Report of the MedSudMed-08 Oceanographic and Ichthyoplankton Survey

Straits of Sicily, Libyan continental shelf

15 – 31 July 2008

MedSudMed Component on "Small Pelagic Fish: Stock Identification and Oceanographic Processes Influencing their abundance and distribution"

Type of survey: Oceanographic – ichtyoplankton
Country and region: Libya, FAO GFCM Geographical Sub-are 21
Research vessel: R/V Urania (Italy)
Survey number/date: MedSudMed Oceanogrpahic and Ichthyoplankton
Number of days: 17
General objectives:

- - delineation of the spawning areas of the target species;
- study of the correlation between mesoscale physical structures and the distribution and abundance of small pelagic fish eggs and larvae and zooplankton in the study area;
- measurement of physical parameters with a multiparametric probe;
- analysis of sediments.

The survey was organized with the aim of collecting data in the in the Gulf of Sirt (central-eastern Libyan waters), as a follow-up to the first survey that covered the western part of the Libyan waters. The overall objective was to get a regional representation of transport patterns of small pelagic fish eggs and larvae and to identify the oceanographic features that are responsible for retention areas.

Survey main itinerary:

Sail	Port	Dock	Port	Activity
15 July ‘08	Siracusa (Italy)	17 July ‘08	Misurata (Libya)	Transfer Sampling
18 July ‘08	Misurata (Libya)	23 July ‘08	Ras Lanuf (Libya)	Sampling
24 July ‘08	Ras Lanuf (Libya)	28 July ‘08	Misurata (Libya)	Sampling
28 July ‘08	Misurata (Libya)	30 July ‘08	“Geostar station”	Sampling
30 July ‘08	“Geostar station”	31 July ‘08	Palermo (Italy)	Transfer and Disembarking

Cruises leader: Dr Angelo Bonanno, IAMC-CNR, Mazara del Vallo, Italy

Participating institutes:
Istituto per l’Ambiente Marino Costiero (CNR-IAMC), Mazara del Vallo Section, Italy;
FAO MedSudMed Project;
Marine Biology Research Centre (MBRC), Tripoli, Libya;
Istituto di Scienze Marine (CNR- ISMAR) Oceanografia Fisica Section, La Spezia, Italy;
Istituto Nazionale di Geofisica e Vulcanologia, La Spezia, Italy;
Istituto per l’Ambiente Marino Costiero (CNR-IAMC), Messina Section, Italy

Experts on board:

1) Angelo Bonanno	CNR-IAMC Mazara del Vallo, Italy
2) Sergio Bonomo	CNR-IAMC Mazara del Vallo, Italy
3) Ignazio Fontana	CNR-IAMC Mazara del Vallo, Italy
4) Mireno Borghini	ISMAR-CNR La Spezia, Italy
5) Salem Zgozi	MBRC Tripoli, Libya

6) Paola Rumolo	CNR-IAMC Napoli, Italy
7) Abdul Bari Ramadan	MBRC Tripoli, Libya
8) Daw Haddoud	MBRC Tripoli, Libya
9) Simona Genovese	CNR-IAMC Mazara del Vallo, Italy
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11) Giovanni Giacalone	CNR-IAMC Mazara del Vallo, Italy
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14) Rossana Borghi	CNR-IAMC Mazara del Vallo, Italy
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16) Mariangela Borghi	CNR-IAMC Mazara del Vallo, Italy
17) Umberto Speziale	CNR-IAMC Mazara del Vallo, Italy
18) Adele Bianco	CNR-IAMC Mazara del Vallo, Italy
19) Monica Calabrò	CNR-IAMC Mazara del Vallo, Italy
20) Francesca Polonelli	CNR-ISMAR La Spezia, Italy
21) Ali Kalefa	Tripoli, Libya

Summary of activities:
In total, the following samples were collected:

- 124 ichtyoplankton samples
- 6 zooplankton samples
- 20 fitoplankton samples
- 120 anchovy larvae preserved individually in liquid nitrogen
- 23 Sediments samples (samples in plastic bags)
- 72 CTD casts and ADCP profiles
- 5 waters samples (trace metals)
- 10 waters samples (trace elements)
- 29 water samples (nutrients)
- Continuous acoustic data
- Continuous sodar data
- Meteorological data.

The sampling design was built to integrate the data collected during the first MedSudMed-06 Oceanographic-Ichthyoplankton survey (August 2006). The main study area was the Gulf of Sirt, included between parallels 30°and 33°and meridians 14°and 21°. Sampling was also carried out along a transect between Capo Passero (Sicily) and Misurata (Libya).

Sample/data processing: 24 March-04 April and 04–12 May 2009, IAMC-CNR Mazara del Vallo, Sicily – Italy

Summary of results

Among the larval specimens collected in the Libyan waters 11 Orders, 32 Families, 38 Genera and 39 Species were identified. Data on species composition shows some differences with respect to the 2006 MedSudMed survey. On teh contrary woth respect to the previous survey, Anchovy and Round sardinella were not predominant in the samples. More abundant larvae belog to *Cyclothone braueri*, to genus Vinciguerria and families of Gobidae and Labridae. The specific characteristics of the Gulf of Sirt with respect to the western Libyan waters (e.g. smaller shelf and deeper waters) were considered the main causes of the different presence of anchovy and round sardinalla larvae. Overall the 06-MedSudMed and 08-MeduSudMed surveys pointed out that the western part of the Libyan coast is more productive than the Eastern part.
A description of oceanographic and sediments characteristics, phytoplankton composition, and presence of organic matters, nutrients, and trace elements was provided.

Follow up: The results of the survey and a comparison with the outcomes of the 06-MedSudMed survey will be discussed in the framework of the FAO MedSudMed Working Group on Small Pelagic Fisheries Reources and presented at the SAC Sub-Committee on Stock Assessment (FAO GFCM, Kavala, Greece, 17-21 September 2007).

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The outcomes of the survey will be discussed in the framework of the MedSudMed Working Group on Small Pelagic Fisheries Resources together with the results of the first MedSudMed oceanographic ichtyhoplanktons survey carried out in Libyan waters (July 2006) and presented to the relevant Scientific Advisory Committee(FAO GFCM).

Report status: Draft available at the MedSudMed Project, reference: MedSudMed (eds) 2009. Report of the MedSudMed-08 Oceanographic Survey carried out on the Libyan continental shelf (15 – 31 July 2008). GCP/RER/010/ITA/MSM-TD. *MedSudMed Technical Documents*.

Constraints/comments: The survey carried out gave the possibility to progress in the monitoring of eggs and larvae abundance and distribution in Libyan waters. The results obtained underline how cooperation was successfully established between the participating research institutions. The step forward is to focus, under the same cooperative framework, on specific topics that can be explored in the future if there is any interest in this sense.