

## **CephsInAction meets ICES-WGCEPH**

*Meeting Report - June 16th - 19th, 2014*

**Sílvia Lourenço, Rodrigo Ozório, Catalina Perales-Raya, João Pereira & Graziano Fiorito**

### **AIM OF PARTICIPATION**

Introducing the COST Action FA1301 CephsInAction to ICES Working Group on Cephalopod Fisheries and Life History (WGCEPH) in order to: i. explore and facilitate close future interaction and collaboration between ICES-WGCEPH and CephsInAction, ii. identify contact points and bridges of collaboration.

### **VENUE**

Departamento do Mar e Recursos Marinhos - IPMA, Lisbon, Portugal (June 16<sup>th</sup> - 19<sup>th</sup>, 2014)

### **BACKGROUND AND REASONS FOR NETWORKING**

Cephalopod molluscs are the sole invertebrate taxon included in the European Directive 2010/63/UE on animal use for scientific or educational purposes. At the same time, the species of cephalopods mostly utilized over the last 50 years in experimental studies (Huffard 2013; Ponte et al. 2013; Smith et al. 2013; Fiorito et al. 2014) are the ones with high commercial value and those also affected by increasing exploitation pressure (ICES 2013; see also for example: <http://www.globefish.org/cephalopods-june-2014.html>).

Despite the fact that cephalopod science is a "small world", during the last years several initiatives at international level provided the ground to facilitate cooperation among scientists. In this framework Drs Marina SANTURTUN and Jean-Paul ROBIN – co-chairs of ICES WGCEPH - extended to CephsInAction the invitation to attend to the ICES Working Group on Cephalopod Fisheries and Life History meeting in Lisbon (Portugal).

The main objective of the meeting is to advance the three-years plan of operation established on different Terms of References (see Annex I) mostly concerning biology, stock status and exploitation trends in Northeast Atlantic fisheries. However, the increased attention towards cephalopod research in the ICES area, and in waters other than Europe, that includes all relevant aspects of biology, ecology, physiology and behavior, in field and laboratory studies, promoted the interaction between ICES-WGCEPH and CephsInAction.

The meeting counted 21 participants (Table 1, Figure 1) from seven countries (France, Spain, Portugal, UK, Italy, Greece and Germany) and included several oral presentations and group work for discussion about the ToRs and individual work for preparing the draft of the expected reports.

The two groups are clearly sharing common goals in several aspects and for many activities.

At the Lisbon meeting, Graziano Fiorito (Italy) and Rodrigo Ozorio (Portugal), members of the CephsInAction (FA1301) Management Committee (MC) were invited to attend the annual meeting of WGCEPH. G. Fiorito and R. Ozorio have been joined by Sílvia Lourenço, Catalina Perales-Raya, and João Pereira that apart being active in CephsInAction (see Table 1) are also members of WGCEPH experts group, which justify the networking between the two experts groups.



**Figure 1. Group photo WGCEPH & CephsInAction, Lisbon - June 2014**

**Table 1: List of participants to ICES-WGCEPH meeting, Lisbon 2014**

| NAME                                | ICES-WCEPH | CEPHSINACTION  | COUNTRY  |
|-------------------------------------|------------|----------------|----------|
| Marina SANTURTUN<br><i>Co-Chair</i> | √          |                | Spain    |
| Jean-Paul ROBIN<br><i>Co-Chair</i>  | √          |                | France   |
| Edouard DUHEM                       | √          |                | France   |
| Graziano FIORITO                    |            | √              | Italy    |
| Ane IRIONDO                         | √          |                | Spain    |
| Noussithe KOUETA                    | √          |                | France   |
| Evgenia LEFKADITOU                  | √          |                | Greece   |
| Sílvia LOURENÇO                     | √          | √              | Portugal |
| Roi MARTINEZ                        | √          |                | Germany  |
| Hugo MENDES                         | √          |                | Portugal |
| Ana MORENO                          | √          |                | Portugal |
| Lorena OLMOS                        | √          |                | Spain    |
| Rodrigo OZORIO                      |            | √              | Portugal |
| Catalina PERALES-RAYA               | √          | √ <sup>1</sup> | Spain    |
| João PEREIRA <sup>1</sup>           | √          | √              | Portugal |
| Graham PIERCE                       | √          |                | UK       |
| Cristina PITA                       | √          |                | Portugal |
| Sonia SEIXAS                        | √          |                | Portugal |
| Luis SILVA                          | √          |                | Spain    |
| Ignacio SOBRINO                     | √          |                | Spain    |

---

<sup>1</sup> Dr João Pereira is MC-substitute for Portugal; Dr Catalina Perales-Raya is MC-substitute for Spain in the COST Action FA1301

At the meeting Graziano Fiorito (joined by Rodrigo Ozorio, and other mentioned FA1301 colleagues) introduced to the ICES WGCEPH members the history, aims and current activities of the COST Action FA1301. During this presentation Graziano Fiorito, also provided the background and challenges for the scientific community *at large* given by the inclusion of cephalopods in the Directive 2010/63/EU. A simplified version of the original presentation is given as Annex II.

Extensive discussions provided the general view of the opportunity of strengthening possible interaction between the WGCEPH group and CephsInAction. It has been highlighted that there is space for both groups to work together to fulfill the knowledge gaps that exists regarding several biological and physiological aspects of the cephalopods species that are key to understanding of the variability in abundance, distribution and growth observed, and that constitute the main bottleneck factor for the application of assessment models to the cephalopod stocks.

Clear overlapping and mutual interaction are advised in contribution to several ToRs (see also Annex I) to be fulfilled during the next three years (2014-2016), and in particular:

**ToR C** - Implications of the application of some Policies and Directives on cephalopods:

Implication of CFP (landing obligation) on cephalopod exploitation, how it has been applied in other places and how it has affected them; new regulation of manipulation of animals for research; Nature 2000, network of Marine Protected Areas; Blue growth.

**ToR D** - Review data availability for the main cephalopod species in relation to the main population parameters (e.g.: length distribution, sex ratio, first maturity at age, first maturity at length, growth, spawning season).

**ToR E** - Knowledge base: review and report on cephalopod research results in the ICES area, and if feasible in waters other than Europe, including all relevant aspects of biology, ecology, physiology and behaviour, in field and laboratory studies.

**ToR F** - MSFD and Integrated Ecosystem Assessment: Relevant MSFD indicators (biodiversity, community role, exploitation and contaminants) applied to cephalopods. In this case, for example, the recommendation by MSFD for noise disturbance is considered relevant to both groups considering also the forthcoming publication of "Guidelines for the Care and

Welfare of Cephalopods in Research - a consensus document based on an initiative by CephRes, FELASA and the Boyd Group<sup>2</sup> that will represent a landmark for CephsInAction and for the entire scientific community.

## **RELEVANT OUTPUTS**

1. Presenting the CephsInAction, objectives and contact points, thus to facilitate networking between the two experts groups.
2. Participation of WGCEPH expert group in the future historical bibliographic (CephRes) and current research (CephsInAction) databases that is going to be available for both groups;
3. CephsInAction experts will contribute next years with recommendations/inputs for WGCEPH ToRs, especially ToR-C (European Regulation), ToR-D (biological information update) and ToR-E (New Knowledge).
4. CephsInAction associated labs can contribute with specialized training and sharing of specialized facilities, and promote the interaction among researchers with expertise on welfare in different taxa to advance study and consideration on animal welfare, including the application of the 3Rs principle (i.e. Replacement: use of possible alternatives; Reduction: reduction of the number of animals utilized in experiments; Refinement: application of procedures and methods that may improve animal welfare), thus to further promote the 'ethical' framework for conducting scientific experiments that require live animal.
5. Facilitate interaction between the two groups also based on the fact that CephsInAction aims to facilitate and support a network for improvement of cephalopod welfare and husbandry in research, aquaculture and fisheries ([http://www.cost.eu/domains\\_actions/fa/Actions/FA1301](http://www.cost.eu/domains_actions/fa/Actions/FA1301)).

---

<sup>2</sup> The Guidelines project has also been presented at the Meeting by Graziano Fiorito.

## Reference list

- Fiorito, G., Affuso, A., Anderson, D.B., Basil, J., Bonnaud, L., Botta, G., Cole, A., D'Angelo, L., De Girolamo, P., Dennison, N., Dickel, L., Di Cosmo, A., Di Cristo, C., Gestal, C., Fonseca, R., Grasso, F., Kristiansen, T., Kuba, M., Maffucci, F., Manciooco, A., Mark, F.K., Melillo, D., Osorio, D., Palumbo, A., Perkins, K., Ponte, G., Raspa, M., Shashar, N., Smith, J., Smith, D., Sykes, A., Villanueva, R., Tublitz, N., Zullo, L., Andrews, P.L.R. (2014). Cephalopods in neuroscience: Regulations, Research and the 3Rs. *Invert. Neurosci.*, 14, 13-36.
- Huffard, C.L. (2013). Cephalopod neurobiology: an introduction for biologists working in other model systems. *Invert. Neurosci.*, 13, 11-18.
- ICES (2013). *Report of the Working Group on Cephalopod Fisheries and Life History (WGCEPH)*. 11-14 June 2013, Caen, France: ICES CM 2013/SSGEF.
- Ponte, G., Dröscher, A., Fiorito, G. (2013). Fostering cephalopod biology research: past and current trends and topics. *Invert Neurosci*, 13, 1-9.
- Smith, J.A., Andrews, P.L.R., Hawkins, P., Louhimies, S., Ponte, G., Dickel, L. (2013). Cephalopod research and EU Directive 2010/63/EU: requirements, impacts and ethical review processes. *J. Exp. Mar. Biol. Ecol.*, doi:10.1016/j.jembe.2013.02.009.

## ANNEX I - Working Group on Cephalopod Biology and Life History (WGCEPH) Terms of References (ToRs)

WGCEPH will report on the activities of 2014 (Year 1) by 1 August 2014 to SSGEF.

### ToR descriptors

| ToR | Description   | Background   | Science Plan topics addressed | Duration               | Expected Deliverables   |
|-----|---|--|-------------------------------|------------------------|---|
| a   | Report on status and trends in cephalopod stocks: Update, quality check and report relevant data on: European fishery statistics (landings, directed effort, discards and survey catches) across the ICES area and if feasible in waters other than Europe. Produce and update CPUEs and survey data series for the main cephalopod métiers and species and assess the possibility of their use as abundance indices. Examine the above trends in relative exploitation rates (i.e., catch/survey biomass) to evaluate stock status. Start exploring economic data collected under Data Call. | Data call is part of the justification of this ToR. The data collected should be reviewed by an expert group. The results of the ToR are an output of this discussion. Other outputs will include the identification of cephalopod stocks to be assessed or even managed, the evaluation of needs for further data (spatial, temporal) and the level of species information required. Thus, the baseline work of the ToR is the result of the data call. |                               | Year 2014, 2015 & 2016 | Peer-review paper in relation to status and trends (year 2016).         |
| b   | Conduct preliminary assessments of the main cephalopod species in the ICES area, including evaluation of trends in survey and commercial fishery CPUE where available. Assess production and/or depletion methods utility, if feasible (year 2014). Explore other possible assessment methods if needed (e.g. early season assessment) (year 2015). Carry out assessment of species with the methods chosen (year 2016).  | Data are being collected with the purpose of assessing the status of the cephalopods stocks for Integrated Ecosystem Assessment (IEA).   |                               | Year 2014, 2015 & 2016 | Report on the cephalopods assessed (year 2014, year 2015 and year 2016) |

| ToR | Description  | Background  | Science Plan topics addressed | Duration               | Expected Deliverables  |
|-----|--|---|-------------------------------|------------------------|--|
| c   | Implications of the application of some Policies and Directives on cephalopods: e.g. Implication of CFP (landing obligation) on cephalopod exploitation, how it has been applied in other places and how it has affected them; New regulation of Manipulation of Animals for research; Nature 2000, network of Marine Protected Areas, Blue growth (wind farms). | There are no policies or management measures specifically directed to fisheries for cephalopods but many other pressures and activities would affect them. There are, on the other hand, new regulations that will impact cephalopod research. These directives and policies are essential to assess the ecosystem as a whole (IEA).  |                               | Year 2014, 2015 & 2016 | Report on effects of directives and policies on cephalopod fisheries, assessment, and management (year 2015 & year 2016). Peer review paper about the cephalopods management and governance: the management (or lack of management) of the main cephalopod stocks focused on important species/métiers and proposed alternatives for improving it (year 2016). |
| d   | Review data availability for the main cephalopod species in relation to the main population parameters: length distribution, sex ratio, first maturity at age, first maturity at length, growth, spawning season.  | There is a need for updating main population parameters to be able to relate them to the most recent fisheries data collected through Data calls and to assess stock status. Also, there are particular issues in relation to cephalopod maturity stages, already the subject of an ICES workshop. Recent work on octopus has shown that estimates of size at maturity are highly sensitive to the maturity scale used. |                               | Year 2015              | Peer review paper in relation to population dynamics, biology (year 2015). Report (and/or first draft) of a methodological paper about sampling resolution for best data collection for each stock/species (year 2015).  |



| ToR | Description   | Background  | Science Plan topics addressed | Duration               | Expected Deliverables   |
|-----|---|---|-------------------------------|------------------------|---|
| e   | Knowledge base: review and report on cephalopod research results in the ICES area, and if feasible in waters other than Europe, including all relevant aspects of: biodiversity, biology, ecology, physiology and behaviour, in field and laboratory studies. | Experts should be able to assess population status, and give management advice, if needed, for stocks/populations. Also there is a need for understanding response to stress, factors causing changes in cephalopod abundances and distribution. In this way the expert group will have to be able to inform ICES about population status; dynamics and their relationship with environmental variables; the role of cephalopods in the ecosystem; possible indicators for cephalopods under the MSFD and assessment methods used in commercial cephalopod fisheries. |                               | Year 2014, 2015 & 2016 | Report on scientific articles in relation to the topic worked out every year (Year 2014). Protocol for setting the database on scientific articles in relation to the topic worked out every year. This data base will make use of the already existing tools (Mendelei, Research Gate...) Year 2015.<br>Database on scientific articles in relation to the topic worked out every year. This data base will make use of the already existing tools (Mendelei, Research Gate...) Year 2016. |
| f   | MSFD and Integrated Ecosystem Assessment: Relevant MSFD indicators (biodiversity, community role, exploitation and contaminants) applied to cephalopods.  | There is a need of describing the state and pressure of cephalopods under MSFD descriptors and indicators. ToR a address topics in relation to fisheries (exploitation) and ToR e addresses MSFD from the literature review (knowledge base). In this case, ToR f will cover MSFD focused on the applicability of descriptors on cephalopod populations (status) and level of exploitation (pressures). Thus, ToR a, e and f are complementary in this respect.   |                               | Year 2014, 2015 & 2016 | Report on MSFD descriptors applicable to cephalopods Year 2014 and Year 2015.<br>Peer review paper on cephalopod application of MSFD descriptors Year 2016.   |

### Summary of the Work Plan

|               |   |
|---------------|---|
| Year 1 (2014) | Report on the cephalopods assessed (b)<br>Report on effects of directives and policies on cephalopod assessment (c)<br>Report on scientific articles in relation to the topic worked out every year (e)<br>Report on MSFD descriptors applicable to cephalopods (f) |
|---------------|---|

|               |   |
|---------------|---|
| Year 2 (2015) | <p>Report on the cephalopods assessed (b)</p> <p>Report on effects of directives and policies on cephalopod assessment (c)</p> <p>Peer review paper in relation to population dynamics, biology (d)</p> <p>Report (and/or first draft) of a methodological paper about sampling resolution for best data collection for each stock/species (d)</p> <p>Protocol for setting the database format needed on scientific articles in relation to the topic worked out every year (e)</p> <p>Report on cephalopod application of MSFD descriptors (f)</p> |
| Year 3 (2016) | <p>Peer-review paper in relation to status and trends (a)</p> <p>Report on the cephalopods assessed (b)</p> <p>Report on effects of directives and policies on cephalopod assessment (c)</p> <p>Peer review paper on cephalopod management and alternative proposals to improve it (c)</p> <p>Database on scientific articles in relation to the topic worked out every year (e)</p> <p>Peer review paper on cephalopod application of MSFD descriptors (f)</p>   |

### Supporting information

|                        |  |
|------------------------|--|
| Priority               | <p>The current activities of this Group will lead ICES into issues related to Cephalopods role in the ecosystem and importance as part of directed and in-directed fisheries. Cephalopods are important components of marine ecosystems. Thus, for promoting the sustainable use of the seas and conserving marine ecosystems, cephalopod biology and life history has to be understood. As an example, directed cephalopod fisheries, especially small-scale fisheries, are increasingly important and it is necessary to have in place a useful system of data collection and stock evaluation that would be adequate to support management. These activities are believed to have a very high priority.</p> |
| Resource requirements  | <p>As noted in the 2012 report and previously, participation in WGCEPH is limited by availability of funding, especially as many members and potential members are university staff with no access to “national funds” for attendance at ICES meetings. Efforts to attend to the groups are acknowledged.</p> <p>The future direction of the group focusing more into assessment would hopefully lead to group to be applicable for DCF funding. The group is willing that effort started in 2010 could be recognized in that way. The additional resource required to undertake additional activities in the framework of this group is negligible.</p>   |
| Participants           | <p>The Group was reduced in number of attendees from around 15 members and guests to 9 members. In 2013, number of attendees was even reduced to 6 full time attendees. With a strong bias towards participants from the Iberian peninsula. It is desirable that more researcher working on National Fisheries Institution would have the chance to know the group work and participate in it.</p>   |
| Secretariat facilities | None.  |
| Financial              | No financial implications.   |

---

|  |   |
|--|---|
| Linkages to ACOM and groups under ACOM | There are obvious direct linkages with assessment groups WGHMM, WGCS as cephalopods are caught in stocks/fisheries considered in those groups. Also WGNEW has a linkage to this group.<br>PGCCDBS<br>IBTSWG<br>Provision of information to SciCom and its satellite committees as required to respond to requests for advice/information from NEAFC and EC DG Fish. |
| Linkages to other committees or groups | There is a starting working relationship with WGCRAON as a common workshop on the need of assessment and management on cephalopods and cragon will be deployed in October 2013. It is also a relevant linkage with groups under SCICOM.   |
| Linkages to other organizations        |   |

---