

UN Environment Programme GEMS/Water Capacity Development Centre Newsletter

July 2020

Welcome to the eighth edition of the UN Environment Programme GEMS/Water Capacity Development Centre (CDC) newsletter.

We hope that this Newsletter finds you safe and well. The first six months of 2020 have brought many changes for the staff of our Centre due to the arrival of the Covid-19 pandemic in Ireland in February. The Centre's office in University College Cork closed in March and we have been working from home since then. Our training, travel and field activities have all been suspended, but luckily our on-line courses could continue with minimal disturbance for our students. This first half of the year has been a steep learning curve on team work on-line as we have been working hard to fulfil as many of our 2020 plans as possible while working remotely. We would like to thank all our colleagues internationally for their commitment and support in our efforts to improve global capacity to monitor and assess freshwater quality.

I hope you enjoy reading about our activities since January. Please don't hesitate to contact us if you would like more information about any of them or if you have ideas about how we might increase capacity development in your country or region.

Stay safe,

Dr Debbie Chapman

Director, UNEP GEMS/Water Capacity Development Centre

Meet the UN Environment Programme GEMS/Water Capacity Development Centre Team



Deborah Chapman

Centre Director: training and advice in freshwater quality, monitoring and assessment.



Aoife Nagle

Administrator: administration, project and Analytical Chemistry support for the GEMS/Water CDC.



Stuart Warner

Training and Support Officer: supporting capacity development for water quality monitoring with a focus on SDG Indicator 6.3.2.



Lucía Hermida Gonzalez

Programme Coordinator: developing and running our training courses, including the on-line CPDs, PG Diploma and MSc in Freshwater Quality Monitoring and Assessment.



Patrick Cross

Instructional Designer: designing on-line training material for capacity development.



Katelyn Grant

Project Assistant: supporting development and delivery of on-line training and training workshops on water quality monitoring.



New member of staff Steve Hutton

Research assistant: assisting with the development and delivery of training materials.

The UN Environment Programme GEMS/Water Capacity Development Centre Team is based in the Environmental Research Institute, University College Cork, Ireland and works closely with our colleagues in the UN Environment Programme GEMS/Water Data Centre at the Federal Institute of Hydrology, Koblenz, Germany and the UN Environment Programme, Global Programme Coordination Unit in Nairobi, Kenya.

Update on our short, on-line, Continuous Professional Development (CPD) courses

Congratulations to our most recent cohort of CPD students who began their course(s) in January and finished them in April 2020. Despite the difficulties many experienced as the pandemic reached their countries, most students finished their studies with great success.

The next round of the short, on-line courses will begin in September 2020. The deadline for applications has been extended until the **14 August 2020**.



UN environment programme | GEMS Water | Capacity Development Centre

Short on-line courses on water quality monitoring and assessment

Six courses of 12 weeks each
University accredited and certified
Applications close 14th Aug 2020
and courses commence September 2020

Further information
Details: www.ucc.ie/en/gemscdc/shortonlinecourses/
Email: gemscdcadmin@ucc.ie

The short courses available are as follows, together with links for more details on each one:

- Freshwater Monitoring Programme Design:
<https://www.ucc.ie/en/cpd/options/science/ev6012/>
- Quality Assurance for Freshwater Quality Monitoring:
<https://www.ucc.ie/en/cpd/options/science/ev6013/>
- Data Handling, Assessment & Presentation for Freshwater Quality Monitoring:
<https://www.ucc.ie/en/cpd/options/science/ev6014/>
- Water Quality Monitoring and Assessment in rivers/lakes/reservoirs:
<https://www.ucc.ie/en/cpd/options/science/ev6015/>
- Water Quality Monitoring and Assessment of Groundwater:
<https://www.ucc.ie/en/cpd/options/science/ev6016/>
- Alternative Methods for Freshwater Quality Monitoring:
<https://www.ucc.ie/en/cpd/options/science/ev6017/>

You can find a link to the brochure for the short on-line, CPD, courses here:

<https://www.ucc.ie/en/media/research/watercapacitydevelopmentcentre/ShortCoursesPDF.pdf>

Keep an eye on these as we hope to have more in the future!

Update on the Postgraduate Diploma and MSc in Freshwater Quality Monitoring and Assessment

Our current cohort of Postgraduate Diploma and MSc students began their studies in September 2019 and are progressing well. In the first four months of 2020, they studied “Quality Assurance in Freshwater Quality Monitoring Programmes”. They are now coming to the end of their third and final module of their first year, “Data handling and presentation for freshwater quality monitoring programmes”. These students are from 12 countries, all of which have been impacted by the current pandemic. Therefore, we have tried to accommodate the difficult circumstances most of these students have been experiencing by providing extensions to deadlines for completing their assignments. Despite the difficulties faced, most of our students will soon be completing their first year. Well done to all of them all as they continue to work hard and show great resilience.



UN environment programme | GEMS Water | UCC School of Biological, Earth and Environmental Sciences

MSc and Postgraduate Diploma FRESHWATER QUALITY MONITORING AND ASSESSMENT

Through its global scoping exercise and bilateral discussions with the water and education sectors in developing countries the Capacity Development Centre identified a need for a flexible, advanced course for individuals involved in water quality management. In addition, the new UN Agenda 2030 Sustainable Development Goal for water (SDG 6) is leading to an increased demand for knowledge, understanding and capacity in water quality monitoring and assessment worldwide. These Postgraduate programmes in Freshwater Quality Monitoring and Assessment address these needs by enabling the development of expertise in countries through online learning.

Over the first two years the Postgraduate Diploma focuses on all aspects of water quality monitoring including: monitoring programme design, quality assurance, data analysis and presentation, monitoring and assessment of rivers, lakes and groundwater, and water quality monitoring with biological and ecological methods and with particulate material. There is also an opportunity to take part in a field workshop during the second year of the programme. In the third year students undertake a research project on a water quality topic in order to qualify for the MSc in Freshwater Quality Monitoring and Assessment.

The programme aims to recruit highly-motivated, enthusiastic students who may be (i) currently involved in water quality monitoring, (ii) part of the UNEP GEMS/Water network, and/or (iii) seeking to specialise in water quality monitoring and assessment, and who wish to study on a flexible, part-time basis.

Modules

The MSc and Postgraduate Diploma in Freshwater Quality Monitoring and Assessment are part-time programmes taken over 36 or 24 months respectively, starting in September every second year.

Application deadline: 18th June, 2021
Courses commence: September 2021

To be awarded the Diploma students must complete and pass 30 credits from Year 1 and 30 credits from Year 2. To be awarded the MSc students must also complete and pass the dissertation.

Students can exit the course after completion of EV6001, EV6002 and EV6003 with a Postgraduate Certificate in Water Quality Monitoring and Assessment or after Year 2 with the Diploma provided they have completed 60 credits. Teaching is entirely online, with the exception of module EV6004, which is an optional field-based module, and EV6010 which is the research dissertation.

Details for non-EU students applications are available at: <https://www.ucc.ie/en/international/studyatucc/postgraduateprogrammes/taughtprogrammes/>

Year 1

- EV6001 Monitoring programme design for freshwater bodies (10 credits)
- EV6002 Quality assurance in freshwater quality monitoring programmes (10 credits)
- EV6003 Data handling and presentation for freshwater quality monitoring programmes (10 credits)

Year 2

- EV6005 Monitoring and assessment of surface waters (10 credits)
- EV6007 Monitoring and assessment of groundwater (10 credits)

and any two from the following:

- EV6004 Freshwater quality monitoring in the field (5 credits)
- EV6008 Freshwater quality monitoring using biological and ecological methods (5 credits)
- EV6009 Freshwater quality monitoring with particulate material (5 credits)

Year 3

- EV6010 Dissertation in Freshwater Quality Monitoring and Assessment



MSc and Postgraduate Diploma FRESHWATER QUALITY MONITORING AND ASSESSMENT

Career Prospects

The MSc and Postgraduate Diploma are designed to give students a strong foundation in all aspects of water quality monitoring and assessment, equipping them to work in the area of water quality management in public or private sectors, including water and environment ministries, regulatory agencies, agriculture and industry. The programme will be of particular benefit for the career advancement of employees already working in the water quality monitoring sector.

Eligibility and Entry

Applicants must possess a primary degree in a relevant science subject, such as a BSc in Environmental Science or cognate discipline, or a relevant professional qualification. Candidates who do not hold a BSc will be judged for entry into the Postgraduate Diploma on a case-by-case basis for their suitability for the programme, subject to the approval of the College of Science, Engineering and Food Science, UCC. For candidates applying directly to the MSc a relevant BSc is required with a minimum grade of a 2H2 (a grade comparison is available on our website).

Candidates, whose primary or official language is not English, should possess an IELTS of 6.5 (or TOEFL equivalent) with no less than 6.0 in each individual category. Please see here: <https://www.ucc.ie/en/study/comparison/english/> for detailed Postgraduate English Language Requirements.

Students apply online at: <http://www.pac.ie/ucc>, selecting the PAC application Code for the MSc (CKR17) or Postgraduate Diploma (CKR65) in Water Quality Monitoring and Assessment.

Fees

Nominated candidates from UNEP GEMS/Water participating countries are eligible for special reduced fees. Fees for all EU and Non-EU applicants can be found at: www.ucc.ie/en/financeoffice/fees/schedule/

University College Cork and the School of Biological, Earth and Environmental Sciences

University College Cork is one of Ireland's oldest higher education institutions and internationally acclaimed as one of Ireland's leading research institutions. The School of Biological, Earth and Environmental Sciences (BEES) is a recognised leader in teaching and research in Zoology, Ecology, Plant Science, Geology and Environmental Science.

UNEP GEMS/Water Capacity Development Centre

The UNEP GEMS/Water Capacity Development Centre (CDC) was founded in 2015 to provide global capacity development in water quality monitoring and assessment to the UN Environment's global water quality monitoring system, GEMS/Water, through the provision of education, training and expert advice. The Centre is based in the Environmental Research Institute, UCC.

For further information contact

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E-mail: gemscdcadmin@ucc.ie
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<https://www.ucc.ie/en/gemscdc/>
Programme Co-ordinator
Dr. Lucia Hermida
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The next intake of new students to the Postgraduate Diploma and MSc will be in September 2021.

You can find further information on the Postgraduate Diploma here: <https://www.ucc.ie/en/ckr55/> and the MSc here: <https://www.ucc.ie/en/ckr17/>

MSc in Freshwater Quality Monitoring and Assessment

After completing the Postgraduate Diploma, students who achieve the required grade can progress into a third, MSc year. This year involves an individual research project and dissertation, which can be carried out in their home country in conjunction with their employment.

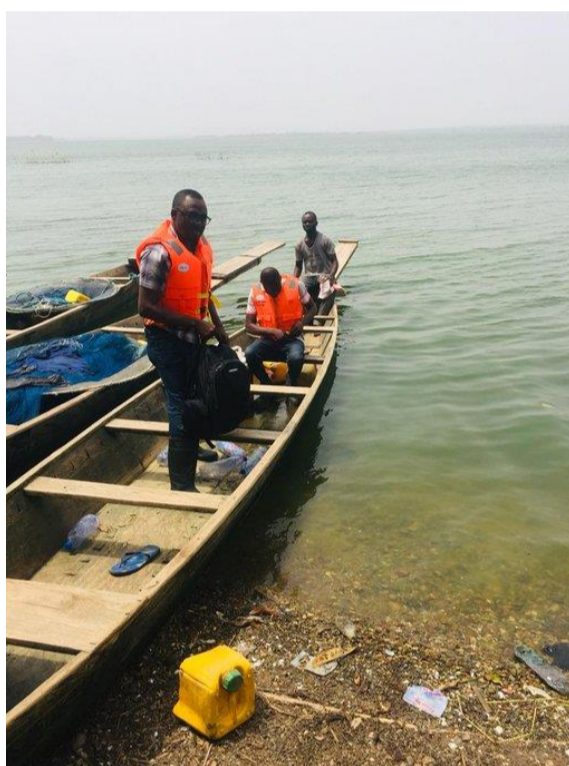
We currently have 12 students carrying out MSc research projects in various aspects of freshwater quality monitoring and assessment. These students, along with their supervisors, have been resourceful and diligent in their response to the impact of Covid-19 on their studies. With the closing of the University in mid-March, fieldwork was also suspended both for Irish and international research. Therefore, our students had to rethink their research schedules, their project objectives and even in some cases change their projects altogether. Most of them are now working hard on analysing the data they obtained prior to the disruption and data that they have acquired from water sector organisations. The dissertation deadline has been extended until mid-September 2020.

They are an inspiring group and we are looking forward to reading their finished research dissertations!

If you would like to read more about the variety of projects being carried out by our students, we have some project features available on our website, with more coming soon.

Check out Jeremiah Asumbere's freshwater quality research in Accra, Ghana here:

<https://www.ucc.ie/en/gemscdc/news/special-msc-project-feature-jeremiah-asumberes-research-into-freshwater-quality-in-accra-ghana.html>



Jeremiah preparing for sampling in the Weija Reservoir, Ghana (Photo: J. Asumbere).

Read about Mohamed Juanah's assessment of the Rokel River Basin, Sierra Leone here:

<https://www.ucc.ie/en/gemscdc/news/msc-project-feature-mohamed-juanahs-freshwater-quality-research-in-sierra-leone.html>



Collecting field data on the bank of the Rokel river before sampling (Photo: M. Juanah).

Explore Olumide Omolade's research on the coastal groundwater of Nigeria and Cameroon here:

<https://www.ucc.ie/en/gemscdc/news/msc-project-feature-olumide-omolades-groundwater-research-in-nigeria-and-cameroon.html>

Open Access Capacity Development training materials

Although the pandemic disrupted our activities involving travel, it did not hinder our work on developing more capacity development materials. We were lucky enough to be able to recruit some temporary researchers for a couple of months to help with production of open access on-line training courses and short handbooks.

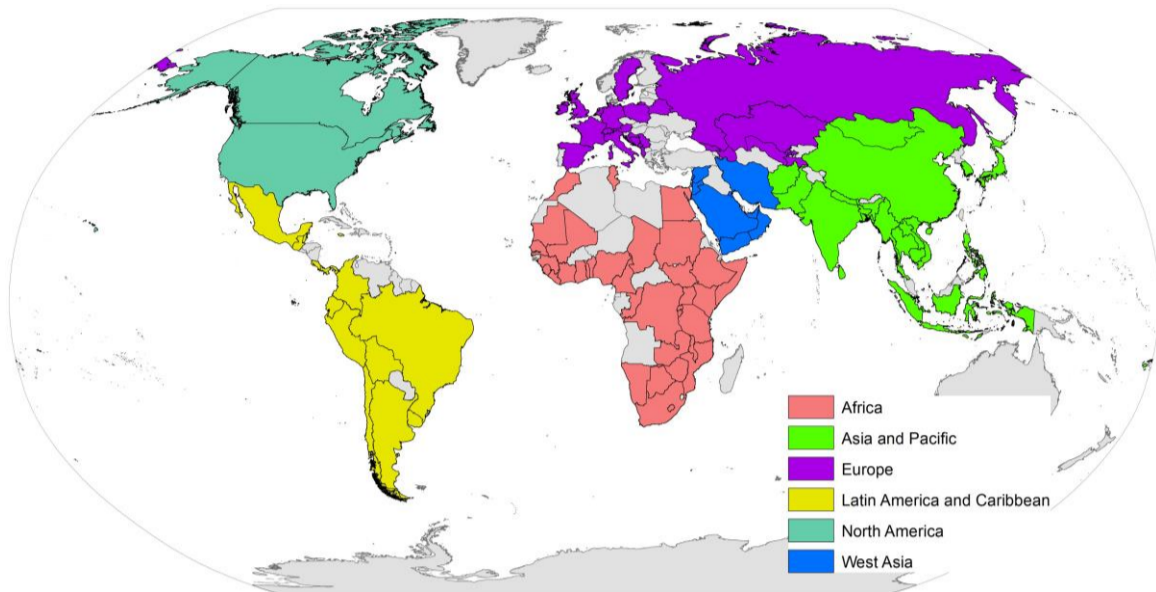
The open access courses will be available on the UN Environment Programme's eLearning platform, with the first courses available later this year. They are being adapted from our University accredited short courses on various aspects of Freshwater Quality Monitoring and Assessment, including water quality monitoring and assessment of groundwaters, rivers, lakes and reservoirs, alternative methods for freshwater quality monitoring, and freshwater quality monitoring programme design. Courses on data management and quality assurance will be completed late in 2020.

Handbooks

Luisa Andrade, Mary Kate Bolger, and our new research assistant Steve Hutton have been working hard on bringing together material from our on-line courses to create a series of short handbooks. These handbooks will each focus on one area of freshwater quality monitoring and assessment and will provide information to assist with monitoring and assessment programmes in countries globally. These handbooks will be available in electronic format for download at the end of the year.

Global view of the countries the GEMS/Water CDC has engaged with since its inception in 2014

The postponement of our international workshops and field courses during 2020 has halted our face-to-face engagement. However, we are grateful for modern technology and the enthusiasm of our partners all over the world. This has enabled the continuation of dialogue and progress towards strengthening capacities to monitor and assess freshwater in many world regions. This capacity development helps countries to generate sound water quality data and to use this data effectively to improve their freshwater quality. Since our inception, we have engaged with 107 countries through our training workshops, short on-line courses, and blended learning programmes. We hope to reach many more people in these countries and others in the future.



Map displaying the 107 countries the CDC has engaged with since 2014.

World Water Quality Alliance

The [World Water Quality Alliance](#) (WWQA) launched in 2019, bringing together a wide range of expertise in water quality, water technology, governance, and diplomacy to provide stakeholders with evidence-based assessment, services, and solutions on water quality problems. Our Director, Deborah Chapman, has been chosen as the co-chair for the WWQA Technical Advisory Committee and the CDC is taking the lead, together with the GEMS/Water team in Nairobi, in developing a WWQA Capacity Development Consortium to enhance the range and global coverage of capacity development activities for water quality.



Challenges to capacity for water quality monitoring

Debbie and Stuart contributed to a paper about the capacity challenges in water quality monitoring, particularly understanding the role of human development. This work was the product of collaboration in 2018 and 2019 with IHE Delft and the United Nations University – Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES).

The full reference to the publication is below and you can find the paper [here](#).

Kirschke, S., Avellán, T., Bärlund, I., Bogardi, J.J., Carvalho, L., Chapman, D., Dickens, C.W.S., Irvine, K., Lee, S., Mehner, T. and Warner, S. 2020 Capacity challenges in water quality monitoring: understanding the role of human development. *Environ. Monit. Assess.* 192:298

IHE Delft Capacity Development Symposium 26-29 May 2020

The IHE Delft Capacity Development Symposium is usually held in Delft, the Netherlands. This year, because of travel restrictions arising from the Covid-19 pandemic, they adapted the event so that the sixth International Symposium on Knowledge and Capacity for the Water Sector was held on-line. Debbie was asked to give a keynote presentation on 'Global Capacity Development in Water Quality Monitoring and Assessment'. She was also a panellist participating in discussions on '[Data and Tools for Water Applications](#)' and '[How to improve data re-use: from data acquisition to capacity development](#)'.



You can still watch her keynote presentation on the symposiums platform [here](#).

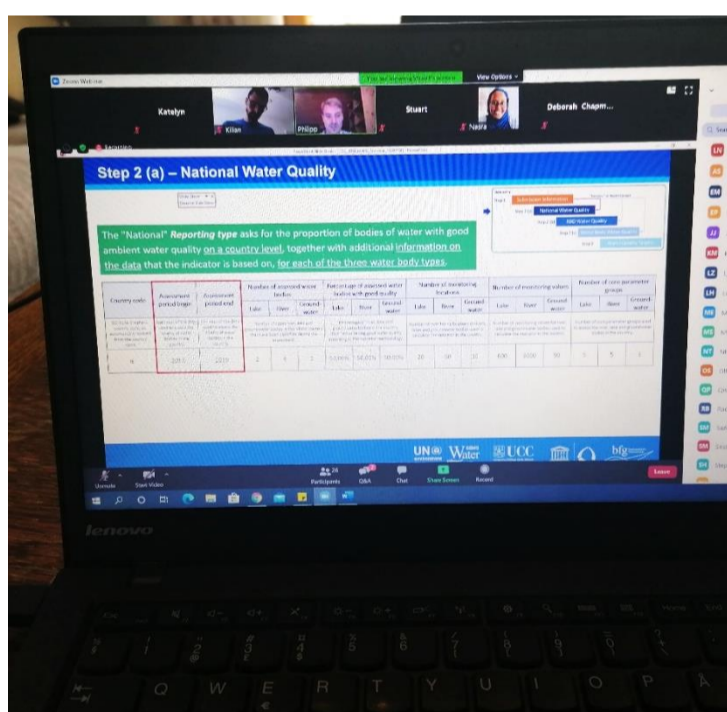
SDG Indicator 6.3.2 Data Drive 2020

The 2020 data drive for Sustainable Development Goal (SDG) indicator 6.3.2 is well underway. Following the feedback from the first data drive in 2017, the supports available to countries wishing to calculate and submit their national indicator value have been greatly increased. The SDG Indicator 6.3.2 community platform, available [here](#), is populated with guidance documents, case studies, and a frequently asked questions (FAQs) section.

GEMS/Water CDC was fortunate to have the help of Oriol Giralt-Paradell and Guilhem Boyer to translate some material into Spanish and French. A big thank you to both Oriol and Guilhem for their hard work.

The available technical guidance documents include documents on monitoring programme design, target values, groundwaters and Level 2 monitoring. These documents are in the process of being translated into more UN languages (French, Spanish, Russian, Arabic and Chinese). There are also presentations available summarising these technical documents.

As a result of the Covid-19 pandemic, *in situ* SDG training and engagement for this data drive has been replaced with extensive training materials, recorded presentations and on-line webinars. A webinar introducing the indicator methodology and reporting workflow for the 2020 Data Drive was held on 7 July 2020 with 20 country representatives attending.

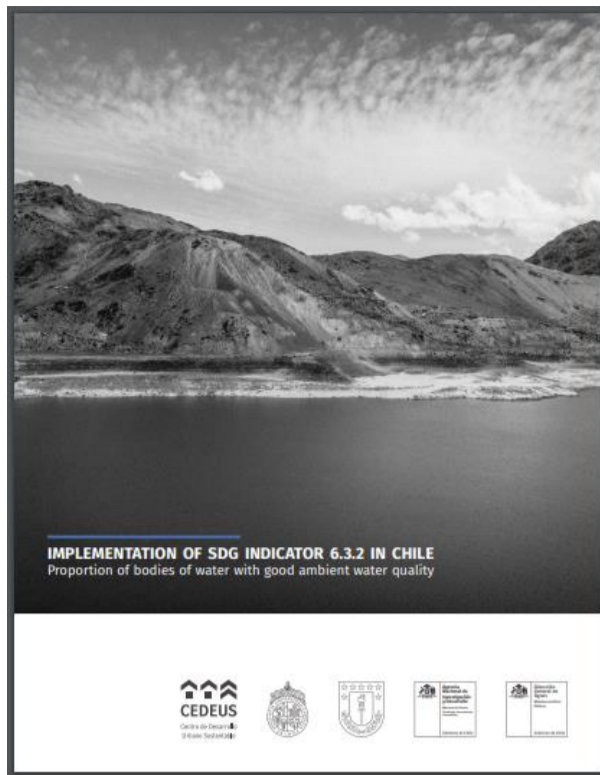


Philipp Saile, from the GEMS/Water Data Centre, presenting on the reporting workflow for the SDG Indicator 6.3.2 Data Drive 2020.

If you have any queries that are not fulfilled by the material available on the [indicator support platform](#) please do not hesitate to contact the helpdesk at sdg632@un.org.

SDG Indicator 6.3.2 Chilean case study

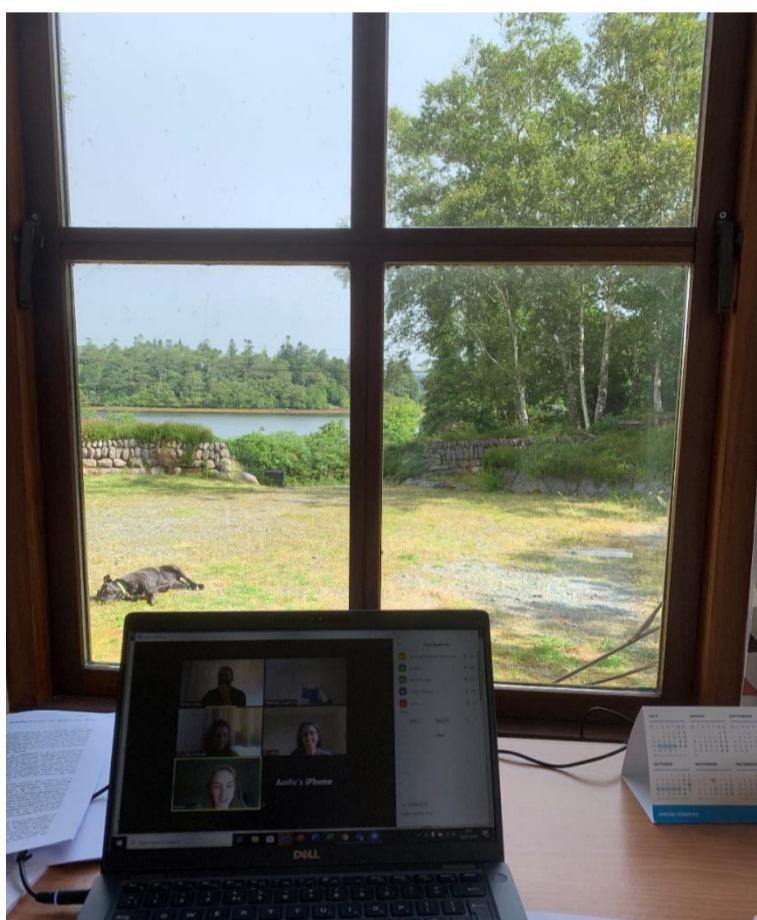
Guillermo Arce, Alejandra Vega and Pablo Pastén from CEDEUS (Centro de Desarrollo Urbano Sustentable), and Daniela Fredes from DGA (Dirección General de Aguas) recently wrote the report 'Implementation of SDG Indicator 6.3.2 in Chile'. The report is a case study about the application of the indicator methodology in Chile using a very large dataset. The methodology adaptations that they made to meet the management requirements of their water resources is documented in the study. There are valuable lessons for other countries in this case study. It is available to read [here](#).



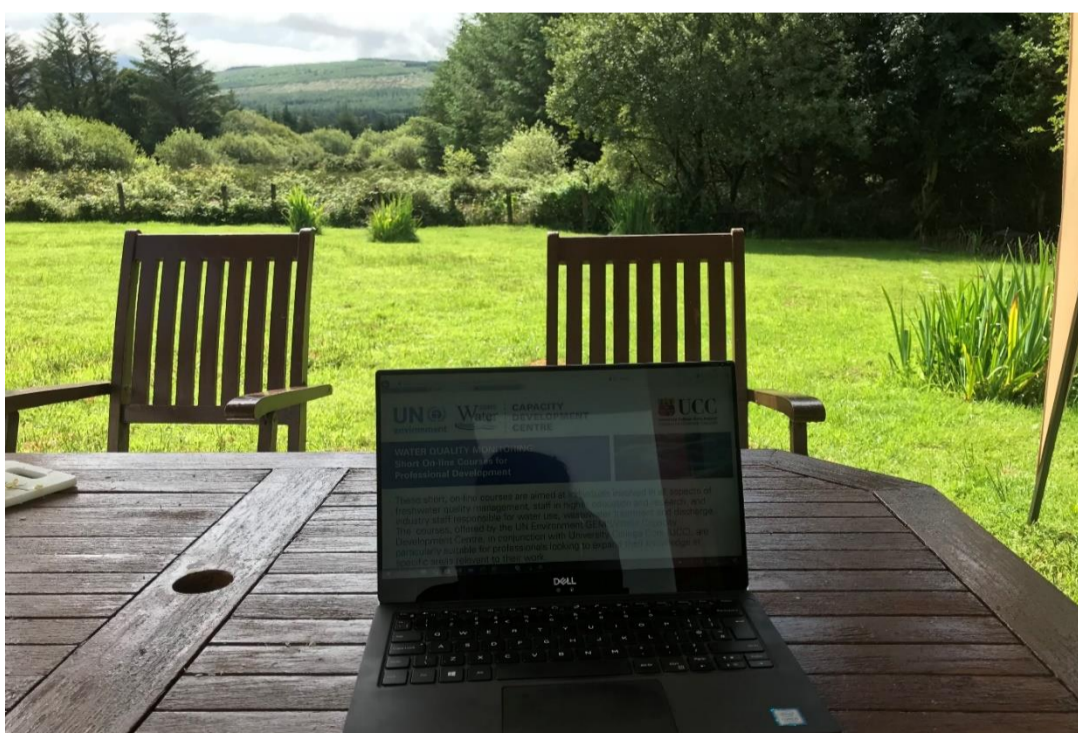
GEMS/Water CDC new office!

Since 12 March, University College Cork has been closed due to the Covid-19 pandemic. All face-to-face teaching and meetings have been moved fully on-line. All fieldwork has been postponed. This closure has meant the CDC is now operating from office space in homes across Ireland in counties Cork, Clare, Kerry, and Kilkenny! We have been very lucky to be able to continue our capacity development objectives while working from home.

Some views from our "working from home" offices below:



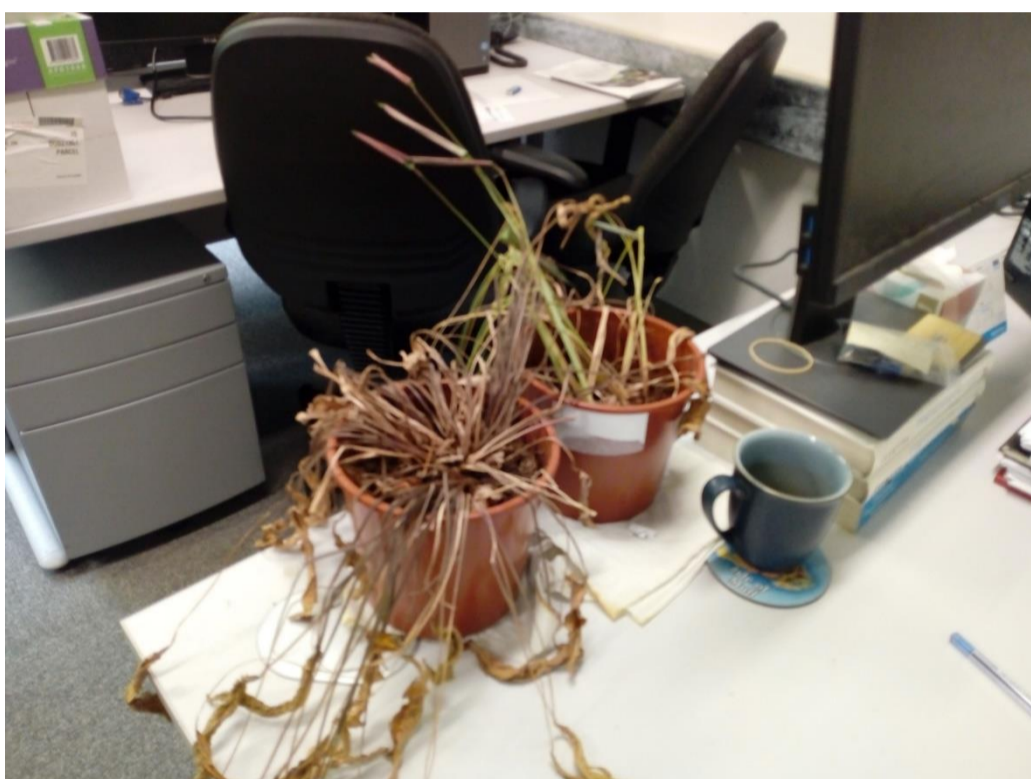
A typical team meeting for Debbie. A sunbathing dog, and the sea close by making for an envious view.



Aoife's outdoor office.



Katelyn's ergonomic arrangement.



Stuart's plants in the CDC office in the ERI have been missing him terribly!

That brings us to the end of our July 2020 newsletter. We would like to wish you all well and look forward to working with you during the rest of 2020.

Keep an eye on our [Twitter](#) feed and [website](#) for the latest updates and further information.

GEMS/Water CDC team



**School of
Biological, Earth and
Environmental Sciences**

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Our website address is:
<https://www.ucc.ie/en/gemscdc/>

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