

**NF-POGO-IEO Shipboard Training Fellowship – RADMED cruise hosted by the Instituto Español de Oceanografía (IEO), Spain.**

### **Fellowship Report**

**Name of Trainee: YAOVI ZOUNON**

**Name of Supervisor (Parent Institution): Dr. Ir. Zacharie SOHOU**

**Supervisor (Host Institution): Dr. Mari Carmen García Martínez**

**Dates of Training: 03 OCTOBER 2022 to 16 DECEMBER 2022**

**Training topic: NF-POGO-IEO Shipboard Training Fellowship / RADMED cruise hosted by the Instituto Español de Oceanografía (IEO), Spain.**

#### **Section A**

**(To be completed by the fellow)**

*It is the responsibility of the trainee to forward this form to the host and parent supervisor, and to submit a fully completed version to the POGO Secretariat. Please note that the complete report will be made public on the OTP website; Private comments should be included in a separate confidential form.*

#### **1) Please provide a brief description of activities during the training period:**

From 3 October to 16 December 2022, our NF-POGO-IEO internship took place at the Spanish Institute of Oceanography in Malaga within the "Mediterranean Climate Change Group". This internship was organized in three main phases and was characterized by our participation in the RADMED scientific cruise in November 2022 on the Mediterranean Sea off the Spanish coast.

From the very first days of our internship, the entire team of the Mediterranean Climate Change Group set out to show us the different equipment and working methods used in the laboratory. We were familiarised with the inverse microscope, the zooscan, the flow cytometer and many other working tools. After this time of immersion, we were given responsibility for processing the samples already available. Thus, under the supervision of our supervisors, we carried out daily and alternating microscopic observations of phytoplankton, the evaluation of zooplankton diversity and biomass using the zooscan and the filtration technique respectively, and the analysis of pico and nano plankton using flow cytometry. We also participated in the analysis of nutrients by spectrophotometry, the analysis of chlorophyll a etc...

The second phase consisted of our participation in the RADMED scientific cruise in November 2022 on the Mediterranean off the Spanish coast.

On the boat, the first days were devoted to the preparation of the sampling equipment, in particular the rosette carrying twelve Niskin bottles, the current meters and the CTD.

During the cruise, we learned and actively participated in the sampling and fixation and storage of water samples taken from the Niskin oceanographic bottles for the determination of chlorophyll a, inorganic nutrients, phytoplankton diversity and abundance (by microscopy and flow cytometry). Zooplankton samples from plankton net were also collected and fixed for the

determination of zooplankton diversity and biomass. Also water samples were taken for bacteriological and environmental DNA analysis.

This cruise phase was accompanied by a third phase which consisted of processing the samples brought back from the cruise. Thus, the analyses mentioned above, in particular microscopic observations of phytoplankton, the evaluation of diversity and zooplankton biomass respectively by zoocan and the filtration technique, the analysis of pico and nano plankton by flow cytometry as well as the analysis of nutrients by spectrophotometry were carried out by us on the samples of the RADMED campaign of November 2022.

In addition, we were systematically involved in all activities that were to bring together all the teams of the institute. We attended courses in statistics and programming in Matlab, and participated in several communication sessions on the Institute's projects and activities.

**2) What applications of the training received do you envision at your parent institution?**

My participation in the training course allowed me to discover sampling techniques and analysis methods in the marine environment that are not necessarily yet used in my home institute. I, therefore, intend to put the knowledge I acquired during my internship to good use at my home institute, particularly in research projects concerning the study of the diversity and planktonic biomass of marine waters. In addition, I took the initiative to put together my home institute with my host institute on future calls for projects. This will allow the two institutes to continue to collaborate in the future.

**3) Please provide your comments on the Fellowship Programme.**

The NF-POGO Shipboard Training Fellowship is a great learning opportunity for early career researchers, especially those from developing countries who are often underserved in terms of research equipment. Even better, this program offers real opportunities for collaboration between different research institutes around the world through student exchanges.

**PRINT NAME**

Yaovi ZOUNON

**Date: 14/12/2022**

**Section B**

**(To be completed by the host supervisor and returned to the trainee)**

*Please note that the complete report will be made public on the OTP website; Private comments should be included in a separate confidential form.*

**1) Please provide your comments on the performance of the trainee.**

Yaovi Zounon has been doing a very good work during his stay at the Oceanographic Centre of Malaga (Spanish Institute of Oceanography). He has proven to be a very good worker. He has being trained in multiple laboratory tasks: inverse microscopy, flow citometry, zooscan, pH determination, chlorophyll a, nutrient analysis, etc. He has completed 60-hours course on statistic and matlab taught by Dr. Manuel Vargas-Yáñez.

He has been also working in the preparation of the RADMED cruise in which he has participated being very active and helpful for the rest of the team. He also has been involved in the analysis of the samples collected during the cruise.

**2) Is this exchange likely to lead to future collaboration with the trainee's parent institution? If so please give example(s) of how this collaboration may be pursued.**

This exchange is a fantastic starting point for future collaborations with his parent University. We are really interested in having Yaovi Zounon again with us, because his expertise in fisheries (mainly bivalves), and its relation with environmental factors can be really helpful for our research group.

**3) Please provide your comments on the Fellowship Programme.**

In my opinion this type of programme allows international collaborations that would not otherwise be possible. It is a fantastic way to establish contacts with other researchers working in similar lines of research, and to compare different working methodologies.

**PRINT NAME**

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**Date: 16/12/2022**

**SECTION C**

**(To be completed by the parent supervisor and returned to the trainee)**

*Please note that the complete report will be made public on the OTPwebsite; Private comments should be included in a separate confidential form.*

**1) Do you agree with the above comments and do you have any additional feedback you wish to provide?**

It is with great pleasure that I read the different comments about my student's training course at IEO Malaga. I agree with all of them. I would like to thank the whole team of the IEO and POGO for the good training opportunity they offer to young researchers from different countries. I hope that the students who did this training course can benefit from other training opportunities. This will surely allow them to deepen the knowledge they have acquired.

**PRINT NAME**

**SOHOU Zacharie**

**Date: 06/01/2023**