

Working Group Proposal Submitted to SCOR, April 2018

WG-OGOD

Ocean Governance and Policy Analysis for Ocean Deoxygenation

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Title: Working Group proposal on Ocean Governance and Policy Analysis for Ocean Deoxygenation.

Acronym: WG –OGOD

1.Summary / Abstract:

The oxygen level in the ocean and coastal water is decreasing which is responsible for changing the coastal and marine ecosystems almost in all parts of the globe. This working group on Ocean Governance and Policy Analysis for Ocean Deoxygenation (WG-OGOD) aims to create a regional network in different part of the globe consists of interdisciplinary stakeholders working on issues related to Ocean deoxygenation and its impacts on coastal, ocean and marine ecology and economy to undertake the series of activities includes preparation of status paper, Research papers and Manuals ,Regional Workshops and training courses on different issues related to Ocean Governance and Policy Analysis for Ocean Deoxygenation and its impacts on coastal, ocean and marine resource, marine and coastal policies, integrated coastal and marine resources management, impacts of urbanization on ocean deoxygenation, role of different stakeholders and institutional framework in ocean governance, ocean pollution and climate change, case studies on ocean and coastal governance influencing the ocean deoxygenation. This working group will also seek larger cooperation through organizing regional, national and international meetings, training courses on ocean governance, to participate in the Decade of Ocean Science ,SCOR and SOLAS activities etc. to highlight the importance of ocean deoxygenation and it is interrelatedness with urbanization, climate change, ecological changes, coastal human interactions, policies and governance required for monitoring ocean oxygen changes.

2.Scientific Background and Rationale :

As per the United Nations estimates, the world population reached 7.3 billion as of mid-2015, implying that world has added approximately one billion people in the span of the last 12 years. The total population on earth is predicted to increase by more than one billion people within the next 15 years, reaching 8.5 billion in 2030, and to increase further to 9.7 billion in 2050 &11.2 billion by 2100. Looking at the ever increasing urbanization, in 2016, an estimated 54.5 % of the world's populations inhabited in urban region. By 2030, urban areas are projected to shelter 60 % of people worldwide. On the basis of these figures and other global trends, it would appear that Africa and Asia will have the highest share of world's urban growth in next 25 years, resulting consideration rise of several metropolitan cities and towns along coastal region of Asia- Pacific and Africa .South America is gaining attention in the global climate change scenario due to its natural resources and its geographical location on globe. Therefore the task of transformation of rapid coastal urbanization in to rising number of coastal cities and towns through ecological, environmental and economic sustainability and building resilient societies in changing climate creating challenges for ocean governance and ocean policy formation for sustainability of urban coastal ecosystem will be vital.

The analysis of the Dead Zones (oxygen-starved zones) was conducted by a team of scientists from the Global Oxygen Network (GO₂NE), created in 2016 by the Intergovernmental

Oceanographic Commission of the United Nations (UNESCO-IOC). Researchers determined that open-ocean “oxygen-minimum” zones have expanded since 1950 by an area roughly equivalent to the size of the European Union. The volume of ocean water completely devoid of oxygen has more than quadrupled in that time, the study found. The number of hypoxic, or oxygen depleted, zones along coasts has increased up to 10 times, from less than 50 to 500. This is caused by the rapid uncontrolled urbanization along coast and increased ocean-human interactions. The scientists recommend salvaging oxygen-starved areas by tackling climate change and nutrient pollution, focusing on protecting particularly vulnerable sea life with no-catch or no-fishing zones, and increasing and improving surveillance of areas where oxygen is plummeting.

The size of oxygen-starved ocean “dead zones,” where plants and animals struggle to survive, has increased fourfold around the world, according to a new scientific analysis.

The growth of the zones is yet another consequence of global warming- including increasing ocean temperatures -triggered by greenhouse gases and, closer to the coasts, contamination by agriculture “Rising nutrient loads coupled with climate change -each resulting from human activities -are changing ocean biogeochemistry and increasing oxygen consumption,” says the study published in the journal of Science(<http://science.sciencemag.org/>). Ultimately, such changes are “unsustainable and may result in ecosystem collapses, which ultimately will cause societal and economic harm.” Therefore interdisciplinary and multidisciplinary studies coupling with impacts of urbanization and increased ocean human interactions on coastal, Marine and Ocean systems are required for systematic assessments, policy formulation and implementation for ocean governance at local, regional and global scale.

3.Terms of Reference :

The term of reference of the working group will lead to interdisciplinary and multidisciplinary studies and research work involving various aspects of Ocean Deoxygenation in local, regional and global context.

- (1) To Assess, Examine and Document the current status and issues related to Dead zones (Dead spot) ,Oxygen minimum zones in the world ocean due to urbanization, pollution and climate change .
- (2) To document and develop the global network of stakeholders for research on Ocean Deoxygenation, Ocean Governance and Policy Analysis.
- (3) To publish the research papers, manual and reports to mitigate the impacts of ocean deoxygenation for sustaining coastal and marine economy and ecology for the use of local stakeholders, governments and educational institutes.
- (4) To develop and implement the web based tools for information related to Ocean Deoxygenation.
- (5) To improve awareness of scientific understanding and local capacity building on Ocean Deoxygenation, oxygen minimum zones or dead zones, its causes, effects and impacts on coastal, ocean and marine system to form the sustainable solutions.

4. Working plan:

The work plan is divided in different activities in the specified time schedule. As regards to the TOR 1, the current status of the Ocean Deoxygenation in different part of the globe will be assessed in first 18 months. For this a regional subgroups will be formed to identify the local issues on global scale. The documentation will be completed intermittently within 3 years after researching the current status, issues in local level etc. With respect to TOR 2, the series of meetings will be planned in Asia-Pacific, Europe, Africa, America and South America within first 2 years of the WG depending on the financial resources to assess the current status of the Ocean Deoxygenation and stakeholders involved in the process to form the global network. This network will be developed in association with the local research institutions, Universities and Governments to bring the sustainability after end of the working group. Some of the institutions have already shown interest to provide the infrastructural facility for such networks. Series of research publications, reports, manuals will be published in association with the local stakeholders during the 2nd and 3rd year of the WG period region wise as well as global level. Depending on the financial resources and local support series of meeting, either webinar or in person will be undertaken to strengthen the research and development activities related to TOR 1 and 3 periodically in consultation with SCOR secretariat. The TOR 4 activity, the web based tools for information and communication will be started after completion of the first year of WG after collecting sufficient data on Ocean Deoxygenation, Ocean Governance, policies, urbanization status along coastal cities and towns etc. The web based tools will be completed at the end of 3rd year for the use of the global stakeholders. The work plan for TOR 5 is supportive to all the TORs as the meetings, seminar, conferences, workshop and training programs will be planned throughout the 3 years as most of the members of the WG are members of Regional and global associations on Ocean, coastal and marine science, urban networks, Future Earth Networks, UNESCO-IOC- WMO Ocean experts etc. In addition to the regular meetings of the WG, it will be our focus to participate in the global meetings on Ocean and marine science, Urbanization, climate changes organized by the UNEP, WMO, SCOR, WCRP, SOLAS, IUGG, UNESCO-IOC, IPCC, IPBES and CBD, AGU, EGU etc. Some of the meetings are already planned which will be coupled with the WG, if this proposal is selected. We have received the commitment from the Organizations in India to provide matching funding for organizing one Annual meetings of WG, two training programs of one week duration and three workshops in India. This will help to bring the synergies on local, regional and global issues on Ocean Deoxygenation. Also we are in process of dialogue with the international institutions to provide institutional support or funding support for achievements of the TORs. The University of Naples 'Federico II'. Naples, Italy has agrees to host the Regional Chair of Europe for the activities of this WG. Similarly we are in process of selecting the organizations to host the Regional Chair of Africa and South America to have a joint activities and assessments on regional basis with in the time frame with increased participation from all the stakeholders. This will also help to raise the awareness on the Ocean dead spots and minimum oxygen zones along the coastline of coastal countries and particularly coastal cities and towns.

5. Deliverables:

The deliverables are planned through various modes, printed reports, web based tools, research publication, Documentaries and research reports of the WG. First the current status report will be delivered in first phase of 18 month to seek the larger cooperation from stakeholders in Ocean Deoxygenation and ocean governance for completion of the TOR 2 to 5 in second phase. The WG desires to publish at least one research paper in the international journal on regional scale and at the final stage at the Global scale. The database

and maps of the Oxygen minimum zones, dead zones will be published yearly and finally will be made available on the web based tool. The WG will be represented by the WG members and associated members in different global and regional meetings to review the work depending on the funding availability. Also some short term fellowships, summer schools and training programs are planned in association with the local institutes. In addition to the financial resources from SCOR and other participating institutions, the WG aims to obtain the additional funding support for early career scientist and researchers from various funding institutes, universities and government institutes. The WG will publish the final report of all activity along with the data, analysis and results and recommendations. We planned one training session in India in first year for which the Partner institute has agreed to provide matching grants. In second year training sessions are planned in Africa and America for which we will be able to generate the resources. The third training course will be planned in Europe in third year. Some of the training sessions will be planned during the WG annual meetings to optimize the financial resources.

6.Capacity Building:

This WG will help to strengthen the efforts of mitigating impacts of Ocean Deoxygenation in Coastal urban region of the world. The WG will bridge the gap in ocean governance and ocean policy development through participation of global stakeholders to form the sustainable solutions to Ocean Deoxygenation along the coastal urban centers. The WG will contribute in providing training the local stakeholders around the globe to enhance the skills and knowledge on urbanization and its impacts on ocean and marine system, Ocean Deoxygenation, ocean human interactions and ocean minimum zones and dead zones. The web based tools will be helpful in capacity building to aid in identification of ocean minimum zones and dead zones, causes, effects and solutions. The WG will help to stimulate new research activities with interdisciplinary and multidisciplinary approach in ocean minimum zones and dead zones, Ocean Deoxygenation coupling the human interactions and governance and policies required for ocean sustainability. It is proposed that the participating member's institutes/ organizations will be associated with the WG by providing the infrastructure facilities for other members of the WG. This will also help in institutional capacity building of the members of WG as well as associate members and associate institutions who are willing to contribute to the WG activities. We have already received confirmation from Italy, India, Sweden and Sri Lanka regarding institutional participation and support from Universities, Government and Institutions. We are planning to couple the activities with the WMO, UNESCO-IOC, Future Earth, FAO for strengthening the training activities for enhancing the skills and knowledge for the stakeholders from North –South part of the Globe. It is also proposed a long term joint training and research programs through memorandum of associations (MoU) with the institutions of the Full and Associated members after completion of the WG period to bring the sustainability and providing leadership on this forefront areas. This will help in capacity building of the SCOR partner institutions as well as the Institutions of the Full members and Associated members of this WG. It is expected that more organizations from different part of the globe may be willing to associate with the long term training and research activities of this WG for strengthening their local program on Ocean Deoxygenation and Oxygen minimum zone, Dead spots in marine and coastal zone. The Full members from University of Naples, Italy are already providing scientific and technical knowledge and services to local coastal towns to overcome these problems. It is expected that more local governments from the coastal cities and towns in Asia-Pacific, Europe, America and Africa may likely to approach the WG for assessment of the dead zones in coastal region to form the coastal and ocean governance and policy formulation.

7. Working Group composition (as table).

(A) Full Members .

Name	Gender	Place of work	Expertise relevant to proposal
1. Kalpana Chaudhari (Chair)	F	Institute for Sustainable Development and Research, ISDR, India. (Mumbai, India)	Coastal cities , Urban Environmental management, Ocean Governance, Coastal pollution , Ocean Information and communication
2. Murray Rudd (Co- Chair)	M	World Maritime University (WMU), Malmö, Sweden.	Ocean Governance, Institutional analysis, marine policy science policy interface, ocean policy
3. Pasquale De Toro	M	Interdepartmental Research Centre in Urban Planning 'Alberto Calza Bini' (CIRURB), The University of Naples 'Federico II'. Naples , Italy	Environment and climate change, Coastal cities, Landscape and conservation , Urban coastal zone management.
4. Annette Breckwoldt	F	Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI), Bremerhaven, Germany.	Coastal Change, Fisheries Management and Ecology, marine resource management
5. Chandra Prakash	M	ICAR-Central Institute of Fishery Education, Mumbai, India	Ocean Deoxygenation, Marine pollution, Urban Coastal zone management
6. Mario Rosario Losasso	M	The University of Naples 'Federico II'. Naples, Italy	Urban Planning, Coastal infrastructure and planning, coastal cities.
7. H.M. Palitha Kithsiri	M	National Aquatic Resources Research and Development Agency (NARA), Crow Island, Colombo 15, Sri Lanka.	Ocean Deoxygenation, Marine Pollution, Marine Fisheries and Aquaculture, Ocean Governance
8. Ruby Asmah	F	CSIR-Water Research Institute, Accra-North, Ghana	Ecological Marine Management, Sustainable aquaculture

			development, environmental and socio-economic impact assessments; integrated coastal zone management; assessment, monitoring and management of pollution in inland and coastal waters, ecotoxicological assessments, and applications and use of Geographical information systems in environmental management.
9. Alice Newton	F	Centre for Marine and Environmental Research,(CIMA), University of Algarve ,Faro , Portugal	Environmental Impacts and Economics, Marine and Environmental Sciences, oceanography, Land ocean interactions in the coastal zone, Bioeconomy Strategy
10. Iosu Paradinas	M	University of Valencia, San Sebastian, Basque Country, Spain	Marine Spatial Planning, Fisheries and Aquaculture, Biostatistics, Ecological and Environmental modeling, Marine Biology.

(B)Associate Member (no more than 10) :

Name	Gender	Place of work	Expertise relevant to proposal
1.Kithulampitiya Koralege Tharaka Nuwansi	F	ICAR Research Fellow, Galle, Sri Lanka	Fisheries biology rejuvenation technology and economics, coastal zone management, Nutrient Recycling, Marine Fisheries and Aquaculture.
2. Jerry Miller	M	Science for Decisions,	Costal Pollution, Marine Policy Management,

		Washington DC, USA	international Census of Marine Life programs, Ocean Science and Policy, Oceanography.
3. Alex Godoy-Faundez	M	Universidad del Desarrollo, Santiago, Chile.	Strategic Resource Management, Environment and Climate Change, water recovery and recycling, engineering, societal and political frameworks.
4. Samiya Selim	F	University of Liberal Arts Bangladesh, Dhaka, Bangladesh.	coastal management and conservation, marine ecosystem services, Sustainable Development.
5. Christina Cheong	F	UN-Women, Port Moresby, Papua New Guinea.	Coastal Urbanization, Small and Island countries, Urban planning in Coastal region, Coastal cities management.
6. Anjana Sing	F	Tribhuvan University, Kathmandu, Nepal	Biological Science, Microbiology, Ecology, Waste Water treatment .
7. Mr.Saikat Shome	M	Haldia Institute of Technology, India	Environmental Management, Coastal Zone Management, Water Pollution and treatment.
8.tbd			
9.tbd			
10.tbd			

8. Working Group contributions:

- 1) [Kalpana Chaudhari](#) (Chair) is member of Future Earth – Ocean KAN Development Team having experience of Urbanization in Coastal region, climate change, Ocean Governance, Information and Communication for Coastal, Ocean and Marine system. She is interested in Assessment of Coastal Urbanization in Asia-Pacific and to coordinate with other participating institutes.
- 2) [Murray Rudd](#) (Co-Chair) is working with World Maritime University, Sweden and has expertise with the international ocean laws and governance. He will be responsible for organizing the training session on Ocean governance and issues related to Marine science. He will be responsible for assessments of Coastal cities in Europe and identifying the Minimum Oxygen Zone in Coastal Europe.

- 3) [Pasquale De Toro](#) is working as Professor in Urban Planning in Italy and has expertise in Coastal urban management, impacts of urbanization on coastal zones. He will be responsible to organize the training session on urbanization and coastal pollutions .
- 4) [Annette Breckwoldt](#) is working at center for Polar and Marine research, Germany . She will be responsible for organizing training and research program on Coastal Change, Fisheries Management and Ecology, marine resource management.
- 5) [Chandra Prakash](#) is expert in marine pollution , coastal urbanization and sewage treatment in Coastal urban region . He will be responsible for work related to ocean deoxygenation and related training programs. He will be responsible for synchronizing the work related to Ocean Deoxygenation in Asia-Pacific, Europe, Africa , America and South America .
- 6) [Mario Rosario Losasso](#) is expert in Urban Planning, Coastal infrastructure and planning, coastal cities. He will be responsible for assessing the impacts of Urban effluents on Ocean and Marine water . He will also organize a training session on Municipal sewage discharge in coastal cities and Towns.
- 7) [H.M.Palitha Kithsiri](#) is working with Sri Lankan Government in Fishery Center. He will be responsible for the work related to Ocean Deoxygenation, Marine Pollution ,Marine Fisheries and Aquaculture, Ocean Governance in Small and island countries.
- 8) [Ruby Asmah](#) is working with Government Research institute in Ghana . She will be responsible for work related to the status report on Coastal cities in Africa and impacts of Ocean Deoxygenation on African Coast.
- 9) [Alice Newton](#) has a long standing experience on Ocean governance , policy , Ocean human interaction . She is member of Scientific steering committees related to Ocean and programs. She will be responsible for organizing the training session in relevant areas as well as to organize the training works related to European , African and South American Coast.
- 10) [losu Paradinas](#) is Working in Fishery assessment and Marine spatial planning for fisheries and aquaculture. He is interested in Costal ecology , Biostatistics, Ecological and Environmental modeling, Marine Biology of European and Mediterranean coast.

9.Relationship to other international programs and SCOR Working groups:

The activities of this working group are in consistence and mutually beneficial to the other SCOR working Groups as well as other international programs. There is strong correlation with the other International programs of ICSU, SCOR, WCRP, WMO, UNESCO-IOC, SOLAS, IMBeR, UNFCC, IPCC and United nations Decade on Ocean.

- (1) [SCOR WG 132](#) ; [Land-based Nutrient Pollution and the Relationship to Harmful Algal Blooms in Coastal Marine Systems](#) is useful for data collection on Marine Pollution and its impacts on coast. The data and research work of this WG will be mutually

beneficial for both the Working group for simulation analysis.

- (2) **GEOTRACES**: The work of this WG is closely related to GEOTRACE as the data on biogeochemical cycle and marine environment will be required for analysis. The WG activities related to training session on Ocean Deoxygenation can be collaborated with GEOTRACES.
- (3) **SOLAS**: We anticipate that the coordination with SOLAS ,China and SOLAS ,Germany will be beneficial for organizing the research and status reports on Dead Zones in Ocean in various part of the World in association with SOLAS IPO. The SOLAS related project on Global Ocean Oxygen Network (GO₂ NE) is highly relevant for collaboration and long term association.
- (4) **IMBeR** : The activities are beneficial to IMBeR. This WG already consists of the experts from IMBeR for synergies. Also we are planning to organize one training session during IMBeR open Science Conference in 2019. More scientist and researchers can be collaborated in future to utilize the IMBeR's world wide framework.
- (5) **UNESCO-IOC** : We are in contact with the WMO –JCOMM to provide us the training facilities for the early career scientist and researchers from coastal countries. There is a possibility to organize the training session in association with WMO partner organization.
- (6) **Future Earth**: Ocean KAN and Urban KAN : As the WG members are also connected with the Future Earth Ocean Knowledge Action Network , there is every possibility that this WG will coordinate with the Ocean KAN Development Team members world wide to get the real time data for assessment .Also few meeting can be organize jointly with the regional Future Earth offices. This WG is expecting the Future Earth –Urban-KAN can be associated for the impacts of urbanization on coastal and marine ecology and economy as the Coastal cities are gaining importance in view of implantation of Sustainable Development Agenda 2030. The Long term association in joint activities with Future Earth is expected with this WG in cross cutting issues on coastal and marine science with interdisciplinary and multidisciplinary subjects.

10. Key References.

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Appendix .I :

For each Full Member, indicate 5 key publications related to the proposal.

Kalpana Chaudhari

- (1) Dr.Kalpana Chaudhari, Dr.Suresh yavalkar," Changes in marine ecosystem: evaluating the impacts of climate change and developing adaptation strategies using application of e- governance and ICTs for protection and sustainable exploitation of coastal and marine resources " Scoping Workshop on the Development of an Integrative Ocean Research Network,Jointly hosted by: Future Earth, Future Ocean – Kiel Marine Science, Kiel , Germany and ICSU, IOC, SCOR and WCRP ,4-5 December 2016, Cruise Terminal Ostseekai, Kiel, Germany.
- (2) Mrs. Kalpana Chaudhari, Dr.Upena D Dalal , Mr.Rakesh Jha, "Application of Wireless Technology For Electronic Governance in Rural Region Using Information And Communication Technologies", " International Journal of Wireless Communication and Simulation (IJWCS), Volume 2,number 1-2 (2010) pp.113- 126
- (3) Mrs. Kalpana Chaudhari, Dr.Mr. P.T. Karule, "How to Improve Role of Information and Communication Technology for Health Care in Maharashtra State", International Journal of Advanced Research in Science, Engineering and Technology(IJARSET), Vol. 1, Issue 3 , ISSN: 2350-0328 (2014) 115-125
- (4) Mrs. Kalpana Chaudhari: Dr.Upena D Dalal , Mr.Rakesh Jha "Application of WiMAX Technology for Electronic Governance in Rural Areas" The Journal of Computing(TJC) ISSN:0976-6928 in Vol.2 Issue2-Feb,2011,PP.1-10

- (5) Dr.Kalpana Chaudhari , Dr.P.J.Philip,“Application of Information and Communication Technologies for Transboundary Water Governance and Diplomacy in Indo-Pacific and Beyond, IAHS Scientific Assembly, 10-14 July 2017, Port Elizabeth, South Africa.

Murray Rudd

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- (3) Murray A Rudd, Mark H Tupper, Henk Folmer, GC Van Kooten, Policy analysis for tropical marine reserves: challenges and directions ,*Journal of Fish and Fisheries*, 2003, vol-4, issue -1,p.65-85.
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- (5) Mark Tupper, Murray A Rudd, Species-specific impacts of a small marine reserve on reef fish production and fishing productivity in the Turks and Caicos Islands , 2002, *Journal of Environmental Conservation*, Vol.-29, issue-4,p.-484-492.

Pasquale De Toro

- (1) *Luigi Fusco Girard,; Maria, Cerreta; Pasquale De Toro ;* The Bay of Naples: a multi-criteria evaluation of vulnerability and resilience ,2017 , ISBN 9788899130688.
- (2) *De Toro, P .; Venditto, T.;* Planning, landscape and evaluation: an experimentation for a river ecosystem ,2016, *journal of urbanistica Informazioni* Vol .- 263 s.i.,p.16-21.
- (3) Fusco Girard, L.; Cerreta, M.; De Toro, P., The sea resource for the territory. Development prospects for the coastal strip of the province of Naples. ,2015, ISBN 9788874318056,
- (4) *Cerreta M .; De Toro P .; Ferretti F.;* Evaluations and decision-making processes for a sustainable tourist port in the Mediterranean; 2013, *Journal -TRIA, Italy, vol-11; p.239 252*
- (5) Cerreta, M.; De Toro, P. A Multi-Dimensional Evaluation Model for the Historic Urban Landscape , *Book -Heritage and Landscape ad Human Values*,2015, ISBN-9782918086024,2015; p.302-306

Breckwoldt Annette

- (1) Veitayaki, J., Ledua, E., Nakoro, A., Hyun Pyo Hong, Han, P., Sein Kim, Breckwoldt, A. (2018). The Future Use of Past Practices – insights from two community-based marine resource management projects in Fiji. *Ocean Yearbook* 32: 376–406. doi 10.1163/9789004367005_015.

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Dr. Kalpana Chaudhari
Institute for Sustainable Development & Research, ISDR,
Mumbai, India

11-04-18

Subject: Letter of Support for proposal for a SCOR Working Group on Ocean Governance and Policy Analysis for Ocean Deoxygenation (WG-OGOD)

Dear Dr. Chaudhari,

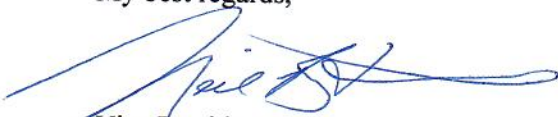
We hereby confirm our support for Professor Murray Rudd (Nippon Foundation Chair in Sustainable Marine Management and Ocean Governance) to participate in the proposal for a Scientific Committee on Oceanic Research (SCOR) Working Group on Ocean Governance and Policy Analysis for Ocean Deoxygenation (WG-OGOD).

Coastal urbanization and upland development are closely linked with the challenge of ocean deoxygenation. Efforts to address this challenge will need to consider ocean governance, ocean and marine policy formation and implementation, and the relationships between ocean and terrestrial governance systems. For this, regional and global cooperation is essential among different stakeholders in ocean, coastal, urban, environmental, and climate research and management communities.

We anticipate that the planned 3-year initiative for the WG-OGOD will help spur joint efforts on local, regional, and global scale to help manage the challenges relating to ocean deoxygenation. The activities of the WG-OGOD may also encourage local and institutional capacity building for effective coastal management and ocean governance.

Given his focus on international ocean governance research and teaching, we are supportive of Professor Rudd's participation in the proposed SCOR WG-OGOD.

My best regards,



Vice President Academic
World Maritime University
Malmo Sweden
nab@wmu.se

Letter of Support

Date:

To ,

The Proposer,
The Working Group on Ocean Governance and
Policy Analysis for Ocean Deoxygenation.

Subject: Letter of Support for individual and Institutional cooperation for The Working
Group on Ocean Governance and Policy Analysis for Ocean Deoxygenation(WG-OGOD).

Dear Proposer,

We hereby confirm our support for The Working group on Ocean Governance and Policy Analysis for Ocean Deoxygenation (WG-OGOD). The issues related to Coastal urbanization , ocean deoxygenation are closely linked with Ocean governance, ocean and marine policy formation and implementation. For this regional and global cooperation is essential among different stakeholders in Ocean, Marine, coastal , urban, environmental and climate communities .

We consider that the joint efforts on local , regional and global level will help to overcome the challenges in Ocean Deoxygenation through Ocean Governance and Policy Analysis through this Working Group. The activities of this proposed Working Group will also help in local and institutional capacity building on the subject related to Coastal Ocean and Marine Governance.

We hereby endorsed our support for fulfillment of the activities of the Working group on Ocean Governance and Policy Analysis for Ocean Deoxygenation (WG-OGOD).

Thanking you ,

Yours Sincerely ,

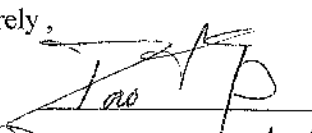
Signature(s)

Name (s) :

Designation(s) : /

Institution :

Contact address and tel.


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