

Mauritius Declaration on Ocean Sciences
from the
Roundtable Discussion on Advancing Ocean Sciences in Africa
25-26 July 2016 in Port Louis, Mauritius

CONTEXT: Recognizing the emerging importance of the ocean to Africa, scientists from a dozen African nations met to discuss ways to grow the relevant scientific capacity and ensure that scientific knowledge is available to inform public understanding and policy. Both established and emerging scientists attended. Roundtable goals, sponsors, program, and participants are provided in Appendix I. Participants decided to create a network of African scientists (including both social and natural sciences) devoted to advancing ocean sciences in Africa. They crafted the following statement.

DECLARATION

The African continent is surrounded by the ocean -- the Atlantic, Southern, and Indian Oceans and the Mediterranean and Red Seas. Roughly 70 percent of African nations are coastal. The ocean contains or produces a wealth of benefits for people and it has intrinsic value. Humans depend upon both the living and non-living portions of the ocean, for oxygen, climate regulation, food, jobs, energy, transportation, medicine, recreation, inspiration, cultural benefits and more. Recent discoveries emphasize the importance of the health of ocean ecosystems to most of these benefits, but especially food security, resilience to climate change, protection of coasts from storms and storm surge (e.g., by coral reefs, mangroves, and salt marshes), and expanded opportunities for tourism, recreation and culture. In other words, it is in our direct interest to ensure ocean ecosystems are healthy. Many feel that humans also have a moral obligation to be good stewards of the natural world that depends upon us, including the wealth of biodiversity in the ocean.

Technology now enables expanded uses of the ocean, while at the same time providing expanded opportunities to conserve ocean ecosystems. Many nations are looking seaward for new opportunities for economic growth, poverty alleviation, food security and more. Some opportunities may involve additional extractive activities of renewable and non-renewable resources. Other opportunities might focus on enhanced stewardship, for example through creation of fully protected marine areas and thus protection of biodiversity and the benefits it provides, but could also entail new job creation through scientific research, monitoring, tourism, and guiding opportunities. If human activities are managed wisely, guided by precaution and sound scientific knowledge, the ocean can indeed provide enhanced economic growth opportunities and jobs, and contribute to poverty alleviation and food security, in both the short and long terms. But smart, sustainable, equitable growth requires knowledge as well as innovation and ingenuity, to make the smartest use of this opportunity and avoid the pitfalls that would result from a focus only on short-term benefits that damage prospects for long-term use and prosperity.

In recent years, the international community and Africa have focused increasingly on the ocean, notably on opportunities for strategic social and economic development. In crafting its priority agenda through 2030, the United Nations agreed upon Sustainable Development Goal (SDG) 14: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development. Additionally, many African countries are developing national and regional frameworks for blue or ocean economies. The African Union recently launched a Decade of the Ocean and Seas.

As governments, civil society, the private sector, and the public worldwide advance dialogues and strategies for expanded uses of the ocean, marine and ocean scientists as well as their social science and law colleagues, can add significant value and are eager to participate. Two impediments to realizing this value exist: 1) Existing knowledge about the ocean and the potential trade-offs in different uses is often not readily available to the public or policy makers; 2) the capacity in Africa to generate the new knowledge that is needed is insufficient. In short, scientists have knowledge that is not being used, and more ocean and marine scientists are needed to generate the new knowledge that society needs.

Recognizing these dual needs, we, the participants in the Roundtable Discussion on Advancing Ocean Sciences in Africa, held July 25-26, 2016 in Mauritius, established a new Forum on African Marine Sciences (FAMS) and declare the following points of agreement and commitment:

Statements of Agreement:

- Research, monitoring, communication, and training efforts should reflect the full range of relevant scientific disciplines and the importance of collaborative, interdisciplinary approaches to solving real-world problems. Understanding how the living and non-living portions of the ocean interact and are changing, and how human activities modify ocean processes is vital to understanding trade-offs in achieving sustainable use. Equally important are the integration of social science studies, humanities, and natural sciences and the engagement of society in understanding options for sustainable use.
- Existing networks of African science academies, universities, and other institutions are valuable assets. They should actively raise the profile of and help grow ocean sciences in Africa and provide formal platforms for better coordination and collaboration on ocean sciences research, assessments, and communication of science and capacity building in sciences.
- To be useful and effective, ocean sciences need to be incorporated into public understanding, policy making, management, and business decisions. New mechanisms are needed to synthesize existing knowledge and demonstrate its direct relevance to societal needs and policy decisions. Academies of science should help fill this gap. Particularly useful would be regional and continental assessments that take stock of current knowledge, demonstrate the relevance of scientific information to achievement of

development goals, identify gaps in knowledge and skills, and set priorities for research training, and funding.

- There is an urgent need for more scientists to become adept at communicating scientific knowledge to nonscientists. Academies of science, universities and others should consider creating or strengthening programs that train scientists to communicate effectively with lay audiences and acquire new leadership and engagement skills. Such training is needed for established as well as emerging scientists.
- Achieving societal goals of sustainable and equitable use of marine resources, mitigation and adaptation to Earth system changes, while developing new economic opportunities will require deep knowledge about ocean processes and dynamics, ecological and social sciences. And it will require engagement of scientists with society to generate and use scientific knowledge. Therefore, scientists must engage and partner with decision-makers, the public, the private sector, and the media in sharing knowledge and listening to societal needs. In turn, government leaders should be encouraged to initiate formal and informal dialogues with scientific experts for feedback.
- Youth engagement is critical to guide and sustain momentum on advancing and using ocean sciences in Africa. Young and emerging scientists need to be given opportunities to develop their careers and contribute meaningfully. They should be empowered to share their knowledge in academic, scientific, public and policy circles. African academies, research institutes, and universities should play a strong role in promoting ocean sciences for young students through conferences, networking, forums, and open days. Training (particularly in leadership, communication, and mediation skills) is essential for these scientists to enhance expertise as well as opportunities for these skills to be used in practice.

Statements of Commitment:

Therefore, to grow ocean sciences in Africa we, as individual scientists and as the Forum on African Marine Sciences (FAMS), pledge ourselves to:

- Champion better use of existing sustainability science knowledge and acquisition of new understanding about oceans and coasts to guide public comprehension, appreciation, decision-making, and governance;
- Empower and mentor emerging scientists, and identify or create training opportunities to ensure they have adequate scientific communication and leadership training skills; and support their efforts to publish research in national and international journals;
- Conduct outreach and education on ocean sciences and sustainability science within both coastal and landlocked countries to increase awareness, attract young people to science, showcase emerging knowledge and grow scientific expertise in Africa;

- Strengthening existing networks and institutions and, where needed, facilitating development of new networks of ocean scientists and leaders across Africa to collaborate;
- Follow up with our individual academies to alert them to this emerging effort and enlist their support; write a summary of the Roundtable for relevant newsletters; request that science academies and other institutions inventory their members to identify ocean scientists who might be interested in joining with us; propose that our academies undertake new scientific syntheses of knowledge about ocean sciences that are relevant to policy making; suggest our academies consider conducting a needs assessment of knowledge regarding emerging uses of the ocean;
- Reach out to colleagues in neighboring countries to grow FAMS membership;
- Advocate for education authorities to include ocean and sustainability science-related curricula in schools, starting at the primary level;
- Elevate ocean issues to the level of relevant government ministries, science organizations, science academies, Heads of State of the African Union and other Regional Economic Communities;
- Encourage academies of science, governments, NGOs, the private sector, and communities in Africa to support ocean sciences research, research dissemination, capacity building, and scientific mobility;
- Encourage governments to consult ocean science networks before the implementation of observation and monitoring networks;
- Encourage scientists to work together to acquire, analyze, and share data, information, and knowledge at multiple disciplinary, temporal, and spatial scales.

Facilitate regular communication within FAMS through either social media, email, conference calls, or in person meetings to maintain this network and host a follow-up to this Ocean Sciences Roundtable, ideally within a year, at the local, regional, and/or continent-wide level.

Participants of the Roundtable on Advancing Ocean Sciences in Africa and Founding Members of the Forum on African Marine Sciences (FAMS)*

Host: Dr. Jane Lubchenco, U.S. Science Envoy for the Ocean, U.S. Department of State, and University Distinguished Professor, Oregon State University

Dr. Olanike Adeyemo, *African Academy of Sciences*

Ms. Nadia Algera, *Academy of Science of South Africa*

Dr. Moamer Eltayeb Ali, *Sudanese National Academy of Sciences*

Dr. Jonathan C. Anyanwu, *Federal University of Technology, Owerri, Nigeria*

Mr. AK Armah, *Ghana Academy of Arts and Sciences*

Dr. Utibe Iba Daniel, *University of Port Harcourt, Nigeria*

Dr. Roseanne Diab, *Academy of Science of South Africa*

Dr. Salif Diop, *Senegal Academy of Science and Technology*

Dr. Jean Folack, *ENVI-REP Cameroon*

Dr. Thierry Hoareau, *University of Pretoria, South Africa*

Professor A. Chidi Ibe, *Nigerian Academy of Science*

Dr. Etinosa O. Igbinsosa, *University of Benin, Benin City-Nigeria*

Dr. C. Prakash Khedun, *University of Mauritius*

Dr. Louis Kotzé, *North-West University, Potchefstroom, South Africa*

Dr. Angus Macdonald, *University of KwaZulu-Natal, Durban, South Africa*

Dr. Yousuf Maudarbocus, *Mauritius Academy of Science and Technology*

Dr. Yunus Mghaya, *Tanzania Academy of Sciences*

Mr. Nadeem Nazurally, *University of Mauritius, Reduit*

Dr. Manta Nowbuth, *University of Mauritius*

Professor Driss Ouazar, *Hassan II Academy of Science and Technology, Morocco*

Dr. Hema Rughoonundun, *University of Mauritius*

Professor Cherif Sammari, *National Institute of Marine Sciences and Technology, Tunisia*

Dr. Amos Saurombe, *University of South Africa*

Dr. Nirmal Jivan Shah, *Nature Seychelles*

Dr. Bernard Slippers, *University of Pretoria, South Africa*

***countries and affiliations are listed for purposes of identification only and do not imply endorsement by the country or any institution.**

Individual Pledges and Contributions to the Mauritius Declaration on Ocean Sciences:

Cameroon

- **ENVI-REP Cameroon, Dr. Jean Folack:** Work with leadership in Cameroon to introduce the notion of ocean and coastal zone in primary and secondary school particularly with geography or ecology subjects; Create an autonomous institution in Ocean Sciences.
- **ENVI-REP Cameroon, Dr. Jean Folack:** Carry out a deep diagnostic on the state of Ocean Sciences in Cameroon and propose solution to efficiently promote it with the Cameroon context. After this diagnostic is complete, organize a national workshop on Ocean Sciences in Cameroon.
- **ENVI-REP Cameroon, Dr. Jean Folack:** Through the Cameroon Academy of Sciences, develop a strategy for capacity building on Ocean Science in Cameroon with the aim to implement at the national level the 2050 Africa's Integrated Maritime Strategy (AIMS 2050) of the African Union.

Mauritius

- **University of Mauritius, Faculty of Ocean Studies:** Organize an open dialogue with undergraduate and postgraduate students from the Faculty of Ocean Studies as part of Research Seminar series which are conducted bimonthly at Faculty level.

Senegal

- **National Academy of Sciences and Techniques of Senegal (ANSTS), Dr. Salif Diop:** Follow-up with the ANSTS in order to continuously seek support to the Ocean Roundtable in Africa and in particular to recommend that ANSTS should seize the opportunity to organize within a year, if possible, the next high level round table on “the importance for the advancement of ocean science and the need to better integrate the knowledge in the field of marine sciences in the decision making process in Africa.”

Seychelles

- **Nature Seychelles, Dr. Nirmal Shah:** Circulate the Mauritius Declaration on Ocean Sciences to academies, Foreign Ministries, and other networks for wider publication.
- **Nature Seychelles, Dr. Nirmal Shah:** Partner with existing ocean agendas or incorporate ocean perspectives into other agendas, strategies, programs (e.g., build from and connect with WIOMSA, AU, NEPAD, relevant NGOs, MFAs)
- **Nature Seychelles, Dr. Nirmal Shah:** Request the Western Indian Ocean Marine Science Association (WIOMSA) send information to Roundtable Participants on the next WIOMSA Marine Science Symposium meeting (Tanzania 2017).

South Africa

- **(PLEDGE COMPLETED) Academy of Science of South Africa (ASSAf), Dr. Roseanne Diab:** Follow-up with The World Academy of Sciences (TWAS) to write a newsletter article on this Roundtable and FAMS
 - Article Published September 26, 2016: <http://www.assaf.org.za/index.php/news/general-news/303-new-era-dawns-for-african-marine-sciences>
- **ASSAf, Dr. Roseanne Diab:** Advocate for the inclusion of ocean sciences into the agenda of Future Earth
- **ASSAf Programme Officer Ms. Nadia Algera** will serve as the contact point for FAMS for the southern African region, distributing communications, information, public event invitations or public research calls related to ocean sciences to the Forum with the purpose to increase the visibility of ocean science activities in the region.

- **The Global Young Academy, Dr. Bernard Slippers:** Engage with the South Africa Department of Science and Technology to seek support for a second Advancing Ocean Sciences in Africa Roundtable and host it as part of the Future Africa platform at University of Pretoria (contingent upon funding).
- **South African Young Academy of Science (SAYAS), Dr. Louis Kotzé:** Share the current declaration and future work of FAMS with SAYAS members and to mainstream FAMS activities into the SAYAS agenda, including aligning undertakings and activities from both networks around the ocean sciences theme.
- **(PLEDGE IN PROGRESS, drafted 9/2016) University of South Africa, Dr. Thierry Hoareau:** Submit an article for the African Journal of Marine Science and/or other publications to highlight the outcomes of the Roundtable on Advancing Ocean Sciences in Africa and launch of the FAMS.

Sudan

- **Sudanese National Academy of Sciences, Dr. Moamer Eltayeb Ali:** Enlighten the Red Sea region countries and marine scientist on the meeting and the outputs of the Round Table through PERSGA (the Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden) to support a second roundtable meeting.

Tanzania

- **Tanzania Academy of Sciences, Dr. Yunus D. Mgaya:** Liaise with the Western Indian Ocean Marine Science Association WIOMSA to invite Roundtable Participants to the next meeting (Tanzania 2017).
- **Tanzania Academy of Sciences, Dr. Yunus D. Mgaya:** Liaise with Commission for Science and Technology (COSTECH) and Tanzania Academy of Sciences with a view to bringing Ocean Sciences to the attention of politicians and policy makers.

United States

- **(PLEDGE COMPLETED) U.S. Department of State, Bureau of African Affairs, Ameliah L. Croft:** Propose a FAMS announcement at the Our Ocean Conference 2016.
 - At the Our Ocean Conference in Washington, D.C. September 15-16, 2016, Dr. Nirmal Shah from Seychelles announced the launch of a Forum on African Marine Sciences, “a network between science academies, universities, and organizations from more than 12 African countries designed to enhance communication and collaboration on ocean science, host academic exchanges to strengthen local capacity, and support ocean and blue economy policy engagement across Africa.” (<http://ourocean2016.org/commitments>)
- **U.S. Department of State:** Roundtable Participants and regional U.S. embassies agree to engage after the Roundtable so that participants can share information about how they have applied their training and share recent ocean science updates with Embassy staff.

Global

- **Mauritius Academy of Science and Technology, Dr. Yousef Maudarbocus; National Academy of Science and Technology of Senegal, Dr. Salif Diop; and others:** Work with the Network of African Science Academies (NASAC) and other institutions to build side events on ocean sciences for the UN Framework Convention on Climate Change (UNFCCC) 22nd Conference of Parties in Marrakech, Morocco in November 2016.