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1. INTRODUCTION

1 The IOCARIBE Capacity Development Working Group meeting was opened on Friday, 18 October, 2024 at 11:00 am (ETZ) by Ms Lorna Inniss, Head of the IOC UNESCO Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE) office, located in Cartagena, Colombia, who welcomed the participants.

2 The Head of the IOCARIBE office outlined that the meeting would take place with the support of interpretations available in English, French and Spanish. She then proceeded to introduce the next agenda item on the IOC Capacity Development Strategy.

2. IOC CAPACITY DEVELOPMENT STRATEGY

3 Ms Johanna Diwa-Acallar, Deputy Coordinator of the Intergovernmental Oceanographic Commission (IOC) of UNESCO's Capacity Development Global Coordination unit, provided an overview of the IOC Capacity Development Strategy. The IOC Capacity Development (CD) plays a central role in the entire IOC value chain of services including ocean research; early warning and services; sustainable management and governance; assessment information for policy; and observing systems or data management.

4 The IOC Capacity Development Strategy 2023-2030 was adopted by the 32nd session of the IOC Assembly, 21-30 June 2023 at UNESCO Headquarters in Paris, France. The IOC CD Strategy aims to support the development of global and regional work plans addressing the 6 outputs on: 1. Human resources developed at individual and institutional levels; 2. Access to technology, physical infrastructure, data and information established or improved; 3. Global, regional and sub-regional mechanisms strengthened; 4. Development of ocean research policies in support of sustainable development objectives promoted; 5. Development of ocean research policies in support of sustainable development objectives promoted; and 6. Sustained resource mobilization reinforced.

5 The main objectives of the Capacity Development Group of Experts are to assist the global and regional programmes with the implementation of capacity development needs assessments, the development of related work plans, mobilization of resources, and provide advice on relevant methods and tools to deliver CD. The Group of Experts on Capacity Development (GE-CD) was established in 2017, since then it has led to various important CD initiatives including the Ocean Info-Hub project and the IOC Ocean Capacity Development Hub in 2023.

6 Other concrete examples of outcomes from the IOC CD Strategy include the Ocean Teacher Global Academy (OTGA) platform further developed and reinforced across all IOC programmes. It will also address the capacity development aspects of the UN Decade of Ocean Science for Sustainable Development (2021-2030), closely collaborating with the Decade Capacity Development Facility and Working Group 9 on Capacity Development of the Vision 2030 process. In partnership with the Norwegian Agency for Development Cooperation (NORAD), IOC has launched in 2024 the Ocean Training Internships, as a mechanism to enhance global human capacity related to the IOC mandate.

7 The Regional Subsidiary Bodies (RSBs) serve a key role in the successful delivery and implementation of a cohesive and inclusive capacity development in the different regions. An important objective in (2024-2025) is to develop regional work plans

in cooperation with RSBs that respond to the identified CD needs through a coordinated implementation of the IOC Capacity Development Strategy.

8 Ms Johanna Diwa-Acallar ended her presentation by highlighting the upcoming Sixth Session of the Group of Experts on Capacity Development (GE-CD-VI) of the IOC, which is going to take place from 22-24 October 2024 in Oostende, Belgium. The primary outcome of the GE-CD-VI meeting is to develop the implementation plan in support of the strategy, including RSBs such as IOCARIBE. In this meeting IOCARIBE is expected to identify CD needs in the region to inform future initiatives.

DISCUSSION

9 Mr Frank Muller-Karger raised concerns about the focus on research in capacity development, advocating for more clear connections to operational applications.

10 Ms Johanna Diwa-Acalar acknowledged the need to address regional priorities and highlighted activities beyond research, such as ocean literacy and technical trainings through the IOC and NORAD Training Internships mechanism and platforms such as the Ocean Teacher Global Academy.

11 Ms Lorna Inniss reassured participants that the comprehensive IOC Capacity Development Strategy (2023-2030) would be shared, emphasizing the IOC's dual mandate of generating and applying ocean knowledge for sustainable development.

3. CAPACITY DEVELOPMENT IN THE TROPICAL AMERICAS AND CARIBBEAN REGION

a. Overview of Programmes of the IOC UNESCO Sub-Commission for the Caribbean and Adjacent Regions

12 Ms. Lorna Inniss, Head of the IOCARIBE office, provided a report on the capacity development activities in the Tropical Americas and the Caribbean Region. She began by giving an overview of the IOCARIBE office, which is composed of 29 Member States and fosters collaboration in ocean science and knowledge across the Caribbean and Gulf of Mexico. The Statutory Intergovernmental meetings of IOCARIBE take place on a biennial basis, the next one expected to take place from 31 March to 4 April of 2025.

13 There is a strong commitment to the UN Decade of Ocean Science for Sustainable Development (2021-2030) and the 10 UN Ocean Decade Vision 2030 Challenges. The IOC CARIBE has a number of programmes that contribute to the UN Ocean Decade and also aim to improve the uptake of ocean science within the region on issues such as Harmful Algal Blooms (HABs) including *Sargassum*; Ocean Literacy; Data and Information Management; Development of Ocean Observations and Numerical Modeling Systems; Multi-Hazard Early Warning Systems (MHEWS); Sustainable Ocean Planning (MSP); among other.

14 Important recent developments in the IOCARIBE include the recent nomination of experts to the IOCARIBE Global Ocean Observing System (IOCARIBE GOOS) Working Group (WG). The first meeting of the IOCARIBE GOOS WG will take place on 8 November 2024. The UN Ocean Decade endorsed project, “Multi-hazard Information and Forecasting System for the Wider Caribbean Tropical Atlantic and Caribbean (TAC) - Ocean Observation Forecasting System” is also under implementation with an initial focus on developing monitoring and alerting capabilities for *Sargassum* and oil spills in the region.

15 The Oil Spills programme has been led by the United States and Trinidad and Tobago aiming to conduct information workshops, trainings, better determine capacity for routine monitoring and develop a pilot project for the GIS-based oil spill information toolkit.

16 The Sargassum Working Group (S-WG) of IOCARIBE has an extensive Programme which includes the Sargassum InfoHub that aims to meet the needs for a centralized access to information and tools for the monitoring and management of *Sargassum*. The S-WG has also developed a webinar series and a number of products on *Sargassum* data sharing and best practices.

17 The IOCARIBE Capacity Development Working Group has been recently formed, composed by Members or coordinators of the different IOCARIBE working groups across different disciplines. The Coordinator of the IOCARIBE CD-WG will be Ms. Elva Guadalupe Escobar Briones, Instituto de Ciencias del Mar y Limnología (UNAM), Mexico.

18 The IOCARIBE CD-WG has open participation, therefore, if there is an expert identified who can contribute to capacity development in the region, this person will be welcome to join with the approval of the IOCARIBE CD-WG members. Presently, the members need to discuss the Terms of Reference and design an initial Work Plan for (2024-2025).

b. Overview of the International Oceanographic Data and Information Exchange (IODE)

19 Ms. Paula Sierra, Co-Chair of the International Oceanographic Data and Information Exchange (IODE) Programme, provided a report about IODE. The IODE Programme was established in 1961 to enhance marine research, exploitation and development, by facilitating the exchange of oceanographic data and information between participating Member States, and by meeting the needs of users for data and information products.

20 The IODE system forms a worldwide service oriented network consisting of National Oceanographic Data Centres (NODCs), Associated Data Units (ADUs) and Associated Information Units (AIUs). This network has been able to collect, control the quality of, and archive millions of ocean observations, and makes these available to Member States. Member States of IOCARIBE are encouraged to establish NODCs to improve regional collaboration.

21 The IODE Strategic Plan (2023-2029) aims to achieve a comprehensive and integrated ocean data and information system, serving the broad and diverse needs of IOC Member States for management, policy-making and scientific information. It is composed of three main objectives: 1. Provide interoperable, quality-controlled data on diverse variables, created using scientifically sound methods and archived in standardized formats; 2. The data should be disseminated promptly, whether in real-time or delayed, catering to the specific needs of various user groups; and 3. The data should be easily discoverable and accessible, offering user-friendly information on diverse variables and derived products, such as forecasts, alerts, and warnings.

22 The core of IODE is the Ocean Data and Information System (ODIS), Ocean Biodiversity and Information System (OBIS) and the Ocean Teacher Global Academy (OTGA) platform. The ODIS provides interoperability and supports diverse ocean data systems, forming a global digital ecosystem. It allows users to discover data, services,

and products through its decentralized architecture. The OBIS is a global, open-access platform providing data on marine biodiversity for science and sustainability.

23 The Ocean Teacher Global Academy regional training center has operated since 2014 and offers an annual calendar of courses. Post-pandemic, they've aimed to resume face-to-face classes, especially for field laboratory topics. Upcoming courses include blue carbon ecosystems, mangrove management, integrated coastal zone management, marine GIS, among others. OTGA is seeking funds for continued training and workshops.

24 The IOC Capacity Development Strategy (2021-2030) has a strategic framework focused on an enhanced and expanded portfolio of activities, based on the existing six outputs of the IOC CD Strategy. The six outputs look to integrate ocean sciences with education, promoting gender and geographic diversity, improving access to technology and data, and strengthening mechanisms in the IOCARIBE region. It also looks to develop policies, enhance ocean visibility and understanding, and emphasizes the importance of mobilizing resources and fostering South-South cooperation. Capacity development goes beyond creating products or establishing alliances to achieve regional goals. It involves sustained efforts to improve investments, resources, and staff capabilities at both the IOC Secretariat and Sub-Commission levels.

25 The IODE encourages regional Member States to establish NODCs, ADUs, or AIUs, and to use and contribute to OBIS via regional alliances. Member States are invited to use AquaDocs as a repository for various documents and publications. They are also recommended to enter online data and information services into ODISCat and contribute to OIH/ODIS by establishing NODCs, and to adopt the new IOC strategic plan for data and information management (2023-2029).

4. PROPOSED INITIAL CAPACITY DEVELOPMENT ACTIVITIES

a. Task Team on Ocean Literacy

26 Ms Lorna Inniss, Head of IOCARIBE, provided a report on the Task Team on Ocean Literacy (TT-OL) for IOCARIBE. The TT-OL was established by the approval of the IOCARIBE Board of Officers and reports under the Capacity Development Working Group. The TT-OL is considered a type of capacity development and will play a pivotal role in influencing the knowledge of the population in the Caribbean region about the ocean.

27 There are seven essential principles of Ocean Literacy which the TT-OL will adapt into its implementation framework: 1. Earth has one big ocean with many features; 2. The ocean and life in the ocean shape the features of the Earth; 3. The ocean is a major influence on weather and climate; 4. The ocean makes Earth habitable; 5. The ocean supports a great diversity of life and ecosystems; 6. The ocean and humans are inextricably interconnected; and 7. The ocean is largely unexplored.

28 Member States of IOCARIBE will be mapping their national priorities for ocean literacy. The tourism and fisheries sectors have already been identified as essential for ocean literacy. Presently, the IOCARIBE is seeking engagement entry points into those sectors and exploring ideas on which other sectors, e.g. transport, to include as priorities.

29 The work in Ocean Literacy will be guided by the IOC UNESCO Manuals and Guides 80 (M&G 80), or “Ocean Literacy for All, a Toolkit”. The M&G 80 provides the methods and resources to understand processes and functions, including how to engage with Member States.

30 The IOCARIBE is looking to develop a Regional Network of Blue Schools. Currently, IOCARIBE is establishing one located in Grenada. The IOCARIBE launched the Ocean Literacy Programme during the 4th Small Island Developing States Conference, 27-30 May, 2024. Since then, there has been an increased interest from different Member States to join the Regional Network of Blue Schools.

31 Finally, to support policy-makers, curriculum developers and educational authorities in implementing Ocean Literacy into their national curricular frameworks, IOCARIBE will use the Manuals and Guides 90 (M&G 90), or “A New Blue Curriculum, A Toolkit for Policy Makers”.

32 IOCARIBE will be submitting requests to all its Member States for nominations to the Ocean Literacy Task Team. The first meeting of the TT-OL will take place on 15 November 2024.

b. **Deep Sea & Biodiversity Beyond National Jurisdiction**

33 Ms Elva Escobar, Chair of the IOCARIBE Capacity Development Working Group, provided a report on capacity development in the Deep Sea and Biodiversity in Areas Beyond National Jurisdiction (BBNJ). All countries and territories in the region have jurisdiction over marine areas deeper than 200 meters, but the high cost and unequal access to tools and resources make deep-sea research and observation challenging. This results in only a small fraction of the deep sea being studied and characterized. In 2021, the IOCARIBE Capacity Development Working Group and the International Seabed Authority identified knowledge gaps and exploration needs in the Western Tropical Atlantic Caribbean and the Eastern Tropical Pacific regions. They explored collaborative partnerships with ongoing UN programmes and funding mechanisms. In 2022, the Ocean Discovery League conducted a global deep-sea capacity assessment, establishing a baseline for technical and human capacity for deep-sea exploration and research.

34 Regional collaboration involves participating in global UN Ocean Decade programmes like Challenger 150, the Deep Ocean Observing Strategy (DOOS), and the International Deep Ocean Stewardship Initiative (DOSI) created in Mexico in 2013. These platforms support the region’s participation in deep-sea research. Long-term deep-sea capacity development programmes in some nations involve university research vessels and industry collaboration. However, many research vessels have aged, and interactions have faded due to funding challenges, affecting access to educational programs at sea. Restrictions on ship time, diesel, maintenance, and basic equipment replacement jeopardize these capacity building programmes.

35 The main challenges in the region are funding, vessel access, and human capacity. Opportunities for deep-sea exploration and research include trainings, cheaper data collection technology, and better data access and analysis tools. Marine scientific research beyond the Exclusive Economic Zones (EEZs) is open to all states, but few nations can harness the benefits. Building scientific and technological capacity is crucial for the conservation and sustainable use of marine biodiversity under the BBNJ Agreement.

36 Capacity building and marine technology transfer are critical issues in the negotiations for a new international legally binding instrument for the conservation and sustainable use of marine biodiversity in Areas Beyond National Jurisdiction. Completing negotiations on technology building and transfer is essential for the effective implementation of the BBNJ Agreement. Long-term implementation requires country-

driven needs assessments, action plans, and diagnostics of the capacity development needs for Biodiversity National Jurisdiction topics. Monitoring, quality assurance of capacity building, information sharing, cooperation for technology transfer, and funding measures are also vital.

37 The regional focus should continue to enhance collaboration, funding, and capacity development, integrating ocean sciences with basic education, promoting gender and geographic diversity, and improving access to technology and data. Strengthening mechanisms in the IOCARIBE region, developing policies, and enhancing ocean visibility and understanding are also crucial. Resource mobilization and South-South cooperation play a significant role in this endeavor. Capacity building involves sustained efforts to improve investments, resources, and staff capabilities at both the IOCARIBE Secretariat and Sub-Commission levels, aiming for long-term benefits and regional goals.

38 In conclusion, addressing the challenges and leveraging opportunities in deep-sea capacity building requires a multifaceted approach. This includes improving funding, vessel access, and human capacity, fostering regional collaboration, and strengthening international legal frameworks. By enhancing capacity building, information sharing, and technology transfer, the region can better understand, explore, and manage its deep-sea environments, ultimately contributing to marine biodiversity conservation and sustainable development. The ongoing efforts and programs, along with future initiatives, are essential for achieving these objectives and ensuring a healthy marine environment for future generations.

DISCUSSION

39 Ms Elva Escobar highlighted that the Tropical Americas and Caribbean region counts with the necessary number of experts and programmes to work in the capacity development of the deep sea and BBNJ.

40 Mr Sergio Cambronero agreed that the region has enough capacity, interest, and connections for deep-sea research, led by strong regional leaders. He advised connecting to the work being developed for potential deep-sea mining in the Clarendon-Clipperton zone, affecting the Eastern Tropical Pacific. Additionally, there is a project deploying Argo Floats in the Thermal Dome, offshore of Central America, aiming for better data collection and technology transfer from Europe, i.e. EuroArgo. This project also looks to connect with DOSI and its Task Force for the Conservation of Deep-Ocean Biodiversity. This collaboration will further support the integration of more sensors and indicators for decision-makers. He advised on the formation of a Task Team to ease the capacity development, knowledge, procedures and logistics in the use of Argo Floats and other ocean observing and forecasting technology in the deep sea.

41 Ms Elva Escobar noted that capacity development is cross-cutting the different disciplines e.g. ocean acidification, *Sargassum*, marine pollution, blue economy etc. It is also exploring the different ocean ecosystems, from coastal to offshore waters and the deep sea. Overall, the Capacity Development Working Group (CD-WG) aims to contribute to the 10 UN Ocean Decade 2030 Vision Challenges and strengthen or build new partnerships, e.g. GEOBON, Blue Planet, etc.

42 Jeffrey Bernus informed about a programme conducted at the Caribbean Cetacean Society (CCS) to standardize protocols for whales, dolphins and marine megafauna, aiding local capacity building. Future plans include deep water ecosystems, with local participants on islands, leveraging current whale and dolphin research

infrastructure. This initiative, set to expand in 2025, focuses mostly on biological aspects but welcomes collaboration to integrate biological and physical data collection.

43 Mr Alejandro Acosta briefed that the Gulf and Caribbean Fisheries Institute (GCFI) has been promoting trainings in acoustic instruments and reef hydro acoustics for deep-sea areas, but the challenge lies in evaluating the massive data generated. The ability to collect and analyze this information is crucial, as even developed countries struggle with this. Building capacity for both data collection and analysis is essential.

44 Ms Lorna Inniss expressed concerns at the difficulty that Spanish, French and English speaking countries find in sharing their best practices and knowledge due to a language barrier. The IOCARIBE CD-WG needs to address this challenge. In addition, she informed that the IOCARIBE CD-WG needs to maximize collaborative efforts in Marine Spatial Planning (MSP) by playing a role in the implementation of the Global Environment Facility (GEF) PROCARIBE + Project. There is a proposed marine spatial planning forum in 2025 and training sessions in both English and Spanish to improve MSP regional collaboration.

45 Ms Elva Escobar noted the importance of restoring society's relationship with the ocean, focusing on ocean literacy. She added that this requires extensive regional work, including the addition of knowledge from Indigenous Populations and Local Communities (IPLCs).

5. INITIAL WORK PLAN (2024-2025) AND AGREEMENT OF METHODS OF WORK FOR THE CAPACITY DEVELOPMENT WORKING GROUP

46 Ms Elva Escobar, Chair of the IOCARIBE Capacity Development Working Group, presented the IOCARIBE CD-WG Terms of Reference (ToRs). The IOCARIBE CD-WG ToRs are included in this report as ANNEX I.

47 She highlighted that the IOCARIBE CD-WG ToRs outline existing capacity development efforts in the region, recognizing past successes and current challenges, particularly in sustaining capacity across generations. The region has benefited from UN capacity development programs, which helped establish research institutions and create working groups.

48 The purpose of the IOCARIBE CD-WG is to support capacity development for the next 6-8 years, following the IOC UNESCO Capacity Development Strategy. The IOCARIBE CD-WG will provide technical advice, oversight, planning, monitoring, and resource mobilization in capacity development. This includes coordinating initiatives within the wider Caribbean and Pacific regions. The Eastern Tropical Pacific has been left out for decades, and the working group aims to integrate this region. The working group comprises nine types of members, including representatives from Latin American universities, Small Island Developing States (SIDS), Early Career Ocean Professionals (ECOPS), and regional ocean teacher global academies. Additional members, such as traditional knowledge holders, may be co-opted as appropriate.

49 The elements of the IOC Capacity Development Strategy (2023-2030) focus on human resources, access to technology, regional mechanisms, research policies supporting sustainable development, visibility, and sustained resource mobilization. This also involves assisting member states in policy development, facilitating workshops and training sessions, and raising ocean literacy from children to industry sectors.

50 Funding and resource mobilization are critical for supporting capacity development and research initiatives. Expected outcomes include improved capacity

development in the region, with measurable criteria for change. Regular reporting and accountability ensure progress is tracked, with biennial reviews and updates to the ToRs to address emerging challenges and continue the efforts of predecessors.

DISCUSSION

51 Mr Alejandro Acosta emphasized the importance of open inclusion for Members of the IOCARIBE CD-WG, including Non-Governmental Organizations (NGOs) as important stakeholders connecting academia and IPLCs to the science and policy interface.

52 Ms Elva Escobar agreed with the request for open participation and invited Members of the IOCARIBE CD-WG to provide comments and amendments on the ToRs.

53 Mr Frank Muller-Karger echoed this sentiment, stressing the need for capacity development that aligns with the specific needs of nations and industries, rather than merely providing training without job prospects.

54 Ms Elva Escobar noted that strengthening collaboration with the industry and private sector is essential. In many cases the private sector has resources like research vessels and trained personnel that are key to strengthening capacity development.

6. ANY OTHER BUSINESS

a. Colombian Association of Naval Engineers (ACINPA)

55 Mr Fernando Ochoa provided a report on the Colombian Association of Naval Engineers (ACINPA) and how they can contribute to the capacity development work in the region. ACINPA works on enhancing research capacities in Colombia and the Caribbean through the acquisition and operation of research vessels. Despite working on this for several years, securing financing has been challenging. Currently, ACINPA has a 30-meter well-maintained ship, which the Institute for Marine and Coastal Research (INVEMAR, Colombia) is interested in owning. ACINPA, with its expertise in operating and navigating ships, would handle the ship's operation.

56 ACINPA aims to implement a project which involves developing research in the Caribbean Sea across five areas, each to be explored during 20-day cruises. The ship, manned by ASINPA and scientific staff, would conduct oceanographic, hydrographic, biological, geological, and meteorological studies. The total cost for a year, including the ship's acquisition, crew, fuel, and scientific personnel, is estimated at $2.4 million, averaging $50,000 to $70,000 per day.

57 The initiative aims to fill gaps in research capacity, providing a platform for extensive studies needed in the region. The project highlights the ship's potential to support the United Nations' Decade of Ocean Science and the IOCARIBE CD-WG, ultimately benefiting regional research and capacity development. The collaboration and shared resources would help advance scientific knowledge and understanding of the Caribbean's marine environment. This initiative underscores the importance of sustained investment in research infrastructure to ensure long-term benefits for the region.

DISCUSSION

58 ACINPA added that it collaborates closely with universities, industry, and communities in ocean science. It also re-assured its commitment to support the enhancement of capacity development in the Tropical Americas and Caribbean region.

7. CLOSURE

59 Ms Elva Escobar, Chair of the IOCARIBE Capacity Development Working Group, thanked all the participants for their interventions. She acknowledged once more the IOC UNESCO Capacity Development Strategy (2023-2030), and highlighted the commitment of the IOCARIBE CD-WG on developing a Work Plan and finalizing the ToRs with the support of its members. In addition, she acknowledged and thanked the contributions done by the Task Team on Ocean Literacy, and the discussions to advance capacity development in the deep sea and Biodiversity in Areas Beyond National Jurisdiction (BBNJ). The meeting closed at 13:15 pm (ETZ).

ANNEX I. TERMS OF REFERENCE OF THE IOCARIBE CAPACITY DEVELOPMENT WORKING GROUP

ANNEX II. AGENDA

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6. ANY OTHER BUSINESS

a. Colombian Association of Naval Engineers (ACINPA)

7. CLOSURE

ANEEX III. LIST OF PARTICIPANTS

CAPACITY DEVELOPMENT WORKING GROUP MEMBERS

Chair

Elva Guadalupe	Mexico	escobri@cmarl.unam.mx

Members

Alejandro Acosta	United States	Alejandro.acosta@myfwc.com
Bailey Dawson	United States	bdawson@georgiaaquarium.org
Branson Belle	Jamaica	branson.belle@uwi.edu
Bruno Sainte-Rose		bruno.sainte-rose@theoceancleanup.com
Carolina Peralta	United States	peraltabrichtova@usf.edu
Devin Burri	United States	devin.burri@noaa.gov
Doug Wilson	British Virgin Islands	doug.wilson@uvi.edu
Elaine Alberts	United States	ealberts@georgiaaquarium.org
Enrique Oñate	Colombia	eonatester@gmail.com
Fernando Ochoa	Colombia	capitanochoa58@gmail.com
Frank Muller-Karger	United States	carib@usf.edu
Javier Augusto Noriega	Colombia	janoriega69@gmail.com
Jeffrey Bernus		jeffrey.bernus@ccs-ngo.com
Paula Sierra	Colombia	paula.sierra@invemar.org.co
Rahanna Juman	Trinidad & Tobago	rajuman@ima.gov.tt
Ronaldo Christofoletti	Brasil	christofoletti@unifesp.br
Sergio Cambronero	Costa Rica	sergiocambroscs@gmail.com
Soraya Silva	Venezuela	soraya.j.silva@gmail.com
Wisnique Panier	Haiti	wisnique.panier@diplomatie.ht

SECRETARIAT

IOC CD Global Coordination Unit

Johanna Diwa-Acallar	jp.diwa@unesco.org

Head of Secretariat

Lorna Inniss	l.Inniss@unesco.org

Team IOCARIBE

Alejandro Rojas	alejo_tato@hotmail.com
Alex Palomino	ae.palomino-cadena@unesco.org
Angelica Toro	angelica.toro97@gmail.com
Bianis Palacios	b.palacios@unesco.org
Juan Pabon	juansebastianpabonbernal@gmail.com
Patricia Wills	p.wills-velez@unesco.org