



UN-OHRLLS UNESCO UN-DOALOS

Report of the Expert Group Meeting on the Significance of Marine Science and Technology for SIDS the Importance of Transfer of Marine technology Transfer to SIDS to support Sustainable Development

**New York
14-17 May**

Table of Contents:

| | <i>Pages</i> |
|---|--------------|
| I. Introduction..... | 3 |
| II. Background..... | 3 |
| III. Summary of Meeting..... | 5 |
| A. Opening..... | 5 |
| B. Session I: Why Marine Science and Technology is Vital for SIDS in their Path toward Sustainable Development..... | 6 |
| C. Session II: SIDS National & Regional Experiences on Implementation of Marine Science Capacity Building and Existing Technology Transfer Mechanisms..... | 7 |
| D. Session III: SIDS Opportunities for New Approaches to Capacity Development and Transfer of Marine Technology.. | 9 |
| E. Session IV: Marine Scientific and Technological Centres/Arrangements..... | 11 |
| F. Session V: Review of Discussions..... | 12 |
| G. Session VI: The link between capacity development and transfer of technology: A SIDS perspective..... | 13 |
| IV. Way Forward..... | 17 |
| V. Briefing with AOSIS and Member States..... | 17 |
| Annex I | |
| Recommendations..... | 18 |
| Annex II | |
| List of Experts..... | 22 |

I Introduction

1. The United Nations Office of the High Representative for Least Developed Countries, Landlocked Developing Countries, and Small Island Developing States (OHRLLS), pursuant to its advocacy mandate in favour of SIDS and in partnership with UNESCO's Intergovernmental Oceanographic Commission (IOC) and UN Office of the Legal Affairs' Division for Ocean Affairs and Law of the Sea (DOALOS), jointly convened a four day Expert Group Meeting (EGM) in New York on the Significance of Marine Science and Technology for SIDS the Importance of Transfer of Marine technology Transfer to SIDS to support Sustainable Development on 14-17 May, 2014. Experts on the field of oceans and marine sciences, including practitioners and academics, representing all three SIDS regions of the Atlantic-Indian Ocean-South China Seas (AIMS), the Caribbean, and the Pacific, attended the EGM with the support of OHRLLS and IOC. The EGM produced a number of specific recommendations aimed at various stakeholders at the national, regional and global levels.

2. The international community, in 'The Future We Want' outcome of Rio+20 conference, decided to convene the Third International Conference on SIDS in 2014. By UN General Assembly resolution 67/207, the General Assembly welcomed the offer by the Independent State of Samoa to host the conference. The same resolution also set out the regional preparatory process leading towards the Samoa 2014 Conference. Paragraph 11 of 67/207 called for OHRLLS and the UN system to support the SIDS preparatory process. OHRLLS and its partners, IOC and DOALOS, therefore, see the convening of the EGM and the recommendations flowing from the meeting as a tangible expression of support towards preparations for Samoa 2014.

II Background

3. The Oceans, for small island developing States (SIDS), is an issue that clearly cuts across the economic, social and environmental dimensions of their sustainable development objectives. This fact is acknowledged by the international community. In 1992 the 'special case' for SIDS was first recognized under the oceans related Chapter (Chapter 17.G) in UNCED's Agenda 21 in 1992, highlighting the unique relationship that SIDS have with the ocean. Further, SIDS continue to be active participants on matters concerning ocean governance at the global, regional and national levels. The commitment to matters concerning oceans is underscored by the fact that all SIDS who are able to do so have ratified the United Nations Convention on the Law of the Sea (UNCLOS).

4. SIDS have demonstrated leadership in managing the living marine resources that occur under their respective jurisdictions, as evidenced by a number of regional cooperation arrangements and agreements to manage these resources, and are again

leading the way on matters concerning the exploration and potential exploitation of deep sea minerals. The need to build capacities and scientific know-how remains a crucial component to support SIDS' sustainable development aspirations and the efforts in tackling the multifaceted adaptation and mitigation requirements of climate change. Many SIDS, being in other words, "large ocean states," are arguably in a prime position to utilize marine science research and technology that will contribute significantly in making inroads towards achieving sustainable development. They have the potential to access modern technologies, under mutually agreed terms, which industrialized countries have developed. The question is whether the political will, the legal infrastructure and international partnerships exists to better utilize these technologies in support of SIDS sustainable development.

5. UNCLOS recognizes that for developing countries like SIDS, marine science and technology and capacity building go 'hand in hand'. Part XIII and XIV of UNCLOS provides and highlights the importance of the establishment of marine scientific centres and transfer of technology, particularly in and to developing countries.

6. The Intergovernmental Oceanography Commission (IOC) has already undertaken a number of initiatives and have interacted with a number of SIDS on oceans issues including through creating the conditions for good science and building networks of scientific logistic facilities at the global and regional and sub-regional levels. The IOC has also developed guidelines for the transfer of marine technology

7. Internationally agreed sustainable development frameworks such as 1994s Barbados Program of Action (BPOA) for the sustainable development of SIDS emphasized the crucial role that science and technology plays in SIDS' efforts to achieve sustainable development. With regard to marine scientific research and technology transfer, several United Nations General Assembly (UNGA) resolutions on the agenda item 'Oceans and Law of the Sea' have called for action on the matter of technology transfer. The Johannesburg Plan of Implementation (JPOI) also emphasised ". . . *transfer of environmentally sound technologies and assistance for capacity building from the international community . . .*" as a prerequisite for SIDS to achieve their sustainable development aspirations.

8. Rio+20 continued to underscore the need for technology transfer as an issue of crucial importance to sustainable development. The most recent UN General Assembly resolution A/RES/67/78 on Oceans and the Law of the Sea reiterated the essential need for cooperation, including through capacity-building and transfer of marine technology, to ensure that all States, especially developing countries, LDCs and SIDS, are able both to implement the Convention and to benefit from the sustainable development of the oceans and seas, as well as to participate fully in global and regional forums and processes dealing with oceans and law of the sea issues.

9. Not only has technology transfer featured throughout the text of Rio+20's final outcome document, but SIDS leaders addressing the Plenary Session of the Conference in many cases emphasised the dire necessity of technology transfer as a priority area to achieve sustainable development.

10. There is growing interest to explore and secure mining rights in the world's oceans where mineral deposits occur. A number of SIDS have shown keen interest to exploit their potential mineral resources to support their economic growth. Furthermore,

commercial and mining interests have made claims in the volcanic zones around within areas under the national jurisdiction of several Pacific SIDS. The ocean seabed is indeed the last frontier in the exploration of the Earth's surface and thus SIDS, are well placed to not only benefit from these new ventures, but also balance these interests with their stewardship role of the oceans.

III Summary of Meeting

A Opening

11. In opening the meeting, Mr. Sandagdorj Erdenebileg, Chief Policy Development, Coordination, Monitoring & Reporting Service, OHRLLS, welcomed all the participants and the experts on behalf of OHRLLS Under-Secretary-General and High Representative for LDCs, LLDCs and SIDS, Mr. Gyan Acharya. He also welcomed the partners of the EGM, UNESCO's Intergovernmental Oceanographic Commission (IOC) and OLA's Division for Ocean Affairs and the Law of the Sea (DOALOS) and thanked them for their cooperation and collaboration in convening the EGM.

12. He stated that the influence that the oceans exert over SIDS is immense and that SIDS have a special relationship with Oceans. He also recalled that the international community, ever since the 'special case' for SIDS was first recognized under the oceans Chapter in UNCED's Agenda 21 back in 1992, confirming the special relationship that SIDS have with the oceans, numerous UN Global Conferences, including the Barbados First Global Conference on SIDS, the Mauritius International Meeting, the Johannesburg World Summit on Sustainable Development, and last year's Rio+20 Conference have all reaffirmed this special connection that SIDS have with oceans.

13. This, he stated, underscored the significance of enhancing marine science and technology capacities for SIDS and the importance of appropriate marine technology transfer to SIDS and it was against this backdrop that OHRLLS decided to organize this EGM. Noting the Third International Conference on SIDS to be convened in, Apia, Samoa, on 1-4 September, 2014, and noting further that oceans issues will likely feature again at the conference, as had been the case in past conferences, he stated that the report of this EGM will contribute to the preparatory process for SIDS 2014.

14. In his opening remarks, Statement by Mr. Mitrasen Bhikajee, Deputy Executive Secretary, IOC, remarked all our planet's oceans are interconnected – there is in fact only one ocean – known regionally by different names; anything that happens in the waters of one coastal state impacts on neighbouring states. He also stated that pollutants are carried through ocean currents, heat is transferred from one region to another, and fish migrate. None of these, he stated, know any geographical or political barrier.

15. Underscoring that no country can pretend, alone, to protect and maintain the integrity of the oceans and hence the planet's life support systems, Mr. Bhikajee stated that the need to promote capacity to protect and manage the ocean and coasts should be global. He also stressed the global responsibility for all States to ensure that capacity for managing the ocean exists in all countries - because humankind's common destiny is interconnected and depends on the integrity of the life support system of planet earth.

16. He stated that Capacity Development is at the very core of IOC's mandate and its statutes. He underscored the need for capacity in the context of transfer of technology by stating that what technology we can transfer if a country does not have the Capacity. This reaffirmed the importance that the IOC gives to both Capacity Development and Transfer of Technology.

17. In his opening remarks Mr. Vladimir Jares, Deputy Director DOALOS/OLA, welcomed the opportunity to collaborate with OHRLLS and IOC in convening the EGM. He highlighted the importance the United Nations Convention on the Law of the Sea (UNCLOS) which sets out the rights and duties as well as the cooperative mechanism through which the international community uses, exploits, conserves and manages the ocean spaces and its resources.

18. Mr. Jares noted that SIDS themselves have always been active participant in the development of oceans governance at the global, regional and national levels. All SIDS who are able to become parties to UNCLOS have already done so. He highlighted DOALOS' role as Secretariat for the convention and its work in promoting the capacities of developing countries, including SIDS. He recalled UNGA resolutions on oceans and the law of the sea which continue to highlight the importance of capacity building for developing countries, including SIDS, in the area of marine science as well.

B Session 1: Why Marine Science and Technology is Vital for SIDS in their Path toward Sustainable Development:

19. Presentations were made during the session by Mr. Taholo kami, of IUCN's Oceania Office, Dr. Patrick McConey, University of West Indies, and Dr. Willy Morrell, of the Pacific Islands Forum Secretariat.

20. Mr. Kami, speaking on the Significance of marine science and technology to SIDS, stated that there was a need to shift from 'threats to consequences' as can be observed in the recent dialogues of the CBD and UNFCCC processes, the discussions for Rio+20, and the conversations on food security. He advocated for a 'shift from vulnerability to value' arguing that that the per capita lens is no longer relevant and the need to look at this shift through a climate change lens was more appropriate. Mr. Kami further stated that while tuna resources remained an important resource for SIDS there was a need for SIDS themselves to look beyond tuna to healthy habitats and that there may be a need in prioritising the management of natural resources, including the vast marine resources, on par with the priorities accorded to the education and health sectors. He underscored the role that enhancement of SIDS marine science capacity could play in the shift from vulnerability to value underlining the need to enhance marine science and policy interface.

21. Dr. McConey, addressing the issue of regional/national interplay of institutional arrangements for ocean science and capacity building for SIDS sustainable development, highlighted the Sustainable development in SIDS and anywhere else is based in large part on good policy and governance. He stated that policy cycles operate at multiple levels (e.g. global, regional, national) and thereby connect diverse stakeholders at each level (e.g. resource users, universities, government agencies). He expressed the view that for ocean science to make the most positive impact upon sustainable development the policy cycles, stakeholders and linking arrangements must be understood and managed. Dr. McConey also stated that the interrelated nature of oceans and marine resources needed

an ecosystem based management and need for inter-sectoral integration should be recognised nationally and regionally. He also stressed the need for ocean science to be linked to coastal science. Emphasising the importance of science-policy interface, Dr. McConey posed a series of questions that could guide discussions towards an outcome at Samoa 2014 that looks at, how do policy processes value marine science at national, regional levels. Do the producers and the users of marine science communicate effectively? What are the entry points for improving the use of marine science in policy? What are the roles of universities?

22. Dr. Morrell, speaking on the on regional SIDS oceans policy as it relates to marine science and technology, recalled the high importance that Pacific SIDS place on oceans and its resources. He underscored the value of marine resources to Pacific SIDS in terms of economic value and support for livelihood by stating that license fees from Distant Water Fishing Nations provides 3 to 40% of government revenue for seven Pacific SIDS and that 47% of households in Pacific SIDS communities derive their first or second income from catching and selling fish. He also highlighted that oceans and marine resources and their importance to Pacific islanders livelihoods continue to be acknowledged at the highest political level, including through the Pacific Islands Forum Leaders' Communiqués. He highlighted that some 10% of world's oceans fall within the jurisdictional realm of Pacific SIDS and that many are hugely dependent on the Pacific Ocean's services for transport and trade, fisheries, food security and tourism. Dr. Morrell also stated that a regional oceans policy had been adopted in the past but that translating this regional policy at the national levels posed a major challenge. He highlighted the aims of 'Oceanscape' a more encompassing approach to oceans management that involves, Integrated Ocean Management, Adaptation to Environmental and Climate Change and Liaising, Listening, Learning and Leading.

23. During the ensuing interactive discussions that were moderated by the Republic of Seychelles' Ambassador for Climate Change and SIDS Issues, H.E Ronny Jumeau, experts highlighted the value that oceans and marine resources contribute to support SIDS economies and livelihoods and the importance of SIDS-SIDS cooperation on matters on oceans in general and marine science and technology in particular. One concrete example of SIDS-SIDS cooperation on ocean affairs involved the joint submission by a number of SIDS to the Commission on the Limits of the Continental Shelf. Experts highlighted that the need to create space for dialogue on varying approaches to oceans by SIDS themselves, between the emphasis that is placed by some on the large oceanic realm and that on coastlines and near-shore marine resources focused approach, should be welcomed. The need for continued augmentation by their development partners of the resources of SIDS to manage their ocean spaces was also highlighted. The sentiment was expressed that more emphasis needed to be placed on oceans and marine science and technology by SIDS and that there was a need for SIDS to focus on natural resources management. The view was expressed that SIDS Leadership may need to better communicate and articulate to donors that natural resources management are an important area in which partners and resources need to be directed towards.

C Session II: SIDS National & Regional Experiences on Implementation of Marine Science Capacity Building and Existing Technology Transfer Mechanisms

24. Presentations were made in session by Mr. Michele Ameri and Ms. Charlotte Salpin of DOALOS, Dr. Daniel Marie of Mauritius, Dr. Russell Howorth, formerly of SPC's SOPAC and Mr. Nanjundappa Srinivasan, of UNESCAP's Asia Pacific Centre for Transfer of Technology (APCTT).

25. Mr. Michele Ameri, of DOALOS, made a presentation on UNCLOS provisions in Part IV on Archipelagic States and Part VIII on the Regime of Islands. He highlighted that SIDS were very active in the development of these parts of UNCLOS, given their relevance and importance to SIDS. Mr. Ameri provided a brief overview of some of the more salient provisions of Part IV of UNCLOS including the definition of Archipelagic States. He went through some of the provisions of Art. 47 on archipelagic baselines. On Part VIII of the UNCLOS on the Regime of Islands, Mr. Ameri stated that this idea was a novel one when it was introduced during the conferences leading up to the adoption of UNCLOS. He explained the provisions of UNCLOS stating that an island is a naturally formed area of land, surrounded by water, which is above water at high tide and that with the exception of rocks which cannot sustain human habitation or economic life of their own shall have no exclusive economic zone or continental shelf, the territorial sea, the contiguous zone, the exclusive economic zone and the continental shelf of an island are determined in accordance with the provisions of this Convention applicable to other land territory.

26. Ms. Charlotte Salpin, of DOALOS, made a presentation on UNCLOS provisions in Part XIII on Marine Scientific Research and Part XIV on Development and Transfer of Marine Technology. She outlined the main provisions and principles in her overview of Parts XIII and XIV of UNCLOS, highlighting that Part XIII provides a comprehensive global regime for the promotion and conduct of MSR which balances the rights and duties of coastal States and of other States. She went through the provisions of Part XIII as they relate to General provisions. She also highlighted provision on promotion of flow of scientific data and information and transfer of knowledge, especially to developing States as well as Strengthening of MSR capabilities of developing States. Ms. Salpin also highlighted the provisions relating to the establishment of national and regional centres and further highlighted the functions of regional marine and scientific research centres, as mentioned in Art. 276 of UNCLOS. She stated that the implementation of Part XIV has been lacking.

27. Dr. Daniel Marie, shared Mauritius' national experience on the contribution that marine science and technology, and transfer of marine technology have made to the sustainable development aspirations of the country. He highlighted the importance of the oceans and marine resources to the sustainable development and economic growth of Mauritius informing the meeting of a number of national programmes which saw close cooperation with partners from the developed countries, including some groundbreaking work on the medicinal properties of sea sponge. He highlighted the success of these programmes as pointing the way forward for Mauritius which is based on collaboration and partnership with a wide range of stakeholders.

28. Dr. Russell Howorth, formerly of SPC's SOPAC, made a presentation on SIDS regional capacity building marine science and technology institutions, noting that in the lead-up to Rio+20 oceans was not featured. He highlighted areas where in his opinion, more effort should be concentrated on in the lead-up to Samoa 2014. These areas included: Doing business differently versus doing different business, capacity building

versus capacity supplementation, scale versus risks, linking science and policy better, and the need for better SIDS-SIDS Cooperation. He called for enhancing regional hydrographic survey capacity, highlighting that that most port charts in the Pacific SIDS had been prepared during the WWII period. Citing the growing interest of many Pacific SIDS in ocean floor mining within areas under their national jurisdictions, he informed the meeting that through support from the EU the Pacific region has completed the Regional Legislative and Regulatory Framework (RLRF) for deep sea minerals. There has been a new priority as well on building negotiation capacity for equitable interaction between the SIDS and the mining industry. He highlighted the importance of the migratory fish stocks to Pacific SIDS region but he also emphasized the need for closer attention to the coastal fisheries programme which is the main source of food and livelihood for many islanders. He underscored the enhancement of coastal fisheries science to contribute in the management of coastal marine resources and the importance of a community approach.

29. Mr. Nanjundappa Srinivasan, of UNESCAP's, made a presentation on the work of the Asia Pacific Centre for Transfer of technology (APCTT) in ESCAP. Capacity building and technology transfer practices. He informed that the centre was established to develop and manage national innovative systems, develop, transfer adapt and apply technology; improve the terms of transfer of technology. He underscored the importance of Science, Technology and Innovation (STI) as a key driver in economic performance. He expressed the view that there needed to be national innovation systems (NIS) for sustainable development. He also promoted the need for capacity building in technology transfer and collaboration. He also called for a strengthening of technology intelligence, meaning that SIDS should be kept abreast of global technology development and use such technologies strategically.

30. In the ensuing interactive exchange moderated by Ambassador Jumeau, the view was expressed that Pointed out that most countries in the Pacific do not have science policies in place and that this is an area which is very much lacking and needs attention. The meeting discussed that SIDS need the capacity to absorb technologies. Simultaneously the question of whether SIDS are themselves ready to absorb technology they receive needs to be addressed as well, which highlighted the importance of developing capacity. The issue of the human resource constraints that many SIDS face was also raised. Discussions also centred around issues on the need for support to SIDS to fulfil their obligations under UNCLOS, including the issue of depositing maritime coordinates with the UN Secretary-General. The need to update the hydrographic charts of ports in many SIDS was also identified as an area where appropriate high imaging data including LiDAR imagery, could be utilized. The view was expressed that poor charts could hamper the docking of big ocean going vessels, including cruise liners, which in turn could harm the tourism industry that many SIDS depend on to augment their foreign income earnings. Experts recalled that it was because of SIDS actively seeking the inclusion of oceans related outcome of from Rio+20 that there is a strong outcome on oceans from Rio+20. They also stated that an outcome from 2014 Samoa conference will need to be action oriented and avoid repeating and reaffirming issues that were already contained in the Barbados programme of action for SIDS and its Mauritius Strategy for Implementation. Discussions also focused on the need for targeted capacity building which experts opined was essential given the limited resources in many SIDS. The view was expressed that SIDS governments needed to become the catalyst for directing

investments into the right areas including on oceans and the specific area of marine science and technology.

D Session III: SIDS Opportunities for New Approaches to Capacity Development and Transfer of Marine Technology

31. In this session presentations were made by Professor Al Binger, of the SIDS-DOCK Secretariat, Mr. Michael Lodge, of the International Seabed Authority (ISA), and Mr. Mitrasen Bhikajee, of UNESCO's IOC.

Prof. Al Binger, of the SIDS-DOCK Secretariat, made a presentation on the origins of SIDS-DOCK as a mechanism through which SIDS could work collectively to address the high dependency on fossil fuel. He stated that the goals of SIDS DOCK are to mobilize in excess of USD 10 Billion, by 2033, to help finance the transformation of the SIDS Energy Sector to achieve a 25 percent (2005 baseline) increase in energy efficiency, generation of a minimum of 50 percent of electric power from renewable sources, and a 25 percent decrease in conventional transportation fuel use, in order to enable climate change adaptation in SIDS. He promoted the use of Ocean Thermal Energy Conversion (OTEC) highlighting the potential that this technology would bring given SIDS vast ocean resources. Prof. Binger expressed the view that the possibility of using ocean energy offers one of the most promising opportunities for sustainable development in island states and that various forms of ocean energy, including both kinetic energy (tidal, wave and current) and thermal energy represent the largest source of available renewable energy for SIDS, worldwide. He also stated that SIDS must not abandon the understanding that to achieve sustainable development they would have to pursue development of a "Blue Economy." He recalled that the protection of the oceans, all kinds of seas and coastal areas and the protection, rational use and development of SIDS living resources is the focus of Chapter 17 of Agenda 21, the same Chapter that recognized SIDS as a special case for their environment and development.

32. Mr. Michael Lodge, of the International Seabed Authority (ISA), International Seabed Authority, made a presentation on mandate of the ISA as it relates to contributing to the building the capacities of SIDS. He noted that while all SIDS listed in OHRLLS' list are members of the ISA only some 40% of SIDS have attended ISA meetings in the past 5 years. He highlighted the need for SIDS to be more involved in ISA matters as the issues considered by the ISA are of high importance and relevance to SIDS. He informed that three SIDS are sponsoring States for entities who are interested in tenements for seabed exploration and mining at the seabed area beyond national jurisdiction. Mr. Lodge also highlighted the training opportunities that exist for SIDS, including mandatory contractor training. He also highlighted the ISA Endowment Fund for Marine Scientific Research which a number of SIDS nationals have already benefitted from. He also called SIDS to ratify Part XI of UNCLOS and take advantage of opportunities for joint research and training and participate in ISA deliberations to identify research priorities, identify capacity building needs and priorities, and promote SIDS interests.

33. Mr. Mitrasen Bhikajee, of UNESCO's IOC, made a presentation on IOC's mandate on marine science capacity building with special emphasis on developing countries. He highlighted a decision from Rio+20 which emphasized the need for

cooperation in marine scientific research to implement the provisions of the United Nations Convention on the Law of the Sea and the outcomes of the major summits on sustainable development, as well as for the transfer of technology, taking into account the IOC's Criteria and Guidelines on the Transfer of Marine Technology. He also stated that IOC has been instrumental in the improvement of formal qualifications and technical capacity of staff in Member States. It has also supported Member States in ocean policy development and implementation as well as implementation of relevant conventions. Mr. Bhikajee also highlighted one of IOC's strengths in supporting the development of infrastructure for marine scientific research and raising awareness on the significance of marine science and capacity building.

34. In the discussions that ensued, which was moderated by the Ambassador Jumeau, experts discussed the move by a number of SIDS who have been reframing their status as large ocean states thereby shifting the focus beyond vulnerability to one of value. The fact that the inherent vulnerabilities of SIDS still remain in spite of such reframing was also underscored by the meeting. That the special case for SIDS was initially recognized in Chapter 17 of Agenda 21, the chapter on oceans, was also recalled positively by the meeting. The view was expressed that over the years a number of other priority issues have rightly been identified by SIDS and their development partners but these should not be done on the expense of oceans matters being overlooked. Another view was expressed linking OTEC technology to the possible extraction of seabed minerals. The meeting acknowledged that silos on oceans issues existed at all levels, including the national level. The need to work across all sectors on oceans issues was emphasised and the meeting recognized the merit for SIDS to adopt a holistic view on oceans, the management and the sustainable development of marine resources. The meeting acknowledged that there was a lack of 'Ministries of Ocean Resources' at the national level. The view was expressed that in this context the importance on the need to work on an Oceans SDGs should be seriously pursued with the leadership role of SIDS underscored. The meeting also recognized that in many respects a number of important decisions on oceans and marine science have been adopted by UN conferences including the Johannesburg World Summit on Sustainable Development and its Johannesburg Plan of Implementation outcome. As such linkages should be made to these decisions, as appropriate in outcomes from SIDS 2014 Samoa conference. The view was expressed to enhance linkages on oceans matters between SIDS and other global processes including the World Bank's Global Partnership on Oceans initiative. The oceans' role in carbon sequestration was also raised as an avenue through which SIDS may want to pursue further.

E Session IV: Marine Scientific and Technological Centres/Arrangements

35. In this session presentations were made by Mr. Bhikajee and Dr. Thomas Goreau of Global Coral Reef Alliances,

36. Mr. Bhikajee, made a presentation on IOC's regional sub commissions stating that among IOC programmes those of greater interest to SIDS include early warning systems for tsunamis, understanding and predictive tools that address coastal areas of local interest to SIDS, capacity-building through the development and delivery of ocean and climate curricula, and workshops to build capacity in climate change phenomena, impacts and adaptation strategies. He also informed that the Joint WMO-IOC

Commission on Oceanography and Marine Meteorology (JCOMM) has initiated two pilot projects to coordinate the development of cost-effective global *in situ* wave observing technology in support of a wide range of applications, including the monitoring of extreme wave events for disaster risk reduction, wave modeling, and the calibration and validation of satellite wave measurements.

37. Mr. Bhikajee also informed that IOC operates largely through regional programmes and structure with the IOC Sub-commission for the Caribbean and Adjacent Regions (IOCARIBE) covering the whole area of the Caribbean. The IOCARIBE Secretariat operates from the UNESCO Field Office in Kingston, Jamaica and the office of Cartagena in Colombia; the IOC Sub-commission for Africa and Adjacent Island States covers the African continent and the following SIDS: Cape Verde, Comoros, Guinea-Bissau, Mauritius and Seychelles. He informed that since last year, all IOC activities in Africa are coordinated from the IOC Sub-Commission Office at the UN Office in Nairobi.

38. He highlighted the Pacific Islands Global Ocean Observing System (PI-GOOS), set up in 1998 that was set to assist sustainable development in Pacific Island nations by facilitating the establishment and implementation of coastal and open ocean observing programs, and helping to improve uptake and use of the data, information and products being generated. He also informed that three of the four tsunami warning systems coordinated by IOC – the Pacific (PTWS), the Indian Ocean (IOTWS) and the Caribbean (CARIBE-EWS) are particularly relevant to SIDS. We have secretariats of the regional warning systems in Perth and Apia and tsunami information centers in Honolulu and Jakarta, with an additional one being established in Barbados.

39. Dr. Thomas Goreau of Global Coral Reef Alliances gave a presentation, from an NGO perspective, on the work his organization has been doing on climate change adaptation, coastal and fisheries restoration and shore protection. He highlighted the work he has been carrying out on electrical stimulation of corals which he described as being successful. He expressed the view that there are SIDS developed technology already in existence today, which included his coral electrical stimulation procedures, that needed to be replicated and up-scaled to as many SIDS as possible. He cites the relative inexpensiveness of these technologies and their appropriateness for SIDS as advantages. He also showed data he has collected in a number of SIDS in the AIMS, Caribbean and Pacific regions over the years that indicated that his process of coral electrical stimulation had a high success rate.

40. In the ensuing discussions moderated by Ambassador Jumeau, the view was expressed that high temperatures are more destructive for coral reefs than ocean acidification and that there's a greater need to focus on rising temperatures. Another view espoused during the discussions cautioned against agenda setting by funding agencies on matters pertaining to environment protection in general. Questions were raised on the effectiveness of the electrical stimulation of corals to restore their properties and contribute to shore protection. Examples were cited on where this method was apparently very successful. The suggestion was made for a 'one-stop-shop' for marine technology transfer where SIDS could access such information. SIDSnet was referred to as a tool that could be used to facilitate such an exchange of information, although there were questions on whether SIDSnet could successfully carry out such a role.

F Session V: Review of Discussions

41. Following the end of presentations over two days the meeting reviewed the discussions over the period and provided thoughts on the way forward highlighting a number of issues that could be taken up in the preparations for SIDS 2014 Samoa Conference. During the discussions the view was expressed that SIDS have, for the most part, stuck with proven scientific methods particularly as it related to renewable energy like solar and wind and the question was raised as to whether other technologies involving the ocean resource such as wave energy needed to be considered more seriously. In this regard the suggestion was made that SIDS regional institutions may need to be more innovative. The discussions acknowledged that the idea of promoting value in addition to vulnerability for SIDS had merits which contributed towards differentiating SIDS from other groups of vulnerable countries. In this regard it was important for SIDS and all stakeholders to ensure that the post 2015 development agenda contains ocean related targets and maximise oceans as an issue of great importance to SIDS and the world. The view was also expressed that marine science does not have to be high-tech but it is important to be able to tailor science to local communities. The discussions also highlighted the need to remove silos on matters relating to oceans and emphasised the need to promote oceans institutions for SIDS, including the implementation of Article 276 of UNCLOS to establish or designate SIDS regional marine science research and technology centres in the SIDS regions. It was underscored that policy for integrated innovation has to come from governments themselves but simultaneously the regional approach that SIDS regions have been effectively pursuing remained important and the need for linkages and partnerships that promote science, technology and innovation development should be enhanced and strengthened. The discussions underscored the need for each SIDS to have an oceans policy. At the same time it was acknowledged that appropriate support to SIDS to develop these policies should also be in place. The need for targeted capacity building was also reiterated. The importance for SIDS to have the capacity to turn information into some form of knowledge management like Geospatial Information System (GIS) database was also underscored during the discussions. Recognizing the connection between SIDS and the marine resources as the main drivers to build SIDS economies and achieve their sustainable development objectives, the view was expressed that emphasis needed to be placed on promotion of the Blue Economy. The view was expressed that for SIDS the issue of poverty reduction cannot be separated from the discussions on oceans and climate change. The need to enhance partnerships policies in SIDS was also discussed and the importance of targeted messaging was raised in this connection. The advantages of initiatives such as the Global Island Partnership (GLISPA) which involves partnering with large non-SIDS countries that have islands and can share experiences and best practices as well as support SIDS pursuit of sustainable development was also highlighted during the discussions

G Session VI: The link between capacity development and transfer of technology: A SIDS perspective

42. In this session presentations were made by Mr. Osamu Miyaki, of IOC, Mr. Hans Thulstrup, of UNESCO, Dr. Venu Ittekot, of Bremen University, Ms. Maxine Monsanto of Belize, M. Shiham Adam of Maldives and Mr. Rajendra Prasad of Fiji.

43. Mr. Osamu Miyaki, of IOC, gave a presentation on strengthening and implementation of Marine Technology Transfer from a SIDS perspective. He informed the meeting on the background of the development of IOC's Guidelines on Transfer of Marine Technology (TMT) stating that the guidelines were developed by the Advisory Body of Experts on the Law of the Sea (IOC/ABE-LOS) whose functions was to provide advice on the IOC's role in relation to UNCLOS. Mr. Miyaki informed that the IOC Guidelines on TMT was adopted by the IOC Assembly in 2003 and published in 2005. He highlighted the results of a 2008 questionnaire that was completed by 50% of IOC member states which showed that suppliers of TMT preferred working at bilateral and regional levels, and partnerships is preferred over joint-ventures or other forms of cooperation. Mr. Miyaki stated that SIDS could enhance International cooperation for TMT through the IOC relevant activities, in particular through its capacity building initiatives. The possibility of partnership between suppliers and recipients of marine technology in SIDS should be further explored at the bilateral and regional level, or sub-regional and global levels. Any financial issues should be solved by both suppliers and recipients for TMT. He also stated that the TMT Guidelines does not included technology for mining deep sea.

44. Mr. Hans Thulstrup, of UNESCO, made a presentation on engaging local communities and knowledge in ocean monitoring and sustainable use, highlighting two programmes that have been implemented in SIDS, Sandwatch – a hands-on, education based programme through which schools, communities and research organizations engage actively to identify and address coastal management issues; and Climate Frontlines – a UN interagency partnership supporting community-based research on climate-related issues. He stated that SIDS were 'leading the way' in the implementation of Sandwatch which is based on observation and recording. A manual assists in guiding communities in the step-by-step implementation of sandwatch. He underscored networking across various stakeholders as an essential part of Sandwatch. Mr. Thulstrup also spoke on 'Frontlines' a programme that involves partnership between three UN entities which are CBD Secretariat, the UN Permanent Forum on Indigenous Issues, and the Office of the High Commissioner for Human Rights. Frontlines promote the inclusion of local & indigenous knowledge perspectives in global climate change assessments, such as the Intergovernmental Panel on Climate Change (IPCC)'s 5th Assessment Report. Mr. Thulstrup recalls that indigenous observations and interpretations of meteorological phenomena have guided seasonal and inter-annual activities of local communities for millennia and it was essential that these traditional knowledge inform environmental policy decisions, both in climate change and biodiversity. He stated oceans policy should be informed by the best available knowledge, which includes SIDS indigenous and traditional knowledge as well.

45. Dr. Venu Ittekot, of Bremen University, made a presentation on the findings of an IOC capacity needs assessment survey that was carried out on developing countries IOC members which included responses from eight SIDS from all three SIDS regions. He gave some highlights from the questionnaire that showed a perceived Urgency of Capacity Development (CD) Actions for IOC Programs, in the need for Research & Education, Training Programs, Ocean Experts, Marine Policy, Regional, international engagement (Conventions, Treaties and Processes). The survey found that ocean research or related services were still weak, that there was an overdependence on project-oriented, short-term international support. It also found that higher education heavily dependent

on the type & expertise of guest researchers and that technical education in marine-related fields absent/inadequate and infrastructure remained weak, inadequate or where available needed upgrade.

46. Dr. Ittekkot also stated that the survey found that there was a lack of a critical mass of ocean experts (both scientific and technical) and that there were no mechanisms or incentives to retain built capacity and available experts. Further, he informed that competition from non-marine sectors was severe and that training programs were mostly one-off which raised doubts on the long term benefits of such arrangements. The survey also found that Ocean issues were generally sidelined by the relevant authorities and often there were no national coordinating agency for oceans matters. Furthermore, national marine policy/marine development plan were rare or absent and there was a general lack of or inadequate resource allocation for marine issues

47. Dr. Ittekkot noted that SIDS were mostly new IOC Member States and the need to raise awareness of the full range of IOC Programs was slowly picking up. Many SIDS faced unique challenges and needs due to vastness of the ocean space around them and the remoteness of individual islands. He listed a number of constraints facing SIDS which included limited daily access to scientific support systems, the lack of vessels which requires special arrangements to access outer islands, communication problems, and potential exacerbation of “non-climate” risks from new and emerging initiatives for resource exploration/exploitation. He also expressed the view that Oceans and Seas affairs needed to be treated as an emerging theme and he highlighted the need for technical capability to make the best use of transfer of Marine Technology.

48. Dr. Ittekkot also underscored the need to enhance efforts to develop of national strategies for the conservation and sustainable use of Oceans and Coasts. He also stressed the need to invest in human resources and infrastructure for SIDS and the aspiration for a more active role in the UN Regular Processes for Global Reporting and Assessment of the State of the Marine Environment, including Socio-Economic Aspects. He recognized that there were new Opportunities to align Capacity Development interventions and Marine Technology Transfer with National Priorities and the potential to shift from Capacity Development “Assistance” to Capacity Development “Partnerships” including interventions in North-South, South-South Cooperation. He also advocated for strengthening of regional approaches to strengthening capacities of SIDS and facilitate transfer of appropriate technology to SIDS.

49. Ms. Maxine Monsanto of Belize gave a presentation on her country’s Assessment of Marine Environmental Management Capacity & Needs. She underscored the importance of oceans, marine resources to Belize’s economy highlighting the dependency of the Agriculture, Fishing, Tourism, and Service Sectors on the Marine Environment & Resources. She informed that some of the constraints for her country included the need for enhanced data exchange, sharing of Best Practices & Technologies. She also highlighted the need for a cost-benefit analysis of the ecosystem services the marine environment provides, and need for national buoy and observing stations. She stressed the need for improved coordinated effort at the Regional level, Oceanographic and Bathymetric Assessment, and training in data collection, use of equipment, and analysis of data by Belize nationals.

50. M. Shiham Adam of Maldives made a presentation on his country's Capacity Assessment, he referred to some of the unique features of Maldives Archipelagic area, including coral reefs & lagoon habitats, and underscored the Maldives' reliance on ocean and marine resources and services that sustain their tourism and fisheries sectors which were the main economic base of the country. He underscored that these two vital sectors depended on the health of the coral reef ecosystem and that the geophysical existence and economic base is dependent on coral reefs. Mr. Adam gave a brief overview of the oceans and marine science capacities in Maldives listing a number of institutions that had programmes on the subject matter. He stated that efforts are being made in support of developing more Marine Protected Areas (MPA) and Marine Managed Area Programs. He listed a number of national programmes currently being considered or already in existence which included the Baa Atoll Biosphere Reserve. He highlighted the need to support their National Geographic Information System, Climate Database (under Integrating Climate Risks into Resilient Island Planning Project, MoEE) and informed of a Web-enabled coral reef database being developed with EU-WCCM support.

51. Mr. Rajendra Prasad of Fiji made a presentation on the situation in Fiji as it related to human resources capacity on oceans affairs stating that there were few Ocean Experts in the country or outside and informed that the expertise gaps were being temporarily filled through technical assistance arrangements including volunteer schemes and Short-term contracts. He also stated that there was little awareness of IOC in the past but improving quickly with appointment of Suva based NPO. However, this is largely in the area of tsunami warning and response. He highlighted the need for more awareness raising of the IOC programmes in Fiji and within the Pacific region as a whole. He stated that there were no national marine/ocean science policy in place for Fiji and that coastal environment policy required strengthening. He also informed that neither Fiji nor any of the other Pacific SIDSs have dedicated national provisions for Marine Science and Oceanographic research/services, except for marine meteorological service provided by National Metrological Services. He underscored the need to improve marine and oceanographic observations, data management and accessibility for constructive research.

52. In the discussions that ensued which were moderated by Ambassador Milan N. Meetarbhan, Permanent Representative of the Republic of Mauritius to the United Nations, the meeting highlighted the importance to strengthen the national marine scientific capacities in SIDS. The need to raise awareness of the significance of marine science research and technology within SIDS national structures themselves was also stressed. The meeting also discussed the importance of including all stakeholders including civil society on matters concerning oceans as well as on issues concerning marine science was also underscored. The importance of inter-disciplinary approach to matters of ocean and marine science was also reiterated as a positive way forward and should be encouraged. The meeting also discussed the importance of raising awareness of the IOC's programmes in the SIDS regions, including the important work it has been doing through its regional commissions. The need for IOC to strengthen its presence in SIDS regions was also discussed. The view was expressed that it was clear that IOC's regional commissions' mandate and functions are separate from the functions of regional marine science and research centers provided for in Article 276 of UNCLOS and that there is merit in pursuing the establishment or designation of these UNCLOS mandated regional centers in SIDS regions. The meeting also discussed that low cost marine science research including those that monitor, analyze and share findings such as

UNESCO's Sandwatch have a place in SIDS communities. The meeting acknowledged the data gap that exists at the national level while acknowledging that data on fisheries was perhaps more available than those on other marine resources. The view was expressed that there might be an abundance of data, particularly on fisheries, but that there is no information sharing mechanism to ensure that the information is disseminated widely. While the meeting discussed the importance of higher education in oceans and marine science the need to address the issue of brain drain was also raised. The meeting discussed the issue concerning resources that are often tied to short term projects and recognized that utilization of resources over a longer term was more important and funding agencies and partners needed to recognize and support sustained funding which is key to successful projects. The meeting also discussed the importance that partnerships with universities, NGOs and broader stakeholders can contribute to building capacity in marine science research and technology in SIDS. In this regard the need to strengthen the interdisciplinary approach among the SIDS University Consortium towards promoting what could be termed as SIDS science was stressed. The view was expressed that IOC's TMT Guidelines may need to be updated to reflect the latest technology, including high quality imagery technology. The meeting discussed the importance of traditional knowledge in marine science and research recognizing that the oceans is dynamic in nature and need for monitoring needs to be done over a long period of time, which is where traditional knowledge can play an important part.

VI Way Forward

54. The EGM noted the upcoming SIDS regional preparatory meetings from the Caribbean, Pacific and AIMS regions to be convened in Jamaica from 4-6 July, Fiji from 10-12 July, and Seychelles from 17-19 July, respectively. The meeting agreed that the recommendations (see attached annex) from the meeting can make a contribution to the regional preparatory meetings and that delegations and all stakeholders should be able to have access to the recommendations during their deliberations.

V Briefing with AOSIS and Member States

55. On the afternoon of 17 May the experts met with members of AOSIS and development partners to brief them on some of the salient outcomes of the EGM that will form the recommendation of the EGM. The meeting was chaired by Ambassador Meetarbhan. Statements from OHRLLS, IOC and DOALOS and were made highlighting the close cooperation and partnership these UN entities to jointly convene the meeting. The experts made presentations on some of the recommendations they will be making which they expressed hope could provide a useful input to the SIDS regional preparatory meetings towards a successful SIDS 2014 in Samoa. The experts also took a number of questions from member states who attended the briefing. The Chair summarised the discussions highlighting the importance of oceans and marine science research and technology for SIDS. He appreciated the work of the EGM over the four days and expressed the hope that the recommendations from the meeting would make a useful and meaningful contribution to the regional preparatory meetings and the process leading up to SIDS 2014 Conference in Samoa.

ANNEX I

The Significance of Marine Science and Technology for SIDS and the Importance of Transfer of Marine Technology to SIDS to Support Sustainable Development

EXPERT GROUP MEETING RECOMMENDATIONS

In the context of the preparations for the 2014 Third International Conference on SIDS in Apia, Samoa, the Expert Group Meeting (EGM) on: The Significance of Marine Science and Technology for SIDS and the Importance of Transfer of Marine Technology to SIDS to Support Sustainable Development, *having met* at the United Nations Headquarters in New York, from 14-17 May, 2013, under the auspices of the UN-OHRLLS, in partnership with UNESCO's IOC and the Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs of the United Nations, recommended that:

- 1. Accelerated efforts must be undertaken, including through the effective implementation of the Barbados Programme of Action for the Sustainable Development of SIDS and its Mauritius Strategy for implementation and in accordance with the 1982 United Nations Convention on the Law of the Sea (UNCLOS) and other relevant instruments, to conserve and manage sustainably SIDS valuable marine resources. These efforts should include innovative approaches that (i) develop targeted SIDS capacities and scientific know-how, particularly in marine science, research and technology, given SIDS lack of a critical mass of human resources in this vital field, and (ii) capture SIDS traditional knowledge that provide SIDS with the best available information to guide them in pursuing their sustainable development aspirations, including in the efforts to harness their massive ocean renewable energy potential as well as in tackling the multifaceted impacts of climate change through adaptation and mitigation;**
- 2. Renewed efforts to place oceans and marine resources at the heart of the sustainable development agenda for SIDS must recognize the inherent vulnerability of SIDS, but should also place new emphasis on the value of SIDS. This acknowledges that, relative to their land masses, SIDS are in fact Large Ocean States (LOS). Many are custodians to vast ocean spaces that are globally significant for a number of reasons including food security, rich**

biological diversity, carbon sequestration, natural resources exploitation potential;

- 3. Improved coordination mechanisms at appropriately high levels within national authorities are needed to: (i) elevate science-based policy discourses on oceans governance and marine resources management and (ii) raise awareness among what are comparatively small populations and small land masses in globally important spaces. In this regard SIDS should seriously consider the establishment of national Ministries of Oceans/Marine Resources that place oceans at the center of SIDS national development policies. Established Ministries should adopt an integrated approach to the management of human activities affecting the oceans and their resources and consider fisheries, agriculture, watershed and coastal management, forests, and biodiversity conservation. They should recognize the value that marine science and technology can contribute towards better informed decision making on the broad range of oceans and marine resources issues, including the effective designation of managed and protected areas, enhanced integrated coastal management, improved ocean zoning, improved sustainable marine resources management, improved tourism policies and capitalising on the holistic “ridge to reef” approach;**
- 4. The international community should make available adequate resources to alleviate any disproportionate 'conservation burden' that SIDS, some of whom have undertaken ambitious voluntary commitments to conserve vast areas of ocean spaces under their national jurisdiction for the sake of national as well as global good, may shoulder having potentially forgone the economic benefits that they would have otherwise derived from the use and exploitation of the resources in those areas;**
- 5. Initiatives by the international community in support of marine scientific research carried out in SIDS should be consistent with UNCLOS and be longer term based, with a focus on achieving high quality outcomes over high quantity of outputs and include large scale outreach and bottom-up capacity components. This will better meet the challenges of managing the oceans and marine resources under national jurisdiction, regions and sub-regions, including by global, regional national and local institutions, NGOs and other stakeholders;**
- 6. Increased resources, including required technical support, should be made available to SIDS to allow them to effectively implement UNCLOS, including through SIDS/SIDS cooperation, to effectively manage their marine resources and develop their marine scientific research capacities, and fulfill their obligations under UNCLOS, to deposit, with the Secretary-General of the United Nations, charts showing straight baselines and archipelagic baselines as well as the outer limits of the territorial sea, the exclusive economic zone and the continental shelf or, alternatively, the lists of geographical coordinates of points;**
- 7. The collection of data and information, including in particularly those collected in areas under SIDS jurisdiction, should be carried out pursuant to the provisions of UNCLOS on marine scientific research, including article 244, and that knowledge and research results from marine scientific research be disseminated to SIDS.**

8. Cooperation amongst SIDS and between SIDS and their development partners, including the private sector, in areas of mutual interest are further enhanced in new and emerging areas, particularly in the potential for responsible exploitation of deep sea mineral and other non-living resources in areas under SIDS jurisdiction, and further recommend that clearing house and technical backstopping mechanisms are developed that would support and promote such cooperation;

9. Renewed efforts to develop national ocean policies should be considered with an emphasis on science and research in wide consultation with civil society and other user groups, including the private sector, to inform policy decisions, and strengthen national ocean policies where they already exist, which places emphasis on multi-level governance at national, local and community levels with appropriate support of relevant regional and global institutions, including IOC of UNESCO. Efforts should place emphasis on the need to increase awareness of the role of oceans and seas for sustainable development with significant impacts on SIDS economic, social and environment dimensions;

10. The marine science and technology research programmes within the SIDS University Consortium of Small Island States (UCSIS) must be strengthened. This is especially to promote SIDS-SIDS partnerships that emphasise interdisciplinary approaches to marine science and developing curricula in SIDS regions that address human resource development, technical institutional infrastructure, continuing education and building locally relevant adaptive capacity;

11. SIDS Academic institutions, NGOs, civil society and other stakeholders should be encouraged to pursue and secure relevant funding sources that promote marine science and research in SIDS that are normally not available to SIDS governments to supplement and complement efforts made at the government levels to implement SIDS marine science and research and contribute to the science/policy interface;

12. Support networks, measures or mechanisms should be established to retain built capacity in marine sectors. These should include the provision of incentives for continuous upgrade of professional knowledge and the conduct of capacity development actions aimed at reducing the 'brain drain' of SIDS marine and ocean sector specialists in SIDS as well as systematically taking advantage of the pool of internal and external experts for capacity development action while recognizing the need to widely disseminate information on national programmes to tap this resource;

13. Measures to raise awareness and knowledge on the benefits flowing from the implementation of, and compliance with, the provisions of UNCLOS and other relevant treaties and ongoing processes that relate to scientific data and information gathering and dissemination, as well as other general provisions that extend beyond channels of information dissemination including direct engagement with national and regional centers, universities, end users, private sector and other groups involved in ocean-related activities, need to be improved;

- 14. It is essential that SIDS continue to attend, in larger numbers, and effectively participate in, a number of global and regional oceans processes particularly those related to the implementation of UNCLOS, including the work of the General Assembly and the processes it has established to consider ocean affairs and the law of the sea, the International Seabed Authority and IOC programmes and, in this regard, the international community should assist SIDS to attend and effectively contribute to these global and regional processes;**
- 15. The IOC explore the possibilities for updating its Guidelines on the Transfer of Marine Technology to reflect recent developments particularly in the field of geospatial and other innovative technologies relevant to SIDS;**
- 16. Article 276 of UNCLOS be implemented in SIDS to allow for a coordinated approach involving global and regional oceans and marine science institutions, including those indigenous to SIDS, to enhance support for SIDS capacity development on marine science research and technology, and facilitate the transfer of marine technology to SIDS;**
- 17. UN-Oceans should place SIDS specific issues high on their agenda in the ongoing effort by the UN System entities to coordinate on oceans affairs and issues;**
- 18. SIDS be assisted to strengthen their national, sub-regional and regional enabling environment through Science, Technology and Innovation (STI) policy framework and institutional mechanisms that not only deploy modern marine STI but also mainstream traditional marine technologies for the socio-economic and inclusive development of SIDS. Such assistance could be provided through UN Regional Commissions and their specialized agencies such as Asian and Pacific Centre for Transfer of Technology (APCTT) of ESCAP, and other UN agencies through south-south and trilateral cooperation;**
- 19. SIDS capacities to analyze high resolution imagery of SIDS and their coastal zones captured through technologies such as LiDAR, should be improved to allow marine scientific research and accurate assessments that can translate to better planning and policy decisions;**
- 20. Development of SIDS endogenous capacity and training in new SIDS-developed technologies to protect corals from global warming, shores from global sea level rise, restore fisheries, and undertake sustainable mariculture be instituted urgently to assist SIDS ability to adapt to the immediate and future impacts of climate change.**

ANNEX II

List of Experts

Mr. Michele Ameri, UN Division of Ocean Affairs and the Law of the Sea
Mr. Mohamed Shiham, Adam, Maldives
Mr. Mitrasen Bhikajee, IOC/UNESCO
Prof. Al Binger, SIDS-DOCK
Dr. Thomas Goreau, USA, passport
Dr. Russell Howorth, (former) South Pacific Community (SPC)
Dr Achutan Venugopalan William Ittekot, University of Bremen
Mr. Taholo Kami, IUCN
Mr. Michael Lodge, ISA
Dr. Daniel Marie, Mauritius
Dr. Patrick McConey, University of the West Indies
Mr. Osamu Miyaki, IOC/UNESCO
Ms. Maxine Monsanto, Belize
Dr. William Morrell, Pacific Islands Forum Secretariat
Mr. Rajendra Prasad, IOC/UNESCO
Ms. Charlotte Salpin, UN Division of Ocean Affairs and the Law of the Sea
Mr. Nanjundappa Srinivasan, ESCAP-APTTC
Mr. Hans Thulstrup, SC/UNESCO

Moderators

H.E Ambassador Ronny Jumeau, the Republic of Seychelles' Ambassador for Climate Change and SIDS issues
H.E Ambassador Milan N Meetarbhan, Permanent Representative of the Republic of Mauritius to the United Nations