMAR-SPM, Marine Acoustics Unit, Ancona (Italy)  
 2 Institute of Oceanography and Fisheries, Split (Croatia)  
 3 Fisheries Research Institute of Slovenia, Ljubljana (Slovenia)

**Species Scientific name\***

**1** Source: GFCM Priority Species

**2** Source: -

**3** Source: -

**Geographical area\*** South boundary: Gargano Promontory

**Geographical Sub-Area (GSA)\*** 17 - Northern Adriatic

Combination of GSAs

|   |  |
|---|--|
| 1 |  |
| 2 |  |
| 3 |  |

**SAC GFCM - Sub-Committee on Stock Assessment (SCSA)**

Assessment form

Sheet #0

Basic data on the assessment

Code: ANE1708San

|       |    |     |      |          |   |
|-------|----|-----|------|----------|---|
| Date* | 19 | Sep | 2008 | Authors* | Santojanni A.1a, Cingolani N.1a, Donato F.1a, Colella S.1a, Belardinelli A.1a, Giannetti G.1a, Leonori I.1b, Sinovic G.2, Marceta B.3 |
|-------|----|-----|------|----------|---|

|                          |                              |                      |         |
|--------------------------|------------------------------|----------------------|---------|
| Species Scientific name* | Engraulis encrasicolus - ANE | Species common name* | Anchovy |
|--------------------------|------------------------------|----------------------|---------|

**Data Source**

|      |                        |                 |           |
|------|------------------------|-----------------|-----------|
| GSA* | 17 - Northern Adriatic | Period of time* | 1975-2007 |
|------|------------------------|-----------------|-----------|

**Description of the analysis**

|                       |  |                |  |
|-----------------------|--|----------------|--|
| Type of data*         | Catch at age and abundance index for tuning.                   | Data source*   | Commercial (catch at age) and echo-survey (abundance index). |
| Method of assessment* | Virtual Population Analysis (VPA) with Laurec-Shepherd tuning. | Software used* | Darby C.D., Flatman S. 1994.                                 |

**Sheets filled out**

| B | P1  | P2a | P2b   | G     | A1    | A2    | A3    | Y     | Other | D | Z | C     |
|---|-----|-----|-------|-------|-------|-------|-------|-------|-------|---|---|-------|
| 1 | --- | --- | #REF! | #REF! | #REF! | #REF! | #REF! | #REF! | #REF! | 1 | 1 | #REF! |

**Comments, bibliography, etc.**

Fishery: mid-water trawlers and purse seiners.  
 Bibliography: see the original abstract "Anchovy and sardine stock assessment in the GSA 17: 1975-2007".

**Comments, bibliography, etc.**

Sheet #0 (page 2)



A large, empty rectangular box with a thin black border, occupying the majority of the page. This area is typically used for providing detailed responses or evidence during an assessment.

**SAC GFCM - Sub-Committee on Stock Assessment (SCSA)**

Assessment form

Sheet B  
Biology of the species

Code: ANE1708San

**Biology**

|   |        |     |      |               |                     |    |
|---|--------|-----|------|---------------|---------------------|----|
| Somatic magnitude measured (LH, LC, etc)* |        |     |      | Total length. | Units*              | cm |
| Sex                                       | Fem    | Mal | Both | Unsexed       |                     |    |
| Maximum size observed                     | 18,5   |     |      |               | Reproduction season |    |
| Size at first maturity                    |        |     |      |               | Reproduction areas  |    |
| Recruitment size                          | 9-10.5 |     |      |               | Nursery areas       |    |

**Parameters used (state units and information sources)**

|                            |              | Units | Sex    |      |      |         |
|----------------------------|--------------|-------|--------|------|------|---------|
|                            |              |       | female | male | both | unsexed |
| Growth model               | $L_{\infty}$ |       |        |      |      |         |
|                            | K            |       |        |      |      |         |
|                            | t0           |       |        |      |      |         |
|                            | Data source  |       |        |      |      |         |
| Length weight relationship | a            |       |        |      |      |         |
|                            | b            |       |        |      |      |         |
| M                          | 0.6 - 0.8    |       |        |      |      | x       |
| sex ratio (mal/fem)        |              |       |        |      |      |         |

**Comments**

More emphasis on M = 0.6 (year-1) (precautionary).  
 Reference for both M = 0.6 and M = 0.8 :  
 Santojanni A., Cingolani N., Arneri E., Belardinelli A., Giannetti G., Colella S., Donato F. 2006. Use of an exploitation rate threshold in the management of anchovy and sardine stocks in the Adriatic Sea. *Biologia Marina Mediterranea*, 13(3): 98-111.

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**SAC GFCM - Sub-Committee on Stock Assessment (SCSA)**

Assessment form

Sheet P1

General information about the fishery

Code: ANE1708San

|  |  |           |           |
|--|--|-----------|-----------|
| Data source*   | ISMAR-CNR-SPM, Ancona, Italy   | Year (s)* | 1975-2007 |
| Data aggregation (by year, average figures between years, etc.)* | Catch data are relative to the total fleet (Italy, Croatia, Slovenia). Split-year was used, e.g. split-year 1976 is formed by Jan-May of 1976 and Jun-Dec of 1975. |           |           |

**Fleet and catches (please state units)**

|                     | Country | GSA | Fleet Segment | Fishing Gear Class | Group of Target Species | Species |
|---------------------|---------|-----|---------------|--------------------|-------------------------|---------|
| Operational Unit 1* |         |     |               |                    |                         |         |
| Operational Unit 2  |         |     |               |                    |                         |         |
| Operational Unit 3  |         |     |               |                    |                         |         |
| Operational Unit 4  |         |     |               |                    |                         |         |
| Operational Unit 5  |         |     |               |                    |                         |         |

| Operational Units* | Fleet (n° of boats)* | Kilos or Tons | Catch (species assessed) | Other species caught | Discards (species assessed) | Discards (other species caught) | Effort units |
|--------------------|----------------------|---------------|--------------------------|----------------------|-----------------------------|---------------------------------|--------------|
|                    |                      |               |                          |                      |                             |                                 |              |
|                    |                      |               |                          |                      |                             |                                 |              |
|                    |                      |               |                          |                      |                             |                                 |              |
|                    |                      |               |                          |                      |                             |                                 |              |
| Total              |                      |               |                          |                      |                             |                                 |              |

|                    |                             |
|--------------------|-----------------------------|
| Legal minimum size | Italy: 9 cm. Croatia: 9 cm. |
|--------------------|-----------------------------|

**Comments**

*Comments*

**Comments**

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**SAC GFCM - Sub-Committee on Stock Assessment (SCSA)**

Assessment form

Sheet P2a  
Fishery by Operational Unit

Code: ANE1708San  
#REF!

|              |                               |           |  |
|--------------|-------------------------------|-----------|--|
| Data source* | ISMAR-CNR-SPM, Ancona, Italy. | OpUnit 1* |  |
|--------------|-------------------------------|-----------|--|

**Time series**

|                 |       |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|
| Year*           | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  |
| Catch           | 26844 | 29611 | 30753 | 24427 | 28954 | 28184 |
| Minimum size    |       |       |       |       |       |       |
| Average size Lc |       |       |       |       |       |       |
| Maximum size    |       |       |       |       |       |       |
| Fleet           |       |       |       |       |       |       |

|                 |       |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|
| Year            | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  |
| Catch           | 23115 | 24261 | 31280 | 42290 | 41468 | 44084 |
| Minimum size    |       |       |       |       |       |       |
| Average size Lc |       |       |       |       |       |       |
| Maximum size    |       |       |       |       |       |       |
| Fleet           |       |       |       |       |       |       |

**Selectivity**

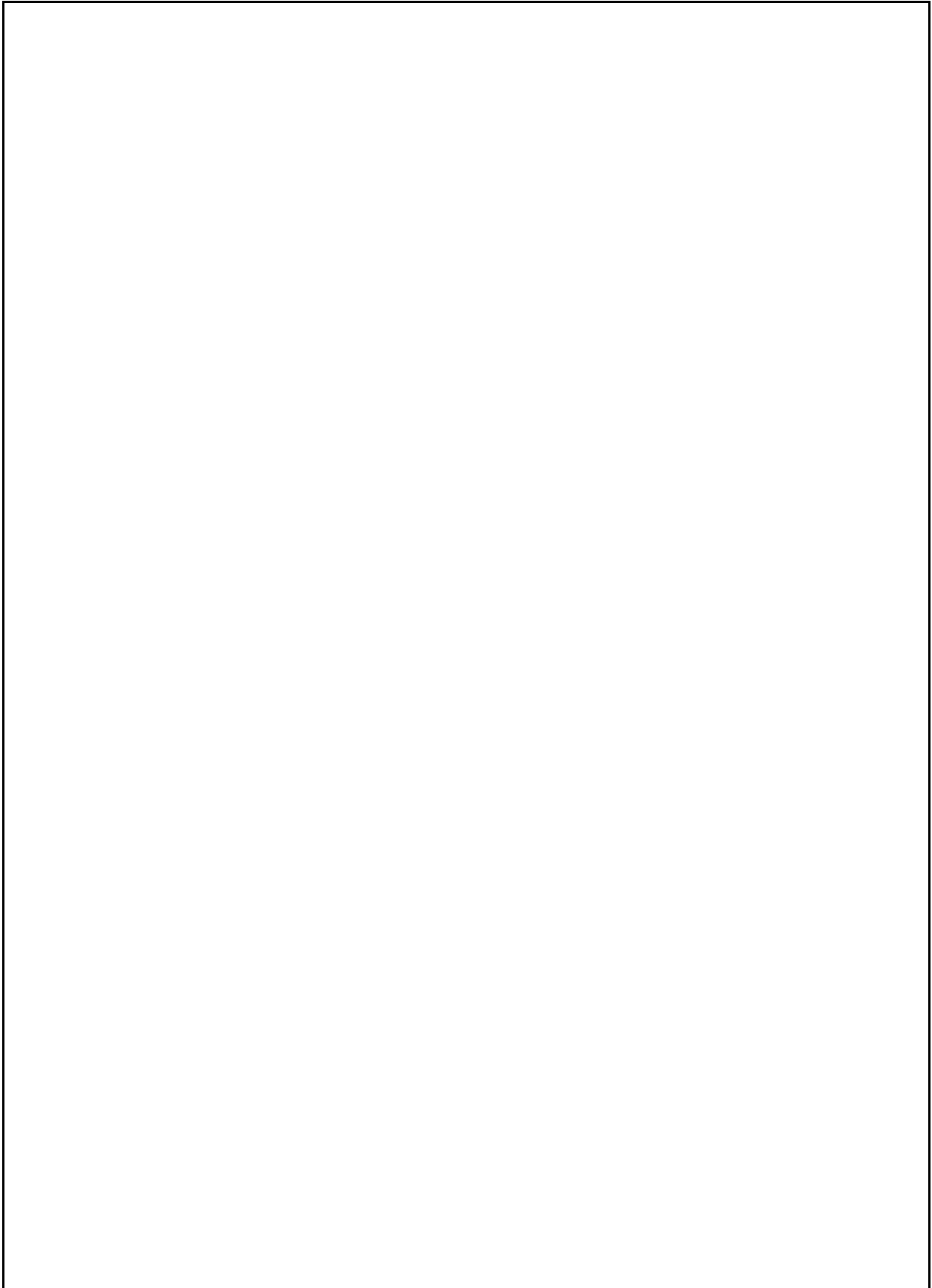
**Remarks**

|                  |  |  |
|------------------|--|--|
| L25              |  |  |
| L50              |  |  |
| L75              |  |  |
| Selection factor |  |  |
|                  |  |  |

**Structure by size or age**

|  |  |
|--|--|
|  |  |
|--|--|

**Structure by size or age**

A large empty rectangular box with a black border, intended for a diagram or structure.

|  |  |
|--|--|
| <b>SAC GFCM - Sub-Committee on Stock Assessment (SCSA)</b> |  |
| Assessment form  | Sheet A1<br>Indirect methods: VPA, LCA |

|      |     |
|------|-----|
| Sex* | M+F |
|------|-----|

|                  |       |
|------------------|-------|
| Code: ANE1708San | #REF! |
|------------------|-------|

|              |     |
|--------------|-----|
| Analysis # * | VPA |
|--------------|-----|

**Time series**

|               |      |     |
|---------------|------|-----|
| Data          | Size | Age |
| (mark with X) |      | x   |

|               |         |               |
|---------------|---------|---------------|
| Model         | Cohorts | Pseudocohorts |
| (mark with X) | x       |               |

|                       |  |               |                              |
|-----------------------|--|---------------|------------------------------|
| Equation used         |  | Tuning method | Laurec-Shepherd              |
| # of gears            |  | Software      | Darby C.D., Flatman S. 1994. |
| F <sub>terminal</sub> |  |               |                              |

**Population results (please state units)**

|          | Sizes | Ages |                    | Amount | Biomass |
|----------|-------|------|--------------------|--------|---------|
| Minimum  |       |      | Recruitment        |        |         |
| Average  |       |      | Average population |        |         |
| Maximum  |       |      | Virgin population  |        |         |
| Critical |       |      | Turnover           |        |         |
|          |       |      |                    |        |         |
|          |       |      |                    |        |         |

**Average mortality**

|                | Total | Gear |  |  |  |  |
|----------------|-------|------|--|--|--|--|
| F <sub>1</sub> |       |      |  |  |  |  |
| F <sub>2</sub> |       |      |  |  |  |  |
| Z              |       |      |  |  |  |  |

(F1 and F2 represent different possible calculations. Please state them)

**Comments**



**SAC GFCM - Sub-Committee on Stock Assessment (SCSA)**

Assessment form

Sheet D  
Diagnosis

Code: ANE1708San

**Indicators and reference points**

| Criterion | Current value | Units | Reference Point | Trend | Comments  |
|-----------|---------------|-------|-----------------|-------|---|
| B         | 210452        | t     |                 |       | Average 2005-2007; with M = 0.6 (precautionary).                |
| SSB       |               |       |                 |       |   |
| F         |               |       |                 |       |   |
| Y         |               |       |                 |       |   |
| CPUE      |               |       |                 |       |   |
| F/Z       | 0,28          | no    | 0,4             |       | Average 2005-2007; threshold 0.4 suggested by Patterson (1992). |
|           |               |       |                 |       |   |
|           |               |       |                 |       |   |
|           |               |       |                 |       |   |

**Stock Status\*** Use one (or both) of the following two systems for the stock assessment status description

|                       |                                  |  |
|-----------------------|----------------------------------|--|
| <b>Unidimensional</b> | <input type="radio"/>            | ? - (or blank) Not known or uncertain. Not much information is available to make a judgment;   |
|                       | <input type="radio"/>            | U - Underexploited, undeveloped or new fishery. Believed to have a significant potential for expansion in total production;  |
|                       | <input type="radio"/>            | M - Moderately exploited, exploited with a low level of fishing effort. Believed to have some limited potential for expansion in total production;   |
|                       | <input checked="" type="radio"/> | F - Fully exploited. The fishery is operating at or close to an optimal yield level, with no expected room for further expansion;  |
|                       | <input type="radio"/>            | O - Overexploited. The fishery is being exploited at above a level which is believed to be sustainable in the long term, with no potential room for further expansion and a higher risk of stock depletion/collapse; |
|                       | <input type="radio"/>            | D - Depleted. Catches are well below historical levels, irrespective of the amount of fishing effort exerted;  |
|                       | <input type="radio"/>            | R - Recovering. Catches are again increasing after having been depleted or a collapse from a previous;   |

|                      |                          |                          |                        |                          |
|----------------------|--------------------------|--------------------------|------------------------|--------------------------|
| <b>Bidimensional</b> | <b>Exploitation rate</b> |                          | <b>Stock abundance</b> |                          |
|                      | <input type="radio"/>    | No or low fishing        | <input type="radio"/>  | Virgin or high abundance |
|                      | <input type="radio"/>    | Moderate fishing         | <input type="radio"/>  | Intermediate abundance   |
|                      | <input type="radio"/>    | High fishing mortality   | <input type="radio"/>  | Low abundance            |
|                      | <input type="radio"/>    | Uncertain / Not assessed | <input type="radio"/>  | Depleted                 |
|                      |                          |                          | <input type="radio"/>  | Uncertain / Not assessed |

**Comments**

See also the original abstract.

**SAC GFCM - Sub-Committee on Stock Assessment (SCSA)**

Assessment form

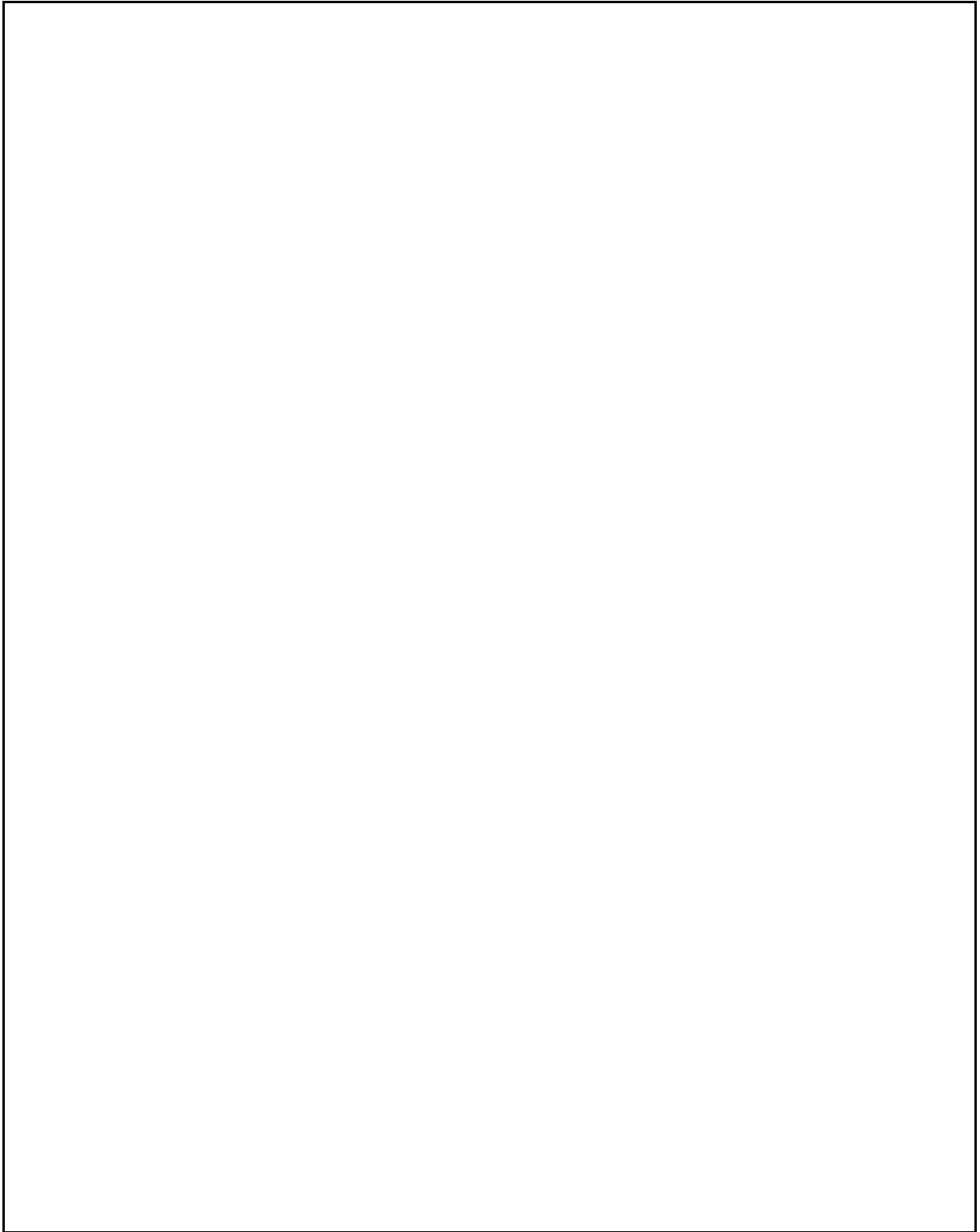
Sheet Z  
Objectives and recommendations

Code: ANE1708San

**Management advice and recommendations\***

It is recommended not to increase the fishing effort.  
See also the original abstract.

**Advice for scientific research\***



## Abstract for SCSA reporting

**Authors**  **Year**

**Species Scientific name**   
Source: GFCM Priority Species

Source: -

Source: -

**Geographical Sub-Area**

**Fisheries (brief description of the fishery)\***

**Source of management advice\***

(brief description of material -data- and methods used for the assessment)

VPA

**Stock Status\***

F - Fully exploited. The fishery is operating at or close to an optimal yield level, with no expected room for further expansion;

**Exploitation rate**

**Stock abundance**

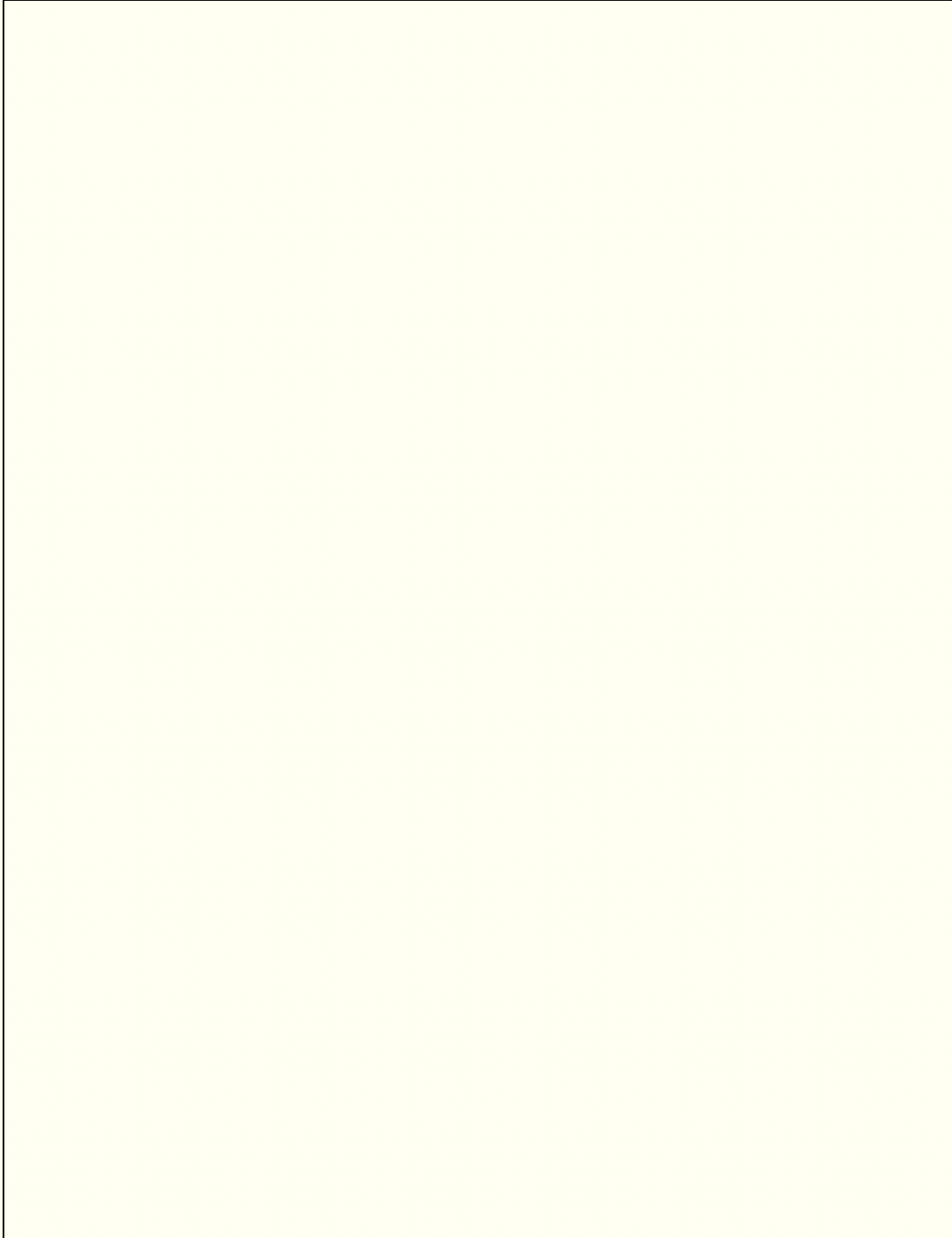
**Comments**

See also the original abstract.

**Management advice and recommendations\***

It is recommended not to increase the fishing effort.  
See also the original abstract.

**Advice for scientific research\***





## SAC GFCM - Sub-Committee on Stock Assessment (SCSA)

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Assessment of Anchovy (*Engraulis encrasicolus* - ANE ) from 17 - Northern Adriatic. Santojanni A.1a, Cingolani N.1a, Donato F.1a, Colella S.1a, Belardinelli A.1a, Giannetti G.1a, Leonori I.1b, Sinovic G.2, Marceta B.3

Description of fishery:

Source of management advice: VPA

Exploitation rate:

Stock abundance:

Comments: See also the original abstract.

Management advice and recommendation: It is recommended not to increase the fishing effort.  
See also the original abstract.

Advice for scientific research:

