



ANNUAL REPORT 2015



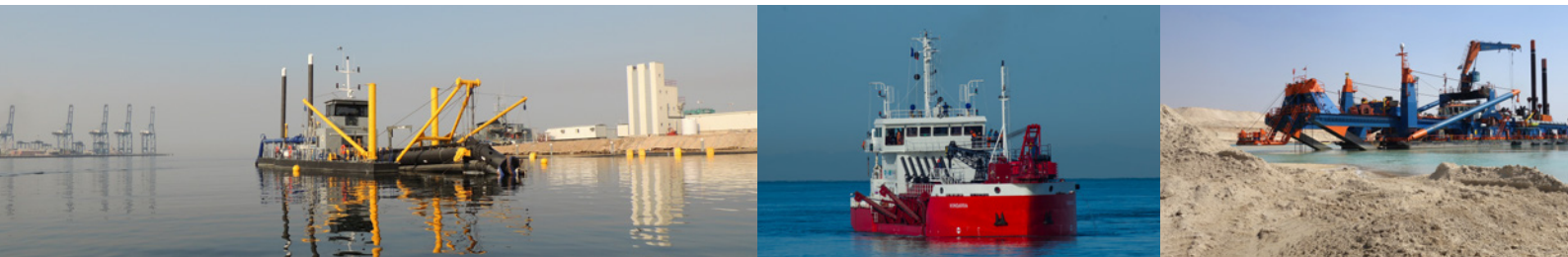
UNDERSTANDING DREDGING



Central Dredging Association

Central Dredging Association – CEDA

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CEDA ANNUAL

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REPORT 2015

MESSAGE FROM THE PRESIDENT AND THE GENERAL MANAGER

Dear Reader,

2015 has been another remarkable year. One in which we hosted a number of key events including Dredging Days, in Ahoy Rotterdam, and a WODA workshop on underwater sound, in Paris. The African Section experienced a revival in activities and held the very successful 6th International Symposium, in Morocco. We were keen to ensure that our services to our members remained on track so we asked our Corporate Members what they thought of our efforts. Finally, to cap a very busy year, one president passed the leadership baton onto the next.

With the help of an army of volunteers, supported by our Corporate Members, CEDA achieved many things in 2015. Some notable highlights from the year include:

- A number of very successful meetings. The increasing numbers of participants (whether delegates, sponsors or exhibitors) are a testament to the quality of those events.
- The Workshop on Underwater Sound in Relation to Dredging, organised for WODA in Paris in March, was very well-received. It offered a unique opportunity to learn from the experts in a well-designed, comprehensive series of excellent presentations.
- CEDA Dredging Days 2015, at Ahoy Rotterdam in November, was a huge success with over 250 members attending from across the region. 60 students were able to attend, as part of the Young CEDA Student Programme is in keeping with our remit

to attract students and young professionals to the industry and support them in their career.

- Under the remit of the CEDA Environment Commission, and thanks to the hard work and efforts of the members of the Adaptive Management and the Environmental Monitoring Working Group, we published important new papers on each topic during the year.
- We were delighted to get a good response to our call when we asked for feedback from Corporate Members during CEDA Dredging Days 2015. It was good to hear that the core activities most valued by our members were the CEDA events, networking opportunities, Section meetings, and Young CEDA activities. We will of course endeavour to improve on those. Members also told us that we needed to be better at communicating with them. We appreciate the feedback and have taken it on board as a key task for 2016 and beyond.

As always we would like to thank the many CEDA members – individuals and corporates – who have kindly volunteered their time and/or their staff during the year. We would not be able to do much, if any, of it without them and it is much appreciated.

Thank you all and we look forward to working with you in growing our association and further promoting best practice and the dredging profession in 2016.



Anders Jensen

President until 5 November 2015



Polite Laboyrie

President from 5 November 2015



Anna Csiti

General Manager

ABOUT CEDA

CEDA is an established authority and the leading independent forum for the professional dredging community and associated industries in Europe, Africa and the Middle-East. It represents dredging organisations and professionals and organisations, from government, academia and business, in the region and fosters and promotes the understanding and advancement of dredging to the wider community. It is a recognised reference point for high-quality specialist knowledge on all aspects of dredging and provides a multidisciplinary network for professional contacts.

Drawing on the collective knowledge of its members, and as an impartial organization, CEDA regularly gives expert advice to government and international regulatory bodies. CEDA members are representative of consultancies, research and educational institutions, port authorities, government agencies, dredging contractors, designers and builders of dredging vessels, suppliers of ancillary equipment, and organisations providing a whole range of related services.

Mission

CEDA's mission is to be the independent, easy-to-access forum for the professional dredging community and the wider associated industries in Europe, Africa and the Middle East. Through its knowledge transfer and exchange programmes, products and services, CEDA enables the professional development, and corporate and personal success, of its members. It fosters technological innovation and advancement of best practice in all dredging-related activities. It promotes the contribution of dredging to sustainable aquatic environment and infrastructure.

CEDA's scope includes all fields related to dredging such as land reclamation, marine and fluvial construction, offshore energy, fluvial and deep-sea mining.

Vision

CEDA's vision is to be essential to the professional dredging community and the wider associated industries and to be universally recognized for its professional expertise and balanced views.



Position

CEDA is part of the World Organisation of Dredging Associations (WODA) and is responsible for Europe, Africa and the Middle East. CEDA's two sister associations, WEDA (Western Dredging Association) and EADA (Eastern Dredging Association), serve the Americas, and Asia, Australia and the Pacific region respectively.

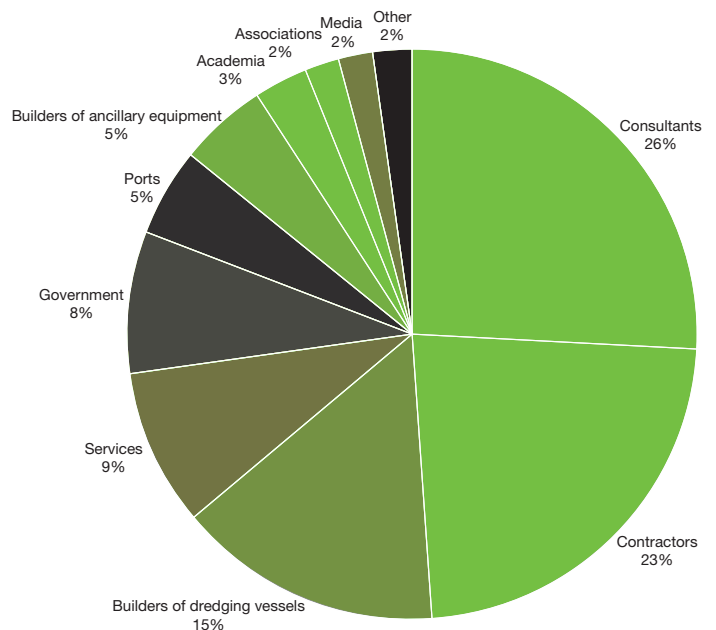
A number of international and national organisations, both professional and trade, operate in dredging and related fields. The graphic below shows the types of international organisations with which CEDA has regular contacts and co-operates on projects of common interest.

Countries of origin

Argentina	Guinea	Nigeria
Australia	India	Norway
Belgium	Indonesia	Portugal
Canada	Iraq	Qatar
China	Ireland	Russian Federation
Cyprus	Italy	Spain
Denmark	Malaysia	Switzerland
Finland	Morocco	United Arab Emirates
France	Mozambique	United Kingdom
Germany	the Netherlands	USA

MEMBERSHIP

One of CEDA's distinctive strengths lies in its diverse membership. CEDA members, corporations, organisations and individuals come from many fields and include project owners, commissioners of large infrastructure projects, dredging contractors, equipment manufacturers, consultants, academics and regulators. The graphic and list below illustrate the diversity and the geographical spread of CEDA's members.



Composition of CEDA's membership by main area of activity.

At the end of 2015, CEDA had 452 individual members, including 14 students, 7 starters, 34 retired members and 12 university or college lecturers. For the first time in years there has been a slight increase in the number of individual members (in the previous year there were 456).

The number of corporate members has also fallen. At the end of 2015 we had 121 corporate members, 2 members less than in 2014.

Attracting new members and retaining existing ones is a challenge. We strive to put extra effort into bringing new members into our community, and all members are encouraged to be good ambassadors for CEDA.

New corporate member

In 2015 we were delighted to welcome VITO N.V. from Belgium as a new corporate member in the CEDA community.



CEDA VOLUNTEERS: CEDA PILLARS

CEDA is driven by its members, many of whom provide their time and expertise voluntarily. The growth of the association is based on their enthusiastic and dedicated work; they are the true pillars of CEDA.

NATIONAL SECTIONS

Areas or countries with many CEDA members can set up a regional or national CEDA section to support internal networking at regional or national events. These sections are the smallest clusters through which CEDA members can become part of the wider CEDA network and, through WODA, be connected to the global network of professionals who share the same interest in dredging and marine construction. The chairs of these sections are CEDA ambassadors who help newcomers swiftly and easily become part of the CEDA community.

In 2015, CEDA's national sections continued to offer a successful series of meetings and site visits on topical subjects. Altogether, CEDA's four national sections held 11 well-attended meetings, site visits and events over the year. Members can see many of the presentations on the appropriate national section pages of the CEDA website.

*CEDA IS DRIVEN BY
ITS VOLUNTEERS*

African Section



Mulud Abudib
Acting Chair



Khadija Legliti
Secretary

2015 was a year of revival for the African Section. During the Annual General Meeting in April Mr Mulud Abudib, of the Group World Drapor, was elected Chairman of the Section. The year also saw the very successful 6th International Symposium entitled 'Sand Dredging: an alternative for sustainable development'. Organised by the Section, it took place on 22-23 April in Casablanca, Morocco, and was well-attended by 120 experts from 10 countries from Africa and Europe. The objective of the conference was to inform participants and encourage debate on the various techno-economic, legislative and social tools for sand dredging in an environmentally responsible manner.

Mr Redouane Belarbi, Secretary General, gave the opening address on behalf of the Ministry of Infrastructure, Transport and Logistics. He pointed out that many countries of the region were embarking on major transport infrastructure programmes, which would span several years, as part of their economic and social development policies. As a result, there would be a huge demand for

construction sand and public authorities would need to find alternative sources to meet this demand in a sustainable manner. One such source would be dredged marine sand.



Panel discussion on the optimal use of sand, which has strategic importance in Morocco. Panellists (l to r): Abdelhadi Taimouri (Independent Consultant), Mulud Abudib (Satram Marine), Moha Hamaoui (DPDPM - Direction des Ports et du Domaine Public), Hassan Ayad (RIMAL), Haima Hassine (DPDPM), all from Morocco.

A detailed report of the Symposium, and its agreed recommendations, are available on the CEDA website (Select National Sections > African Section).

Mulud Abudib
Chair, CEDA-AS



Participants of the 6th international seminar on sustainable sand dredging in Casablanca. An invaluable opportunity for professionals, researchers, academics and government, from a range of countries from Africa and Europe, to come together and share their knowledge and experience.

Belgian Section



Eric Van den Eede
Chair



Christel Goetschalckx
Secretary

The Belgian Section was pleased to present the following events in 2015 for its members.

Joint Dutch-Belgian event

As an alternative to the traditional New Year's Reception this year, the Dutch and Belgian sections held a joint event on 27 January 2015, at the Amrath Hotel Brabant in Breda, on the publication of the preliminary PIANC-report 144. Following the event, the report – 'The Classification of Soils and Rocks for the Maritime Dredging Process' – was released for consultation and remarks were invited from interested stakeholders.

At CEDA's request, PIANC Headquarters made the report electronically available to all CEDA-members in order to facilitate the review.

Club Evening: From Suez to Panama

'From Suez to Panama' was the theme of the Club Evening, held on 28 April, at the Hotel Beveren in Beveren. The enlargement of the Suez Canal was executed in the record time of 1 year and created a huge challenge for the contractors working on the project.

Presentations were given by representatives of both major Belgian dredging companies involved. Those present heard from Ir. K. Willems (DEME) on "Dredging the Suez Canal: excellence in execution" and ir. S. Bruggeman (Jan De Nul) provided an insight into how they dredged at a rate of one million cubic metres per day. Not only were Belgian companies heavily involved in the dredging and lock construction, but they were also involved in the design. Dr. ir. F. Toro (IMDC) covered the use of models for large scale projects-in this case the locks of the Canal.



Speakers of the joint Dutch-Belgian event in Breda, Peter Verhoef, Royal Boskalis Westminster (left) and Dirk Roukema, Blue Pelican Associates.

The works on the Panama Canal are nearing their completion.

Club Evening: Restoring Mont-Saint-Michel

A Club Evening was planned for 20 October where attendees would learn about the 'Restoration of the maritime character of the Mont-Saint-Michel'. Mont-Saint-Michel, where the high tidal range has created a unique and constantly changing landscape, is one of the most frequented tourist destinations in France. However, in recent centuries the maritime character of the site has been damaged by human activity. An ambitious project was set up to restore this site and to isolate once again the island from the mainland during high tide.

Unfortunately, this event had to be postponed and will hopefully be rescheduled for the near future.

Eric Van den Eede
Chair, CEDA-BE

Dutch Section



Johan Pennekamp
Chair



Yvonne Duivenman
Secretary

The Dutch Section (CEDA-NL) focusses on disseminating knowledge, and creating a platform for networking, in the Dutch and regional dredging community.

In 2015 CEDA-NL organised five main events. As always a range of topics were carefully chosen to add value, engage and inform, and the large audiences were a testament to the programme's great success. Growing the attendance and interaction of young professionals in the CEDA community continued to be a priority this year. We are proud to have welcomed a greater number of young professionals to our events.

CEDA-NL was pleased to be able to host an event in collaboration with global power solutions company, Wärtsilä. Also our collaborations with Dutch branch associations of shipbuilders, KNVTS, and IRO, have gone from strength to strength.

In 2015 CEDA-NL meetings were:

- 27 January: Based on the newly published PIANC report 144 'Classification of Soils and Rocks for the Maritime Dredging Process'. The meeting was held at the Amrath Hotel, Breda, and jointly organised

with CEDA-BE. Speakers were Dirk Roukema, Blue Pelican Associates, and Peter Verhoef, Boskalis International and a speaker from the PIANC editorial group provided a review of the report.

- 12 March: Held in association with IRO, a comprehensive meeting covered the topic of 'Offshore Industry: Status and Future' and was held at the Gouden Leeuw meeting centre, in Voorschoten. Industry Analyst, Richard Brakenhoff, Rabobank, considered offshore, energy and oil markets and discussed the prospects of a short term dip, but long term rise; ir. Jan Vlak, Operations Manager, Van Oord Dredging & Marine Contractors, spoke about dredging at extreme depths; and Henk J. Cornegé, Royal IHC, spoke on 'The seabed: where dredging and offshore meet each other'.
- 30 April: Held in association with KNVTS, the meeting covered ship deck appendages and speakers focused on the static and dynamic loads that these appendages have to bear. Attendees at the event, at the Delta hotel, Vlaardingen, heard from Menno Deen and Jacob Schaap, both from Ridderinkhof Winch Systems, and Toine Mulder, STEMA.
- 26 May: The meeting on 'The new bypass of the Zuid-Willemsvaart and Maxima Canals' was held in collaboration with Wärtsilä, at their offices in Schiedam. Renee Bruins, Ministry of Infrastructure and Environment, spoke on the contract and the modus operandi; Evert Aukema, also from Ministry of Infrastructure and Environment, covered innovative technology and design; and Tim Pallandt, Van den Herik Sliedrecht B.V., spoke on the operations of soil works, sheet piling and slope armouring.
- 29 September: 'Cyber Security' held at meeting centre Campanile, Delft. Mark Luchs, MSc student



The evening on cyber security attracted many young people.



There is always plenty of time to catch up with colleagues and friends.

Offshore and Dredging Engineering, Delft University of Technology, set the scene; Professor Christian Doerr, Cyber Security Group, discussed ‘Why have a lock at all’ and Erik Otto, Senior Information Security Advisor-Shell, spoke on ‘Cyber security within the industrial environment.

- On the 5th of November the Dutch Section hosted a very sociable Dutch Reception at the CEDA-Dredging Days. The event was sponsored by Dutch Dredging, Van Oord Dredging and Marine Contractors, and Royal Boskalis Westminster.
- CEDA-NL is one of two founding members of the Maintenance in Dredging Society and three meetings were held, under its auspices, in 2015:
 - 2 March: ‘High Profile Innovations’
 - 8 June: ‘From Dredging Vessel to Deposition Location’
 - 9 November: ‘Developments around Ballast Water’

Johan Pennekamp
Chair, CEDA-NL

UK Section



Nicola Clay
Chair



Katherine Coldwell
Associated Societies
Executive

Overview

I am delighted to be able to report a significant increase in CEDA-UK individual membership during the course of 2015 – up from around 40 members in February 2015 to nearly 70 members in January 2016!! During this year, the CEDA-UK Committee has put considerable effort into attracting new members. We saw a trickle of new members through the year and a larger number following our December technical seminar. The Committee agreed to charge a fee for non-members to attend the event and offered a year’s CEDA membership with the fee. We are working hard to provide an interesting and relevant programme of events for 2016 to ensure we retain, and further increase, our membership numbers.

2015 saw our first regional technical seminar in many years with an event in Glasgow. This was very well received by members who are based outside of London and we are committed to hosting one of our meetings and technical seminars around the UK each year.

The difficulty of programming site visits, and a relatively limited number of active projects in 2015, meant that we did not offer any visits but our technical seminars were excellent and well attended nevertheless! The CEDA-UK Committee members continue to actively participate in meetings and we are looking forward to our 2016 programme with excitement.

CEDA-UK members are contributing to the new book on Sustainable Dredging, led by CEDA Environment Commission.

Events and Activities

Two half-day technical seminars were held in 2015.

Overcoming the challenges of dredging in Scotland

In May, CEDA members gathered in Scotland for our first regional technical seminar for many years. We were delighted to meet around 40 attendees from across Scotland's maritime industries and government. Scotland's ports and harbours play a vital role in the country's economy through imports, exports, offshore energy and fishing. As a result, the creation and maintenance of navigation depths and channels is of fundamental importance. Presentation topics covered the regulatory process for dredging and port development in Scotland and included case studies on Aberdeen Harbour and the Nigg South Quay Development & Invergordon Phase 3 Development in the Cromarty Firth. Attendees also heard the latest on the process to update the British Standard for dredging and reclamation fill. The CEDA-UK Committee would like to thank the Scottish Institution of Civil Engineers for hosting our Committee meeting.

Delivering connectivity – the role of dredging in major infrastructure projects

Our December technical seminar focussed on the topical issue of connectivity. In countries around the world dredging plant is playing an essential role in the delivery of major infrastructure schemes that enhance connectivity at national and global scales. The speakers showcased a number of exciting, major infrastructure projects where dredging was a key component, including the Panama Canal, immersed tube tunnels in Hong Kong and Denmark, the Thames Tideway Tunnel, Forth



The first regional technical seminar in many years in Glasgow, Scotland.



The seminar in December was followed by a Christmas drinks reception.

Crossing and the proposed Swansea Tidal Lagoon. The seminar was followed by our Christmas drinks reception. Around 50 guests enjoyed the informal networking and the opportunity to hear such stimulating presentations.

John Sargent Lecture: The Garden Bridge

The 2015 John Sargent lecture was given by Dr. Francis Archer, Lead Structural Engineer at Arup working on The Garden Bridge. The Garden Bridge is both infrastructure and destination; the 350m long pedestrian bridge over the Thames will also be a 6000m² garden – a place to visit and relax in the heart of London.

Francis captured the attention of the audience, by describing the vision of the project, the bridge, the garden and the landings, and showing how it will fit into the busy city around it. He then showed how the concept translated into very specific engineering requirements and described the proposed structural solution, key materials, the construction envisaged and the foreseen programme for delivery. It was a fascinating insight into the design of a high-profile project and the strong attendance of 77 guests demonstrated the relevance and interest of the topic to CEDA. The Committee would like to thank Francis for taking the time to introduce us to The Garden Bridge.

CEDA input to legislation

CEDA-UK takes an active interest in the development of national and European legislation that may affect the dredging industry. The UK government has continued to progress marine plans and swathes of new Marine Conservation Sites. Both of these initiatives bring new assessment requirements for projects in the coastal and marine environment.

CEDA-UK continues to host the CEDA Liaison Group which is using information from case studies on the use of dredged material to inform evidence-based decision-making by regulators, although there has been a hiatus in 2015 this group will be revived in 2016. Key UK regulators and stakeholders are represented on this group. Nick Smith continues to represent CEDA-UK in discussions with Defra on inland dredgings. In the UK CEDA attends the UK Water Framework Directive/Marine Strategy Framework Directive Navigation Sector Group which provides a forum for the navigation industry and government to liaise over the progress with these pieces of legislation.

Committee members have continued to play an active role in wider CEDA activities; Lindsay Murray and Michael Costaras represented the Committee on the CEDA Main Board; Lindsay has since stepped down and Will Shields of Boskalis has taken over that role. Andrew Birchenough and Katherine Harris are involved with CEDA's Environment Commission and Mike Dearnaley joined them in October 2015.

Future events

In 2016 the Committee is planning several interesting sites visits depending on project progress. Details will be provided when the visits are confirmed.

The 2016 John Sargent Lecture will be a joint presentation given by Boskalis and DEME will look at the Suez Canal.

Our technical seminars in 2016 include:

- May: Showcasing the Maritime Northern Powerhouse (to be held in the northeast)
- September and December: TBC
- Liaison with kindred organisations

The Committee has continued to liaise with kindred organisations including PIANC, the Federation of Dredging Contractors, AINA and, of course, the CEDA Main Board. We are represented on the ICE Maritime Panel by Payam Foroudi. We are looking forward to strengthening our relationship with the ICE as part of its knowledge sharing programme. CEDA continues with its official observer roles in the London and OSPAR Conventions.

Personnel

Lindsay Murray retired from the Committee in 2015. Lindsay was one CEDA's longest standing Committee members and made a huge contribution to CEDA both in the UK and through her roles on the Main Board and Environment Commission. We will miss Lindsay's knowledge and experience and the Committee would like to express their gratitude for her considerable contribution to CEDA over many years.



Our thanks to Lindsay Murray (3rd from left) who contributed hugely to CEDA both in the UK and through her roles on the Main Board and Environment Commission. Lindsay is with CEDA President and Members of the UK Committee in 2011 (l to r): Anders Jensen (DHI - Denmark), Steve Challinor (Royal HaskoningDHV), Any Birchenough (CEFAS), Michael Costaras (HR Wallingford), Nicola Clay (Royal HaskoningDHV), Will Shields (Boskalis Westminster), Colm Sheehan (Antony Bates Partnership), Nick Smith (Canal & River Trust).

We also said goodbye to Jackie Finch who provided our Secretariat in 2015. We would like to thank Jackie for her input, although it was brief, we enjoyed working with her! We have welcomed Katherine Coldwell as our new Secretary and are enjoying introducing her to the world of dredging!

The CEDA-UK Committee has two new members – Alan Gerrett who has taken over as DEME representative and Ben Elstob from Land and Water. All members have made a strong Commitment to CEDA-UK through attendance at meetings and leading technical seminars and events. I would like to thank the Committee members for their continued dedication to CEDA-UK and their enthusiasm for our activities. I look forward to, and appreciate, the continued input from all Committee Members during 2016.

Nicola Clay
Chair, CEDA-UK

EVENTS

CEDA Dredging Days 2015: Innovative dredging solutions for ports

5 - 6 November 2015, Rotterdam, the Netherlands

We wish to thank the following companies for their support to CEDA Dredging Days 2015:



The latest edition of our flagship event was an absolute hit. Nearly 250 members of the dredging community gathered at Ahoy Rotterdam, the Netherlands, on 5-6 November, for CEDA Dredging Days 2015. Dredging professionals, young, established and expert, assembled to exchange the latest ideas, knowledge and best practice, at a packed event. In keeping with CEDA's remit, papers were of a high technical level however the event wasn't all work and no play. There was reportedly a great atmosphere, both in the conference and the exhibition halls, and there were plenty of opportunities for delegates to network with their peers.

There were many highlights in the programme the core of which were 21 peer-reviewed technical papers by experts from a range of countries. *"It was all very useful and relevant for us"*, said Teresa Sá Pereira from Port of Lisbon Authority, Portugal.



A lot of work went into selecting and reviewing the papers for the conference. Members of the Technical Papers Committee at one of their meetings (clockwise): Renaat De Sutter (Antea Group- Belgium), Cees van Rhee (Delft University of Technology - the Netherlands), Henrich Röper (Hamburg Port Authority-Germany), Sylvia Minten (Minten Projectmanagement-the Netherlands), Erik van der Blom (Royal IHC - the Netherlands), Colm Sheehan (Anthony Bates Partnership - UK).

CEDA Dredging Days is widely considered to be an invaluable forum for leading researchers and industry experts to discuss and share dredging challenges, solutions and experiences. Dredging and the management of sediments are key elements in the sustainable development and operation of most ports. By focussing on innovative dredging solutions for ports CEDA Dredging Days 2015 has gone some way to furthering the debate.



In his introductory note Professor Cees van Rhee, Chairman of the Technical Papers Committee, (TU Delft - the Netherlands) outlines the technical programme of CEDA Dredging Days 2015.

The technical sessions, and site visit, the dredging exhibition and the popular CEDA-NL Reception, all combined to make it a successful event that will have far-reaching benefits for the industry. Delegate Roderik Hoekstra from Deltares said *"I enjoyed it. I can't wait for the next one...But I have to go home first..."*

For more photos with highlights of CEDA Dredging Days 2015 please see the special feature on pages 28-32 in this report.



Nearly 250 experts participated in CEDA Dredging Days 2015 from 20 countries.



More than 50 delegates representing scientists, regulators, policy-makers and practitioners working in dredging and associated fields, attended the workshop.

WODA workshop: Underwater sound in relation to dredging – translating science into first-hand guidance

26 March 2015, Paris, France

The WODA workshop presented the latest knowledge on the acoustic impacts of dredging on aquatic species. It was based on the work of the two Working Groups that drafted the CEDA Position Paper of the same title (November 2011) and the associated WODA Technical Guidance (June 2013).

The effects of underwater sound are an important environmental issue and this is clearly reflected by policy developments in Europe and the rest of the World. Increasingly, developers and operators working in water environments are being required to consider and

manage underwater sound. This was the impetus that lead CEDA and WODA to take a pro-active role in investigating the possible effects of dredging underwater.

During the well-attended one-day workshop, participants heard the latest thinking on dredging and underwater sound, from leading international experts in the field, and had a rare opportunity to discuss the ideas presented. The event was attended by more than 50 delegates representing scientists, regulators, policy-makers and practitioners working in dredging and associated fields, and from 6 different countries.

For those who couldn't make the event, video recordings and copies of the workshop presentations are available from the CEDA website (www.dredging.org). The CEDA Position Paper and the WODA Technical Guidance on Underwater Sound in Relation to Dredging can also be downloaded from the CEDA site.

For more about the workshop please see the special feature on pages 24-27 in this report.



Discussion time - workshop speakers (l to r): Stephen Robinson (NPL - UK), Christ de Jong (TNO - the Netherlands), Frank Thomsen (DHI - Denmark), Douglas Clarke (HDR - USA) Edward Kleverlaan (IMO - UK), René Dekeling (Ministry of Infrastructure and the Environment - the Netherlands).

The workshop was organised by CEDA, on behalf of WODA, and supported by CEDA Corporate Member Cerema (Center for expertise and engineering on risks, urban and country planning, environment and mobility) and the French Maritime Cluster (CMF), and the French federation of companies working in the maritime field (Tramaf).

CEDA-EuDA Workshop: Sustainable dredging approaches to climate change adaptation - Solutions from the European dredging community

12 May 2015, Copenhagen, Denmark



In his presentation on the Dutch government's perspective on adapting to climate change, Pieter de Boer (Ministry of Infrastructure and the Environment - the Netherlands) underlined the value of ecosystem-based approaches to deliver multifunctional solutions.

This workshop was part of the European Climate Change Adaptation Conference (ECCA) 2015 that was held on 12 - 14 May 2015, in Copenhagen, Denmark. ECCA 2015 is the second in the series, following the inaugural event in Hamburg 2013 which was attended by more than 700 participants. It is an initiative of a number of major European research projects and other stakeholders. The conference covered a broad range of issues related to climate change adaptation. It placed a greater emphasis on understanding and assessing adaptation in action under the theme: 'Integrating climate adaptation action in science, policy, practitioners and business'.

Our joint workshop, featured prominent speakers in their field, and presented the perspectives of academics, policy makers and practitioners. One of the key messages conveyed was that dredging knowledge, research and technologies were indispensable in finding the varied solutions that would enable vulnerable coastal and inland areas to adapt to climate change.

The workshop was chaired by Polite Laboyrie (Witteveen+Bos - the Netherlands), who was Chairman of the CEDA Environment Commission, at the time, and the CEDA speaker was Pieter de Boer (Ministry of Infrastructure and the Environment - the Netherlands) who presented the National government perspective.

The CEDA position paper 'Climate Change Adaptation as it Affects the Dredging Community' (published in 2012) is available from the CEDA website.

CEDA representation at events organised by others



The CEDA presentation was followed by a talk about TideElbe which gave very good connection, having applied adaptive management during stakeholder management in a very professional manner, said Gerard van Raalte (Hydronamic/Boskalis - the Netherlands).



In addition to presenting the monitoring paper at Dredging 2015, Matt Jury (DHI - Singapore) also represented us at the PIANC EnviCom meeting in Savannah, USA and contributed to the draft Terms of Reference of the planned PIANC report on monitoring.

CEDA representatives have given presentations at the following two third-party events:

- Gerard van Raalte (Hydronamic/Boskalis - the Netherlands) presented the CEDA position paper on adaptive management at the HTG Congress (9-11 September 2015, Bremen, Germany);
- Matthew James Jury (DHI - Singapore) presented the CEDA information paper on environmental monitoring at the Dredging 2015 conference (19-22 September, Savannah, Georgia, USA).

SERVICES

In addition to providing a platform for learning, information exchange and networking, CEDA also offers a variety of other services to members. In particular, it publishes resources in print and online. It also gives corporate members the opportunity to present themselves online and at events.

Publications

CEDA's official magazine, IHS Dredging and Port Construction, DPC

Every CEDA member receives, as a benefit of membership, a subscription to IHS Dredging and Port Construction (DPC), the official magazine of CEDA. This specialised monthly publication keeps the readers informed of the latest developments in the sector and is helpful in identifying appropriate business partners. DPC also keeps readers up-to-date on the activities of CEDA and its sister associations, EADA and WEDA. CEDA members have access to the online version of DPC and can browse or download the archives.



All CEDA members receive the print magazine DPC and have access to the online version.

Subscribers to IHS Dredging and Port Construction including all CEDA members – can benefit from enhanced features such as:

- Access to the IHS Sea-web™ news module: www.sea-web.com/news
- Digital magazine: maritime.emags.ihs.com



Exploring ways of working together more effectively during a visit to the CEDA office (l to r): Natasha Bailey and Nick Blackmore (IHS - UK) with Anna Csiti.

CEDA position paper: Integrating Adaptive Environmental Management into Dredging Projects

This important paper was published in March 2015. It aims to further the debate on Adaptive Management (AM), as an important tool, in managing dredging and reclamation projects in an environmentally friendly manner.



The Adaptive Management Working Group during one of their meetings hosted by Royal HaskoningDHV (l to r): Marcel Van Parys (Jan De Nul – Belgium), Henrich Röper (Hamburg Port Authority - Germany), Gerard van Raalte (Hydronamic/Boskalis - the Netherlands); Marijn Huijsmans (Witteveen+Bos - the Netherlands), Chris Adnitt (Royal HaskoningDHV - UK); John Kirkpatrick (HR Wallingford - UK).

The Chairman of the Working Group, Gerard van Raalte (Hydronamic/Boskalis - the Netherlands), said *"We encourage all stakeholders in this field to carefully look at the opportunities presented by adaptive management, as an alternative to applying the precautionary principle which may lead to inefficient use of resources without delivering environmental gain."*

The position paper is the product of an experienced group of individuals, representing a broad cross section of the industry, from agencies, project owners, and environmental consultants, to contractors. Together, with our vast pool of experience and expertise, we were able to bring together and present the latest knowledge in the application of Adaptive Management.

Even within the Working Group we experienced that working with people from various disciplines, in an open dialogue, is a very fruitful way of achieving a common goal. This is a prerequisite for successfully applying Adaptive Management in dredging and reclamation projects. It was an honour for me to have been invited to lead this Working Group, and I thank my dear colleagues, friends for their excellent contribution."



Two members of the Working Group on monitoring, Steve Challinor (Royal HaskoningDHV - UK) and Marcel Van Parys (Jan De Nul - Belgium).

The position paper has been presented at meetings of the London Convention and OSPAR as well as at the HTG Congress in Bremen (September 2015) and at the CEDA Dredging Days 2015. It can be downloaded from the Resources section of the CEDA website.

CEDA extends its thanks to the following members of the Working Group who volunteered their time and expertise:

- Gerard van Raalte (Hydronamic/Boskalis - the Netherlands) - Chair
- Chris Adnitt (Royal HaskoningDHV - UK)
- Marijn Huijsmans (Witteveen+Bos - the Netherlands)
- John Kirkpatrick (HR Wallingford - UK)
- Ram Mohan (Anchor QEA, LLC - USA)
- Marcel Van Parys (Jan De Nul - Belgium)
- Henrich Röper (Hamburg Port Authority - Germany)
- Craig Vogt (Craig Vogt Inc - USA).

CEDA information paper: Environmental Monitoring Procedures

The paper describes why and how environmental monitoring is undertaken. It covers the different types of monitoring in relation to the different stages of a dredging project, and includes a series of case studies which illustrate monitoring methods and uses. The case studies represent various types of monitoring including: baseline monitoring, surveillance monitoring and compliance monitoring. The examples illustrate the relevance of adapting the monitoring programmes as the understanding of the system, and its response to pressures, changes. Also illustrated is how the dredging project may be adapted during the project period as a result of knowledge obtained by monitoring.

'Environmental Monitoring Procedures' was prepared in conjunction with the 'Integrating Adaptive Environmental Management into Dredging Projects' (written by the CEDA Adaptive Management Working Group). The activities of the two Working Groups have been closely harmonized because of the clear interaction and connections between the two subjects. Adaptive Management is heavily dependent on good monitoring while environmental monitoring itself can be done in an adaptive manner.

Working Group Chair, Ida Brøker (DHI - Denmark), said *"Environmental monitoring is undertaken to establish an understanding of baseline environmental conditions. It also assesses the level and compliance of environmental change caused by dredging in relation to agreed environmental thresholds and quality standards. Monitoring is a pre-requisite for adaptation and optimization of dredging operations in the interest of the environment, the project owner, and the contractors. This paper*

discusses the concepts of monitoring in connection with large dredging projects, gives examples of monitoring programs from specific projects, and lists a number of lessons learnt. We hope the paper will inspire all parties involved in dredging-related projects to design relevant and sufficient monitoring programs.”

Working Group member Mark Lee (HR Wallingford - UK) said *“As a group we have pooled information, knowledge and experience relating to monitoring with the aim of encouraging and promoting good practice. We have brought together all the concepts, and some really valuable case studies, for the reader to make it essential reading.”*

CEDA extends its thanks to the following members of the Working Group who volunteered their time and expertise:

- Ida Brøker (DHI - Denmark) -Chair
- Steve Challinor (Royal HaskoningDHV - UK)
- Andrew Costen (BMT - Australia)
- Rebecca Gardner (Anchor QEA AS - Norway)
- Frederik Goethals (DEME - Belgium)
- Mark Lee (HR Wallingford - UK)
- Dafydd Lloyd Jones (Marine Space - UK)
- Ulrik Lumborg (DHI - Denmark)
- Frederik Roose (Ministry of the Flemish Community, Maritime Access Division - Belgium)
- Marcel Van Parys (Jan De Nul - Belgium).

The information paper can be downloaded from the ‘Resources’ section of the CEDA website.

In preparation: CEDA-IADC handbook “Sustainable Dredging” (working title)

Since the publication in 2008 of CEDA-IADC book *Environmental Aspects of Dredging* (ed. N. Bray), there have been considerable advances in knowledge about the natural environment and its processes and dynamics. The focus of environmental concerns, associated with dredging projects, has shifted from contaminated sediments to issues including climate change, working with nature, and habitat. As a result the CEDA and IADC boards felt it was time to summarise the latest knowledge and make it available to a broad audience in a new book.



Discussing the chapter on Environmental Impact Assessment. (l to r): Co-authors Jamie Gardiner and Elizabeth Jolley (Royal HaskoningDHV - UK) and Katherine Harris (HR Wallingford - UK) Editorial Board Member (at the time) and Ambassador for the chapter.

Following the October 2014 workshop, hosted by the Hamburg Port Authority, 27 international experts worked with the Editorial Advisory Board (EAB) to devise the structure, and draft content of the book, including essential lessons and relevant case studies. The EAB identified and invited lead and co-authors for each proposed chapter. The authors met for the first time at the end of January 2015 for a 2-day working session. It was an intense and very productive meeting during which authors in discussion, and co-ordination, which each other developed the outline for their own chapters.



The 2-day working session of lead authors hosted by EcoShape was an important milestone in shaping the book’s content.

Participants of the writing session in January 2015

Lead and co-lead authors		
Chapter 1	Introduction	
Chapter 2	Dredging for sustainability	Tiedo Vellinga, Port of Rotterdam - the Netherlands Todd Bridges, US Army Corps of Engineers - USA
Chapter 3	Project initiation, planning and design	Jos Smits, IMDC - Belgium
Chapter 4	Environmental impact assessment	Elizabeth Jolley, Royal HaskoningDHV - UK Jamie Gardiner, Royal HaskoningDHV - UK
Chapter 5	Dredging process	Gerard van Raalte, Hydronamic, Boskalis - the Netherlands, Marcel van Parys, Jan De Nul - Belgium
Chapter 6	Monitoring	Ida Brøker, DHI - Denmark Mark Lee, HR Wallingford - UK

Editorial Advisory Board	
Anders Jensen, DHI - Denmark, representing CEDA – Chair	
Stefan Aarninkhof, Boskalis - the Netherlands, representing IADC	
Anna Csiti, CEDA - the Netherlands	
Rene Kolman, IADC - the Netherlands	
Mark van Koningsveld, Van Oord - the Netherlands, representing IADC	
Polite Laboyrie, Witteveen+Bos - the Netherlands, representing CEDA	
Marcel van Parys, Jan De Nul - Belgium, representing IADC	
Katherine Harris, HR Wallingford - UK (at the time), representing CEDA	

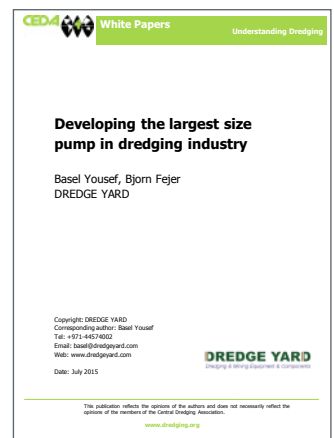
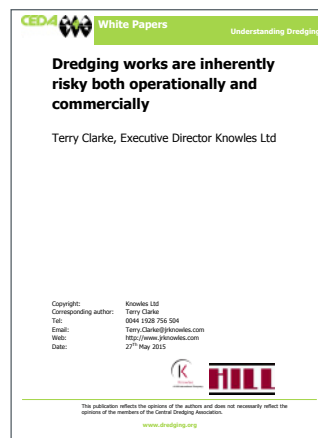
CEDA white paper on integrated risk management

By a ‘white paper’ we mean a technical article that provides detailed information about a product or service. White papers have an objective, educational approach. However, unlike conference papers that must avoid commercialism, white papers can contain additional promotional material that offers a particular product or service as the favourable solution to a particular problem. By publishing a CEDA white paper on the CEDA website corporate members can reach a large portion of their target audience.

In 2015 we published the following two white papers:

- ‘Dredging works are inherently risky both operationally and commercially’, by Terry Clark, Knowles Ltd - UK
- ‘Developing the largest size pump in dredging industry’, by Basel Yousef and Bjorn Fejer, Dredge Yard - UAE

Both papers can be downloaded from the ‘Resources’ section of the CEDA website, www.dredging.org.



CEDA white papers can have commercial content.

Books with discount for CEDA members

To allow us to offer CEDA members favourable discounts on relevant technical books we work closely with publishing companies to get the best deals. Books available at a CEDA member discount are listed in the 'Publications and Resources' section of the CEDA website, www.dredging.org and includes the most recent edition of Dredgers of the World (2015).



The latest list of books that can be ordered at special CEDA member discount price.



Digital services

CEDA websites and e-newsletters

The two CEDA websites, www.dredging.org and www.cedaconferences.org, as well as the CEDA Newsletter, are the most effective ways to keep members, and other stakeholders, informed about CEDA's activities.

They also facilitate the sharing of dredging knowledge and information. More and more employees of CEDA corporate members are opening personal accounts to allow them to bypass the CEDA contact points for their organisations and directly access CEDA e-notices and e-newsletters.

CEDA proceedings online

In 2015 we added lots of valuable content to the proceedings section of the CEDA website. We digitised 13 CEDA Dredging Days and WODCON proceedings which were previously only available in print. These are now available online on the CEDA website (Resources > CEDA publications online), and are readily accessible to CEDA members free of charge.



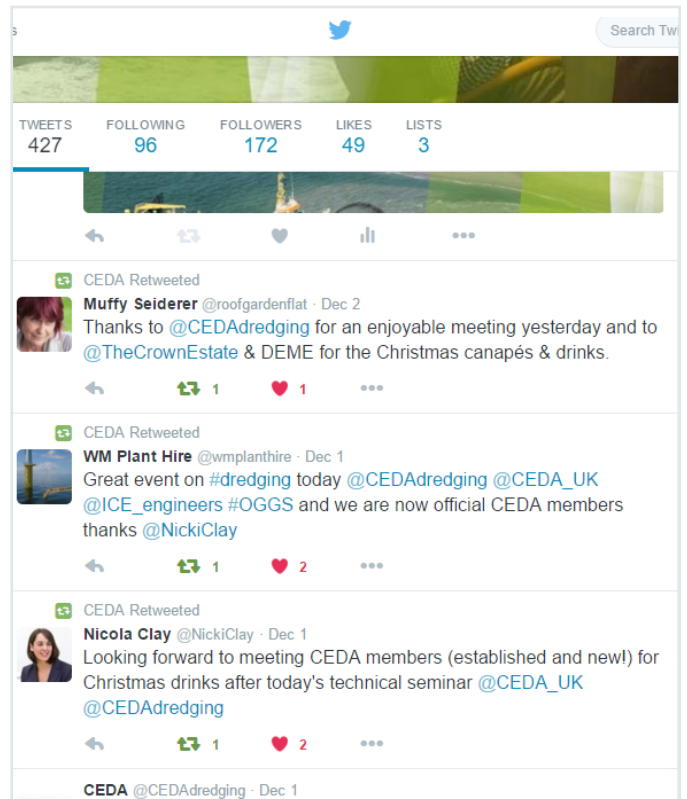
We have digitised many of the papers from our historic proceedings and made them available on our website.

The online proceedings are also available to non-members who can access any full paper for €20.00.

Social media

In autumn 2014 we launched our Twitter profile (@CEDAdredging) and reactivated our LinkedIn page. The aim was to expand our reach and to enable members, and non-members, to connect, share ideas, and keep up-to-date more easily.

Those interested in dredging can communicate, start debates and network with each other, on three LinkedIn groups – CEDA, Young CEDA and CEDA-UK. Each group allows members to connect, and have meaningful dialogue, with like-minded professionals and associates in the industry.



The number of our followers continues to grow. Are you a member of the CEDA LinkedIn group? Do you follow us on Twitter? Make sure you are part of the debate.

While the start is encouraging, we will continue working hard, in 2016, to make better use of the opportunities, offered by all communication channels, and ensure that they continue to add value for members and others.

Services to corporate members

Corporate members of CEDA have the opportunity to promote their products and services directly to the membership. They can also reach a broader audience through publishing commercial white papers on the CEDA website, which we distribute via the CEDA e-newsletter and our social media channels including LinkedIn and Twitter.

The list of corporate members on the CEDA website, which includes hyperlinks to the companies' own websites, is one of the most frequently visited pages of the site.

SPECIAL FEATURE: MAKING NOISE IN PARIS

A detailed report about the WODA workshop on underwater sound on 26 March 2015, in Paris, France, by Gerard van Raalte of Boskalis Hydronamic, the Netherlands and member of the WODA Expert Group Underwater Sound.

People standing at the base of the Eiffel Tower in Paris may have all kinds of thoughts, but probably not on the topic of underwater sound. Yet this was the topic for the WODA (World Organisation of Dredging Associations) workshop held at that location, well-organised by CEDA with support from its French members, on WODA's behalf.

Welcome

The workshop was opened by Jan Vandenbroeck of SDI, France, also a member of the CEDA Board of Directors, who was pleased to welcome around 50 participants from six countries – scientists, regulators, policy-makers and practitioners working in dredging and associated fields. On behalf of the host country, Paul Scherrer, at the time with the Ministry of Environment and Sustainable Development and Energy (MEDDE), France welcomed the guests: *“It was a great pleasure and honour for France that Paris has been chosen by CEDA/WODA for this workshop with attendees and speakers from all over northern Europe and even one speaker from the USA. The presentations and discussions gave a really good and complete view on the topic of underwater sound, sound propagation and possibilities of mitigation. We also know much better now how sound affects aquatic life, with some fish species mostly sensitive to particle motion and other to sound pressure, the mammals being especially sensitive to higher frequencies and therefore not so much affected by dredging sound which are mostly lower frequencies. We also got a very good overview on EU and IMO work on this topic. In short, a very dense and complete day with many interesting discussions between the participants.”*

During this one-day workshop, participants were informed of, and discussed, state-of-the-art knowledge of dredging and underwater sound, based on the two papers recently published by CEDA and WODA.

“Jacques Cousteau was wrong” stated René Dekeling (Ministry of Infrastructure and the Environment, - the Netherlands) when he launched his famous movie on ‘Le Monde du Silence’ (The Silent World), which in 1955 showed for the first time the richness of the underwater world. We now know there are many sounds, most of these natural, but many more being added by man. As with most anthropogenic contributions, awareness is growing that potential effects deserve more attention. This has led CEDA and WODA to take a proactive role in investigating the possible influence of dredging in this world of silence.

Setting the scene

Dr. Frank Thomsen, bioacoustician (DHI - Denmark) and chairman of the two Working Groups that drafted the CEDA Position Paper on ‘Underwater Sound in Relation to Dredging’ (November 2011) and the WODA Technical Guidance on the same subject (June 2013), chaired the workshop.

In the first presentation of the day he set the scene. His summary of existing knowledge, illustrated with several sound recordings, clearly demonstrated that sound is a critically important sense for aquatic species, and we still have an incomplete understanding of many aspects about underwater sound. In particular, we need to know more about how sound propagates in shallow waters, how it potentially impacts on different species, and what the short-term and long-term effects might be. The use of the ‘zone influence model’ can be helpful in identifying risks of sound impacts, but it is obvious that quite some research effort is needed before more accurate and reliable assessments can be made.



Workshop chair Frank Thomsen (DHI - Denmark) “It was a real pleasure doing this workshop. I was especially intrigued by the excellent questions from the audience leading to in-depth discussions on the topic.”

Assessing exposure

In the next presentation acoustician, Dr Christ de Jong (TNO - the Netherlands), explained how to assess the exposure of marine life to the underwater sound of dredgers.



'Decibels' often cannot be compared with each other warned Christ de Jong (right) (TNO - the Netherlands)

He warned that several different acoustic quantities are being used which are all expressed in decibels (dB), which cannot directly be compared with each other. He made a strong plea for the international standardisation of underwater acoustic terminology and measurement procedures that are under development at ISO. A lot of work remains to be done. Standardised procedures are now available only for ship-radiated sound measurements in deep water, whereas dredging is frequently a shallow water operation.

Currently various acoustic propagation models are available to calculate the spreading of sound in the environment. However, selection of the appropriate model depends on the specific application (frequency range and environment) and general guidelines and standardisation are lacking.

Christ also reported on the extensive underwater sound investigations that were done during the Port of Rotterdam's Maasvlakte 2 construction. Based on results of that study, he stated that dredging adds 4dB to the ambient sound of Rotterdam's regular shipping traffic, but what that meant for fish or marine mammals was largely unknown.

The work done so far to characterise the dredging sources of underwater sound were presented by acoustician Stephen Robinson (NPL - UK). He showed that,

in various parts of the world, studies have been made describing the source per type of dredger and trying to distinguish the contribution of various factors such as soil type, mode of operation and also size and state of the vessel. He showed that all these factors contribute to the radiated sound, but that quantification is influenced by various factors acting simultaneously. Major generalisations are that the highest sound pressures produced by dredgers are in the lower frequency band (<1kHz) and that dredging is not louder than commercial shipping. In response to a question, he stated that if TSHD dredgers want to perform more quietly, the focus should be on reducing sound during the loudest phase of the cycle – sailing between the dredging and placement sites.



Stephen Robinson's (NPL - UK) talk focused on sources of sound from dredging.

How serious is it?

Fisheries biologist Dr Doug Clarke (HDR Inc. - USA) was the person challenged to answer the question 'how serious is it?' After summarising existing knowledge on



Dr Doug Clarke (HDR Inc. - USA) pointed out that "little is known concerning the thresholds of sound that induce biologically meaningful responses."

the hearing capabilities of diverse aquatic organisms, he confirmed that in essence *“little is known concerning the thresholds of sound that induce biologically meaningful responses”*.

For example, only a few valid audiograms have been established for approximately 34,000 species of fish. These studies indicate highest sensitivity in the lower frequencies, where dredgers are loudest. Although most marine mammals are more active in the higher frequency range, dredging sounds that overlap with their lower audible range can induce ‘masking’ of frequencies used for communication and echolocation. Also impulsive sounds (from piling or sonar) are found to be more harmful than continuous sounds: dredging is generally described as consisting of ‘continuous sound’, but mechanical dredging certainly shows a pulsating pattern, although at lower source levels. A consensus exists that dredging sounds do not pose a substantial risk of mortality, or permanent injury, but that the scales of masking effects and implications of behavioural responses remain largely unknown.

An interesting development in the recent science concerns the comparative importance of the sound pressure component of propagated sound versus that of the particle motion component. It seems that for many species (particularly fish and invertebrates), particle motion is more important than pressure. Sound propagation, in the form of particle motion, decays faster over distance, suggesting that critical underwater sound doesn’t carry as far as often feared. It is still too early to draw firm conclusions, but this certainly is a topic for further study.

Legislation

At present there is little legislation on underwater sound, but a lot of activities are ongoing, as the audience heard from René Dekeling of Ministry of Infrastructure and the Environment, Netherlands and Edward Kleverlaan, Head of the Office for LC/LP & Ocean Affairs, at International Maritime Organisation (IMO), UK.

Within the EU, underwater sound comes under ‘descriptor 11’ of the Marine Strategy Framework Directive and dredging sounds fit in the ‘ambient sound’ category. At present, underwater dredging sounds are regarded as comparably low level in impact, as mainly causing masking and behavioural response, for which quantitative criteria will be very hard to set. Focus of regulation could be on protection of sensitive areas and on sensitive species. In Europe, the Natura2000 network



“Driven by EU legislation, MSFD noise maps will enable assessment of levels, potential trends, and possible impacts” said René Dekeling (Ministry of Infrastructure and the Environment - the Netherlands).



Edward Kleverlaan (IMO - UK) identified collecting information on sensitive areas, including well-known habitats or migratory pathways, as one of the possible future issues for IMO.

of protected areas can be used for first identification.

“International regulatory organisations such as IMO or OSPAR, which the dredging professional community must interact with (for instance through WODA), can and should play a leading role in setting research targets, interpreting information from science and field experiences, and providing the substantiation for improved future guidance,” said Kleverlaan.

At the global scale many regulations for airborne noise from shipping are already in place, with traditional emphasis towards on-board personnel. In the last few years more effort has been spent on providing useful guidance for limiting underwater sounds, which for commercial shipping is mainly related to reducing propeller cavitations. Non mandatory guidance was issued by IMO in April 2014 (MEPC.1/Circ.833) for international shipping, which to a certain degree will also be applicable for dredgers. Both speakers warned that, although

the dredging industry is ahead in awareness compared to the shipping industry, new developments are emerging rapidly and the industry should be prepared to take appropriate action.

In conclusion...

Following this series of very informative presentations there was a Q&A session, in which a highly engaged audience sought more clarity on several aspects. Worth mentioning is the discussion on 'who has the onus on underwater sound assessments?'

For projects the responsibility to manage underwater sound basically rests with the regulator, to set the standards, and with the developer to assure adherence. Because site-specific guidance is still rarely available, it is tempting to rely on precautionary approaches, which might complicate the works and hamper the opportunity to increase knowledge.

Based on the events of the workshop your rapporteur makes the following observations.

- While the industry talks about 'sound', regulator language is about 'noise'. One might say that sound becomes noise when a threshold that poses a risk of detrimental impact is exceeded. In that case, noise needs to be regulated

- The effects of underwater sounds produced by dredging are mainly masking effects, or behavioural responses, for which quantifiable standards will be difficult to set
- It is challenging to compare the impact of underwater sound by dredging on fish with the impact of commercial fishing on fish
- The statement 'we are lacking information' was made more than once and it underlines the importance for broad, multi-disciplinary cooperation in research and regulatory frameworks

Missed the workshop?

...Don't worry, you can catch up by watching the video recordings. 6 hours of relevant, timely knowledge shared by top experts for only EUR 145. If you're an employee of a CEDA Corporate Member you can access it all for free. Contact the CEDA Secretariat for details.



SPECIAL FEATURE: CEDA DREDGING DAYS 2015 HIGHLIGHTS IN PICTURES

Keynote and featured presentations



Professor Tiedo Vellinga (Delft University of Technology & Port of Rotterdam - the Netherlands), presenting his keynote speech. "In recent years a growing call for innovative and cost-effective solutions that enhance or create natural ecosystems and add to biodiversity around ports can be seen."

Technical sessions: high quality, peer-reviewed presentations

Over 2 days, in 6 technical sessions, 21 speakers gave presentations on a range of subjects on the key theme - innovative dredging solutions for ports. All papers were peer-reviewed and included in the conference proceedings and can be found in the Resources section of the CEDA website: www.dredging.org.

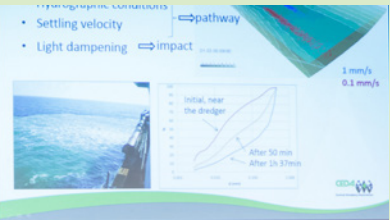
Some of the speakers ...



- AM efficient and cost-effective management process when objectives clear, yet local environmental effects uncertain, and management actions implemented to address uncertainties as project progresses.
- AM to desired goals by addressing uncertainty, incorporating flexibility and robustness, with new information for decision-making as the project develops.
- AM "modern" approach, potential to become good practice; underlines commitment for process optimisation. Not likely AM to become good practice for all projects, but advantages mainly for larger and multi-year projects.



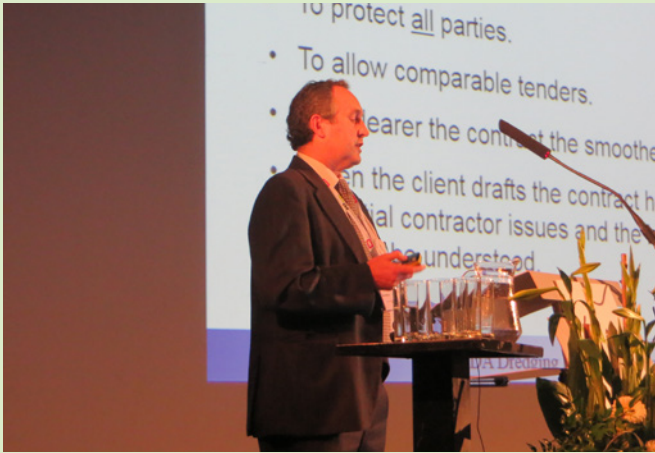
Mark Huygens (DEME - Belgium) talked about operational proactive environmental management of dredging.



Gerard van Raalte (Hydrodynamic/Boskalis - the Netherlands) and Ida Brøker (DHI - Denmark), Chairs of the CEDA Working Groups Adaptive Management and Environmental Monitoring (respectively), gave a featured presentation. They highlighted the main messages of the two closely-related CEDA papers on the subject.



Alessandra Feola (ISPRA - Italy) told about a methodological modelling approach to assess the potential environmental impacts of dredging activities.



Martin Maloney (Antony Bates Partnership - UK) advised on dredging contract specification for dispute avoidance.



The International Associations Young Authors' Award was given to Rudy Helmons of the Delft University of Technology - the Netherlands (r) for his paper entitled 'Modeling the effect of water depth on rock cutting processes with the use of discrete element method' by Rene Kolman, Secretary General of IADC (l).



Bas van Maren (Deltares - the Netherlands) talked about the impact of channel deepening and dredging on the suspended sediment concentration in the Ems Estuary. Photo: @Kloet.



Caption: Joost van Wiechen (Van Oord - the Netherlands) talked about the practical use of dredge plume source terms.



Throughout the two day programme the conference room was packed.

Young CEDA played a prominent part over the two days



Those who made it happen... Young CEDA Commission members enjoying a meal together before meeting the students for drinks and orientation (round the clock): Arjan de Heer (Witteveen+Bos - the Netherlands), Nicolas Hibert (DEME - Belgium), Friederike Lehne (Hamburg Port Authority - Germany), Joris Santermans (IMDC - Belgium), Loek Verheijen, past chair of Young CEDA (Oceanco - the Netherlands), Jaco den Hoed (Royal IHC - the Netherlands), Stefan Bruggeman (Jan De Nul - Belgium), Louis-Robert Cool (dotOcean - Belgium). Missing from the photo is James Spragg (Boskalis Westminster - UK), who organised the Pitch talks session.

With an eye on the future of the dredging profession 60 promising graduate and post-graduate delegates were given funding to attend the event as part of the Young CEDA Student Programme.



The Young CEDA Pitch Talks were well-attended and received a lot of positive feedback. The young speakers who proved you can tell a lot in 6 minutes and their session chair with a 'strong hand' (l to r): William Coulet (Exco Environmental - UK), Neil Crossouard (HR Wallingford - UK), Arjan de Heer (Witteveen+Bos - the Netherlands), Camille Kapela (Boskalis - the Netherlands); Wiebe de Boer (Deltares - the Netherlands), Roderik Hoekstra (Deltares - the Netherlands), Edwin de Hoog (Royal IHC/TU Delft - the Netherlands), Thomas Van Hoestenberghete (Fluves - Belgium).



Students and young professionals had their own corner on the exhibition floor where they could catch up with each other and talk to members of the Young CEDA Commission. In the picture Roderik Hoekstra, Young CEDA Commission member (Deltares - the Netherlands) Young CEDA chats with one of the participants.



The interactive session exploring what makes a dredging project sustainable



In a lively and highly engaging session, the audience explored what makes a dredging project sustainable using a case study, from the fictitious City of Loof, which was specially designed to mirror real-life challenges. "Everyone I talked to loved it" said Mark Bollen (IMDC - Belgium), one of the members of the expert panel. The pictures here are the testament to that.



Session designer and moderator, Mike van the Vijver (right) (MindMeeting - the Netherlands), gives panel members a last-minute briefing before the session. Members of the panel played a key role in designing the fictitious case, and reflected on the solutions offered by the participants, during the event. Panel members (clockwise): Pieter de Boer (Ministry of Infrastructure and the Environment - the Netherlands), Eric van der Blom (Royal IHC - the Netherlands), Ida Brøker (DHI - Denmark), Astrid Kramer (Boskalis - the Netherlands), Mark Bollen (IMDC - Belgium).



Young CEDA Commission members ensured that a microphone was always on hand to share the group's recommended solution to the City of Loof.

The exhibition that complemented the technical programme was a busy place during the session breaks

The traditional CEDA-NL Reception is an event that everyone looks forward to. It is a widely recognized as a great opportunity to network with peers from many countries. It took place in the exhibition area, which allowed further opportunities to mingle and interact with the exhibitors over a glass of wine.



There was a lot of positive energy on the exhibition floor during the breaks. The exhibition was enjoyed by both delegates and exhibitors alike. "We have made lots of new contacts here", said exhibitor Markus Uhle, of Admodus® Maritime Devices.

Technical visit to “Room for the River” project sites



The Room for the River is a unique programme that has created a lot of international attention. It is seen worldwide as an inspirational example of a large-scale river project where a variety of innovative solutions are used to increase water safety. Dredging Days participants had the opportunity to visit three of the 34 project sites during a technical visit. The technical visit was sponsored by Van Oord Dredging and Marine Contractors.



Hans Brouwer of The Room for the River Programme (RWS) tells participants on the technical visit about the project at Overdiepse Polder. On his right is Nol Hooijmeiers, the owner of the farm on the flood mount which was partially built with thermally-cleaned soil.



REPORTS FROM THE COMMISSIONS

Educational Activities Commission (EAC)



Cees van Rhee

Chair

The remit of this young Commission is to strengthen CEDA's role in the creation, dissemination and exchange, of high-quality, unbiased, relevant and timely knowledge and best-practice experience.



The Commission concluded that a potential CEDA dredging course had no added value in view of existing dredging courses offered by various organisations. However, a scientific dredging journal, and a portal to facilitate research, had merits and should be further explored. (l to r): Johan Pennekamp (Deltares - the Netherlands), Frans Uelman, guest (Lecturer IADC dredging course - the Netherlands), Cees van Rhee, Chair (TU Delft - the Netherlands), Joris Santermans, Young CEDA representative (IMD - Belgium), Dingeman van Woerden (TID - the Netherlands), Anna Csiti (CEDA - the Netherlands).

Last year we extensively discussed three possible new initiatives:

- **Developing and presenting a CEDA dredging course.** On assignment from the Commission, Michael Costaras developed a detailed content outline for a possible CEDA dredging course. At the same time we collected the programmes of existing dredging courses, international and national, presented by IADC, IHC and the Vereniging van Waterbouwers (The Dutch Association of Dredging Companies). In a thorough analysis and extensive debate the commission concluded that – while these

courses target different audiences, and their level of details are different – together they address all topics that a potential CEDA course would cover. Given CEDA's resources, and those of our volunteers, it was concluded that developing a CEDA course would require disproportionate efforts in terms of the added value it would deliver to CEDA members and to the broader dredging community.

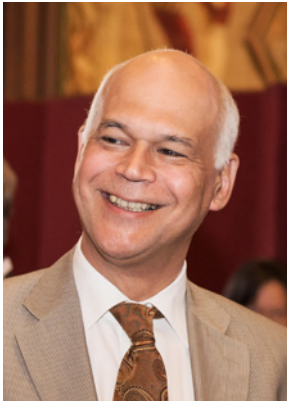
- **Publishing a scientific dredging journal.** The aim is to publish two issues annually, with peer reviewed technical/scientific papers addressing a broad range of topics in association with dredging, including equipment and technology, natural and social sciences. All CEDA members would have free access to these journals. We intend to team up with an established publisher to make this feasible. Negotiations are ongoing. I'm very pleased this initiative has gained a lot of support in the survey the CEDA Board conducted amongst Corporate Members of CEDA at the end of the year under "The CEDA Board wants to hear from you" initiative.
- **Facilitating research.** Our aim is to create a portal for our members through which problem owners and problem solvers and potential project partners can connect more easily. We are working together on this with the Strategic Commission. We are now discussing with our knowledge provider members whether this is a viable initiative.

We are also looking into how we could extend and/or modify our existing content platforms, and tap into the collective knowledge of our membership in order to more widely share the learning opportunities. The interactive session during the recent Dredging Days (see on page xx in this report) is a result of these efforts.

Cees van Rhee

Chair, Educational Activities Commission

Annual Report CEDA's Environment Commission (CEC)



Polite Laboyrie
Chair until 9 October 2015



Frederik Roose
Chair from 9 October 2015

In 2015 CEDA's Environment Committee (CEC) continued to lead the way in the field of sustainable dredging by providing useful information on what was achievable and real-life experiences. This year we had two truly inspiring meetings - one in the spring, in Amsterdam, hosted by Witteveen+Bos Consulting Engineers, and the other in Lisbon, in the autumn, hosted by the Lisbon Port Authority. Both events were productive, well-attended and well-received.

Currently CEC is fortunate to have members from many countries including Belgium, United Kingdom, Denmark, France, Germany, the Netherlands, Italy, Russia, Bulgaria, Portugal and Spain. They represent a broad section of our community including governments, port authorities, consultants, contractors, dredging constructors and research institutes. Their backgrounds are equally diverse and include civil engineers, ecologist, mechanical engineers and academics. This rich variety guarantees a representative pool of knowledge and experience across the different subjects that the CEC deals with.

The CEC gets a huge amount of support from the CEDA members, for the working groups, for which the Committee is always very grateful. The working groups are established once the CEC has selected a subject, formulated a Terms of Reference (ToR), and conveyed an invitation. In 2015 we started a ToR for a new working group on governance, which will cover government, legislation, public involvement and project management. From references at conferences, and in publications, it's apparent that we have access to valuable knowledge, and experience, on the subject of the beneficial use of dredged material. With that in mind, and in order to share that within the dredging community, we are also



The CEDA Environment Commission at the Lisbon Port Authority posing under the beautiful mural of Almada Negreiros (l to r): Helmut Meyer (Water and Shipping Directorate Northwest - Germany), Erik van der Blom (Royal IHC - the Netherlands), Frederik Roose (Ministry of Flemish Community, Maritime Access - Belgium), Mark Bollen (IMDC - Belgium), Rebecca Gardner (Anchor QEA AS - Norway), Alberto del Pino (Dravosa - Spain), Anna Csiti (CEDA - the Netherlands), Joel I'Her (Cerema - France), Rita Ramos (Port of Lisbon - Portugal), Henrich Roeper (Hamburg Port Authority - Germany), Astrid Kramer (Boskalis - the Netherlands), Teresa Sá Pereira (Port of Lisbon - Portugal), Polite Laboyrie (Witteveen+Bos - the Netherlands), Andy Birchenough (Cefas - UK), Klavs Bundgard (DHI - Denmark), Mikhael Shilin (Russian State Hydrometeorological University - Russian Federation).

preparing a ToR for a working group on the subject. Finally, preparations are also underway on a working group on energy efficiency / CO2 footprint with the view to presenting the bigger picture on the subject.

As a result of the excellent response to the CEDA 2011 position paper 'Underwater Sound Related to Dredging', and the WODA 2013 paper 'Technical Guidance on Underwater Sound', a WODA workshop on underwater sound was held in March in Paris. The valuable presentations and discussions were well-attended and you can read about the event in detail on page 16. The video recordings of the presentations can be found on the CEDA website where corporate members can access them for free.

The Climate Change Adaptation Conference 2015, was held in May, in Copenhagen where with EuDA we presented a workshop. The conference was an initiative of a number of major European research projects, and other stakeholders, and covered a broad range of issues related to the topic and followed international adaptation conferences. It focused on understanding and assessing adaptation in action under the theme:

'Integrating Climate Adaptation Actions in Science, Policy, Practitioners and Business'. The theme of our joint session with EuDA was: 'Sustainable Dredging Approaches to Climate Change Adaptation'. Input came from our information papers on climate change adaptation and new adaptable approaches such as adaptive management and monitoring.

At the HTG (the Hafenbautechnische Gesellschaft) Congress 2015 in September, in Bremen, the chairman of the Working Group on Adaptive Management of Dredging Projects, Gerard van Raalte, gave a presentation on the subject. The congress was attended by 400 participants and there were good discussions which will help to implement this management option in Germany. At the Dredging 2015 conference in Savannah, USA, Mathew Jury of DHI gave a presentation on the information paper on environmental monitoring.

At the CEDA Dredging Days in November the CEC organised an interactive session entitled 'When is Your Project Sustainable?' which looked at the challenges faced by the fictitious city of Loof. In small groups, about

A letter to our outgoing CEC Chair

Dear Polite, Thank you!

During your term as CEC Chair (2008 - 2015), the Commission was involved in a number of important initiatives. Without trying to be exhaustive, these included the publication of nine CEDA information and position papers on a range of subjects from climate change to ecosystem services and underwater sound. CEC has also started work on a new book on environmental aspects around dredging projects. Other highlights of your leadership of the CEC included actively engaging in the discussions around relevant EU directives, in particular the Marine Strategy Framework Directive. Through the CEC, you also played a key role in helping CEDA expand its geographic reach and establish a strong working relationship with the Russian State Hydrometeorological University.

As Chair of the CEC, you represented WODA/CEDA on numerous occasions at the London Convention meetings, where you contributed to the discussions, drawing on CEDA's collective knowledge and experience, including the recent revision of the Dredged Material

Guidelines. You have also represented the Association at various events organised by others including PIANC and SedNet.

One of your last assignment as CEC chair was the interactive session on sustainability in dredging at CEDA Dredging Days 2015 - an outstanding success.

Last but not least you made sure that we, the members of the Board, kept up-to-date on issues relating to dredging and the environment.

No doubt, your dedicated and enthusiastic work has put a huge demand on your time and we are grateful to you, your company, Witteveen+Bos, and your family for making that possible.

We may have lost you as our Chair but we are absolutely delighted to have you as our President and look forward to working with you in that capacity in raising CEDA to new heights.

The CEDA Board



The Environment Commission (CEC) welcomes the new chair

At the end of 2015, Frederik Roose, of the Maritime Access Division, Flemish Ministry of Mobility and Public Works, Belgium, succeeded Polite Laboyrie, Witteveen+Bos, the Netherlands, as CEC Chair. After chairing the CEC for 8 years, Polite has moved on to lead the Association in his new role as CEDA President.

Frederik graduated in bioengineering in soil and water management and has a Masters in Marine and Lacustrine Sciences, both from the University of Ghent, Belgium.

Since 2006, he's been a project coordinator in the Environment Team of the Maritime Access Division - a fitting match for the CEC. His projects cover the monitoring and research that contribute to the integrated management of the Schelde Estuary. Examples include: analysis of siltation of Deurganckdok and the efficiency of the current deflecting wall, and optimising the relocation strategy for maintaining the maritime fairway. In addition, he has experience managing monitoring data and developing applications to enable easier access to geographic data sources.

Frederik has been an active member of CEC since 2009. He has contributed to several CEDA Information Papers (e.g. ecosystem services, and environmental monitoring procedures), and to the WODA Principles of Sustainable Dredging issued during WODCON XX in 2013. For several years he also acted as a Young Professional liaison between the CEC and Young CEDA.

“Since it was established in 1992, CEDA Environment Commission was upfront with new developments in dredging and marine construction. In this way, CEC has contributed to CEDA’s position as the independent source of up-to-date knowledge, and information on dredging (and environment), and to deliver added value to CEDA’s members.” said Frederik. “As the new chair of CEDA Environment Commission, it’s my aim to keep CEC on this track and to address new challenges as they arise.”

When it comes to dealing with future societal challenges, Fredrik believes, that dredging can be part of the solution and, as such, dredging is a necessary tool for the integrated management of coastal ecosystems.

150 delegates, discussed the challenges and had to advise the city on how to deal with the dredging, and the dredged material, in a sustainable way. It resulted in a very lively discussion with some interesting points were raised, such as contamination in relation to the carbon footprint. The results will be drafted in an information paper in 2016.

Also during the Dredging Days a questionnaire on turbidity limits was pre-launched. In practice there is very often a discussion about how to set and use turbidity limits. These can be stressful for the parties involved such as the project owner, the contractor, the surveyor and the regulator. This has been a topic of discussion for more than 20 years. In order to make an inventory of these stress factors, and to help move the discussion on, a questionnaire has been drafted by the CEC. On the basis of the reactions to the questionnaire further actions will be taken by the Commission. The questionnaire will be issued to a wider audience in March 2016.

CEC continues to play a proactive role in the London Convention, in the Oslo and Paris Convention, and in EU-policy advising groups. Our experience and knowledge is provided in order to ensure that legislation is based on best available knowledge and that any earlier mistakes are not repeated. In these bodies relevant topics of discussion include: new assessment guidelines for the handling of dredged material, dealing with underwater sound, and managing seafloor integrity. There are also discussions on what constitutes good environmental status. The contributions of CEC members are



CEC members have diverse expertise and come from 10 different countries

CEDA representatives at international forums



Andy Birchenough
Cefas-UK
◆ LONDON CONVENTION
◆ OSPAR



Pieter de Boer
Ministry of Infrastructure and Environment-the Netherlands
◆ EU WASTE DIRECTIVE



Vera Breitung
German Federal Institute of Hydrology-Germany
◆ INTERNATIONAL COMMISSION FOR THE PROTECTION OF THE RIVER DANUBE



Dafydd Lloyd Jones
Marine Space-UK
◆ EU MARINE STRATEGY DIRECTIVE WG GES
◆ EU MARINE STRATEGY DIRECTIVE NAVI



Polite Laboryrie
Witteveen+Bos-the Netherlands
◆ LONDON CONVENTION



Marie Pendle
HR Wallingford-UK
◆ OSPAR INTERESSES- SIONAL CORRESPONDENCE GROUP MARINE STRATEGY DIRECTIVE



Henrich Roeper
Hamburg Port Authority-Germany
◆ EU WATER FRAMEWORK DIRECTIVE NAVI
◆ EU MARINE STRATEGY DIRECTIVE NAVI



Frank Thomsen
DHI-Denmark
◆ EU MARINE STRATEGY DIRECTIVE, TECHNICAL SUBGROUP UNDERWATER SOUND
◆ OSPAR INTERESSES- SIONAL CORRESPONDENCE GROUP NOISE



Thomas Vanagt
eCoast-Belgium
◆ OSPAR

Thanks and appreciation to the CEC Members who stepped down in 2015



Ida Brøker
DHI - Denmark



Katherine Harris
HR Wallingford - UK



CEC members in action (l to r) Astrid Kramer (Boskalis - the Netherlands), Mark Bollen (IMDC - Belgium), Klavs Bundgaard (DHI - Denmark), Katherine Harris (at the time HR Wallingford - UK)

greatly appreciated. At the London Convention Scientific Meeting held in April, in London, the CEDA paper on adaptive management of dredging projects received positive comments.

Laura Lailier very kindly stepped in for Thomas Vanagt, both of eCoast, and represented CEDA on OSPAR's Environmental Impacts of Human Activities Committee (EIHA) meeting. OSPAR is collecting information on the beneficial use of dredged material.

The EU Marine Strategy Framework Directive (MSFD) provides the legislative basis, and processes, for EU Member States to establish national marine strategies to achieve or maintain Good Environmental Status (GES) of their marine waters. CEDA is chairing the NAVI group. The NAVI group is a stakeholder group which gives input to the EU on this legislative process. In 2012 Member

States submitted their initial assessment of their marine environment to the European Commission to provide the baseline for the state of the environment, and for determining what is considered to be "good environmental status" (GES). This assessment also identified what is required in terms of environmental targets to guide progress from the present state to GES. The NAVI group gave comments on the descriptors: Sea floor integrity, hydrographical conditions, pollutants and underwater sound, in July. Comments from this consultation process have been taken into account in the preparation of the new revised version of the Descriptor Manuals.

Because of all the developments, in dealing with projects where dredging is involved, there is a new attitude towards the environment. It is no longer the case that infrastructure is designed and the effects calculated and mitigated afterwards. Nowadays the environment and society are an integral part of the design process. Design involving nature-based principles are becoming more widespread and new legislation and guidelines are embracing them making them more accepted and used. As a result of this change in design under the remit of the CEC, CEDA together with IADC, started to develop a new book as a successor to 'Environmental Aspects of Dredging' which will focus more on these new design principles. The editorial commission started in 2014 and several workshops have been held with relevant people from CEDA and IADC. The new book will give guidance on designing and constructing sustainable infrastructure where dredging is involved and will be ready early 2017.

In 2015 we were delighted to welcome the following new members:

- Klavs Bundgaard, DHI - Denmark
- Mark Dearnaley, HR Wallingford - UK
- Alberto Del Pino, Dravosa - Spain

Polite Laboyrie
Chair, Environment Commission

Strategy Commission



Wim Klomp
Chair

In 2015 we focused our activities on increasing the value of CEDA membership to our Corporate members. We aimed to provide members with valuable services, a vibrant community, and essential knowledge to aid professional development. To find out how we were doing in achieving our aims, we conducted a survey among our Corporate Members. We asked them to fill out a questionnaire and organised one-to-one discussions with a Board member during the CEDA Dredging Days in November.

Being fully aware of how busy everyone was, and the fact that nobody likes filling out questionnaires, we followed up the e-mail requests with phone calls by members of the CEDA and Young CEDA Boards. We found it a very interesting and worthwhile exercise.

The responses confirmed that members found many of our ongoing and/or proposed activities and topics useful. They also generated some good discussions in the Commission and resulted in new ideas for the future. The next step will be to act on the lessons learned and the suggestions of our members. We are developing strategies and plans for consideration and approval by the Board and the implementation.



'The CEDA Board wants to hear from you' initiative was conceived at the spring meeting of the Strategy Commission at Tideway in Breda (clockwise): Nicolas Hibert (DEME - Belgium), Bart Verboomen (Baggerwerken Decloedt & Zoon N.V. - Belgium), Wim Klomp (Royal HaskoningDHV - the Netherlands), Daan Rijks (Boskalis - the Netherlands), Polite Laboyrie (Witteveen+Bos - the Netherlands), Arjan de Heer (Witteveen+Bos - the Netherlands).



CEDA Board member Claudia Flecken (r) (Hamburg Port Authority - Germany) interviews Markus Stünkeel of CEDA Corporate Member Strabag Wasserbau (Germany) as part of 'The CEDA Board wants to hear from you' survey.

Another area we have started work on is research facilitation. Our aim is to create a portal for our members which will allow problem owners, problem solvers and potential project partners to get together and connect more easily. We are working together on this with the Education Activities Commission. We are now discussing with our knowledge provider members whether this is a viable initiative.

Wim Klomp
Chair, Strategy Commission

Young CEDA Commission (YCC)



Arjan de Heer
Chair

Young CEDA looks back at a successful year championing dredging and marine construction. Commission members have chatted and networked with many students, and young professionals, during events, national sections club evenings, and on social media. The Young CEDA LinkedIn group has continued to grow and currently stands at around 350 members.

There were three key events organised during the year. The Belgian Section organised an excursion to the marine base in Zeebrugge, which is home to the mine sweepers that are tasked with removing unexploded mines and munitions (UXOs). The afternoon programme started with presentations on identifying and localising UXOs, and operating mine sweeping vessels. This was followed by a visit to the wharf and a visit on board of the brand new patrol vessel P902. The visit closed with

discussions over drinks. The event was attended by young professionals from Belgium and the Netherlands.



Time for catching up after a fascinating introduction to the dangerous business of finding and removing unexploded mines.

With the bi-annual CEDA Dredging Days in November in Ahoy, Young CEDA made the most of the opportunity to introduce students to the dredging industry. Most of the students in attendance were in the final phase of their studies, and writing their master theses, so it gave them an unrivalled platform to present their research. With around 60 students attending the event Young CEDA made its presence felt on the conference floor. Students came from all over Europe, with the majority travelling from Belgium, United Kingdom and the Netherlands. Those travelling from further afield, from the UK, were enabled by generous sponsorship from Boskalis Westminster and we are grateful for their support.

The Dredging Days started on Wednesday evening with an ice breaker at Café Loos and students were given free tickets to attend the conference on Thursday and Friday. On Friday afternoon, we organised a separate session for our young guests, at which seven speakers presented their research, in a '20 slides x 20 seconds' timed presentation. With well-defined subjects, and strict timings to present, the presenters kept their pace and the audience's attention. Young CEDA was represented by Louis-Robert Cool and Friederike Lehne in the Technical Paper Committee. See the Young CEDA Dredging Days photos in the special section about the conference in this Annual Report on page 28.

In November and December, DEME's CSD d'Artagnan was working in the Port of Antwerp on the Deurganckdock project. The visit to one of the biggest CSDs in the world was combined with more hands-on

experience at the dredging simulator, hosted by DEME. 25 students from the universities of Gent, Leuven and Antwerp attended.



A great opportunity for the lucky ones: on board the CSD d'Artagnan.



While sailing to the d'Artagnan, Nicolas Hibert (DEME - Belgium) tells the students about about the ongoing dredging works in the Deurganckdock.

General organisation

Young CEDA was well-staffed during 2015 with Section representatives in the Netherlands, Belgium, Germany and the United Kingdom. Louis-Robert Cool (dotOcean, Belgium) was welcomed to the Commission. In order to ensure that young professionals were being heard across the Association, Young CEDA representatives took part in several other CEDA commissions most notably, the Education and Activities Commission (EAC), the Strategy Commission and national club evenings.



Young CEDA Commission during their meeting in Antwerp (l to r): Arjan de Heer (Witteveen+Bos - the Netherlands), Nicolas Hibert (DEME - Belgium), Friederike Lehne (Hamburg Port Authority - Germany), Louis-Robert Cool (dotOcean - Belgium), Nicolas Hibert (DEME - Belgium), Christoph Tiggesbäumker (Hamburg Port Authority - Germany), Joris Santermans (IMDC - Belgium), Stefan Bruggeman (Jan De Nul - Belgium), James Spragg (Boskalis Westminster - UK).

It has taken us a while and we are now delighted to have found a new representative in Denmark. Sani Sanemi (DHI - Denmark) was introduced to Young CEDA following the Dredging Days.

Arjan de Heer
Chair, Young CEDA





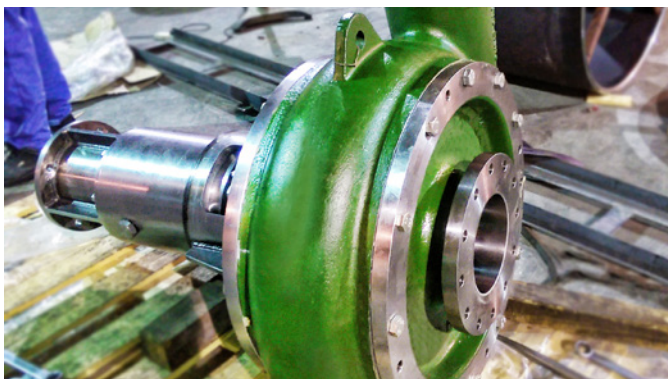
FINANCES

Balance sheet 2015

Expenditures	€ x 1.000	Income	€ x 1.000
Office and governance	39.5	Membership fees	
Staff	113.3	- Individual members	32.1
		- Corporate members	211.1
		Interest and exchange diff.	4.7
Environment Commission	3.1	Events	28.2
Young CEDA	1.4		
Services and DPC subscriptions	60.2		
National sections			
- African Section	1.3		
- Belgian Section	12.7		
- British Section	9.3		
- Netherlands Section	12.9		
Promotion CEDA and its Corporate Members	5.9		
Provisions	0.0		
Total	259.6	Total	276.1
Result			16.5
Reserves			501.8

Figures

Individual CEDA members:	458
Corporate CEDA members:	121
National section meetings:	12



OBJECTIVES FOR 2016

We're looking forward, in 2016, to continuing our programme of activities within the National Sections, the International Conventions, Young CEDA, and relevant bodies in the European Commission. The following is just some of the initiatives that we are continuing to develop and work on.

- Following an extensive survey of our Corporate Members at the end of 2015, we will be processing and acting on the results. We are committed to meeting the needs of our members and, as part of that commitment, we aim to raise CEDA's profile in new countries and amongst all dredging professionals and organisations that are not yet part of our community.
- Acting on the Strategy Commission's recommendation we will set up a commission that focusses on the management of dredging projects, maintenance and optimisation, and contracts including smaller-scale activities in various countries.
- We believe that all interested members should have an equal opportunity to participate in the various commissions and committees, including the Board. Memberships in these groups is arranged in an honest and transparent manner without excessive bureaucracy. One of CEDA's strength is its lack of bureaucracy, its flexibility and dynamism, and we are keen to preserve that.
- One of the highlights of the year will be World Dredging Congress XXI in Miami. It will be organised by WEDA, our sister association. The response to the call for papers, from our region, has been excellent, with CEDA members submitting around 45 abstracts. Based on the technical/scientific content and quality the CEDA Technical Papers Committee has selected 39 papers to put forward for the Congress. On that basis alone we're looking forward to an excellent event.
- Another highlight will be the publication of the joint book which we have been developing, on sustainable dredging, in collaboration with IADC. It's scheduled for publication at the beginning of 2017.
- In 2015, under the remit of the Environment Commission, we initiated three working groups – all three with the remit to produce a CEDA information paper. The first one, on beneficial use of dredged material, will be a follow up on previous publications and will summarise the latest approaches and

experiences. The other two working groups will focus on governance and energy efficiency of dredging projects.

- In connection with the development of the Spanish dredged material guidelines we are planning a workshop in Spain, on the beneficial use of dredged materials, in early spring.
- Drawing on the collective knowledge of CEDA members, and other experts in the field, we will aim to inform guidance and best practice in setting and working with turbidity limits. We will invite members, and other stakeholders, to complete a questionnaire so that we can gain a greater insight into the challenges faced. The responses will be used to develop an information paper on the topic.
- Based on the participant feedback during CEDA Forum 2013 we developed another questionnaire. This will also be issued in the course of 2015. The purpose of the questionnaire is to gain the dredging industry's perspective on the most important factors necessary to implement a successful project in the context of the EU Birds and Habitats Directives.

As you can see, as always, we have a lot planned for the coming year. We very much value the input of our members so do let us know if there is anything that you would like to contribute. Contact the Board with your ideas and general feedback, and let us know if you would like to get involved with any of the CEDA initiatives. We are always keen to hear from its members, so get in touch.

The Board of CEDA

ORGANISATION

CEDA Board of Directors



To be elected Board members also joined the Board meeting as guests on 4 November 2015 (l to r) first row: Jan Vandebroeck (SDI - Société de Dragage International "S.D.I." sa - France), Johan Pennekamp (Deltares - the Netherlands), Anders Jensen (DHI - Denmark), Polite Laboyrie (Witteveen+Bos - the Netherlands); second row: Frederik Roose (Ministry of Flemish Community, Maritime Access - Belgium), Claudia Flecken (Hamburg Port Authority - Germany), Michael Costaras (HR Wallingford - UK), Miloud Abudlib (Drapor - Morocco), Anna Csiti (CEDA - the Netherlands), Ida Brøker (DHI - Denmark); third row: Andre Kik (Royal IHC - the Netherlands), Cees van Rhee (Delft University of Technology - the Netherlands), Wim Klomp (Royal HaskoningDHV - the Netherlands), Daan Rijks (Boskalis - the Netherlands), Arjan de Heer (Witteveen+Bos - the Netherlands), Dirk Defloor (DEME - Belgium), Will Shields (Royal Boskalis Westminster - UK).

CEDA is governed by the Board of Directors, which generally meets twice a year. Elections are held every two years. After the most recent election in November 2015, and one interim retirement during the year, the Board of Directors is made up of 17 members from 7 countries. Following the last election four Directors left the Board.

The next election will take place in November 2017.

Retiring members and their successors are as follows:

- Anders Jensen, DHI - Denmark, succeeded by Ida Brøker, DHI - Denmark
- Lindsay Murray, Independent Consultant - UK, succeeded by Will Shields, Royal Boskalis - UK)
- Loek Verheijen, Royal IHC, the Netherlands, succeeded by Andre Kik, Royal IHC - the Netherlands
- Bart Verboomen, DEME - Belgium (interim retirement), succeeded by Dirk Defloor, DEME - Belgium

Thanks and appreciation to the retiring Board Members



Lindsay Murray

Independent Consultant - UK



Bart Verboomen

DEME - Belgium



Loek Verheijen

Royal IHC - the Netherlands

New President



With the shake of a hand the outgoing President, Anders Jensen (r), passes the baton to new CEDA President, Polite Laboyrie.

During the Annual General Meeting on 5 November, Anders Jensen (DHI - Denmark) stepped down as President after seven outstanding years of service to the Association and Polite Laboyrie (Witteveen+Bos - the Netherlands) became CEDA President after his year as CEDA President-elect. Polite said, "I am honoured to accept the mantle of CEDA President from Anders. I

believe that cooperation of organizations and experts is the key to finding the best solutions to the challenges we face as an industry. CEDA is already the leading association on dredging – and has been for more than 35 years. Dredging is particularly important to our society because it contributes to safety, trade and transportation. To be able to lead this organization and to help it grow makes me proud."

For new President Polite, taking on the role has meant leaving CEDA's Environment Commission (CEC) where he was a member for more than 12 years, and Chairman for 7 years. He leaves with fond memories and has made a huge contribution to its work over the years (see also in the Environment Commission Section on page 35 in this report).

The final word went to Anders, as outgoing CEDA President, who said "I wish Polite good luck with his new quest of taking CEDA forward as a thoroughly independent association attracting members not only from people and organisations involved in dredging but also from related sectors such as the offshore energy sector. I wish all the best to Polite and the Board."





Thank you Anders!

On behalf of the Board, Johan Pennekamp, CEDA vice President (Deltares - the Netherlands) expressed their gratitude to Anders for his dedicated service on the Board, and their delight that he will be continuing his valued contribution to the Association, in other capacities. This is what Johan said:

“Anders Jensen first became involved with CEDA in 2001 as a member of the Environmental Committee. At the time he was an environmental specialist on the Femern Bael Project. He became a member of the Board of Directors in 2003, and was elected CEDA President in 2008. Now, after 7 years in office, he is stepping down”.

Anders has contributed to CEDA in many ways. He came to our association with a vast knowledge of all aspects of dredging, environmental issues and management, and extensive experience with dredging projects from all over the world. But even more important than that, he came with loads of commitment, motivation, energy, stamina, passion and involvement. These aspects and his attitude were the essence of his tenure and the key to success as President.



Johan Pennekamp, CEDA Vice President (Deltares - the Netherlands) thanks Anders Jensen for his contribution as President during the 37th Annual General Meeting of CEDA during the Dredging Days in November.

His focus was CEDA's role as a provider of objective dredging knowledge and he championed CEDA, as a truly independent association, for the uniquely broad-based dredging community and associated stakeholders. To highlight a few of Anders successes, under his leadership, we broadened our professional attention in keeping with the attitude and the increasing demands of society towards our industry. Our membership grew, and extended to other regions, and we adopted a more strategic approach to planning and implementation. We organised the extremely successful World Dredging Congress XX in Brussels, in 2013, and held the first ever CEDA Dredging Days in the Middle-East, in Abu Dhabi, in 2012.

Although we are sad to see him go as President, all is not lost as Anders will continue to serve CEDA. He will stay on the Education Commission, as well as chairing the Editorial Board of the new CEDA-IADC book on sustainable dredging, and he is a member of the next WODCON's Papers Committee.

CEDA Annual General Meeting

The Annual General Meeting (AGM) in 2015 took place on 5 November, at Ahoy, Rotterdam, the Netherlands. It followed the first day of CEDA Dredging Days 2015.



The Audit Committee has found everything in order said Peter de Graaf (Royal IHC - the Netherlands) said on behalf of his colleagues on the Committee, Lynyrd De Wit (Swasek Hydraulics – Netherlands) and Leen Wassenaar (Wassbeer – the Netherlands).

CEDA Secretariat

The day-to-day management of CEDA is carried out by a permanent secretariat based in Delft, the Netherlands. In 2014 CEDA employed two staff members with 1.63 full-time equivalents: Anna Csiti, general manager and Yvonne Duivenman, administrative assistant. Mark Luchs, MSc student at the Delft University of Technology, supported the Secretariat on a part-time basis.

The main areas of work for the secretariat include (but are not limited to):

- Planning, managing, executing and supporting, the execution of various CEDA projects;
- Overseeing, organising and assisting, CEDA activities including CEDA Dredging Days, seminars and conferences;
- Supporting the Board of Directors and the various CEDA commissions;
- Acting as CEDA's contact point for other related organisations, individuals and national sections;
- Developing and maintaining the online presence of CEDA;
- Managing CEDA's financial and operational administration;
- Membership administration;
- Acting as the secretariat for the Dutch Section.

In addition to the central CEDA Secretariat, every national section organises its own national secretariat.



CEDA VOLUNTEERS

A word of thanks is due to all the volunteers who work for the benefit of CEDA. We pay tribute to all those silent and sometimes not so silent workers who give up their free time to contribute to CEDA's successes. In many cases, their employers allow them to do part of this work in their company's time, so we express our gratitude to those companies too.

In 2015 the staffing of CEDA's voluntary-based units was as follows:

Standing bodies

Board of Directors

Elected members

Miloud Abudib, Drapor Marocco (*Chair African Section*)

Ida Brøker, DHI, Denmark (*from November 2015*)

Michael Costaras, HR Wallingford, UK

Dirk Defloor, DEME, Belgium

Kathleen De Wit, IMDC, Belgium

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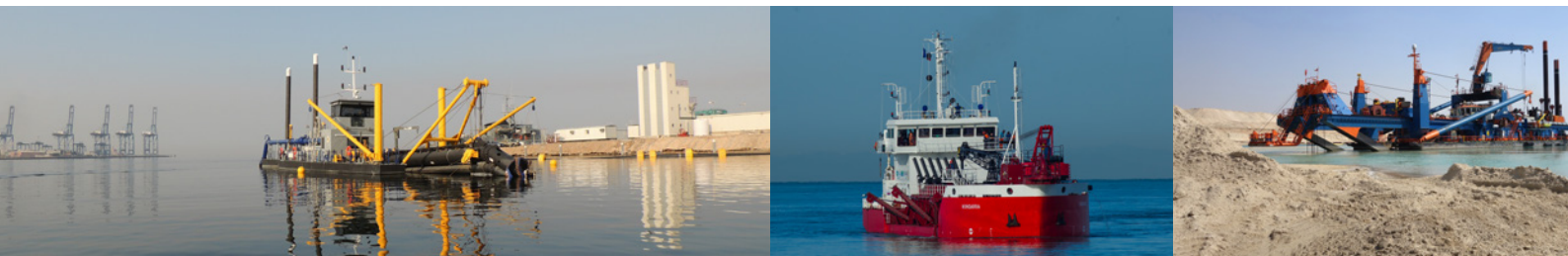


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