Implementing & Monitoring the Sustainable Development Goals in the Caribbean: The Role of the Ocean
Saint Vincent and the Grenadines
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Implementing and Monitoring the Sustainable Development Goals in the Caribbean: The Role of the Ocean

EXECUTIVE SUMMARY

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Contents

1 The Workshop

The workshop on "Implementing and Monitoring the Sustainable Development Goals in the Caribbean: The Role of the Ocean" was held on January 17-19, 2018 at the Beachcombers Hotel in Saint Vincent. The workshop brought together 42 participants from sixteen countries. The participants represented a broad range of societal stakeholders in the implementation of the United Nation's 2030 Agenda for Sustainable Development¡/a¿, with representatives of governmental departments and agencies, intergovernmental organizations and United Nation's agencies active in the Caribbean, regional and local non-governmental organizations, businesses and academic. The goal of the workshop was to better understand the role of the ocean for the implementation of the Agenda, and to identify the ocean-related knowledge needs of societal actors engaged in this implementation.

2 Workshop Background, Objectives and Scope

Identifying and Articulating Knowledge Needs for the Implementation and Monitoring of the Sustainable Development Goals in Caribbean Small Island States and Matching Those Needs to Knowledge, Tools, and Data.

2.1 The SDG Challenge

The implementation of the seventeen Sustainable Development Goals (SDGs) of the Agenda poses wicked problems to society, that is, socio-economic and cultural problems that are difficult or nearly impossible to solve because of incomplete or contradictory knowledge, the number of people and opinions involved, the large economic burden associated with progress towards a solution, and the interconnected nature of these problems with other problems. All of this applies to making progress towards achieving the SDGs.

The iterative development and implementation of transformational policies to reach the targets hinges on knowledge derived from data related to the state and trajectory of the Earth system. Likewise, validating these policies and monitoring progress towards the SDG Targets depends observations of the human and non-human environment. The Group on Earth Observations (GEO) prioritizes support of the 2030 Agenda. Among others, the GEO Initiatives "Earth Observations in Service of the 2030 Agenda for Sustainable Development" (EO4SDGs) and "Oceans and Society: Blue Planet" focus on data needs of the SDGs. To better serve the 2030 Agenda, a detailed knowledge of the observational requirements to serve the 2030 Agenda is required, and creating this knowledge necessitates a system approach considering the data needs of the full set of the SDGs.

2.2 The SDG Challenge for SIDS

The challenges faced by Small Island Developing States (SIDS) in the execution of the 2030 Agenda are closely linked with the ocean surrounding these states. Human interactions with the Earths life-support system have impacted the physical, chemical, and biological state of the ocean and triggered distinct trends in the ocean system and its functional position in the Earths life-support system. The trends in marine ecosystems, ocean circulation, the global water cycle, and sea level have many impacts on human communities and influence progress towards most of the goals. Closely linked to challenges in attaining the SDGs is the implementation of the blue economy, which strives for sustainability across economic sectors dependent on marine and ocean resources. For SIDS, the changing ocean poses a complex challenge, and many of the observational requirements will be related to the changing ocean.

2.3 Workshop Objectives and Scope

The workshop aimed to link the efforts that a wide range of stakeholders in the Caribbean SIDS are making towards the implementation of the 2030 Agenda to required ocean observations and to engage in the co-creation of the knowledge supporting these efforts. Collaborating with the governments and NGOs in the SIDS and participating in their efforts to implement the 2030 Agenda is a novel avenue for those providing Earth observations to better understand what ocean observations are required and what products are available to inform decisions. These requirements, where possible, were matched to existing data sets and services to create the knowledge needed by the governments and the people in the Caribbean SIDS, and gaps were identified and addressed where such products do not exist or were not accessible.

3 Participation

The workshop was organized as a collaborative effort of GEO Initiatives, governments of the Caribbean SIDS, United Nations Agencies, and regional non-governmental organisations. It brought together wide range of stakeholders representing SIDS governments (1 female/4 male), government agencies (4/5), intergovernmental and United Nations organizations (4/5), regional and national NGOs (3/1), businesses (3/5), and academia (4/2).

4 Workshop Approach and Format

The workshop combined presentations of different stakeholders with panel discussions, table discussion rounds and a fieldtrip. The presentations provided overviews of efforts made in by the different stakeholder groups. The panel discussions combined brief presentations of the panelists and discussions of the panels with the participants. In the two table discussion rounds, the participants split up in four to five groups discussing table-specific topics. For each round, a round-specific set of questions had been prepared to be considered by each table. The fieldtrip had the goal to introduce the participants to three specific issues related to SDGs, namely the role of private businesses in addressing invasive species such as the lionfish, the role of NGOs in promoting the preservation of ecosystems, including the prevention of plastics and other pollution, and efforts to enable a transition to an organic agriculture.

For each session, the participants were asked to submit so-called 2+2 Forms, in which they were asked to identify two points under each of the headings:

Session 0: Opening Session	This is where progress is being made:	These are major challenges:
Session 1: The 2030 Agenda for Sustainable Development in Caribbean Small Island States (SIS)	This is where progress is being made in the implementation:	These are major challenges for the implementation:
Session 2: Interdependencies and Interactions of SDGs, Targets and Indicators in Caribbean Small Island States	This is where progress is being made in understanding the interactions and interdependencies:	These are major challenges in addressing the interactions and interdependencies:
Session 3: Ocean-related variables and indicators essential for SDG implementation and monitoring in Caribbean Small Island States	This is where progress is being made in the identifying the variables and indicators:	These are major challenges for the identification of variables and indicators:
Session 4: Observational requirements for ocean-related variables and indicators	This is where progress is being made towards specifying observational requirements:	These are major challenges in specifying observational requirements:
Session 5: Matching users, requirements and products	This is where progress is being made in matching stakeholders, requirements and products:	These are major challenges for the matching of stakeholders, requirements and products:
Session 6: Improving availability of Earth observations in service of SDG implementation in Caribbean Small Island States	This is where progress is being towards improving availability of Earth observations for stakeholders:	These are major challenges for improving the availability of Earth observations for stakeholders:

The 40 in-person participants in total submitted 151 2+2 Forms providing a rich basis for a post-workshop qualitative analysis of the implementation and monitoring efforts (Session 0: 31; Session 1: 31; Session 2: 24; Session 3: 24; Session 4: 21; Session 5: 10; Session 6: 10).

5 Workshop Program and Deliberations

The program included an opening session setting the stage, a field trip to introduce the participants to some specific challenges in SIDS, four sessions addressing the challenges and information needs of SDG implementation and monitoring in the SIDS, a session attempting to match these needs to available information, and a final session summarizing the outcomes and discussing the follow-on activities and the next steps.

6 Opening Session

Co-Chairs: Dr. Hans-Peter Plag, Danielle Evanson

The opening session set the stage for the workshop. After a welcome notes from the government of Saint Vincent and the Grenadines delivered by the Hon. Saboto Caesar, Minister of Agriculture, Forestry, Fisheries, Rural Transformation, Industry and Labour, Government of Saint Vincent and the Grenadines, and the Group on Earth Observations (GEO) communicated by Dt. Douglas Cripe, the Session featured a number of keynotes providing insight into the interface between science and governance in the Caribbean Small Island Developing States (SIDS) and the particular challenges faced by the SIDS. A keynote reflected on the implementation of the Blue Economy, which seeks to establish a sustainable use of marine resources as a component to the economies of the SIDS. Adopting a Blue Economy was seen as aligned with targets of the 2030 Agenda for Sustainable Development. The final keynote discussed the contribution of Earth Observations to the implementation and monitoring of the SDGs.

Opening the workshop, Hon. Minister Caesar noted that the workshop was about solving problems that many in the SIDS had nothing to do with. He emphasized that there was often a disconnect between the theory and implementation, so we need to come up with relevant solutions, grounded in practical actions. A way to do this is to establish a small "Geo space for SDGs" where the SDGs are brought to the people with the goal to prove the 2030 Agenda can be implemented over a large space. This is not a state-based but grass-roots effort/intervention.

7 Session 1: The 2030 Agenda for Sustainable Development in Caribbean Small Island States

Co-Chairs: Jai Rampersad, Dr. Julian Roberts

This session facilitated a dialogue between governments and people of the Caribbean SIDS about the challenges of executing the 2030 Agenda in each of the SIDS. Linking the challenges to a "geospace for SDGs" implementation brought a local perspective into the deliberations. The first two presentation presented the efforts made by the governments in Montserrat and the British Virgin Islands, and the next presentation gave an overview of the work of a local NGO in Saint Vincent and the Grenadines. Subsequently, the three panelists provided insight into the challenges and efforts from the point of view of UN agencies and regional intergovernmental organizations.

The presentations and panelist statements provided answers to questions including: What are the core challenges? Who is doing what? What are the responsibilities? What knowledge is needed? Where is knowledge on the ocean needed? What data is used and what gaps are known? What science support is available?

At the end of the session, a common understanding of the core problems started to emerge, and knowledge needs to address these problems were identified.

8 Fieldtrip

Chair: Louise Mitchell

The scope of the fieldtrip was to illustrate aspects of living on a SIDS and interacting with the Ocean. The fieldtrip visited three locations:

1. Visit to the site of Serenity Dive in Calliaqua, South Coast.
2. Sans Souci beach - major nesting site for leatherback turtles.
3. Visit a natural farm at Sans Souci.

At Serenity Dive, Vaughn Martin gave an overview of the challenges coastal areas in Saint Vincent are exposed to and summarized the work done in scuba diving courses to raise awareness of the fragility of the marine environment as well as provide an example of a sustainable business as part of the blue economy.

At San Souci beach, Robin Hoflund and Louise Mitchell pointed out issues with a large amount of waste deposited on the beach by the ocean. This waste, which to a large extent consists of many forms of plastics originating in different and often far-away parts of the globe poses risks to the leatherback turtles during their brief visits to the beach for nesting. Likewise, activities on land impact the beach and expose the turtles to risks and disturbances. The recent changes in extreme weather events further puts stress on the beach environment.

The visit to the natural farm operated by the Saint Vincent and Grenadines Preservation Fund provided insight in the opportunities this approach to agriculture opens up. It also emphasized the inherent conflict between the nearby conventional farms and the natural farming area, particularly through the wide-spread use of pesticides impacting the natural farming area.

9 Session 2: Interdependencies and interactions of SDGs, Targets and Indicators in Caribbean Small Island States

Co-Chairs: Danielle Evanson, Dr. Hans-Peter Plag

This session addressed the wicked problem presented by SDGs to society and focus on the interconnected nature of the SDGs. Key characteristics are the potentially large economic burden associated with progress towards the Targets, as well as the challenge that those attempting to solve the problem are to some extent causing the problem. In a transdisciplinary dialogue, the role of the ocean for the interconnected SDGs was characterized taking into account the many interdependencies between the SDGs. The session considered that most of the SDGs address the socio-economic and environmental systems based on land, and that both the human and non-human environment in SIDS is crucially dependent on the surrounding ocean. While this dependency is grossly similar it is discretely different in the different SIDS, and both the similarities and differences were elaborated on. The goal was to identify those applications and tools that are used in generating knowledge addressing the interdependencies across boundaries between SDGs, government departments and societal sectors.

In two initial presentations, the interdependencies of SDGs were discussed and a framework for the implementation of SDG 14 was presented. The next presentation provided local examples of issues that hamper preservation efforts. In the subsequent panel discussion, the panelist addressed different aspects of SDG implementation from the viewpoints of trade, GEO Initiatives, international science organizations and regional NGOs. The participants then split up for a table discussion round.

The first table discussion round focused on the contribution of various stakeholders to the SDG implementation. For each table topic and topical area, the participants were asked to consider the following questions:

1. What are the major sustainability challenges in your country or area/region, and which of those relate to the ocean?

2. Which of the SDGs are of highest priority in your country or area/region, and in which way are these linked to ocean?

3. Are there specific entities in your country or area/region that are responsible for the implementation of the 2030 Agenda and the SDGs?

4. To what extent is your country or group engaged in monitoring and reporting the SDGs and which entities are responsible for the monitoring?

5. How are you communicating the SDGs to the general public and ensuring that they are received in a positive manner to gain community support?

6. What are the challenges in implementing SDGs in a coordinated manner and how are interdependencies between the SDGs addressed?

7. What information is needed by your country or group to develop, amend, and implement policies and action plans for the SDGs and to monitor and report on the SDGs?

8. What ocean-related national, regional and international policies and agreements is your country or group participating in?

The participants grouped into five tables with the topics:

1. Science Support for SIS Governments
2. NGO and Private Sector Contributions to SDG Implementation
3. Fisheries, Food Security, and Life Under Water: SDGs 2 Versus SDG 14
4. Blue Growth and Poverty: SDG 1 versus SDG 14
5. Education for Sustainability, Justice, and Equality.

The outcomes of the discussions were reported back to the plenary.

10 Session 3: Ocean-related variables and indicators essential for SDG implementation and monitoring in Caribbean Small Island States

Co-Chairs: Zahidah Afrin Nisa and Milton Haughton

This session aimed to merge existing scientific knowledge with the understanding of the societal problem of making progress towards the SDGs in Caribbean SIS developed in the first two sessions. The goal of the session was to use the knowledge needs identified in the first two session to co-create a prioritized inventory of those ocean-related variables and indicators that can inform the development and validation of sustainability policies in the SIS, and can help to engage the people in the implementation of these policies. The inventory aimed to include those variables and indices characterizing the physical, chemical, and biological state and trends of the ocean that are essential for both the development and validation of policies in support of SDG implementation and needed for the monitoring of progress towards the targets and more sustainability. The initial presentation gave an overview of work done by experts to identify essential ocean variables and showed examples of observation efforts to monitor these variables. Subsequently, a table discussion round took place.

¡p¿The second table discussion round focused on the variables, and specifically ocean-related variables, that need to be known in order to generate knowledge in support of SDG implementation. The participants at each table were asked to consider the relevant questions from the following list: ¡ol¿ ¡li¿ Is science support available to your government or your group to assist in decision making related to the implementation, monitoring and reporting of the SDGs? ¡li¿ Are scenario-based approaches used to assess policy options and their potential impacts and to evaluate the policy impacts? ¡li¿ In your thematic area, what data are used to address the challenges for SDG implementation and to monitor progress? ¡li¿ What ocean-related data are available and accessible and what data are missing or not fit-for-purpose? ¡li¿ Are you aware of knowledge and capacity gaps impacting your efforts to make progress towards the goals? ¡li¿What practical steps would you recommend to address the knowledge and capacity gaps identified? ¡li¿What ocean-related variables should be monitored to support your efforts to implement and monitor the SDGs? ¡/ol¿

The participants grouped into five tables with the topics:

1. Supporting a Sustainable Blue Economy - SDGs 8, 9, 10, 12, 13
2. Food and Water Security, Health, Poverty - SDGs 1, 2, 3, 6
3. Maritime Transportation, Fisheries, Pollution, Marine Biodiversity - Implementing SDGs 14, 15
4. Ocean and Safe and Thriving Communities - SDGs 7, 10, 11, 12, 13
5. Climate Change, Biodiversity, and the Ocean SDGs 13, 14, 15

The outcomes of the discussions were reported back to the plenary.

11 Session 4: Observational requirements for ocean-related variables and indicators

Co-Chairs: Francisco Chavez and Emily Smail

The goal of this session was to use the knowledge needs identified in the first two sessions together with applications to create this knowledge in the development of observational requirements for the prioritized ocean-related variables collected in Session 3. The original goal was to have a set of requirements for high-priority variables that specify the spatial and temporal resolution and coverage, accuracy, and latency that are consistent with what those applications require that could make use of the observations. After an initial presentation introducing the "GEO Blue Planet Initiative," the following four presentations focused on observational needs in the areas of health and safety, ecosystem health, industry activities, and fisheries. The final presentation provided insight into the role local businesses can play in making progress towards the SDGs.

12 Session 5: Matching users, requirements and products

Co-Chairs: Chris Corbin and Doug Wilson

In a novel co-usage effort, the participating experts in Earth observation worked with the stakeholders engaged in SDG implementation to match, where possible, observational requirements to existing data and products. The main purpose of this session was to explore approaches to the co-usage of products and the co-creation of knowledge with these products. The focus of this session was on identifying existing data, products and services that can support the ocean-related identified information needs of the Caribbean SIDS for monitoring and implementation of the SDGs.

Prior to examining potential matchmaking opportunities, the workshop attendees discussed what types of users and stakeholders require data and visualization products in a plenary discussion. These were broadly grouped as Decision Makers; Information Providers; Monitoring, Regulation and Enforcement; Educational Institutions; Industry; and Local Resource Users. While this effort resulted in a convenient grouping, there still exists variability within each of these groups and commonalities depending on specific country situations. There is a need for more comprehensive stakeholder mapping identifying specific data and information requirements for local, national, and regional priorities and within a specific thematic context, such as pollution, marine protected areas, etc. One might wish to consider if this is done first at a regional level and then in selected countries. The approach to a thorough gap analysis was reviewed in a presentation by Dr. Plag.

The participants were then split into three moderated groups focusing on the knowledge and information needs of decision makers, information providers and those engaged in monitoring, regulations and enforcements. Other main stakeholder groups identified included educational institutions, industry, and local resource users, but the needs of these groups were not yet addressed. The original goal was to demonstrate the use of the data and products to generate relevant knowledge. The groups were asked to discuss data and information needs and consider if there is existing data and products to meet these needs. In cases were no matching products were known, the goal was to indicating gaps in observation, processing or capacity.

A cursory data inventory was provided to facilitate discussions along with a framework and requirements and matchmaking matrix (see Appendix on Approach to Matching). The group deliberations focused more on the process of matching that the actual matching. It was pointed out that a more "neutral" moderation of the deliberations by experienced independent facilitators would have been an advantage compared to the moderation by either Earth observation providers or societal stakeholders. The absence of one or more facilitators and the co-chairing of the sessions by subject-matter experts resulted in little overall moderation of the workshop. Moreover, there was a lack of efficient tools to capture the outcomes of deliberations in previous sessions constantly and have them available in electronic form for Session 5. As a consequence, Session 5 did not get a specific list of observational requirements to build on. Nevertheless, a subset of information needs could be identified. To some extent, countries were able to highlight areas that needed response. It was found important that there is a focus on enabling countries to identify how they will undertake their monitoring, which is their responsibility and they need to define what can work in their own contexts. Engagement with country representatives prior to the workshop would have allowed for a more in-depth matchmaking to take place at the workshop. It would have been helpful to have concrete partnerships identified from the groups where actors responsible for monitoring indicated what or with whom they would like to pursue further discussions.

13 Session 6: Improving availability of Earth observations in service of SDG implementation in Caribbean Small Island States

Co-Chairs: Dr. Douglas Cripe and Dr. Hans-Peter Plag

The experience of Session 5 provided a basis to discuss options for improving the service Earth observations and derived products can provide to the execution of the 2030 Agenda. The main questions addressed were how regional an international organizations can collaborate to ensure that governments and the people have access to the required ocean-related Earth observations along with the capacity to utilize these observations for the creation of the needed knowledge. Concerning the local action, the implementation of the geospace for SDGs was at the center of the deliberations. Demonstrating the relevance of Earth-observation derived information for this geospace was identified as the candidate for a demonstration project to be presented to the GEO Plenary in Fall 2018.

14 Workshop Recommendations

14.1 Follow-on Workshops and Participatory Modeling Events

It is recommended that

- in follow-on workshops and participatory modeling events a similar broad and well distributed diversity of stakeholders be replicated;
- future participatory modeling events also apply a "goal-based design" and engage external experienced facilitators to ensure the inter-linkages between different parts of the event;
- for future workshops experienced but non-expert moderation be utilized for plenary sessions, panels and group discussions;
- the time that is allotted to deliberations in table discussion rounds and breakout sessions be increased so that the participants have more time to develop concrete and practical suggestions that would guide where technical, financial and human resources would be deployed in the future.

14.2 Geospace for SDGs

It is recommended that

- national and international stakeholders engage in the further development of the geospace concept and support the implementation of a first such geospace in Saint Vincent and the Grenadines as a joint state-based and grass-roots effort;
- a follow-on participatory modeling event be organized to further detail the geospace concept, information needs, and practical approaches. A core principle for the geospace is the creating of consciousness of SDGs in the population through integrated information supporting actions. Working out specific examples of how Earth observation data can support implementation of SDGs at Goal or Target levels and inform policies would be beneficial.

14.3 Follow-on Activities

It is recommended that

- a pilot project be set up that tailors information products related to sargassum and oil spill monitoring and forecasting to the specific needs of the Caribbean SIDS and improves accessibility and usability of these products;
- a workshop be considered that brings together stakeholders in lionfish to discuss improved monitoring, options for population control and the development of potential economic activities utilizing lionfish as a food resource;
- a workshop be organized to design and develop a knowledge platform on land, water, and ocean governance and the linkage with poverty and livelihood sustenance;

- a template be developed for a “Country Status Report” considering the specific challenges of SIDS and to ask the governments of the Caribbean SIDS to prepare these reports for further analysis to improve the science, earth observation and knowledge support they need to achieve the SDGs in their country;
- the synergies among SDGs be further explored via evidence-based examples (positive and negative);
- relevant partner join in an effort of developing a feedback tool for knowledge-sharing concerning implementation efforts and solutions as a means to support capacity building;
- best practices be established of how GEO Members are reporting against the SDGs (which ministries, what process, how tier elevation works) and how the GEO community can support SIDS in meeting the reporting requirements that depend on utilizing Earth observations;
- those issues be identified where immediate Earth-observation support is needed in the SIDS, including issues such as maritime security;
- a strategic plan be developed for an increased engagement of the Caribbean scientific community in the implementation and monitoring of the SDGs.