

OA-ICC HIGHLIGHTS

The latest news and updates from the OA-ICC and partners



The 4th GOA-ON International Workshop welcomed 270 scientists from 62 countries in Hangzhou, China (Photo: © Samuel Wang, Xiamen University).

THIS QUARTER:

GOA-ON INTERNATIONAL
WORKSHOP

HUMAN VULNERABILITIES
TO OCEAN ACIDIFICATION

SIOA AND OA-ICC EXPERT
GROUP MEETINGS

PRACTICAL GUIDELINES
FOR OA STUDIES

COA ON OA UPDATE

STUDYING OA IN A MULTI-
STRESSOR CONTEXT

SAVE THE DATE: 5TH
SYMPOSIUM ON THE
OCEAN IN A HIGH-CO₂
WORLD

GOA-ON holds 4th International Workshop in Hangzhou, China

The 4th International Workshop of the Global Ocean Acidification Observing Network (GOA-ON) was held in Hangzhou, China from 14-17 April 2019, hosted by the State Key Laboratory of Satellite Ocean Environment Dynamics and the Second Institute of Oceanography. More than 270 scientists from 62 countries participated. The workshop included plenary talks, break-out presentations and discussions, and poster sessions. The main themes of the workshop were focused on monitoring ocean acidification (OA) in multi-stressor environments, studying biological responses, advancing OA modelling, and discussed ways to meet stakeholder needs. OA-ICC Project Officer Lina Hansson gave a presentation at the workshop entitled “The Ocean Acidification Coordination Centre: A Hub for the Global OA Community”, which provided an overview of OA-ICC’s various activities and upcoming projects. The OA-ICC also supported six scientists from Algeria, Chile, Fiji, Mexico, Morocco and Turkey to present their work at the meeting.

The first day of the workshop included two special events, one focused on satellite remote sensing software (SATCO2), and another aimed at creating a dialogue between scientists and the aquaculture industry. At the meeting, the GOA-ON [Implementation Strategy](#) was released and distributed for community input. A summary of the workshop is available [here](#).

The GOA-ON Executive Council also met to discuss progress and identify priorities for the coming year (report available [here](#)).
#SCIENCE



The GOA-ON Executive Council met in Hangzhou, China (Photo: © Samuel Wang, Xiamen University).



Workshop on the human vulnerabilities to ocean change, Monaco

The OA-ICC organized a Technical Meeting on *Building Resilience to Address Ocean Change: Drivers of Vulnerability and Implications for Adaptation* from 23-25 April 2019 at the IAEA Environment Laboratories in Monaco. Human well-being at large is at risk from both direct and indirect consequences of climate- and CO₂-related ocean changes. However, while societies have some experience in dealing with extreme events like storms and marine heat waves, knowledge is less advanced on society's responses to so called "slow-onset changes" such as ocean acidification, ocean warming and sea level rise. The meeting focused on understanding the root causes of societal vulnerability to slow-onset changes, at the crossroads of both changing ocean conditions and societal dynamics. It gathered 10 experts from Australia, Canada, France, Monaco, UK and the USA. The participants are now working on a scientific article to demonstrate that addressing the root causes of societal vulnerability to ocean change may offer new opportunities, not only to reduce gradual climate risks in the future, but also to advance sustainable development pathways more broadly. Next steps will consist of exploring to what extent such an understanding of human dimensions can feed prospective risk and adaptation scenarios.

#SCIENCE

Workshop on the human vulnerabilities to ocean change, IAEA Monaco, 23-25 April 2019. (Photo: © Marine Lebrech, IAEA).



Annual meetings of SOLAS IMBER Ocean Acidification Working Group and OA-ICC Expert Group, Villefranche and Monaco

Annual meeting of the OA-ICC, IAEA Monaco, 28 May 2019. (Photo: © Tanmay Misra, IAEA).



The OA-ICC held its annual expert group meeting at the IAEA Environment Laboratories in Monaco on 28 May 2019. Twenty experts from 9 IAEA Member States, IOC-UNESCO, and IAEA staff reviewed recent progress and discussed plans for future OA-ICC activities. The focal points for each of the nine OA-ICC activities presented the latest updates from their activities, including progress of the [Global Ocean Acidification Observing Network](#) (GOA-ON), the capacity building, data management and communication activities. Many of the experts are also members of the [SOLAS-IMBER Ocean Acidification Working Group](#), which met the previous day in

Villefranche-sur-mer. [More information](#). #SCIENCE #CAPACITYBUILDING #COMMUNICATION

Practical guidelines for ocean acidification studies, Monaco, 29-31 May 2019

Back-to-back with the annual expert meeting, the OA-ICC together with GOA-ON and [The Ocean Foundation](#) organized a technical meeting on practical guidelines for ocean acidification research. The meeting brought together 15 participants from 7 Member States, IOC-UNESCO and the IAEA to assess needs and issues faced when undertaking ocean acidification monitoring and research in different regions, and to develop practical resources to help respond to those needs. The participants had all been involved in previous ocean acidification capacity building efforts. The full list of products, including manuals for the [GOA-ON in a box kit](#), and a decision tree for chemical and biological ocean acidification studies depending on the intended use of the data, [are open for community input](#). #CAPACITYBUILDING



Practical guidelines for OA studies, Monaco, 29-31 May 2019. Photo: © François Oberhänsli, IAEA).

Updates from the Community of Ocean Action on Ocean Acidification

The [Community of Ocean Action on Ocean Acidification](#) (COA on OA), led by Mr David Osborn, Director of the IAEA Environment Laboratories and Mr Bronte Tilbrook, CSIRO, Australia, hosted the third COA on OA webinar on 12 June 2019. The webinar featured a presentation from Libby Jewett on recent progress of the Global Ocean Acidification Observing Network, GOA-ON (see [Voluntary Commitment here](#)). A recording from the webinar can be found [here](#). For an overview of the COA on OA Voluntary Commitments, click on this [video link](#).

The focal points for the different Communities of Ocean Action also met in Incheon, Republic of Korea, 31-31 May 2019 to discuss opportunities for new partnerships, catalyse new Voluntary Commitments and discuss ideas for a communications action plan in the lead up to the next UN Ocean Conference in Lisbon, Portugal, 2-6 June 2020. More information is available [here](#).

Voluntary Commitments can be submitted at any time on this [website](#), where you will also find more information about the SDG 14 Voluntary Commitments process. [#COMMUNICATION](#)



**COMMUNITIES OF
OCEAN ACTION**
IMPLEMENTATION OF SUSTAINABLE DEVELOPMENT GOAL 14

New web-based simulation and decision support tool for experimental design



A new guide to running best practice experiments in ocean research developed by the [Scientific Committee on Oceanic Research \(SCOR\) Working Group 149](#) is now available. This guide includes several resources to help scientists create accurate and statistically meaningful single- and multi-driver experiments. These include:

- A [decision support tool](#) to help design multiple-driver experiments.
- The Multiple Environmental Driver Design Lab for Experiments ([MEDDLE](#)). The MEDDLE simulator is a computer model that mimics some typical responses of marine organisms to multiple drivers. It allows users to run several virtual laboratory experiments by setting the combined levels of the drivers, choosing the number of replicates, and considering natural variability.
- A [video gallery](#) and a [handbook](#) to guide users of the tools.

See also [this article](#) for more information about these tools and this [review](#) for a comprehensive discussion on different experimental strategies to study multiple drivers. [#SCIENCE #CAPACITYBUILDING](#)

Training course on best practices for ocean acidification experiments in multi-stressor scenarios

The IAEA Environment Laboratories in Monaco welcomed 16 participants from 16 countries on 24-28 May 2019, for a training course on designing and running multi-stressor experiments. The course taught participants how to use the Multiple Environmental Driver Design Lab for Experiments ([MEDDLE](#)), produced by the [Scientific Committee on Oceanic Research \(SCOR\) Working Group 149](#) (see above). Participants were able to use these new tools to plan their own experimental designs and research questions. An interdisciplinary lecture team, including members of the SCOR Working Group 149, led the training. [More information](#). [#CAPACITYBUILDING](#)



Training workshop on OA and multiple stressors, Monaco, 24-28 June 2019. Photo: © François Oberhänsli, IAEA).

SAVE THE DATE: 5th International Symposium on the Ocean in a High-CO₂ World, 7-10 September 2020, Lima, Peru

The Pedro Ruiz Gallo National University, in cooperation with the OA-ICC and other partners, will organize the fifth edition of this Symposium series launched in 2004. It follows the symposia in Paris in 2004, Monaco in 2008, Monterey in 2012, and Hobart in 2016, which were all key events for the international community of researchers studying ocean acidification and related stressors. The 5th symposium will maintain the traditional focus of the four previous symposia and look at ocean acidification and associated impacts on marine organisms, ecosystems, and biogeochemical cycles. Ocean acidification will be considered in combination with other global changes such as warming and deoxygenation.

More information. #SCIENCE

NEXT ISSUE

- *Kick-off meeting of new Coordinated Research Project on ocean acidification impacts on socio-economically important seafood species, Kristineberg, Sweden, 26-30 August 2019*
- *GOA-ON involvement in OceanObs'19*
- *Fourth webinar of the Community of Ocean Action on Ocean Acidification, September 2019*
- *Manuals for "GOA-ON in a box" methodology*

OA-ICC online resources:

- **OA-ICC news stream** - recent publications, media coverage, meeting announcements, jobs etc.
- **OA-ICC website** – Information about activities and resources for different audiences / languages
- **OA-ICC bibliographic database** – close to 5,800 references with citations, abstracts and keywords.
- **OA-ICC data compilation** on the biological response to ocean acidification - access to experimental data from 928 scientific papers.
- **NEW OA-ICC portal for OA biological response data** – access to over 1,000 data sets along with citations.

The IAEA OA-ICC promotes global collaboration and activities to advance ocean acidification science, capacity building, and communication

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