

**Caribbean Geospatial Development Initiative (CARIGEO)
Program Proposal - DRAFT**

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Executive Summary

CARIGEO is a collaborative effort spearheaded by the Regional Committee of the United Nations Committee of Experts on Global Geospatial Information Management for the Americas (UN-GGIM: Americas), the United Nations Economic Commission for Latin America and the Caribbean (UN-ECLAC), the United Nations Group of Experts on Geographical Names (UNGEGN), public agencies of Member States and Territories within the Caribbean, geospatial private sector organizations, academic institutions and civil society representatives, which seeks to empower the countries and territories of this region to advance the greater use and sharing of geospatial and statistical information to support improved decision making for sustainable national and regional development.

This initiative is being built on the gains of the “Project for the Strengthening of Spatial Data Infrastructures” in Member States and Territories of the Association of Caribbean States (Caribbean Project) sponsored by the Government of Mexico with support from the Association of Caribbean States and the University of the West Indies, between 2014 and 2018. The beneficiaries under CARIGEO will be national land and mapping agencies, national geospatial bodies as well as national statistical organizations and will be supported by international and regional partners.

In order to advance the CARIGEO initiative, a Program Steering Committee was established in September 2019 whose main tasks have been the preparation the Terms of Reference for the Initiative and a Program Proposal which provides an overview on the actions to be carried out in the Caribbean region. to strengthen geospatial information management, as a tool to support decision-making, public policies, national development strategies and priorities of action at the regional level.

This Program Proposal is structured into six tracks, each containing activities to be conducted either separately or by means of a project which can include and join activities from different tracks according to the interlinks that may be identified or given the needs of the problem or driver that such specific project will support. These tracks are 1. Assessment of current situation in the Caribbean; 2. Governance and policies; 3. Collaboration and partnerships; 4. Datasets and tools; 5. Capacity development; and 6. Communications.

CARIGEO initiative is seeking to provide geospatial support to regional challenges, drivers and issues in the Caribbean, by addressing topics so relevant as disaster risk management and response, resilience-management, climate change, economic development, the COVID-19 pandemic response, Agenda 2030 implementation, and also national priorities related to development strategies or other major driver at country level. Specific actions or wider projects that may be formulated around these drivers could then include activities from the different tracks given that, for example, in the case of disasters, the geospatial response involves not only data management, but also governance, partnerships, capacity development and communication support.

A program schedule is provided for reference, including the activities included into the different tracks, with a first disaggregation by considering if the activity will need funding provided by a donor, or if it would be possible to conduct in-kind, or under the regular budget of any organization at regional and/or national level. A proposed timeline for the execution of the activities is also provided, understanding that this is flexible at all, depending on the format, stakeholders and agreements under which these activities would be conducted.

Background

CARIGEO is a collaborative effort spearheaded by the Regional Committee of the United Nations Committee of Experts on Global Geospatial Information Management for the Americas (UN-GGIM: Americas), the United Nations Economic Commission for Latin America and the Caribbean (UN-ECLAC), the United Nations Group of Experts on Geographical Names (UNGEGN), public agencies of Member States and Territories within the Caribbean, geospatial private sector organizations, academic institutions and civil society representatives, which seeks to empower the countries and territories of this region to advance the greater use and sharing of geospatial and statistical information to support improved decision making for sustainable national and regional development.

The reality for most countries and territories of the Caribbean region is that their location, limited land space, and economic dependence on international markets leave the region exposed to shocks from economic upheavals, natural disasters and climate change. These shocks threaten the Caribbean's economic stability, social prosperity and environmental sustainability.

The national and regional transformation of the Caribbean countries and territories can be assisted by using evidence-based data analysis and existing and untapped data sources to inform decision making and policies. Geospatial information and location intelligence should provide critical components of national and regional infrastructures and the knowledge economy; a blueprint of what happens where, the means to integrate previously disparate data-including statistical data, and the potential for informed analysis and coordinated response to important local, national and regional issues, and support for monitoring the objectives and indicators of the 2030 Agenda for Sustainable Development.

CARIGEO aims to propel the Caribbean forward and help bridge the geospatial divide. This initiative will build on the gains of the “Project for the Strengthening of Spatial Data Infrastructures” in Member States and Territories of the Association of Caribbean States (Caribbean Project) sponsored by the Government of Mexico with support from the Association of Caribbean States and the University of the West Indies, between 2014 and 2018. At the initial stage of the Caribbean Project, a preliminary diagnosis of Spatial Data Infrastructures (SDI) found most countries lacking in the areas of data sharing agreements and policies, data services, SDI culture, education and training. Through technical cooperation, capacity building workshops and sponsorship of global navigation satellite systems (GNSS) equipment and services, significant progress was made towards SDI implementation at the national and regional levels. Additionally, the Caribbean Project realized the integration and active participation of 17 Caribbean countries and territories in the work of the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) and its regional committee for the Americas UN-GGIM: Americas.

The beneficiaries under CARIGEO will be national land and mapping agencies, national geospatial bodies as well as national statistical organizations and will be supported by international and regional partners. The marine environment is also highly relevant in the Caribbean context – leveraging both marine and land SDIs will be key to the success of this initiative. Examples such as the Arctic Spatial Data Infrastructure (Arctic SDI) and the Caribbean Marine Atlas (<https://www.caribbeanmarineatlas.net/>) will be considered to provide guidance on successful regional collaboration with the maritime sector. The Initiative will also incorporate internationally accepted frameworks, including the General Assembly resolution on a Global

Geodetic Reference Frame (GGRF) for sustainable development, the Integrated Geospatial Information Framework (IGIF), the Global Statistical Geospatial Framework (GSGF), UNGEGN Resolution 1/4 on National Standardization of Geographical Names, and the Strategic Framework on Geospatial Information and Services for Disasters (E/RES/2018/14), to ensure they are fit-for-purpose within the context of the Caribbean's specific conditions.

A CARIGEO Program Steering Committee was established in September of 2019, and it is comprised of the following agencies: National Geographic Institute of Mexico (INEGI), UN-Economic Commission for Latin America and Caribbean (UN-ECLAC), GGIM Americas Secretariat, The University of the West Indies (UWI), Barbados' Lands and Surveys Department, Land Information Council of Jamaica, GeoTechVision and Esri. This Program Steering Committee has prepared the CARIGEO Terms of Reference and this Program Proposal, is calling the participation of national Caribbean government agencies and stakeholders and has supported the development of a Caribbean Geoportal maintained by Esri. The Committee has also established some of the institutional arrangements that will facilitate the establishment of projects under CARIGEO's aegis.

This program proposal provides an overview on the actions to be carried out in the Caribbean region to strengthen geospatial information management, as a tool to support decision-making, public policies, national development strategies and priorities of action at the regional level.

The program proposal identifies a set of principles, formulates six objectives, and describes the proposed actions to fulfill each of them, grouped into work tracks, taking as reference the Integrated Geospatial Information Framework and its strategic pathways. The expected results of the execution of the actions in each of these tracks are also summarized.

Once the actions have been stated, a proposal for a roadmap to schedule their execution over time is delivered, establishing a distinction between those actions that can be directly executed (in-kind) and others that must be conducted as specific projects to be formulated following the formats established by donors and financing sources.

Finally, the document provides a summary of program management, identifying the actors and their corresponding responsibilities.

Guiding Principles

The CARIGEO Initiative has adopted guiding principles that all contributors and participants are expected to adhere to. These principles form the basis for all future efforts amongst participants in the Initiative. Participants are expected to: (i) collaborate and coordinate their activities at all levels; (ii) adopt and adhere to geospatial standards relevant to the needs of the Caribbean; (iii) ensure that there is accountability and a clear understanding of ownership with respect to all geospatial data produced through this initiative; (iv) ensure transparency in the provision of information on processes used in developing geospatial data; (v) protect the confidentiality of persons and the national security of member states by ensuring that data sets containing sensitive information are not provided without appropriate

approvals; (vi) employ good practice and standards in the delivery of data sets and services; and (vii) adherence to the law, regulations and administrative practices relevant to member states and territories. A more detail description of the guiding principles is provided in Appendix 1.

Objectives

The overall objectives of the CARIGEO Initiative are as follows:

- Identify the current situation of geospatial information management in the countries of the Caribbean as baseline to focalize the support to be provided through specific projects.
- Strengthen the governance and policy basis for geospatial information management in the countries of the Caribbean as means to provide strategic support, organizational structure and systematized roadmaps at the national level.
- Develop collaboration and partnerships to facilitate greater use of location information and implement product and services tailored to meet user's needs and improve decision making.
- Facilitate the availability of the datasets, platforms and data integration processes to satisfy national needs and to best leverage alternative data sources such as Earth Observation.
- Strengthen skills and capacities on geospatial information management in the Caribbean countries to best support decision making and public policies, facing development objectives and regional issues.
- Raise awareness and advocacy for stakeholders on the importance of geospatial information management for sustainable national development

Scope of work

The following scope of works is proposed to achieve the objectives of the CARIGEO Initiative:

Track 1: Assessment of Current Situation in the Caribbean

An assessment of the current situation of Caribbean countries with respect to the progress made in implementing the Integrated Geospatial Information Framework is the first step in developing any strategy to support their efforts. The following are the major activities expected to be completed as part of this component:

(i) Secure preliminary agreements from countries to participate in the CARIGEO Project

Participation in the CARIGEO requires preliminary agreement from country representatives to participate in the project. This may involve responding to request for information, setting up working groups, identifying training needs and personnel to be trained and other activities. It is envisaged that based on input from country representatives, partnership agreements would be prepared and signed off on for each country that has indicated an interest to participate in CARIGEO.

(ii) Secure a list of representatives from each participating country

Although a preliminary list of representatives has been compiled as part of the CARIGEO Initiative, a more comprehensive list may need to be developed to facilitate wider participation in the diverse issues to be addressed through the project.

(iii) Develop a strategy to assess the current situation in the Caribbean

The strategy may involve workshops and/or questionnaires. Country representatives may require guidance and support in assessing the current national situation in geographic information management. Because of the diversity political, legal, cultural, and economic situations of the countries expected to participate in CARIGEO, the situation analysis assessment needs to be designed to capture such information that more nuanced strategies may be developed. The assessment strategy will need to be tested before full roll out.

The topics to be assessed are those proposed in the Implementation Guide of the Integrated Geospatial Information Framework Implementation. A draft of template (which can be adapted) to orient the country response is available- The national assessment survey would consider:

- Policy and Legal baseline
- Financial baseline
- Data Inventory
- Standards baseline
- Knowledge-Skills-Resource matrix
- Capacity scanning matrix

(iv) Assess the present situation on GIM including challenges and priority areas for each participating country

Using the strategy developed above, work with country representatives to assess the situation in each country and develop a plan of action.

Track 2: Governance and Policies

This track considers going through several working lines aiming to achieve the objective of strengthening geospatial information management governance and policies in the countries of the region. The following are the major activities expected to be completed as part of this component:

(I) Support the elaboration of national geospatial strategies

It is envisioned to support the elaboration of a foundational document on a national strategy for geospatial information management, aligned with the national development strategy, following the guidance of the IGIF Implementation Guide in SP1.

(ii) Support the elaboration of country level action plans

This activity would be conducted by the countries by following the structure of the IGIF and its nine strategic pathways. This action plan should be consistent with the national strategy and also be based in an exhaustive diagnosis on the current situation of the country regarding IGIF Strategic Pathways.

(iii) Support in establishing a monitoring and evaluation framework

This activity aims to follow up the achievements in fulfilling the national geospatial information management strategies based on existing national good practices and also following the IGIF guidelines.

(iv) Assist the improvement of national geographical names issues

This activity will be focused on standardization principles, policy procedures and bodies, initiating by developing a communication strategy and then work with national representatives to establish National Geographical Names Standardization Committee (NGNSC).

(v) Support establishing a regional strategy for geospatial information management

The regional strategy to be developed has as objective to better connect data to decision making. In this line, the foundational milestone would be the establishment of a regional committee on Geospatial Information Management with a mandate to work with participating countries. This, in consultation with regional bodies such as CARICOM, CDEMA, OECS and ACS.

(vi) Support the countries in providing a policy basis to data sharing

This working line is to support the countries in providing a legal and policy basis at national level, based on gap analysis exercises and following the guidance given by the Compendium on Licensing developed by the UN-GGIM Working Group on Policy and Legal.

Track 3: Collaboration and Partnerships

The CARIGEO Initiative is designed to support the efforts of multiple countries in the Caribbean region. A key component in achieving the objectives of the initiative is the setting up partnerships to facilitate collaboration amongst countries and national organizations within countries. The following activities are proposed in addition to the preliminary activities completed in the situational analysis component. This component places focus on national organizations and stakeholders relevant to these organizations. Achieving the activities proposed here is contingent on the existence of functioning National Geospatial Coordinating Committees (NGCC) and associated policies in each participating country.

(I) Identify key stakeholders in various sectors

The NGCC in each participating country needs to identify the key stakeholders in each of the major sectors that are to be engaged in the CARIGEO Initiative. A list of organizations in each country and representatives for each should be developed and shared with the CARIGEO team.

(ii) Develop strategy to assess needs of stakeholders

Based on the results of the situational analysis conducted in track 1, the NGCC in each country will work with stakeholder organizations to assess their specific needs in order of priority. Needs should be classified according to IGIF guidelines where possible.

(iii) Develop strategy to deliver products and services to participating agencies

The NGCCs, in collaboration with the CARIGEO Steering Committee, will develop country specific strategies to support participating agencies in delivering products and services based on the compiled priority list of needs.

(iv) Establish general cooperation agreements with stakeholder organizations participating in the CARIGEO Initiative

Each National Geospatial Coordinating Committee should prepare and enter into general cooperation agreements with all organizations participating in the Initiative. These agreements are different from the agreements between the CARIGEO Initiative and participating countries. These would be specific to NGCC and their national organizations. This would allow within country coordination and collaboration.

(vi) Monitor and evaluate status of implementation of all cooperating agreements

The NGCCs, in collaboration with the CARIGEO team, develop mechanisms to monitor and evaluate the status of agreements. The results from these are for each participating country to use to better coordinate their internal efforts since other agreements between participating countries and the CARIGEO Initiative already exist and will have separate monitoring and evaluation.

(vii) Identify funding sources and develop proposals to secure funding to support participation

Support should be provided to NGCCs to develop proposals to secure funding for allow national representatives to participate in regional and international events relevant to their country's specific needs.

Track 4: Datasets and Tools

This track aims to promote the creation of datasets and the development of tools that can support countries to improve decision making and public policies. Recent advances in GIS, remote sensing, Artificial Intelligence, Machine Learning and ICT make possible the creation of datasets and applications much more rapidly and cost effectively than it was possible 5 or 10 years ago. With the appropriate training, knowledge transfer and guidance to be provided by CARIGEO, the Caribbean agencies should be able to stand up and maintain a regionally integrated system of location-based applications for the common good of the region.

The following activities are an integral part of this Track:

(i) Support the development of inventories of geospatial data and information

As part of this activity, participating agencies will conduct inventories of geospatial data and information held by national and regional organizations (using questionnaires adapted from IGIF SP4), will execute a data gap analysis to identify desired future datasets and define actionable strategies, and will review and adapt the IGIF Global Fundamental Geospatial Data Themes to the needs of the region.

(ii) Support the preparation and implementation of roadmaps for creating and/or maintaining fundamental regional geospatial datasets

Based on the output of the previous action, a Caribbean Data Management Plan will be established and will incorporate national and regional roadmaps for creating and/or maintaining fundamental geospatial datasets. The Plan will offer guidance and best practices for creating data sharing policies and the generation of geostatistical data. Some parts of the Plan will be implemented via projects, such as the implementation of one regional fundamental geospatial dataset, the development of metadata templates for the fundamental CARIGEO data themes, support to participating agencies in the generation of metadata records, and the design and implementation of cloud data hosting mechanism (for data backup or for activation during national disasters).

(iii) Formulate and implement mechanisms for discovering, accessing, maintaining, and using geospatial data

In order to facilitate discovering, accessing, maintaining and using fundamental datasets, sustainable mechanisms like Web-based GIS services, tools and applications need to be implemented. This will include the development of a regional portal and templates for national portals; the creation of a regional data catalog; the development of focused applications such as monitoring dashboards, story maps and analytical tools; and the establishment of services and data governance guidelines for CARIGEO that can be adapted to the needs of participating agencies.

(iv) Support the implementation of national geostatistical frameworks

Other relevant working line within this track is the implementation of national geostatistical frameworks, which means a collaborative work between the national statistics agencies and the organization in charge of geospatial information management, following global guidelines coming from UN-GGIM; the adoption of the Global Statistical Geospatial Framework; and the establishment of partnerships with CARICOM Statistics to support a regional statistical framework.

(v) Evaluate options for the use of Earth observation data in the region

Finally, CARIGEO will help evaluating and recommending options on the use of Earth observation data (including satellite data) to meet regional needs in the areas of resource management, ecosystem management, disaster preparedness and other relevant applications.

This track aims strengthening skills and developing capacities on geospatial information management in the Caribbean countries to best support decision making and public policies facing development objectives and regional issues. The following are the major activities expected to be completed as part of this track:

(i) Support a capacity building strategy

This working line is to design, evaluate and implement strategies to build human and technological capacity needed to develop and maintain fundamental and other datasets. This implies working with countries representatives to understand the national capacity situation, review the existing programs and materials available and conduct an inventory of knowledge, skills and resources with recommendations and suggested implementation plan, leverage any available training resources web-portal in the region and establishing a Caribbean community of practice.

(ii) Transfer knowledge to maintain technological platforms

This activity aims to transfer the knowledge needed to design, operate, enhance and maintain regional and national technological platforms to be implemented, by securing funds to, and designing/delivering training courses. It is also planned to work with the UNGGIM Academic Network to utilize the Online Training Platform proposed to serve as a clearinghouse for available Geospatial Training courses for the region.

(iii) Implement a knowledge base

The purpose is to implement a co-design/co-development approach to the development of a fit-for-purpose knowledge base, while ensuring ownership and uptake of decision-making at the national level.

Track 6: Communications

The following activities are an integral part of this Track:

(i) Design and create communication and engagement strategies

This activity is focused on raising awareness and advocacy for stakeholders on the importance of geospatial information management for sustainable national development, targeted to government, community, academic sectors and also at individual level.

(ii) Conduct communication activities

Among specific actions, it is considered to organize and deliver seminars for policy makers and managers; set up a series of TV and radio or podcasts interviews for national representatives; or develop student competition series to engage formal education programs, among others. Additionally, a plan to work with international and regional partners to host virtual summits and conferences will be developed.

(iii) Design and implement online tools

Within this track it is also relevant to keep all the partners in the Caribbean abreast of enhancements on ICT and geospatial technology that benefit the development of the region. In order to do this, it is envisioned to support the design and implementation of online tools for the dissemination of ICT and geospatial technology updates, for example, by employing blogs, emails, newsletters, webinars, etc.

Expected results

Assessment track

- Agreements from Caribbean countries to participate in CARIGEO
- An extended list of representatives from participating countries
- An assessment strategy for GIM for the Caribbean
- A situational analysis report on GIM as well as areas of priority and challenges

Governance and policies track

- Efficient planning and coordination of the government geospatial information resources
- Strengthened leadership, institutional mandates and political buy-in
- A cooperative data sharing environment
- A shared understanding of the value of integrated geospatial information management.

Collaboration and partnerships track

- Effective cooperation across disciplines and sectors, private sector and academia, communities and stakeholders, levels of governments, regional and international cooperation.
- Strategic and synergistic endeavors, and trusted partnerships that recognize common needs, aspirations, goals and national priorities.
- Enhancing the efficiency of development efforts through the exploitation of complementary advantages of those involved in a partnership

Datasets and tools track

- Understanding of the data holdings available at the national and regional levels
- Open access to fundamental regional datasets to facilitate policy and decision making
- Access to data via platforms and applications open to CARIGEO stakeholders and the public
- Existence of national geostatistical frameworks that follow global guidelines coming from UN-GGIM
- Broad implementation of mechanisms and applications for leveraging earth observation data
- A critical mass of national and regional data to support national development and innovation

Capacity development track

- Broad geospatial awareness and capabilities at all levels through effective capacity development and education programs.
- Increased adoption and application of geospatial information, technologies and processes by government, organizations, communities, and individuals.
- Creativity and innovative solutions to address real-world challenges, economic opportunities and growth, and wellbeing of society.

Communications track

- Stakeholders and users are actively engaged in the process of strengthening integrated geospatial information management.
- Awareness and understanding about geospatial information within all levels of government and across all industry sectors.
- Increase in the use of geospatial information within government, the private sector and the broader community.
- The community has a strong sense of trust in government provided geospatial information and the confidence to use it.

Program Schedule

The table below provides an overview of the envisioned CARIGEO activities described in this document, with estimated timelines and the type of funding required. Detailed project schedules will be defined once external funding is available. The proposal of timeline below is only for reference and flexible at all, depending on the format, stakeholders and agreements under which activities would be conducted.

Tracks	Main Activities	Funding type	Timeline (years)				
			1	2	3	4	5
Track 1: Assessment of Situation	Secure agreements from countries to participate in the CARIGEO Project.	In-kind	*				
	Secure a list of representatives from each participating country.	In-kind	*				
	Develop a strategy to assess the current situation on GIM.	Funding is needed	*				
	Assess the present situation on GIM. Components: Policy and Legal Financial Data Inventory Standards baseline Knowledge-Skills-Resource matrix Capacity scanning matrix	In-kind	*				
Track 2: Governance and Policy	Supporting the establishment of the governing board, geospatial coordination units, and governance model.	In-kind		*	*		

	Support countries to establish their data governance frameworks.	Funding needed	is		*	*		
	Support the elaboration of a document on a national strategy for geospatial information management.	Funding needed	is	*	*			
	Supporting the elaboration of national action plan for geospatial information management.	Funding needed	is	*	*			
	Establishing a monitoring and evaluation framework of geospatial information management.	Funding needed	is	*	*			
	Creating national geographical names standardization principles, policy procedures and bodies.	Funding needed	is		*			
	Establishing a regional strategy to better connect data to decision making.	Funding needed	is		*			
	Support the countries in providing a policy basis to national data sharing.	Funding needed	is	*				
Track 3: Collaboration and Partnerships	Delivering products and services that are tailored to meet user needs at the regional, national and local levels.	Funding needed	is					
	Establish cooperation agreements with stakeholders.	In-kind		*	*			
	Support the participation of UN GGIM Caribbean Member States to the annual sessions of UN-GGIM and UN-GGIM: Americas.	Funding needed	is	*	*	*	*	*
	Support participation in regional geospatial conferences and forums (e.g URISA Caribbean Conference, Regional Geospatial Workshops)	Funding needed	is	*	*	*		*
Track 4: Data Sets and Tools	Development of national inventories of geospatial data and information.	Funding needed	is	*				
	Implementation of roadmaps for creating and/or maintaining fundamental geospatial datasets	Funding needed	is	*				
	Implementation of Web-based GIS services, tools and applications	In-kind Caribbean Geoportal	for	*	*	*	*	*

		Funding needed for other applications					
	Implementation of national geostatistical frameworks.	Funding is needed	*	*	*	*	
	Evaluating and recommending options on the use of Earth observation data.	Funding is needed	*	*			
Track 5: Capacity development	Design, evaluate and implement strategies to build human and technological capacity needed to develop and maintain fundamental and other datasets.	Funding is needed	*				
	Transfer the knowledge needed to design, operate, enhance, and maintain regional and national technological platforms to be implemented	Funding is needed	*	*			
	Implement a co-design/co-development approach to the development of a fit-for-purpose knowledge base.	Funding is needed	*	*			
Track 6: Communications	Organize and deliver seminars for policy makers and managers.	In-kind	*	*			
	Perform a series of TV and radio or podcasts interviews for national representatives.	Funding is needed		*	*		
	Develop student competition series to engage formal education programs, among others.	Funding is needed	*	*			
	Support the design and implementation of online tools for the dissemination of ICT and geospatial technology updates	Funding is needed		*			
	Developing a plan to work with international and regional partners to host virtual summits and conferences.	Funding is needed	*				

Program Management

The management team for the CARIGEO Program has been drawn from relevant stakeholders from the Caribbean countries and from regional and international organizations. An outline of the main management bodies and their functions is provided below

The **Executive Board** is the governing body of CARIGEO, it reports to UN-GGIM Americas, and it will be comprised by a Chair (President of UN-GGIM: Americas); a Technical Secretary (Representative of Statistics Division of UN-Economic Commission for Latin America and Caribbean, UN-ECLAC); Vocals: representatives of organizations to be defined; and two subject matter experts (one from the statistical and one from the geospatial community)

The **Chair of the Executive Board** will have within his/her functions to represent and direct the CARIGEO Executive Board; convene Executive Board meetings; preside over the meetings of the Executive Board; exercise a casting vote in case of a tied vote in the Executive Board meetings; during the meetings, ensure compliance with any applicable legal provisions, give the right to speak, put issues to vote and announce

decisions; arrange with the relevant regional and international agencies the funding required for the proposed projects under the CARIGEO Initiative.

The **Technical Secretary** will have within his/her functions to report to the President and the Executive Board; prepare the minutes of the meetings and submit them for consideration by the Executive Board; convene meetings; prepare and compile documentation to be forwarded to the CARIGEO stakeholders; maintain updated directories of members of CARIGEO; implement communication actions; organize the documentation of the Executive Board; manage the administrative affairs of the Executive Board; receive and circulate the documentation and communications that are sent by international and regional organizations; attend all meetings of the Executive Board; prepare the agendas and meeting materials for the meetings of the Executive Board; implement actions that may be assigned by the Executive Board in connection with the Project Steering Committee (PSC); keep a record of the progress of implementing CARIGEO; and execute other duties as they may be assigned by the Executive Board

The **Vocals** will have as functions to attend all meetings of the Executive Board; advise, coordinate, and monitor the CARIGEO plans, projects and other related activities; prepare or obtain reports on activities for which they have responsibility and submit them to the Executive Board for consideration; contribute to and support the formation and operations of CARIGEO, and contribute to project work when needed.

The functions and responsibilities of the **Subject Matter Experts** shall be to attend meetings of the Executive Board as applicable; provide technical advice on CARIGEO plans, projects and other related activities; and contribute to project work when needed.

A **Project Steering Committee (PSC)** will be in charge of the design, preparation and management of the different projects developed under CARIGEO. The PSC will work in coordination and collaboration with representatives, committed stakeholders from inside and outside the region and eventually donors where appropriate. The composition of the PSC will be determined on a project by project basis and shall have a basic structure comprised of a project manager, administrative officer and technical specialist.

The representatives serving at the PSC will be approved by and report to the Executive Board. The PSC will identify implementation arrangements and needed resources to implement the projects and ensure proper management of funds, including accounting, financial control and audit procedures. The PSC will assign sub-committees for the project, including finance, administration, public relations, evaluations, technical.

The PSC and various sub-committees will establish statutory meeting times. These will include: meetings of the PSC and all Sub-Committees at the UN-GGIM annual session in New York; monthly statutory remote meetings until project is established, then quarterly of the Sub-committees; technical committee will determine meeting schedules based on project needs.

Monitoring and Evaluation

Monitoring and evaluation are critical components of any successful program. Monitoring is an ongoing process of collecting and analyzing data to check a program's effectiveness and efficiency.

Projects implemented under the CARIGEO initiative will be monitored through project management meetings, interim reports and final reports and list of deliverables.

Periodic surveys as defined within specific project plans will be conducted to ensure activities are on track, milestones are being achieved and deliverables are being produced according to agreed plans.

The monitoring and evaluation processes will be managed by an independent committee of CARIGEO (to include UN-GGIM: Americas, donors and members of academic and private networks).

In the case of CARIGEO, for each project identified for implementation a set of key performance indicators (KPIs) - based on project objectives and activities will be defined. These KPI's will be used to measure and monitor project implementation.

KPIs should include questions such as:

- Was the target group adequately reached?
- Was the program implemented effectively?
- Was the program implemented differently at different locations - and if so why?

Some of the KPIs that will be considered for inclusion in project monitoring are:

- Number and percent of country agencies actively participating in the initiative
- Increase in number of portals across the region
- Increase in number of new institutional arrangements put in place to support data sharing
- Data availability improvements (quantity and quality)
- Increase in number and type of users of data
- Successful completion of milestones as agreed and set out in individual CARIGEO projects
- Engagement in executive and other CARIGEO committees and CARIGEO meetings and events
- Engagement in UN-GGIM as well as UN-GGIM: Americas
- Other measures of the return on investment (ROI) to be defined in project documents

Appendix 1. Guiding Principles

In order to be effective, it is desirable that guiding principles are incorporated in the operating frameworks that govern geospatial information management and understood at all political levels and by all stakeholders. The CARIGEO Initiative has therefore been designed taking into consideration [the Statement of Shared Guiding Principles for Geographical Information Management](#) adopted by the Committee of Experts on UN-GGIM. The key guiding principles under which CARIGEO intends to operate are as follows:

- **Collaboration and coordination:** encourage national, regional and global collaborations fundamental to the facilitation of improvements in the development, management, use and exchange of geospatial information, as well as the integration of statistical data and other information, in order to create new knowledge and supply products and services meeting beneficiary needs.
- **Use of and adherence to geospatial standards:** embrace the development of, adherence to, and use of nationally and internationally recognized geospatial standards and interoperable geo-processing technologies.
- **Ownership and accountability:** facilitate trust amongst geospatial data creators, providers and users, create a clear understanding of geospatial data through the publication of information on ownership and intellectual property rights, access and usage conditions.
- **Transparency:** identify and make available the sources and the processes that are used to create and provide official geospatial data.
- **Respect and confidentiality:** exhibit high levels of responsibility and consideration to stakeholders in the execution of its operations. Particular care is to be exercised to protect the confidentiality of geospatial information that may adversely impact an individual, community and/or Member State. Personal data is to be especially respected and protected.
- **Standards of service:** employ geospatial information management good practices and solutions and pursue excellence in the delivery of geospatial data and services. Appropriate access, fairness and equity are to be accorded to all stakeholders.
- **Adherence to law:** observe laws, regulations and administrative practices of the Member States and territories, as well as national laws and conventions, avoid conflict of interest and make stakeholders aware of those laws and conventions, which govern and are related to operations.