The information in the present report will summarize the activities of our DeepSea Environmental Monitoring Cluster during the Norway Brazil Week 2018 (November) in Brazil.
THE NORWAY BRAZIL WEEK (s) 2018:

The idea, from Innovation Norway Team, is to create an umbrella for several events that seek to emphasize and strengthen successful cooperation on various levels between both countries. Moreover, the creation of a meeting place of high-level decision makers from both Norway and Brazil is envisaged, while also creating an arena where Norwegian SME’s can actively engage with business partners, clients and technology leaders.

The Norway Brazil Week (s) 2018 organized several events scheduled between 12th to 14th November:

VI NOVEMBER CONFERENCE

The 2018 theme was the Energy Transformations: Brazilian and Norwegian Perspectives.

The Conference starts with a plenary session with invited presentations about the changing landscape for energy and petroleum in Brazil and Norway.

What does Brazil and Norway have in common?

What are the differences in both countries’ situations?

How can norwegian and brazilian work together to meet this changed landscape?

The VI NOVEMBER happened at 12th & 13th, 2018.

SEMINAR SUSTAINABLE OCEANS: A WAVE OF INNOVATION

This is the second edition of this seminar with notable representatives with expertise in issues related to Oceans. Brazilian and Norwegian companies presented their solutions to provide food in sustainable way, combat the plastics in the ocean, discuss the biodiversity and how it has been impacted and how to tackle challenges to minimize such impact as well as the renewable energy provided by the ocean.

The Opening Ceremony happened on Nov. 12th at AquaRio, and the Seminar happened in Nov. 13th and 14th at Museu do Amanhã.

THE BLUE INDUSTRIES & DEEPSEA CONSERVATION ROUND-TABLE

This is the second time that Runde Environmental Center is organizing a round-table during the Norway-Brazil Week. The DSEMCluster round-table discussed best practices for the deep-sea environmental monitoring during the oil and gas activities and the Norwegian-Brazilian collaboration (past and future) using the subsea technology. Following the mainly themes in discussion the hot topic of the year is deep-sea database. The speakers share their experiences within deep-sea science, and challenges and opportunities on Brazil-Norway collaboration for new business and better deep-sea knowledge.

The event had presentations and discussion with important multidisciplinary professionals working in Brazil and Norway. The round-table happened in Nov. 14th at CSA Ciencias Oceanicas Conference Room.
**VI NOVEMBER CONFERENCE:**
As in previous years the November Conference brought together researchers and industrial practitioners from Norway and Brazil to present and discuss their ongoing and potential bilateral research, innovation and educational projects. The six thematic areas are chosen to reflect the BN21 agreement. This year the focus was on how energy research shall respond to the driving forces for transformation - digital, environmental and social. The sixth annual November Conference for Norwegian/ Brazilian Energy Research happened at Centro Brasileiro de Pesquisas Físicas (CBPF) in Rio de Janeiro on Monday 12th and Tuesday 13th November 2018.

**PROGRAM**
Monday, 12 November 2018
8:30 am **Welcome coffee and Registration**
9:00 am **Welcoming words**
Ronald Cintra Shellard
Director
CBPF - Centro Brasileiro de Pesquisas Físicas
Mrs. Sissel Hodne Steen
Consul General
Norwegian Consulate General

Mr. Stein-Gunnar Bondevik
Director Innovation Norway

Maurício Syrio
Superintendent FINEP
9:15 am Perspective from the Norwegian Ministry of Petroleum and Energy
William Christensen Deputy Director General, Research and Technology Norwegian Ministry of Petroleum and Energy
9:35 am Keynote Address: Petroleum Industry Transformations
Taran Thune Professor TIK Centre for Technology, Innovation and Culture, University of Oslo
10:15 am Coffee break
10:45 am Response from Antônio Botelho - Universidade Cândido Mendes
11:15 am Energy Research and Innovations in Norway - Johan E. Hustad Professor and Director NTNU
11:40 am A Brazilian Industrial Perspective - Aly Brandenburg Shell Brazil
12:05 pm Quantum Technology applied to Oil Research - Prof. Ivan Oliveira CBPF
12:30 pm Lunch
2:30 pm Parallel session 1: Exploration and Geosciences
Rifted passive margins: comparing the Norwegian and Brazilian margin - Jan Inge from Oslo University
Onshore deep seismic acquisition - Jose Soares University Brasilia
Brazil seismic network, tomographic studies onshore and offshore perspective - Sergio Fontes Observatory
Deep seismic constraints on lithosphere structure from passive receiver function analysis - Stephane Rondenay Bergen University
Stream: Old analogues from Brazilian rifted passive margin - Ricardo Trindade University of São Paulo
Sedimentary basin evolution and sub surface analogues - Rob Gawthorpe Bergen University
Processes underlying rifted passive margin formation - Ritske Huismans Bergen University
Connection between deep and shallow geodynamic processes - Victor Sacek University of São Paulo

Tuesday, 13 November 2018
8:30 Breakfast and registration
9:00 am Education and Funding
Short Introductions from Diku, NFR, CAPES, FINEP
Panel on experience of funding: achievements and challenges.
10:00 am Parallel session 3: Digitalization and Automation
Opening Address – Digitalization/Automation opportunities in offshore Brazil and Norway - Arild Nystad NTNU
Organizational and human aspects of digitalization in Oil and Gas - Prof. Eric Monteiro NTNU
Status of Ontology-Based Data Access in Exploration - Adnan Latif UiO
11:10 am Building ontologies for the petroleum domain - Prof. Mara Abel UFRGS
11:30 am Data-Driven Modeling for Control and Optimization of Oil Production Systems -Prof. Eduardo UFSC
The New Digital Transformation in downstream Oil and Gas Industry - A Case Study - Jose Ricardo Uchôa C. Almeida UFBA
SEMINAR SUSTAINABLE OCEANS: A WAVE OF INNOVATION

Many ideas and innovations will shape our relationship with the oceans in the future. Taking care of our seas is fundamental to face a reality of climate change and the need for low carbon. The Museum of Tomorrow, the Development and Management Institute, the Royal Consulate General of Norway in Rio de Janeiro, Innovation Norway, AquaRio and the Navy promoted two days of discussions about the oceans. On November 13 and 14, 17 experts brought to the public the latest in sustainable development and protection of the seas, which occupy 71% of the Earth’s surface. The event was held on Tuesday afternoon (2:00 p.m. to 5:45 p.m.) and on Wednesday morning (9:00 a.m. to 12:45 p.m.), in the Auditorium of the Museum of Tomorrow.

The Sustainable Oceans seminar - a wave of innovation was organized into four main themes: ocean as a food source; combating plastic in the oceans; biodiversity and energy.

For Norway, the Ocean is a key priority in foreign policy and the Norwegian Prime Minister has been engaged in the global scenario to promote a sustainable ocean economy through the high level panel for a sustainable sea economy. To reach the ODS, the oceans shall provide more food, more jobs and more energy. We must to face the ocean’s threats from many directions, including the effects of climate change, loss of habitats and biodiversity, marine litter and pollution. We urgently need to reduce these threats and promote a wave of the for sustainable ocean. The seminar provided the opportunity to share best practices and present solutions that can lead us towards a sustainable relationship with the oceans of tomorrow.

PROGRAM

Tuesday, 13/11
2:00 pm - Building a sustainable economy for the oceans
Mr. Vidar Helgesen - Special Envoy of the Government of Norway

2:30 p.m. Panel 1 - focus on sustainable food production in the oceans.
The planet needs healthy oceans capable of feeding a growing population. For this, food production needs to become more sustainable. The panel discussed concrete measures to be taken to reach healthy oceans and to enable the sustainable exploitation of their resources. In Norway, the fishing industry had enormous difficulties
with overfishing and with danger of extermination of fish stocks. Now, fishing and aquaculture are sustainable and profitable industries.

Moderator: Dr. Sérgio Santos - UFRJ

Per Schive, Deputy Director of Norway's Ministry of Climate and Environment, is a specialist in the marine environment and resource management, presented the panel perspectives on how to make sustainable use of marine resources. He explained how it is possible to protect ocean in Brazil and Norway both and what could be done to make it happen elsewhere.

Edel Elvevoll, of the University of Tromsø in Norway showed algae production for fish food and the role of these vegetables as lungs of the seas. She talked about algae production as aquaculture fish food, and as "superfood" for human consumption.

4:15 p.m. Panel 2 – focus on "Rethinking Plastic: Saving Our Oceans". 

Plastic pollution is a serious threat to marine habitat and coastal communities. This panel showcased practical solutions and ongoing projects in Brazil and Norway to address the pollution of the oceans and this growing problem. It is essential that we address this threat with a wide range of measures.

Moderator: Mr. Alexander Turra - USP

Martin Moen of REV Ocean talked about a technology that systematically maps plastic waste to the bottom of the ocean and still enables waste to be collected. REV Ocean is dedicated to research and innovation.

Tora Draegni, from SALT Lofoten, demonstrated how local fishermen in Norway are involved in cleaning plastic waste through Fishing for Litter.

Bruno Temer, of the Remolda Project, focuses on involving local communities in collecting plastic waste, turning them into profitable businesses.
18h - Exhibition of the Documentary "Baía Urbana"
In the documentary Baía Urbana, the Brazilian biologist and filmmaker Ricardo Gomes shows, in a different way, the beauty and enormous diversity of Guanabara Bay. Over the course of a year and a half, he dived in various parts of the bay, registering numerous species of fish and other aquatic animals. In 73 minutes of duration you can see the charms of Guanabara, which despite the daily pollution of sewage and garbage, resists, beautiful and alive. Acclaimed during the first UN Conference on the Oceans in New York in June 2017, this is the second documentary on the theme of the seas launched by the carioca Ricardo Gomes. It was supported by the World Center for Sustainable Development (RIO + Center), linked to the United Nations Development Program (UNDP).

Wednesday, 11/14
9 am - Panel 3: focus on Biodiversity: Protecting marine life

The biodiversity of the oceans faces enormous pressures. Researchers from Brazil and Norway share experiences on how to protect marine life. Gustavo Duarte talked about new methods to save coral reefs.
Claudia Erber, from Brazil, works at Runde Environmental Center in Norway and presented an unique multidisciplinary seabirds monitoring project, using oil and gas technology to understand what is going with the seabird food in one of the most important seabird-diversity habitat on the Norwegian coast.

Tiago de Carvalho spoke about the BIG 2050 Initiative, a project in Ilha Grande Bay developed in cooperation with the Food and Agriculture Organization of the United Nations (FAO) and INEA / RJ.

**11:15 a.m.** Panel 4: focus on An Ocean of Sustainable Energy

The oceans contain huge reserves of energy, both in terms of minerals and wind energy and wave energy. In this panel, experts talked about the possibilities we can seize to ensure the sustainable energy of the ocean and the ocean. Battery-powered ferries are already a reality in Norway, and more and more vessels are being equipped with hybrid solutions.

Moderator: Mr. Segen Estefen - UFRJ
Erik Ianssen representing a cluster of clean maritime technologies in Norway and aims to also connect the points to Rio de Janeiro.

Equinor's vice president for sustainability, Bjørn Otto Sverdrup, explained why an oil company is investing heavily in wind and solar energy, including in Brazil.

Paal Jahre Nilsen of Scanship showed how the company is turning greener cruises by turning waste on board into fuel for the ship.
THE BLUE INDUSTRIES & DEEPSEA CONSERVATION ROUND-TABLE.

The Blue industries and Deep-sea Conservation Round table discussion was based on opportunities offered by the long-term and widespread presence of O&G infrastructure to make sustained observations of the deep-sea environment over long time periods and at a range of spatial scales. Regular data collection using subsea technology helps to increase the network of monitoring of deep ocean variables and can be used to address climate, operational ocean services and ocean health. By using the blue industry, it is possible to collect biological and physical data and these measures can improve our scientific understanding of the deep-sea environment. The blue economy includes a wide range of established commercial enterprise as O&G production, shipping and subsea technology. High-resolution mapping and images of complex habitats can support a better understanding of the deep-sea by monitoring changes and predicting future impacts. Having accurate information available enables improvements in planning, management, environment assessment, monitoring, regulation of anthropogenic activities and conservation of deep-sea habitats.

The DSEMCluster Round-Table multidisciplinary speakers shared and discussed experiences to understand how we can help to improve the blue industry and deep-sea policy and practice in Norway and Brazil.

The Program was divided in 03 session: 02 session with 04 presentation each session and 01 discussion panel with 06 multidisciplinary professionals. Every speaker had 10 minutes to do your presentation.

“The Blue Industries in the Deep-sea Session” was divided in two main blocks where the speakers presented the Brazilian and Norwegian approach to the blue industry, their cooperation in a profitable and sustainable way, and innovation in deep-sea environmental monitoring.

Brazil & Norway Cooperation Outlook

Mr. Rune Andersen, Counsellor science and technology – Innovation Norway
The Global Growth Subsea Technologies O&G Brazil Program

What is Global Growth? The Global Growth is an export programme for established companies that want to grow internationally. The programme comprises courses, consultation and gatherings both in Norway and on the export market, provided by a project team of consultants from Innovation Norway and dedicated external parties. Each programme is customised for groups of businesses within one sector and/or market. The goal with the programme is to help the company to increase exports by gaining a deeper understanding of the opportunities, obstacles and challenges on the market. The Global Growth programme can help chart further potential customers, partners and stakeholders. The programme also provides an insight into the prerequisites for success and how to be recognised as an attractive business partner.
The two Joint Public Call aimed to support innovation projects elaborated in cooperation between Brazilian and Norwegian companies. The RCN finances the Norwegian companies, while Finep finances the Brazilian companies. The 1st Joint Call had the thematic areas as Subsea Technology, Increased oil recovery and Environmental technology. The 2nd Joint Public Call had the thematic areas as Environmental technology, Increased oil recovery, Exploration, Cost-efficient drilling and intervention, Production, processing and transport technologies. The projects must be carried out through partnerships between research institutions in Norway and Brazil, in partnership with companies from both countries. The 2 call and collaboration had such success in projects quality, that RCN & FINEP decided to open more new calls for 2019.
Mr. Adhemar Freire, Country Manager – Brazil NORWEP
The Norwegian energy industry and international businesses and governments.

Norwegian Energy Partners is an independent non-profit foundation established to strengthen the long-term basis for value creation and employment in the Norwegian energy industry through expanding the industry’s international business activities. At the beginning of 2018, Norwegian Energy Partners has 250 independent, operating companies as partners. Mapping the competence, technology and comparative advantages of Norwegian companies and matching it with customer demands internationally, improving competitiveness and reduce the risks related to international activities NORWEP became one of the most important international network organization bringing customer and suppliers together from Norway and many other countries.

Blue Industries Outlook

Jim Chamness, Business Development Director CSA Ciencias Oceanicas Ltda.

CSA presented the Environmental Data and Geospatial Services (EDGS): Data management, accessibility, and visualization in a secure, web-based environment. The Scientists, permitting specialists, project managers, database administrators, GIS analysts work together for collection, management, centralization, and visualization data with security and accessibility, also with the analysis and interpretation of all data. The information is saved on the EDGS online, a custom platform with tools, widgets, apps to optimizing the client access to data and to enhance the communications.
Frederico Marins, Diretor Marketing Gardline Marine Sciences do Brasil

Gardline, a wholly owned subsidiary of Royal Boskalis Westminster N.V., is a multidisciplinary marine survey company, providing a comprehensive range of marine services including geophysical, geotechnical and environmental surveys. Established in 1969 in Great Yarmouth, Gardline has grown to become one of the world's largest and well reputed marine survey companies. Gardline’s services are delivered across industry sectors with an interest in the marine environment. Gardline operates worldwide and in Brasil Gardline’s mission is to be best in class provider of geophysical, geotechnical and environmental surveys and related marine services to the offshore wind, oil and gas industries.
Steinar Sanni, Chief Scientist NORCE

The deep-sea scientist presented the activities in regulatory requirements and industrial needs in Norway: Norway aims to get sustainable E&P operations and “0-discharge” (zero harmful effects discharge) by using Risk based, Environmental impact and monitoring, Water column, Sediment and Marine resources samples. The risk-based management is made by impact/effect monitoring in deep sea (biomarkers). And the Norwegian Deepwater Program (NDP) is working on development of risk assessment model tools (DREAM) with fate, effects, bioaccumulation, biodegradation and risk analysis. The methods have special attention to Cold Water Corals (CWC) for further studies. Impact/Effects and monitoring of Corals had the collaboration from Norwegian oil companies (Equinor, CoP, Research Council O&G program), and Petrobras, for research in laboratory and development of monitoring systems.

Vegard Evjen Hovstein, Managing Director Maritime Robotics AS

With technology developed in close collaboration with both civilian, governmental and military partners, Maritime Robotics focuses on delivering high-quality system solutions and products that are cost-efficient, reduce HSE risk exposure and are highly deployable, in any conditions. MR technologies and products operate unmanned in the air and on the surface, and can gather data ranging from air to subsea. MR is working on the field of with seabed and Reservoir Mapping, Marine algae, zoo-plankton, fish juveniles and fish monitoring, marine mammals acoustic, meteorology and oceanography data collection.
The Round-Table Panel discussed about how can we improve the deep-sea environmental monitoring, policy and practice. And how the different stakeholders that use the deep-sea can contribute to a more sustainable operations in the deep-sea environment.

Enrico Campos Pedroso, Coordenator of Technical Data ANP

Enrico Pedroso presented the new Environmental Data Bank. The BDE aims to manage the collection of existing technical data and information on the Brazilian sedimentary basins, as well as information related to the exploration, development and production of oil and natural gas. ANP together with IBAMA wants to develop the BDE as a center of international reference in technological innovation, research, reception, storage, availability, processing and interpretation of technical data acquired in the Brazilian sedimentary basins, providing services, fomenting and subsidizing the oil and natural gas industry in Brazil. The online information available now include data from Marine Biota Monitoring Project (PMBM), Social Media Project (PCS), Passive Acoustic Monitoring Project (PMAP), Beach Monitoring Project (PMP), Noise Monitoring Project (PMR), Pollution Control Project (PCP) and Bird Management Project (PMAVE). ANP ambitious is to create an Environmental Portal to store crucial georeferenced information from academy, government and industry organizations.

Cristiano Villardo, Environmental Analyst IBAMA

The BDE is a partnership between the ANP and IBAMA. The objective is the collaboration between ANP and IBAMA in the process of granting environmental licenses, as it broadens access to reliable and georeferenced technical data. The tool will gather information from the various environmental databases that currently exist, as well as aggregate new data from future studies. Among them is, for example, the basis of the International Association of Geophysical Contractors (IAGC), related to the monitoring programs carried out during the seismic acquisitions carried out on the Brazilian coast. Cristiano Vilardo, responsible for the BDE, environmental databases in environmental licensing in Brazil, wants to take the EIA process and information to another level. By using Information as Environmental Data (Studies, Baselines and Monitoring), Impacts Sources (Effluents, Emissions and Discharges), and Process (Projects, Licenses and Reports). For the continuity and expansion of the database it is necessary to improve Integration, governance and business models, cooperation between the stakeholders and change the brazilian culture to share more data and in a better way.
Fabio DiDario, Associate Professor UFRJ/NUPEM

The deep-sea scientist started his presentation with a brief introduction about NUPEM/UFRJ. And their localization related with Campos Basin, about 80% of the total Oil Production in Brazil. He showed his international publications about the deep-sea fishes and talked about the lack of faunal inventories in Brazilian Deep-Sea environments, even in cases of relatively well-known groups such as fishes. He presented 3 suggestion to improve the deep-sea knowledge: New Technologies (e.g., eDNA, ROVs) and basic taxonomic sampling/inventories/monitoring; Surveys aimed at collecting in lesser known (or totally unknown) habitats in the Deep-Sea – e.g., paleochannels; Strengthen the value/structure of biological collections and the importance on more investment in student formation in systematics and taxonomy.
Taran Thune, Professor at University of Oslo

From oil to … Diversification to new markets for petroleum supply firms was the theme explored by Dr. Taran Thune. She presented the questions on the Agenda in Norway: Are petroleum related companies able to diversify to new markets? Probably, petroleum companies are quite diverse and have potential to develop activities in new markets. What kinds of drivers and barriers do they experience when diversifying? Profitability, costs, risks and lack of position/power cannot recreate the relatively unique conditions of upstream petroleum and less external investment and less public support. How is diversification to new markets conditioned by developments in the oil and gas context? Diversification is “counter cyclical”, entailing that conditions in OG strongly influences diversification patterns. Firms that break this pattern make a strategic move to new markets and are usually “early movers”.

Steinar Sanni, Chief Scientist IRIS/NORCE

The presentation “Brazil and Norway Environmental R&D networks building collaboration with deep sea focus: Experiences and ways forward” demonstrated that Brazil and Norway have interest in common topics as deep sea benthic assessments – biodiversity; DNA based species - determination and mapping; VECs (corals and sponges); Impacts; Ecological functioning; Effect assessments (in lab); and Monitoring (in field). Both countries have common industry partners, and this is a sign that there are many good possibilities for bilateral collaborative projects in deep sea monitoring and assessments. The new joint calls planned to be announced by RCN & FINEP for new research projects, and CAPES and DIKU shall also stimulate relevant networking on the educational level.
Fabiano Thompson, Professor at UFRJ, COPPE, IB UFRJ/COPPE

The presentation “Recent contributions to sustainable production” included Fabiano’s research recent publication about: “Marine Biotechnology in Brazil: Recent development and its potential for innovation, “Perspectives on the Great Amazon Reef: Extension, biodiversity and threats”; The Biodiversity Natura-Capes Award 2018; “Insights on the freshwater microbiomes metabolic changes associated with the world’s largest mining disaster” (Effects of the incident in the Doce River); and finally the BAMBA – the Brazilian Marine Biodiversity Database. Brazilian Marine Biodiversity database (BaMBa) is a national open data infrastructure. Datasets obtained from integrated holistic studies, comprising physical-chemical parameters, -omics, microbiology, benthic and fish surveys can be deposited enabling scientific, industrial, and governmental policies and actions on marine resources uses and management. BaMBa is an initiative of the National Research Network in Marine Biotechnology (Biotecmar) and is funded by the Brazilian Ministry of Science, Technology and Innovation (MCTI) and hosted in the National Laboratory of Scientific Computing (LNCC). BaMBa is connected to other national and international databases: Information system on Brazilian biodiversity (SiBBr), Global Biodiversity Information Facility (GBIF) and Data Observation Network for Earth (DataONE) allowing rapid retrieval of information from any location in the Globe.

In the end of the event, the company Maritime Robotics AS from Norway, exhibited the Unmanned Surface Vehicle (USV) Otter and demonstrate the multiple users of their technology.
NORWAY & BRAZIL CHALLENGES AND OPPORTUNITIES TO STRENGTH THE BILATERAL COOPERATION FOR THE BLUE ECONOMY

Ocean is the most used system, and we need to act to keep the ability of the ocean to continue providing resources. The ocean needs funds for conservation and management. Technology can be developed as important tool for the ocean management. To innovate and manage in an integrated way is necessary more knowledge, capacity, competence, better and stronger policies. Links between academy and industry proved relevance and address the needs of the day for Brazil and Norway.

Brazil has implemented reforms in energy industry to develop better environment projects, and the new investments means more job and development. There is the need to invest in new technology and research, for the development of policies towards future, to explore in a safe way the pre-salt fields. For Norway is urgent to reduce the emissions following the Paris agreement, less CO2 emission are necessary to reach the UN goals. Therefore, renewable energy is the focus for the norwegian future energy industry.

Right balance to provide and increase energy with climate changes issues are the challenges and dilemma for the bilateral cooperation. The cooperation between authorities and workers, to facilitate dialogue, to solve problems and incoming challenges, are dependent of the key resource for management, which is the transfer of knowledge. Brazil and Norway have the potential together to develop the largest market for marine services and suppliers, world class energy production and leadership in the deep-sea research.

For the deep-sea conservation, both countries should give more emphasis on environmental licensing in processes of pipeline installation and drilling, avoid areas with occurrence of rhodolith beds, marine invertebrates communities (corals, sponges); install submarine devices (pipelines, equipment’s, anchoring) without impacts (or less impact) on deep-water corals; and drilling wells without impacts (or less impact) on deep-water corals. These challenges are similar to those experienced by oil and gas companies operating in Norwegian and Brazilian waters, and both countries can thus learn from each other’s experiences.

The petroleum is an ecosystem industry which produce innovation with multiple industries and technologies. Collaborating is important for innovation, R&D and clients to bring the dynamic for the ocean economy development. Deep-sea technologies are becoming faster and cheaper and digitalization is delivering value for the entire chain, of the energy industry, in Brazil and Norway. Science and industries together, balance of economy and conservation, strategy and planning, are the greatest challenges for norwegian-brazilian collaboration.

Blue economy is complex as the ocean complexity proprieties. To understand and manage the entire system is necessary a holistic approach to cross the different marine and maritime sector, to act and innovate for more sustainable and profitable business, and better conservation. Interdisciplinarity and integration are the key elements for the blue economy.

The United Nations has proclaimed a Decade of Ocean Science for Sustainable Development (2021-2030), to support efforts to reverse the cycle of decline in ocean health, and gather ocean stakeholders worldwide behind a common framework, that will ensure ocean science to fully support countries in creating improved conditions for sustainable development of the Ocean.

We live in the most exciting place and most exciting moment to build the future of our oceans!
ACKNOWLEDGMENT:
To Denise Reigada and Mauricio Syrio from FINEP to support and help the round-table organization. To Rune Andersen from Innovation Norway for motivating and believing in the networking power. To Innovation Norway Team: Michelle Duarte, Gabriel Francisco, Rune Bjåstad, Ana Barbosa de Oliveira Roedel and Rodrigo Bastos for the invitation to Runde Environmental Center take part in The Ocean Seminar and to give full support to the Blue Industries & DeepSea Conservation Round Table. Also, thanks for the CSA Ciências Oceânicas Ltda for sponsoring the round-table event auditorium.

SPEAKERS SUMMARY OF QUALIFICATION:
Adhemar Freire Country Manager – Brazil NORWEP
Adhemar Freire has more than 30 years of experience in Oil and Gas Industry. He is graduated in Mechanical Engineer by Universidade Gama Filho and in Law by Faculdades Integradas Bennett. He holds a MBA in Economic and Strategic Management of Business by Fundação Getulio Vargas. He has worked for multinational and national service companies and has joined Norwep (former INTSOK) in January 2013 as an advisor to Norwegian Energy partners in the Brazilian market.

Claudia Erber, Project Coordinator - Runde Environment Center
Biologist, Msc. and MBA in Environmental Science. Developed her expertise in bioacoustics of cetaceans. Has extensive experience in projects related to environmental impact of energy industry on the marine environment, from the preparation of reports to Control Environmental Impact Assessment to the implementation of projects onboard ships and rigs. Participating in cetacean research projects since 1996 got solid experience of marine life monitoring. Managed two Beaches Monitoring Projects, integrating development, environment and fishing communities. Develops, since 2002, Waste Management through the offshore structures. Develops Environmental Education Projects and participates in courses for sustainable world solutions since 1998. Coordinated Environmental Projects on board seismic vessels, required by Brazilian Environmental National Agency. Create the Environment Technician Course for offshore employers and work with Emergency Plans for energy industry. At Runde Miljøsenter, since 2016, is developing research on deep-sea life onboard subsea vessels during oil&gas operations. In 2017 started to develop an unique bilateral cooperation, between Brazil and Norway, within research and subsea technology developers, collaborating and organizing events together with Innovation Norway. In 2018, worked with the Institute of Marine Research in the minke whale counting cruise for IWC.

Cristiane Abreu Manager of Oil and Gas Department FINEP
She is currently the manager oil and gas department at Finep, whose mission is to promote R&D&I actions carried out by the business sector and to support the innovation business plans and projects of Brazilian companies through different financial tools (loans and grants). Mauricio represents FINEP in industry forums related activities end of the area he manages (AFI) and since October 2012, by Ministry of Science Technology and Innovation concierge designation integrates intergovernmental Task Force for Cooperation on Science, Technology and Innovation (ST&I) between Brazil and Norway.

Cristiano Villardo Environmental Analyst IBAMA
Cristiano has a Biology background and a Masters in Environmental Planning. Since 2002, he works as Environmental Analyst in IBAMA’s oil and gas licensing office. He has experience with environmental impact assessment of seismic surveys, and is currently involved with some environmental data management initiatives. He was the coordinator of IBAMA’s oil and gas licensing office from 2011 to 2014.

Enrico Campos Pedroso Coordenator of Technical Data ANP

Fabiano Thompson Professor at UFRJ, COPPE, IB UFRJ/COPPE
Fabio Di Dario is Associate Professor II at the Federal University of Rio de Janeiro (UFRJ), in the Centre for Ecology and Socio-environmental Development of Macaé (NUPEM / UFRJ). He holds a Bachelor’s degree in Biological Sciences from the Institute of Biosciences of the University of São Paulo (USP) (1996), a Master’s and Doctorate in Zoology from the Institute of Biosciences of USP (1999 and 2005) and a postdoctoral fellowship at the Museum of Zoology of the University of São Paulo (MZUSP)(2006-2007). He has experience in Zoology, with emphasis on Systematics, Morphology, Evolution, Biogeography and Conservation of Recent groups of fishes. He is currently the Coordinator of the Graduate Program in Environmental Sciences and Conservation (PPG-CiAC) at UFRJ, where he teaches in the Master and Doctorate. He is a member of the Deliberative Council of the Brazilian Society of Ichthyology (SBI), is a member of the GEOPROF – Deep Sea Fishes Research Group, and is co-leader of the GSE, Group of Systematics and Evolutionary Biology, both Research Groups of CNPq.

Frederico Marins Diretor Marketing Gardline Marine Sciences do Brasil
Professional with solid experience within marine market with 13 years working for the Oil & Gas, Renewables and Telecom industries in Brazil and Europe. Majority of experience is concetrated on business development, marketing management, and international corporate ventures. Strong commercial awareness and client orientation. As a Marketing Executive Officer he is responsible for Business Development, Marketing & Customer Relationship within Brazil and South American markets.

Jim Chamness Business Development Director Ciencias Oceanicas Ltda.
Experience: In the environmental area since 2000 with environmental licensing, implementation of environmental programs and management of SMS processes. She works with the preparation of units (drilling rigs and Supply) for IBMA inspection. Currently is an environmental coordinator for both offshore and onshore activities in the area of Oil and Gas Exploration and Production. Coordinates the processes related to the licensing, compliance with environmental control programs and procedures and legal authorizations.

Rune Andersen Consul Science and Technology at Innovation Norway IN
Rune has worked strengthening the commercial and RD&I ties between Norway and Brazil for several years from the Oslo office. Since 2012, Rune has worked based at Rio office. Rune has an extensive knowledge about the Brazilian culture, institutions and language. In addition, he works in close cooperation with clusters and research institutions. He has a MSc in Economics from the Norwegian School of Economics and Business Administration.

Steinar Sanni Chief Scientist IRIS/NORCE
Steinar Sanni is Chief scientist at the Norwegian Research Centre (NORCE), and Associate professor at the University of Stavanger. He has more than thirty years of multidisciplinary experience as researcher within aquatic sciences, ranging from marine ecotoxicology and lake pollution to fish aquaculture. Development of methods and knowledge for environmental risk and monitoring related to oil and gas activities offshore has been his main focus the last twenty years.

Taran Thune Professor at University of Oslo
Taran Thune is professor of innovation management and policy at the University of Oslo, Norway. Her work concerns innovation processes and outcomes in multiple industries and economic sectors. She has recently completed a large research project on the transformation of the petroleum industry, looking particularly at innovation, technology transfer and diversification of petroleum supply firms, which has resulted in the book “Petroleum industry transformations: lessons from Norway and beyond” (published by Routledge).

Vegard Evjen Hovstein Managing Director Maritime Robotics AS
Managing Director at Maritime Robotics AS since 2007. Founder of Peregrine Dynamics AS Graduation and Master Degree at Norwegian University for Technology and Science. His Field Of Study was Control Engineering and Flight Control Systems.