SAC GFCM
Sub-Committee on Stock Assessment

Date*	21	October	2010	Code*	DPS0310Sai

Authors* Said BENCHOUCHA and Sadia BELCAID

Affiliation* Institut National de Recherche Halieutique

Species Scientific name*

1 *Parapenaeus longirostris* - *DPS*
Source: GFCM Priority Species

2
Source: -

3
Source: -

Geographical area* Morocco

Geographical Sub-Area (GSA)* 03 - Southern Alboran Sea

Combination of GSAs
1
2
3

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Assessment form

Sheet #0
Basic data on the assessment

Code: DPS0310Sai

Date*	21	Oct	2010	Authors*	Said BENCHOUCHA and Sadia BELCAID

Species Scientific name*	Parapenaeus longirostris - DPS	Species common name*	Deep pink shrimp Crevette rose

Data Source

GSA*	03 - Southern Alboran Sea	Period of time*	2000 - 2010

Description of the analysis

Type of data*	Catch, Effort and CPUE	Data source*	Office National des Pêches (ONP) and Institut National de Recherche Halieutique (INRH)
Method of assessment*	Dynamic Production Shaeffer Model	Software used*	Dynamic CECAF Shaeffer Model

Sheets filled out

B	P1	P2a	P2b	G	A1	A2	A3	Y	Other	D	Z	C
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Comments, bibliography, etc.

FAO, CECAFE Shaeffer production model, 2007.

Comments, bibliography, etc.

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet P1** **General information about the fishery**

Code: DPS0310Sai

Data source*	Office National des pêc hes, Institut National de Recherche Halieutique et Délegation des Pêches maritimes	Year (s)*	2000 - 2009

Data aggregation (by year, average figures between years, etc.)*	By year

Fleet and catches (please state units)

	Country	GSA	Fleet Segment	Fishing Gear Class	Group of Target Species	Species
Operational Unit 1*	MAR	03	E - Trawl (12-24 metres)	03 - Trawls	33 - Demersal shelf species	DPS
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
MAR 03 E 03 33 - DPS	121	tons	594	10778			fishing tri
Total	121		594	10778			

Legal minimum size	

Comments

Comments

L'activité de la pêche démersale au niveau de la Méditerranée marocaine revêt un intérêt socio-économique important. Les débarquements des produits de cette activité s'effectuent au niveau de 7 ports et 86 sites de pêche artisanale.

La flotte de pêche au niveau de cette région est composite. Elle est constituée de chalutiers, de palangriers et de barques artisanales. Le nombre de chalutiers opérant en Méditerranée marocaine s'élève à 121, possédant une puissance motrice moyenne de 325 CV et un TJB moyen de 50 Tx. La production annuelle de cette pêcherie est en moyenne de 17011 tonnes (2009) pour une valeur moyenne de 117 millions de dirhams. Les principales espèces cibles par ces pêcheries sont le pageot acarné, le rouget de vase, la crevette rose, le merlu, la bogue, le poulpe, le chinchard, la seiche, le pageot commun et le merlan bleu. Ces espèces représentent environ 84 % du volume des captures des démersaux.

Les données de capture et d'effort utilisées sont les données officielles collectées entre 2000 et 2009. Notant que, l'Office National des Pêches (ONP) a instauré depuis 2003 le système MAIA qui est un système de saisie et d'archivage plus performant.

Dans les dix dernières années, la production annuelle moyenne en Parapaneus longirostris est de 574 tonnes, par ailleurs, l'évolution de sa capture monte une diminution depuis 2000 jusqu'au 2006, pour marque après une lègère augmentation jusqu'au 2009. En 2009, la production en crevette rose représente 5,5% de la production total de la pêcherie démersale.

L'allure de l'évolution de l'effort de pêche montre une tendance à une augmentation de l'effort de pêche entre 2000 et 2002, suivi d'une légère diminution entre 2003 et 2006, puis il a repris à nouveau pour attendre 12705 Marée en 2009.

La tendance d'indice d'abondance au cours de la période de 2000 à 2006 montre une diminution continue , en allant de 111 kg/marée jusqu'au 26 kg/marrée, pour reprendre a nouveau par une legère augmentation en enregistrant 47 kg/marée.

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Assessment form

Sheet P2a
Fishery by Operational Unit

Code: DPS0310Sai

Data source*		OpUnit 1*	MAR 03 E 03 33 - DPS

Time series

Year*	2000	2001	2002	2003	2004	2005
Catch	1049	963	765	684	513	466
Minimum size						
Average size Lc						
Maximum size						
Fleet						

Year	2006	2007	2008	2009		
Catch	199	183	334	594		
Minimum size						
Average size Lc						
Maximum size						
Fleet						

Selectivity

L25	
L50	
L75	
Selection factor	

Remarks

Structure by size or age

Structure by size or age

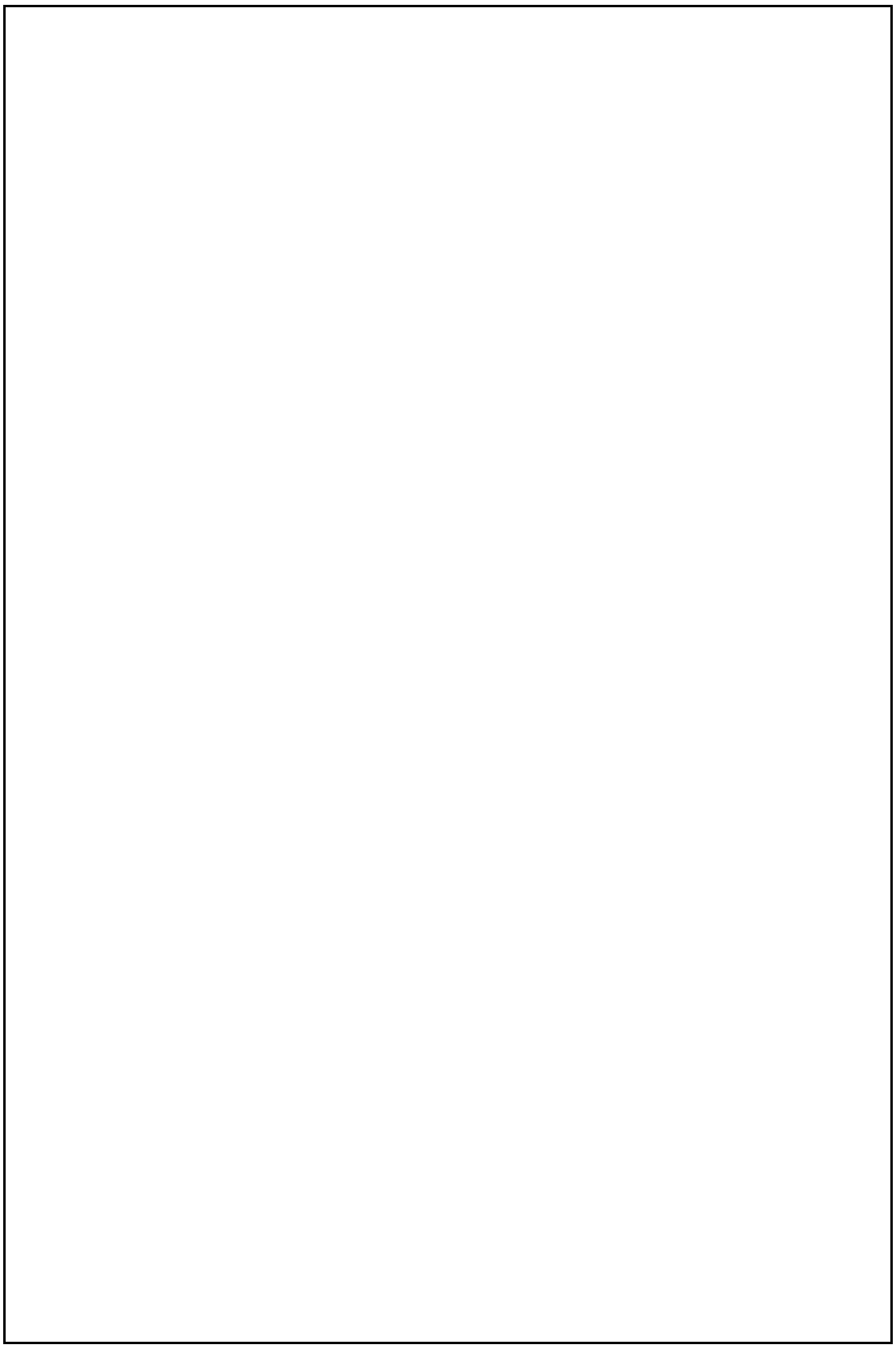
Data source*	Ministère des Agriculture et des Pêches Maritimes	OpUnit 1*	MAR 03 E 03 33 - DPS

Regulations in force and degree of observance of regulations

Fishing licence: Fully observed
Trawl mesh size : ≥50 mm (mesh streched)
Minimum landing size = 10,3 mm (LC)
Interdiction of fishing under 80 m deep in the aerea between Tangier and Al Hoceima,
Interdiction of fishing under 3 miles in the area between Al Hoceima and Saidia.

Accompanying species

Merluccius merluccius, pagellus acarne, Mullus spp, , Boops boops, Gadus poutassou, Octopus vulgaris et Sepia spp.



SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet P2b** **Fishery by Operational Unit**

This sheet will be activated once the Operational Unit information (P1 section) will be successfully filled in

Code: DPS0310Sai

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet P2b** **Fishery by Operational Unit**

This sheet will be activated once the Operational Unit information (P1 section) will be successfully filled in

Code: DPS0310Sai

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet P2b** **Fishery by Operational Unit**

This sheet will be activated once the Operational Unit information (P1 section) will be successfully filled in

Code: DPS0310Sai

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet P2b** **Fishery by Operational Unit**

This sheet will be activated once the Operational Unit information (P1 section) will be successfully filled in

Code: DPS0310Sai

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Assessment form

Sheet G
Indirect methods. Global model

Code: DPS0310Sai

Analysis #*

Data source*	ONP, INRH and DPM	Gear*	Trawl

Model characteristic

Type of model*	Shaefer production Model	Fitting criterion	Observed et predicted abundance indices (CPUE coastal fishery)
Software	CECAF, Shaeffer production sheet	Bibliographical source	FAO, CECAF Dynamic Shaeffer Model

Data

Year	2000	2001	2002	2003	2004	2005	2006
Catch	1049	963	765	684	513	466	199
Effort	9472	10773	11739	11569	10331	10111	9070
CPUE	111	89	65	59	50	46	22

Year	2007	2008	2009				
Catch	183	334	594				
Effort	9647	11345	12705				
CPUE	19	29	47				

Adjustment

RMS	

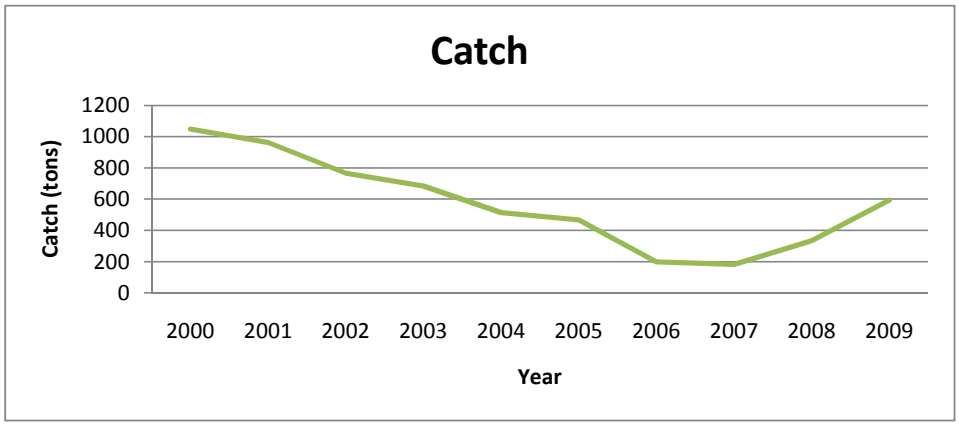
Results

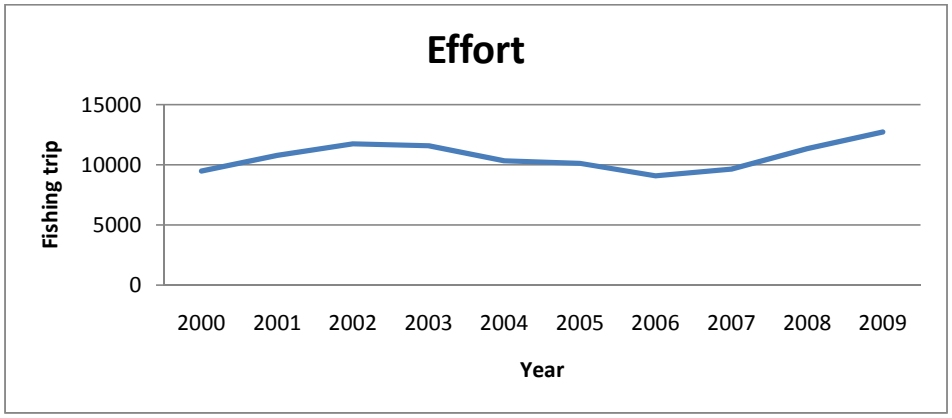
Carryng capacity		a	
Growth rate		b	
Catchability			
MSY			
EMSY		TACMSY	
E0.1		TAC0.1	
Ecurrent			

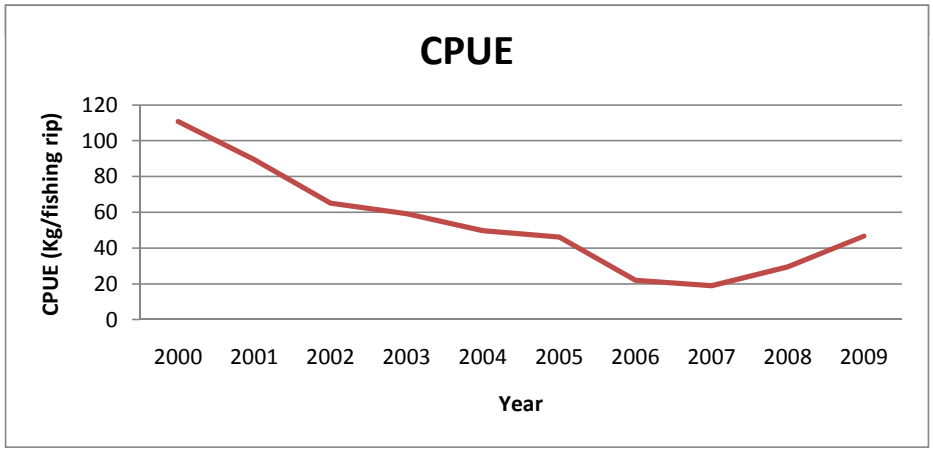
Comments

The evolution catch shows the decrease since 2000 until 2006 and then it increased before. Whatever, the effort in the period 2000 -2002, decease between 2000 and 2006, but it shows the augmentation ir the last four years. Therefore, the CPUE evolution shows two phases; a decreased until 2006 and in the Last four years increased to attend 47 kg/fishing trip

Comments


Catch
Catch (tons)
1200
1000
800
600
400
200
0
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009
Year


Effort
Fishing trip
15000
10000
5000
0
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009
Year


CPUE
CPUE (Kg/fishing rip)
120
100
80
60
40
20
0
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009
Year

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet Y** **Indirect methods: Y/R**

Code: DPS0310Sai

Sex		Analysis #	

# of gears		Software	

Parameters used

Vector F	
Vector M	
Vector N	

Model characteristics

The stock of *Parapenaeus longirostris* was assessed by the Dynamic Schaeffer Production Model. The model use a basic parameters: virgin biomass K, Growth rate of the population r, Initial appauvrissement D (initial biomass corresponding to K). In order to give a better assessment of MSY, BMSY et FMSY, the model calculate the reference points Bratio = (the ratio between the biomass estimated for the last year of the data and BMSY), and Fratio = (the ratio between the fishing mortali for the last year and the fishing mortality which should produce a sustainable catch for the same year The values of FMSY, BMSY and K should not be taken into a consideration because the model gives more reliable estimation for Fratio and Bratio. The trends of this ratios, depending they are up or unde

	Total	Goal			
Current YR					
Maximum Y/R					
Y/R 0.1					
F_{max}					
$F_{0.1}$					
Current B/R					
Maximum B/R					
B/R 0.1					

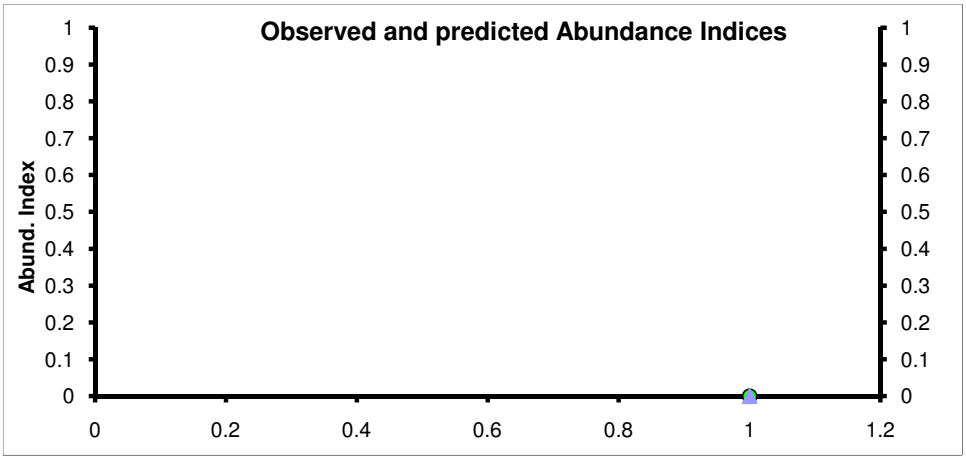
Comments

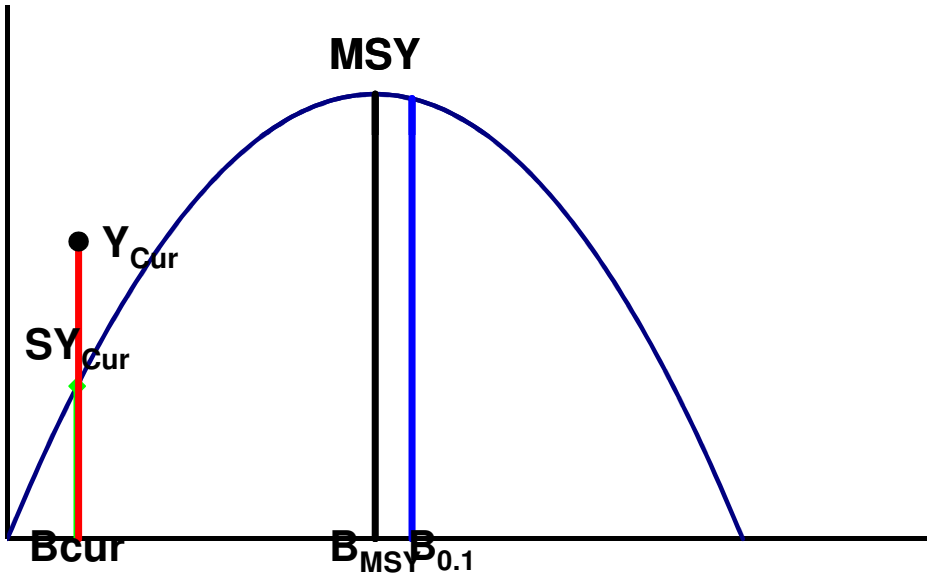
B/B0.1 =17%
Fcur/F0.1 = 392%
Fcur/FSYCur = 353%

References points : B0,1 = 1627

Comments

The results show that the model fitted well with the CPUE used (coastal fishery). The current Biomass represents only 17% of the target Biomass B0.1. The current fishing effort is 392% upper than the target fishing mortality F0.1 and 353% higher than the current sustainable fishing mortality (see results and graphs).





Other assessment methods

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Assessment form **Sheet other**

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Code: DPS0310Sai

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

Assessment form **Sheet other**

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Code: DPS0310Sai

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

Assessment form **Sheet other**

This sheet will be activated once the previous page will be successfully completed

Code: DPS0310Sai

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet D Diagnosis**

Code: DPS0310Sai

Indicators and reference points

Criterion	Current value	Units	Reference Point	Trend	Comments
B					
SSB					
F					
Y					
CPUE					
B/B0.1	17%				
Fcur/F0.1	392%				
Fcur/FSY	353%				

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

Unidimensional

☐	? - (or blank) **Not known or uncertain**. Not much information is available to make a judgment;
☐	U - **Underexploited, undeveloped or new fishery**. Believed to have a significant potential for expansion in total production;
☐	M - **Moderately exploited**, exploited with a low level of fishing effort. Believed to have some limited potential for expansion in total production;
☐	F - **Fully exploited**. The fishery is operating at or close to an optimal yield level, with no expected room for further expansion;
☉	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;
☐	D - **Depleted**. Catches are well below historical levels, irrespective of the amount of fishing effort exerted;
☐	R - **Recovering**. Catches are again increasing after having been depleted or a collapse from a previous;

Bidimensional

Exploitation rate

☐	No or low fishing
☐	Moderate fishing
☐	High fishing mortality
☐	Uncertain / Not assessed

Stock abundance

☐	Virgin or high abundance
☐	Intermediate abundance
☉	Low abundance

☐	Depleted
☐	Uncertain / Not assessed

Comments

This result of the Shaeffer production model shows that the stock of Parapenaeus longirostris is overexploited.
the abundance indices observed during surveys indicate a decrease of this resource.

Code: DPS0310Sai

Management advice and recommendations*

Reduce the fishing effort .

Advice for scientific research*

- Undertake the surveys regularely in the same period,
- Use the surveys abundance indexes (2000-2008) in the Dynamic Shaeffer production model and compare the results with those obtained with the coastal tarwlers CPUE,
- Undertake a regularly coastal fishery landings sampling in the main ports in morocco and undertake Biological studies and studies on the effect of environmental factors on this species.
- extende the study of this resource to auther GSA,(all area)

Comments*

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet C** **Comments**

This sheet will be activated once the previous page will be successfully completed

SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet C** **Comments**

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SAC GFCM - Sub-Committee on Stock Assessment (SCSA)	
Assessment form	**Sheet C** **Comments**

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Abstract for SCSA reporting

Authors Said BENCHOUCHA and Sadia BELCAID

Year 2010

Species Scientific name Parapenaeus longirostris - DPS

Source: GFCM Priority Species

Source: -

Source: -

Geographical Sub-Area 03 - Southern Alboran Sea

Fisheries (brief description of the fishery)*

Source of management advice*

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

Stock Status*

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;

Exploitation rate

Stock abundance

Low abundance

Comments

This result of the Shaeffer production model shows that the stock of Parapenaeus longirostris is overexploited.
the abundance indices observed during surveys indicate a decrease of this resource.

Management advice and recommendations*

Reduce the fishing effort .

Advice for scientific research*

- Undertake the surveys regularely in the same period,
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- extende the study of this resource to auther GSA,(all area)