INTEGRATION OF STATISTICAL AND GEOSPATIAL INFORMATION IN CENTRAL AMERICA

A 2019 PAIGH TECHNICAL PROJECT

QUARTERLY REPORT
JULY 30, 2019

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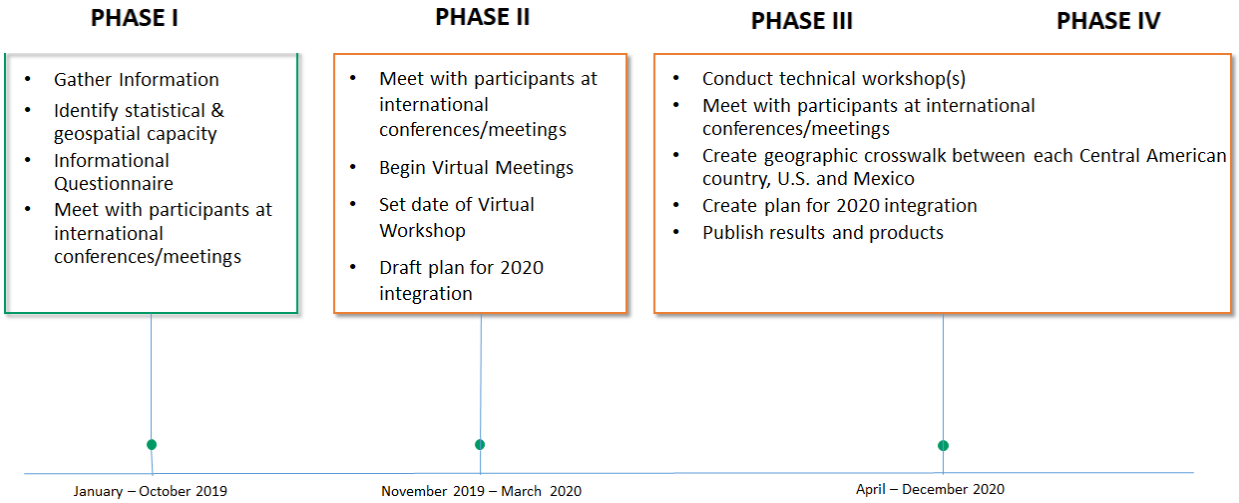
Updated Project Timeline

The timeline that was initially proposed for the project has been modified based on the initial information-gathering phase to help refine the scope for this project.

The revised Phase I and Phase II timeline allows for:

- The development and administration of a questionnaire to help with the information gathering phase of the project and identify potential informational workshop dates
- Time to meet with project participants at international conferences and meetings and relationship building to accomplish this project
- Development of a format to help identify levels of geography for integration
- Development of a plan for integration in 2020
- Begin virtual meetings
- Establish a date and location for a Technical Workshop



The revised Phase III and Phase IV timeline allows for:

- A Technical Workshop(s)
- Continued meetings with project participants at international conferences and meetings and relationship building to accomplish this project
- The documentation of geographies and crosswalk for all participants
- The development of a plan for 2020 integration
- Publishing results and products

Esri International User Conference

At the July 2019 Esri User Conference, the Pan American Institute of Geography and History (PAIGH) and Esri entered into a Memorandum of Understanding. This agreement has allowed PAIGH to successfully secure technical GIS assistance for PAIGH technical projects and their participants to aid in the integration of statistical and geospatial data.

During the conference, a meeting was held to discuss the status of this project and determine future steps. A decision was made to update the geographic crosswalk and hierarchy with fewer levels of geography.

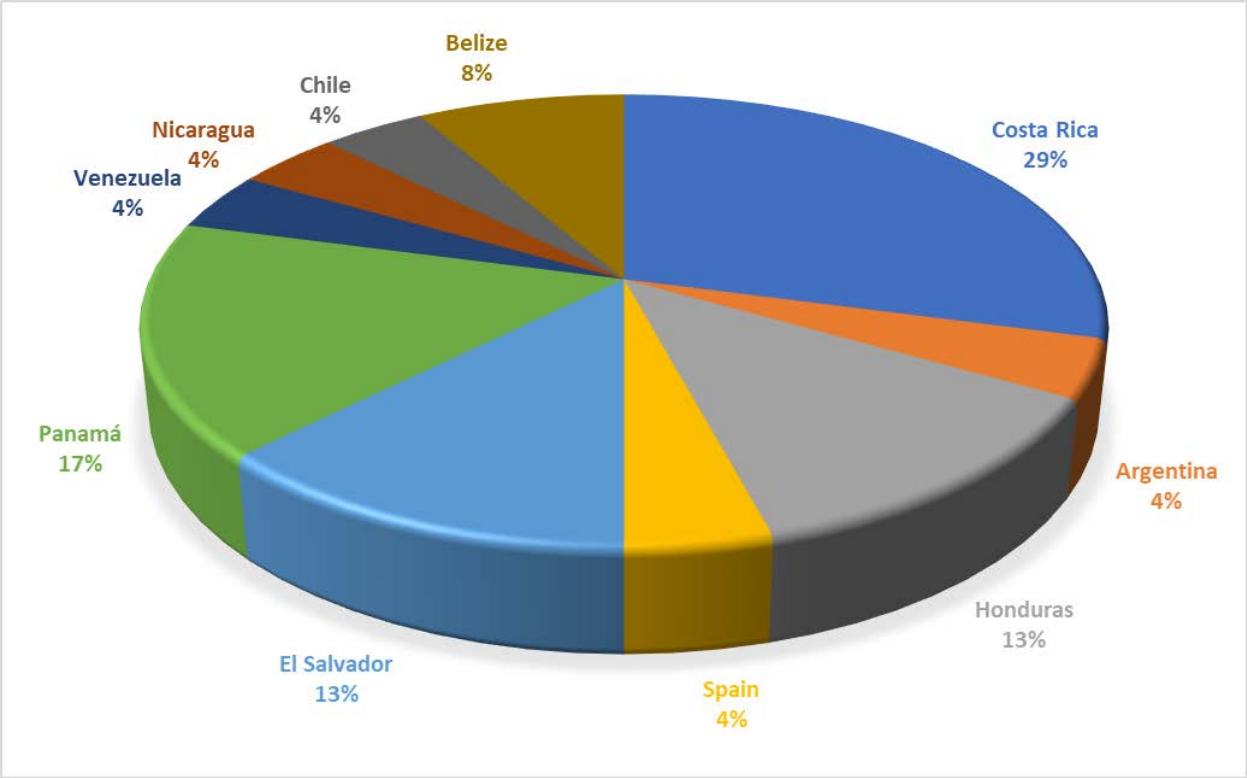
Informational Survey

As part of Phase I of *The Integration of Statistical and Geospatial Information in Central America*, a questionnaire was sent to 51 representatives from statistical, geospatial, and academic organizations from each Central American country as well as collaborating agencies. We received 24 responses including responses from six of the seven Central American countries. The survey served as an excellent way to kick-off the project and engage participants. The results have helped to keep the project moving forward. The following sections include detailed information about the survey questions and responses.

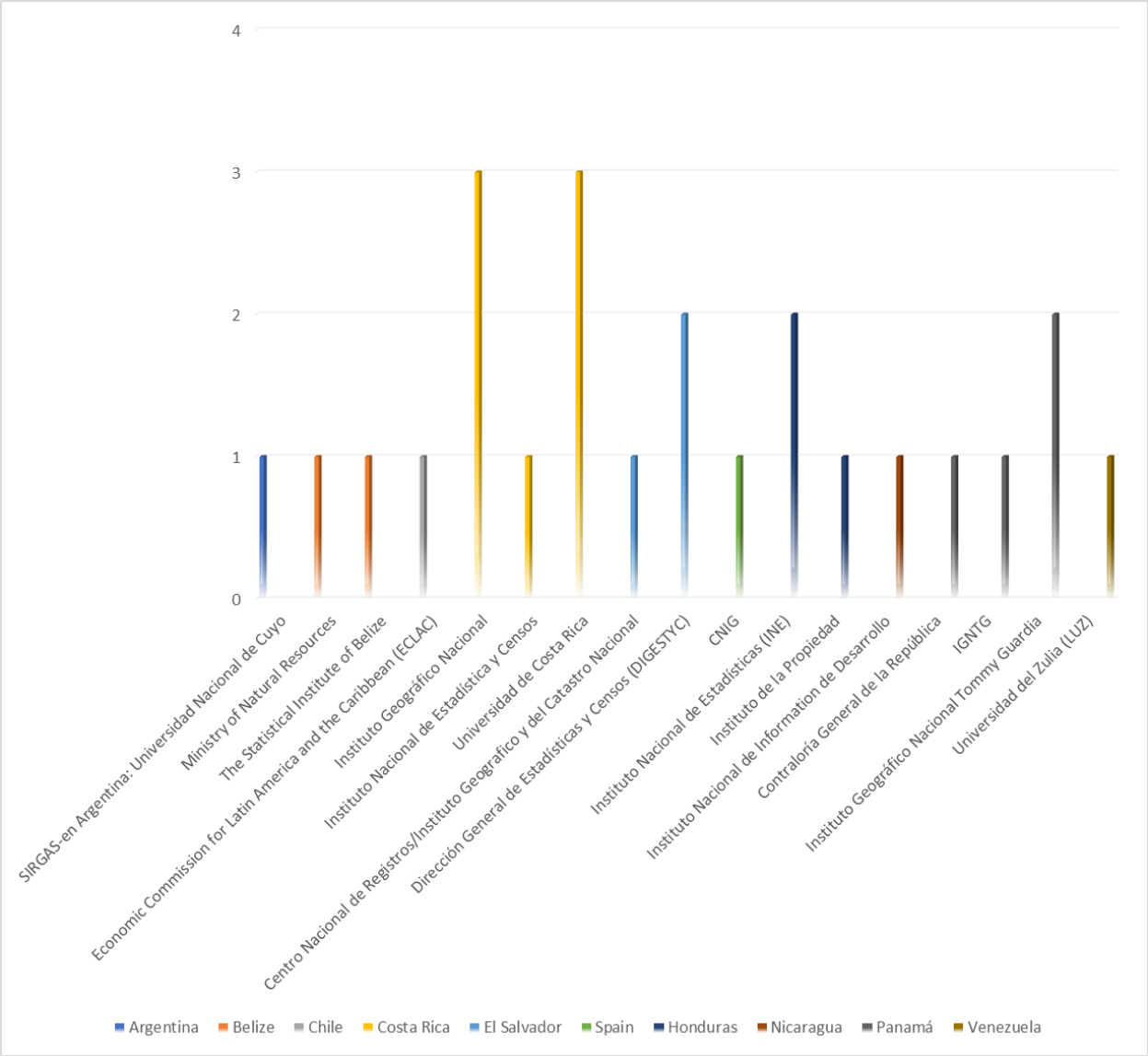
Survey Questions and Responses

The survey consisted of 21 questions. The questionnaire focused on the logistics of planning virtual and/or in-person meetings, agencies' current status of data integration and challenges inhibiting integration, software preferences, and what problem or issue participants would like to see addressed as part of the project. Each question and the summary results are included below.

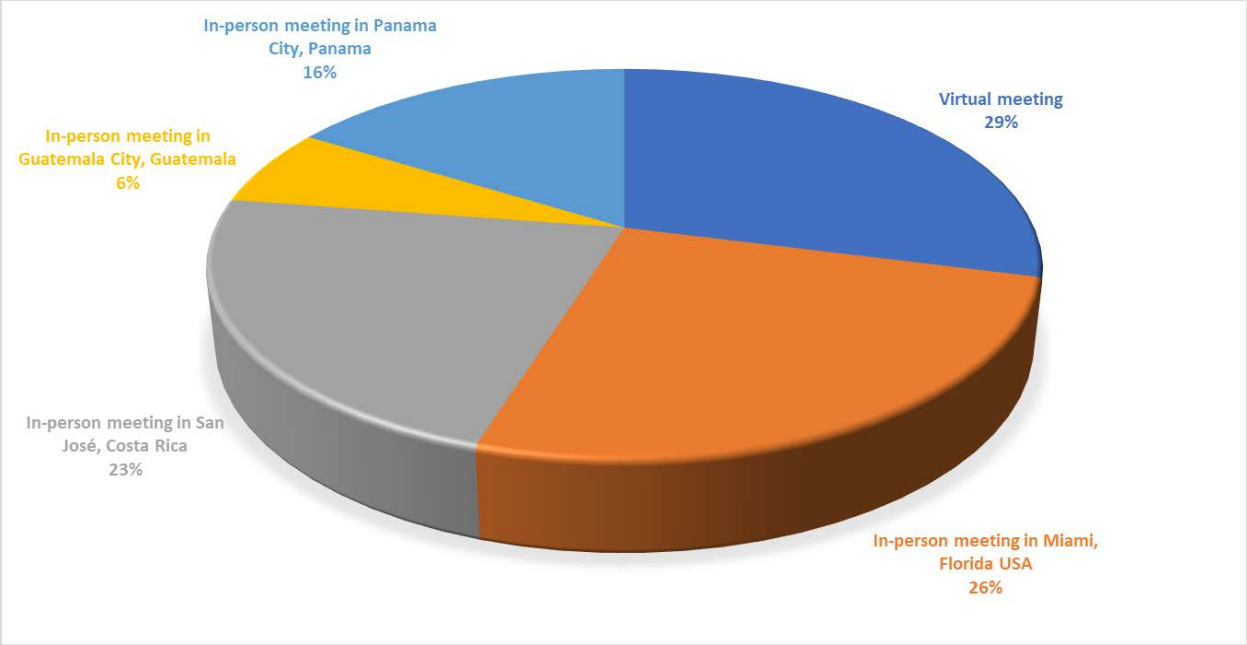
Question 1: Country of Participation



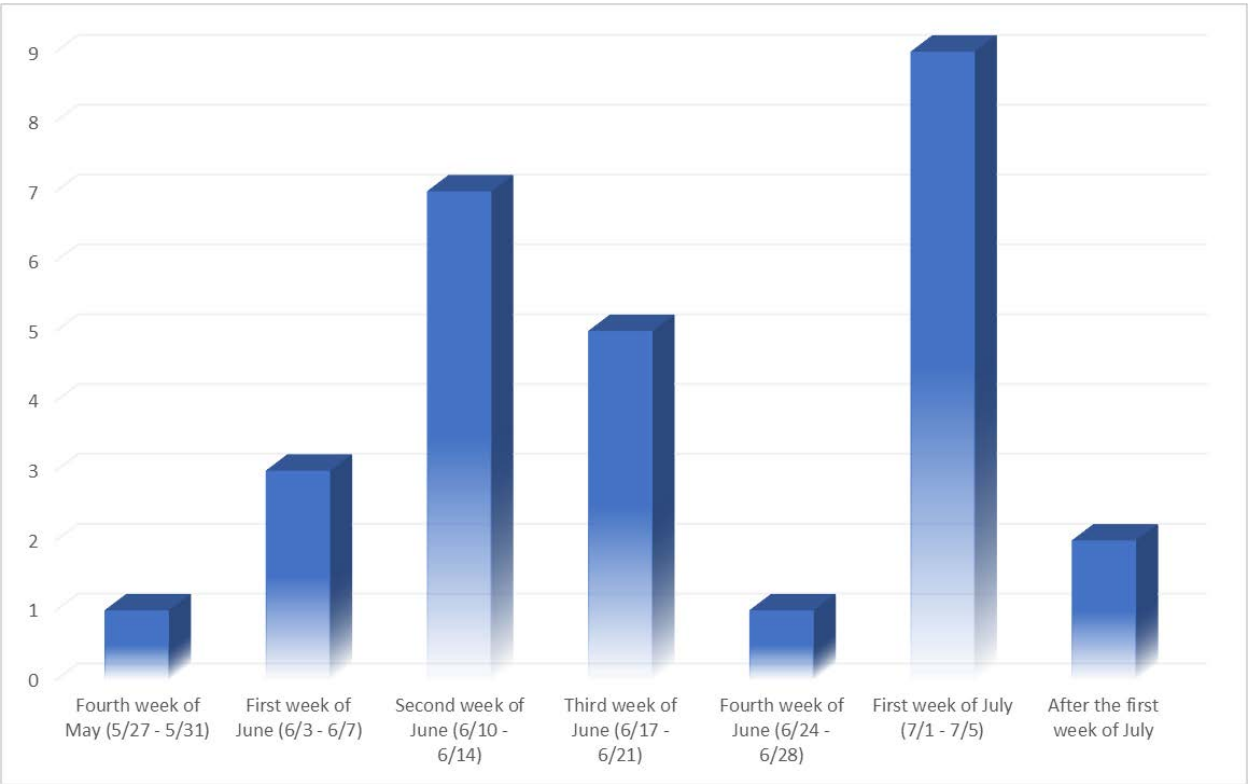
Question 2: Organization of Participation



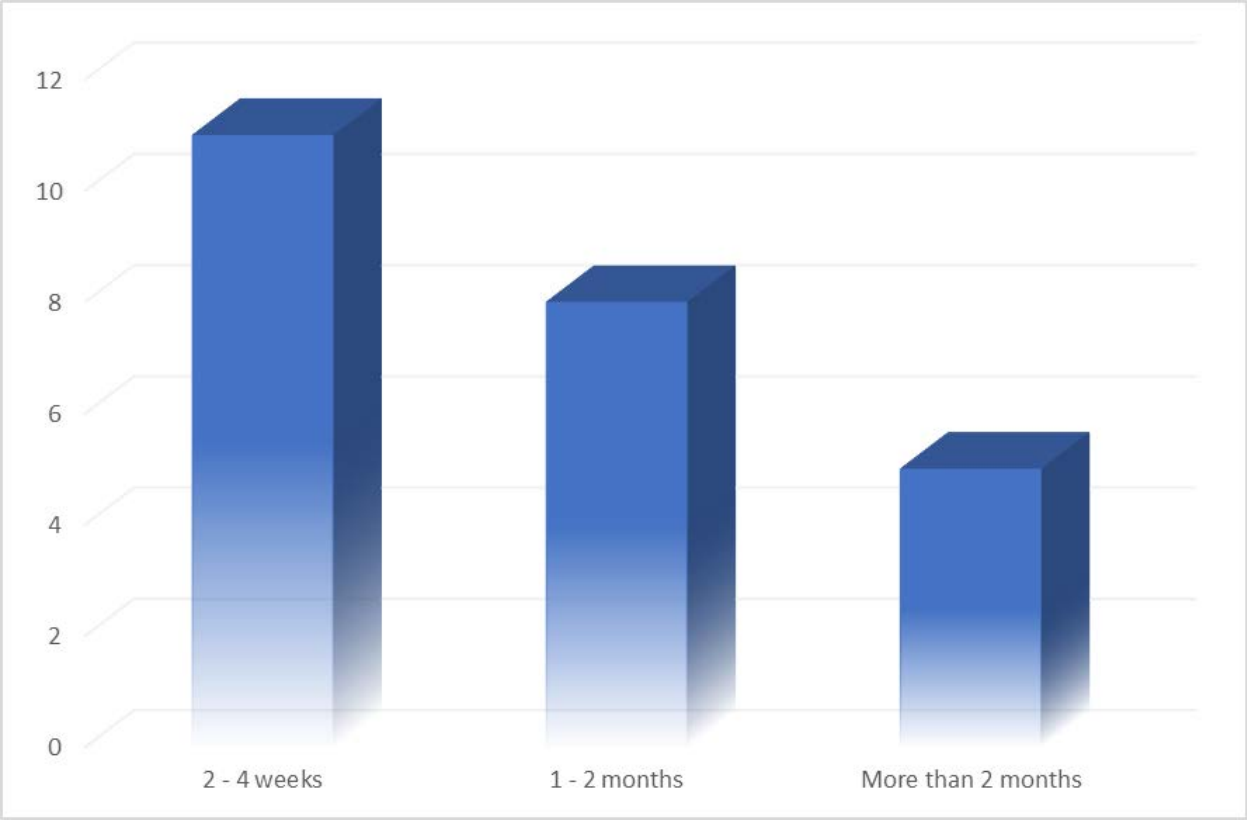
Question 3: We plan to have a kick-off meeting in the near future. Would you prefer this meeting to be virtual or in-person?



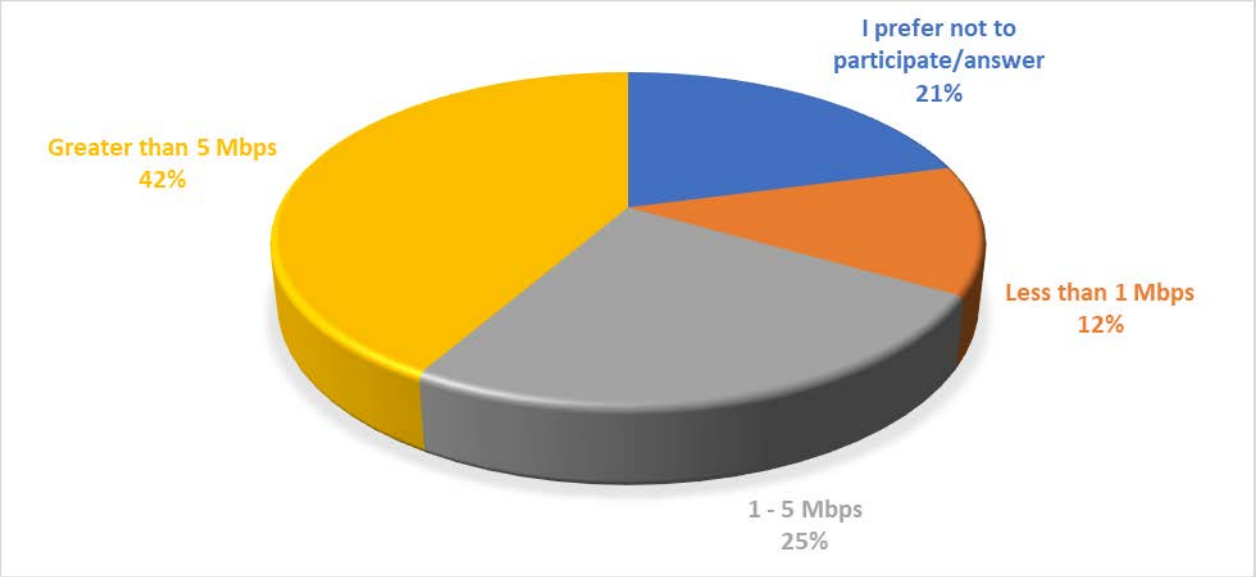
Question 4: What dates would be best for you to attend this kick-off meeting?



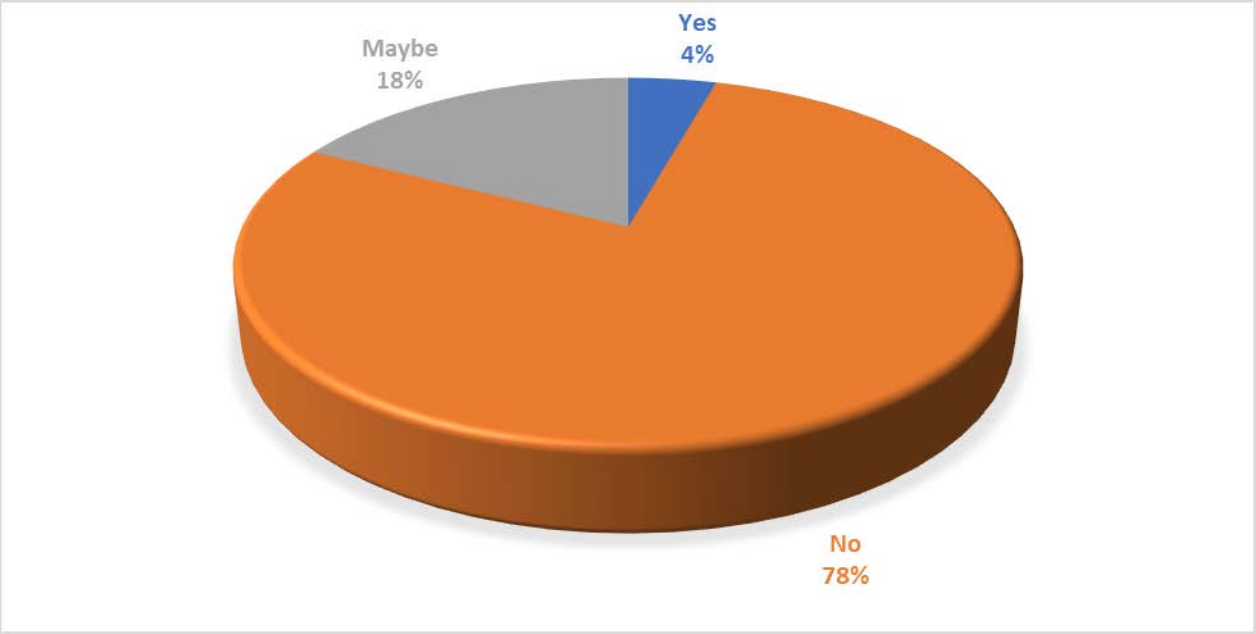
Question 5: How much notice would you require in order to attend an in-person meeting?



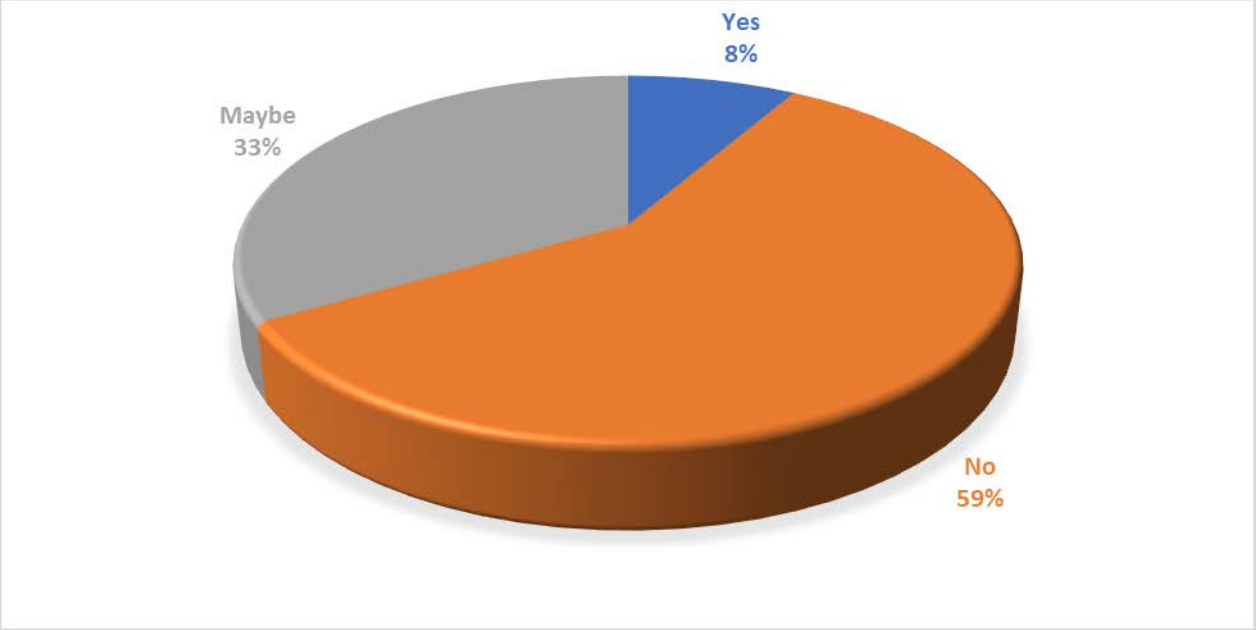
Question 6: Information about Internet speed will assist preparations for virtual meetings. What is the average Internet download speed at your organization?



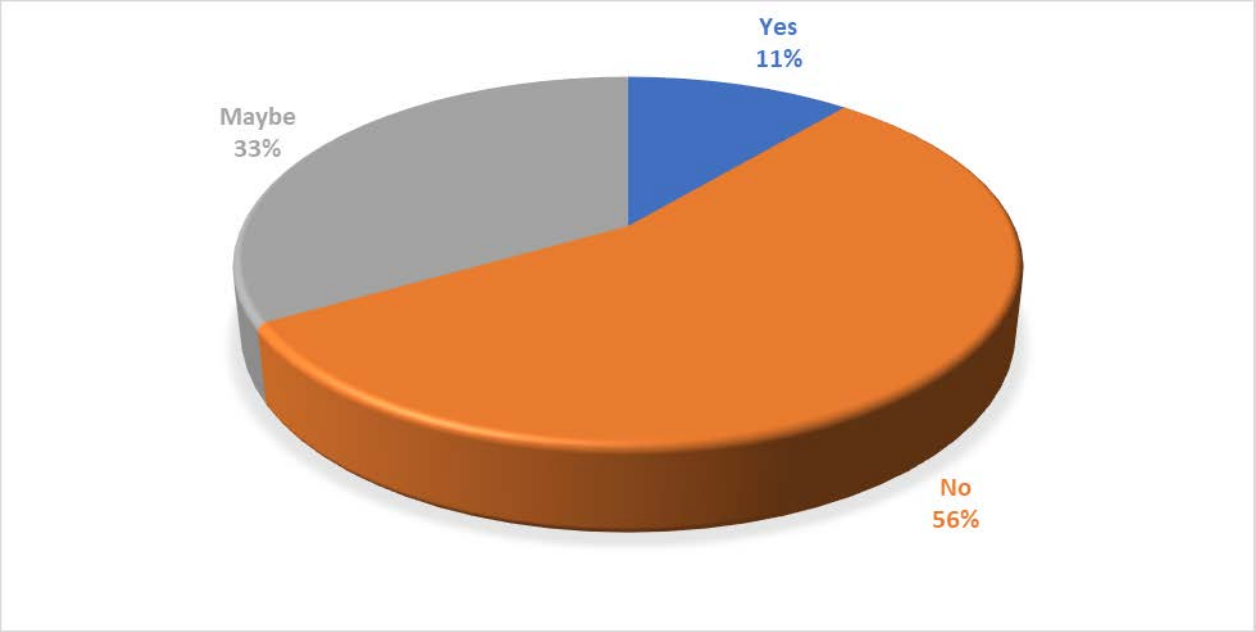
Question 7: Do you plan to attend the ESRI User Conference in San Diego, California July 8-12, 2019?



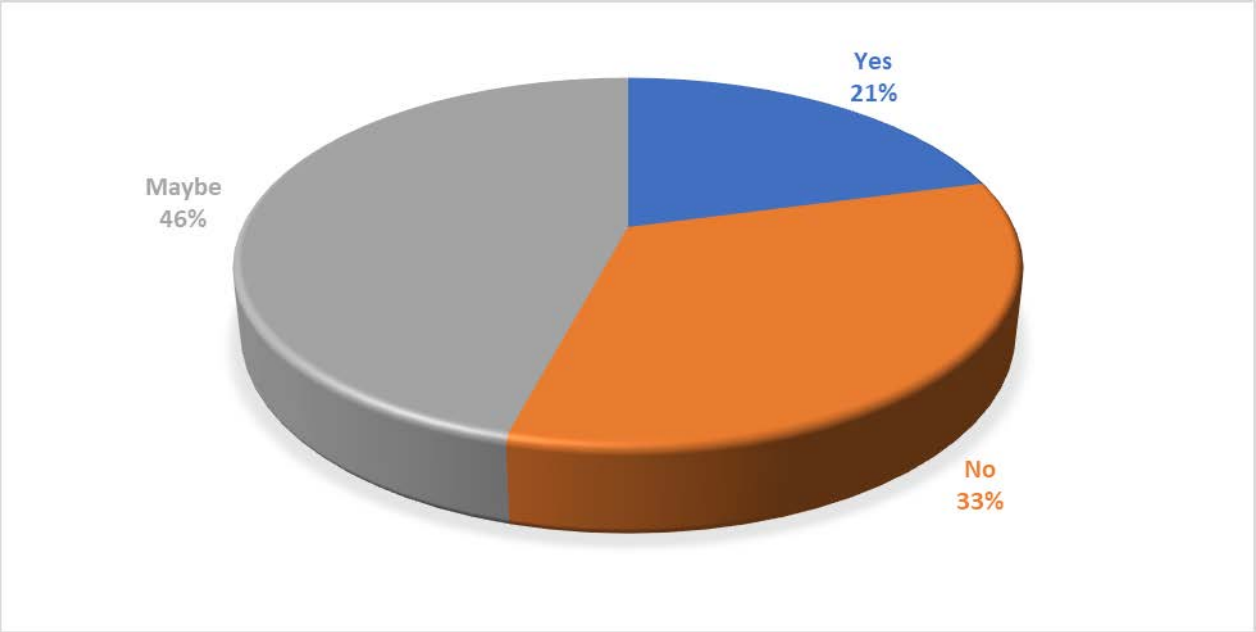
Question 8: Do you plan to attend the Ninth Session of UN-GGIM at UN Headquarters in New York August 7-9, 2019?



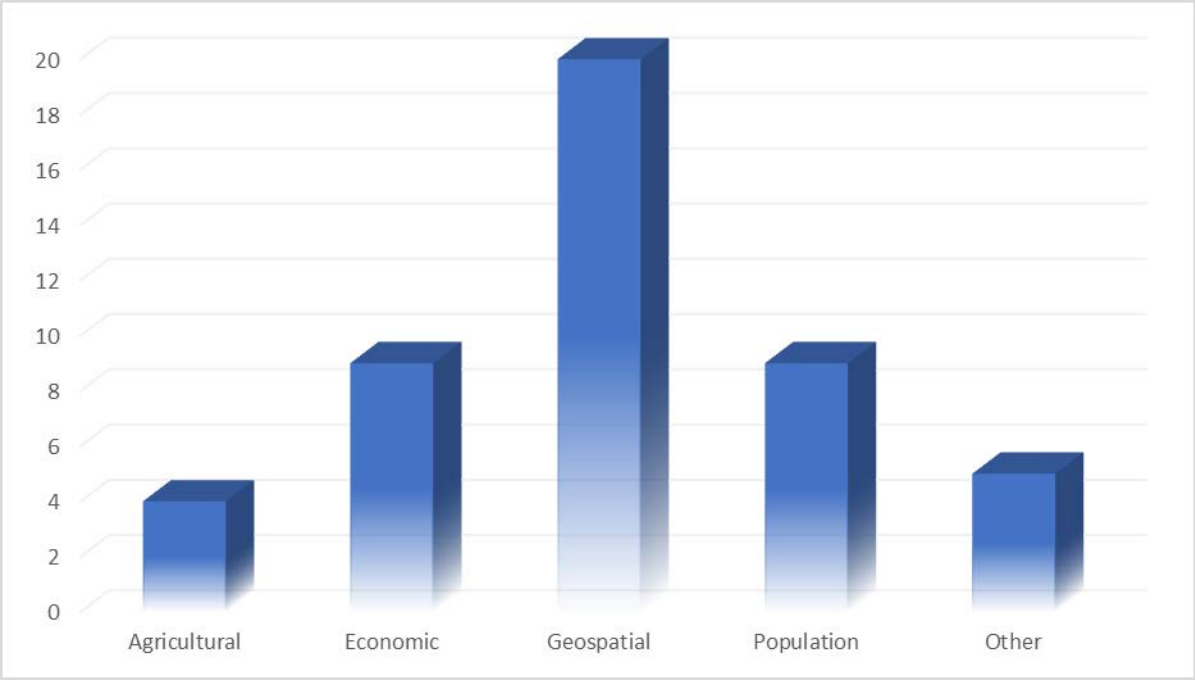
Question 9: Do you plan to attend the Fourth PAIGH Technical Meeting of the Commissions in Santo Domingo, Dominican Republic July 8-10, 2019?



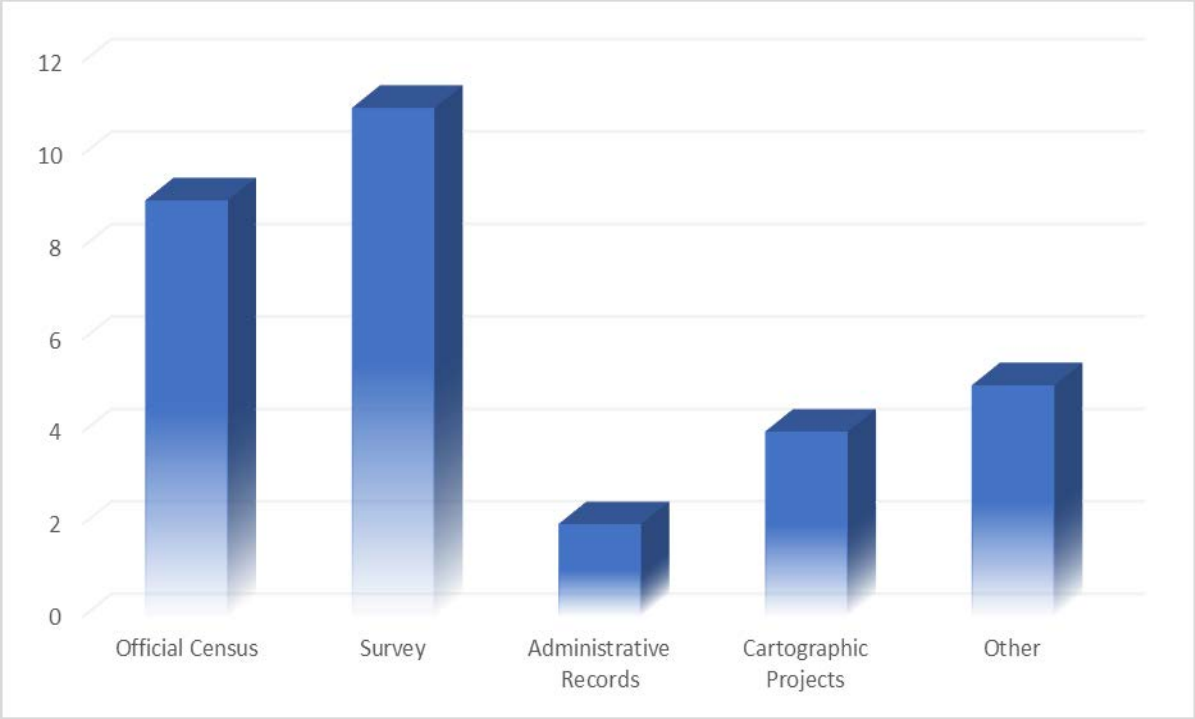
Question 10: Do you plan to attend the Latin America Geospatial Forum and Sixth Session of UN-GGIM: Americas in Mexico City, Mexico October 9-11?



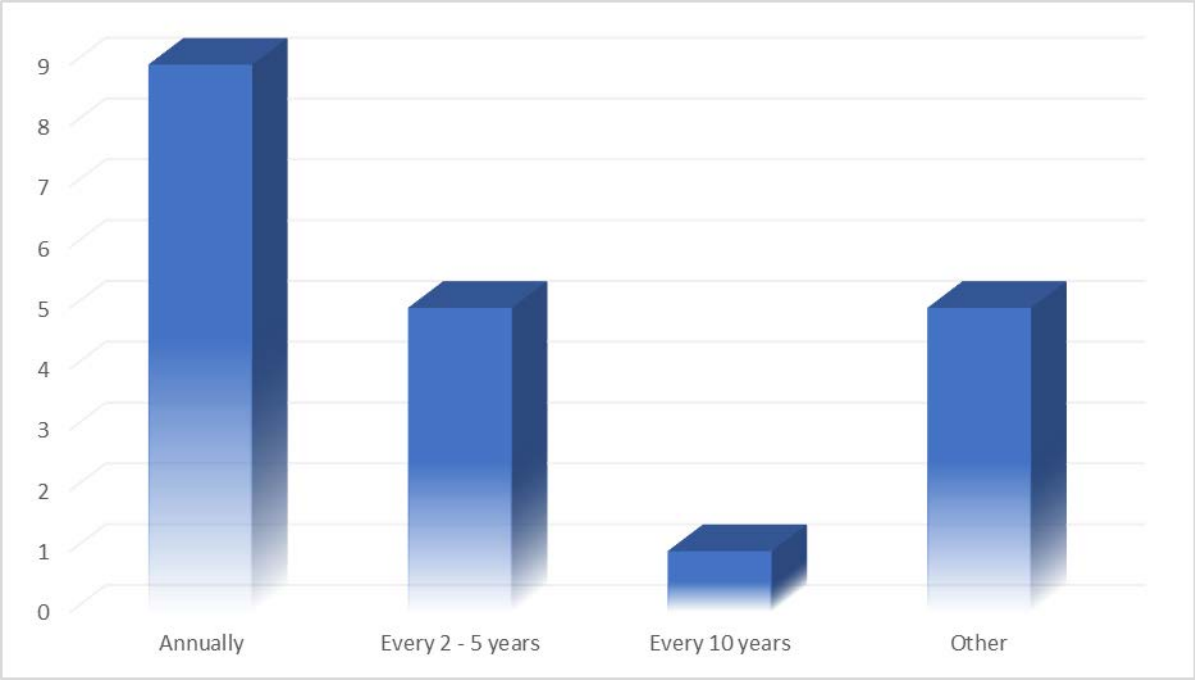
Question 11: What types of data does your organization currently collect?



Question 12: How are the data collected?



Question 13: How often are the data collected?



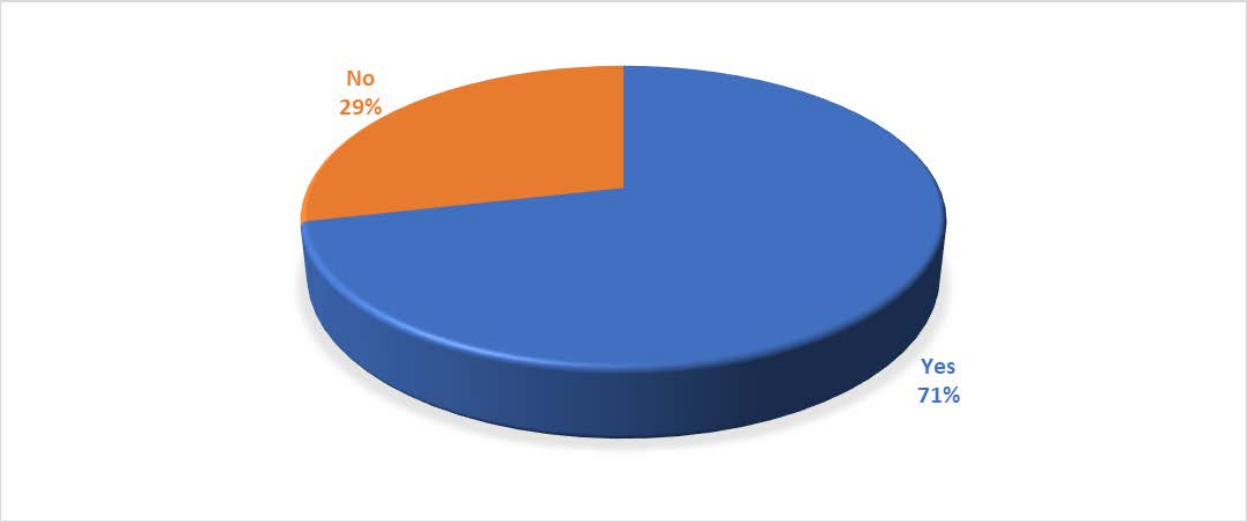
Question 14: What mandates does your organization have for data collection?

Official body of statistical information
Mainly those that are part of the land of the university, as well as the Geomorphology at national level
Property Law and its Regulation
Governmental guidelines and obligations in the national cartographic policy and the ordering of the territory
Those requested by national entities, such as the SNIT
The Catastro Law
Comply with the technical regulations established for geospatial data to ensure the quality, reliability and accuracy of them
Organic Law of Statistics
Cabinet Decree No. 1969, Law No. 59 of 2010
Lay No. 59 of July 4, 1944 and Law No. 8905 of December 10, 2010
By law of political costing
By law, we are responsible for collecting and publishing national statistics
The Economic Commission for Latin America and the Caribbean (ECLAC), in the area of statistics, aims to promote the generation and use of internationally comparable, timely and relevant statistical information for the formulation, monitoring and evaluation of economic, social and environmental development policies in the region. based on three lines of action: a) the promotion of best practices and the dissemination of internationally comparable methodologies, b) advice and technical cooperation aimed at strengthening the technical and institutional capacities of the countries in the field of statistics and facilitating the exchange of experiences and horizontal cooperation, and c) carrying out methodological development activities (proposal and adaptation of indicators)
Population / Housing every 10 years. Labor Force Survey bi-annually. National Accounts Quarterly

Question 15: When it comes to making data available to the public, what restrictions does your organization have in place?

Depends on the scale of the same, the greater the disaggregation, there is a restriction
At the moment, there are no data so sensitive that they can not be published
Recognition of authorship of the data
Policies for its use and consultation
Open policy on some issues, closed on issues or sensitive coverage as resources or basic services
Usually there is none
The ones established by law
The restrictions provided in the law
The fundamental data are freely accessible in our information platform
Law of statistical secrecy, Law of Access to Public Information. Others by institutional strategy
The Organic Law of Statistics, The Law of Access to Public Information and Institutional Regulations
The data have been classified according to whether they are for sale and those that are free of charge
There is no restriction for fundamental data
Norms of use
We do not provide geospatial data at the level of census segments
ECLAC has developed various information systems related to the economic and social development of the Latin American and Caribbean region. These systems are available to governments and institutions in the region through a direct request to the divisions responsible for them
Public can access any data but the individual has to sign a confidentiality agreement. Access given on premise only and strictly for general research purposes and can not use the data to identify any person or business. Freely available data is in the form of aggregated reports

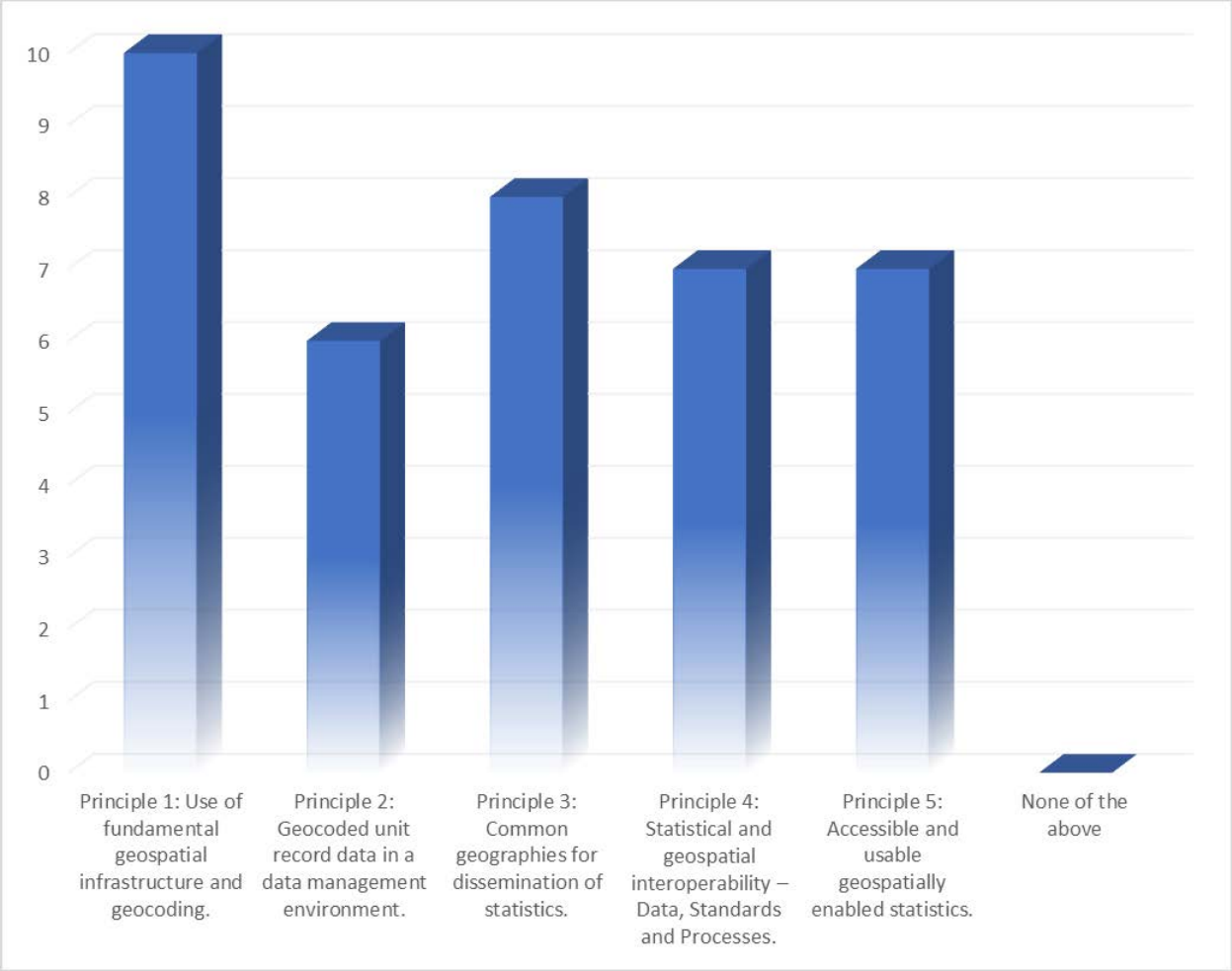
Question 16: Is your organization currently integrating geospatial and statistical data?



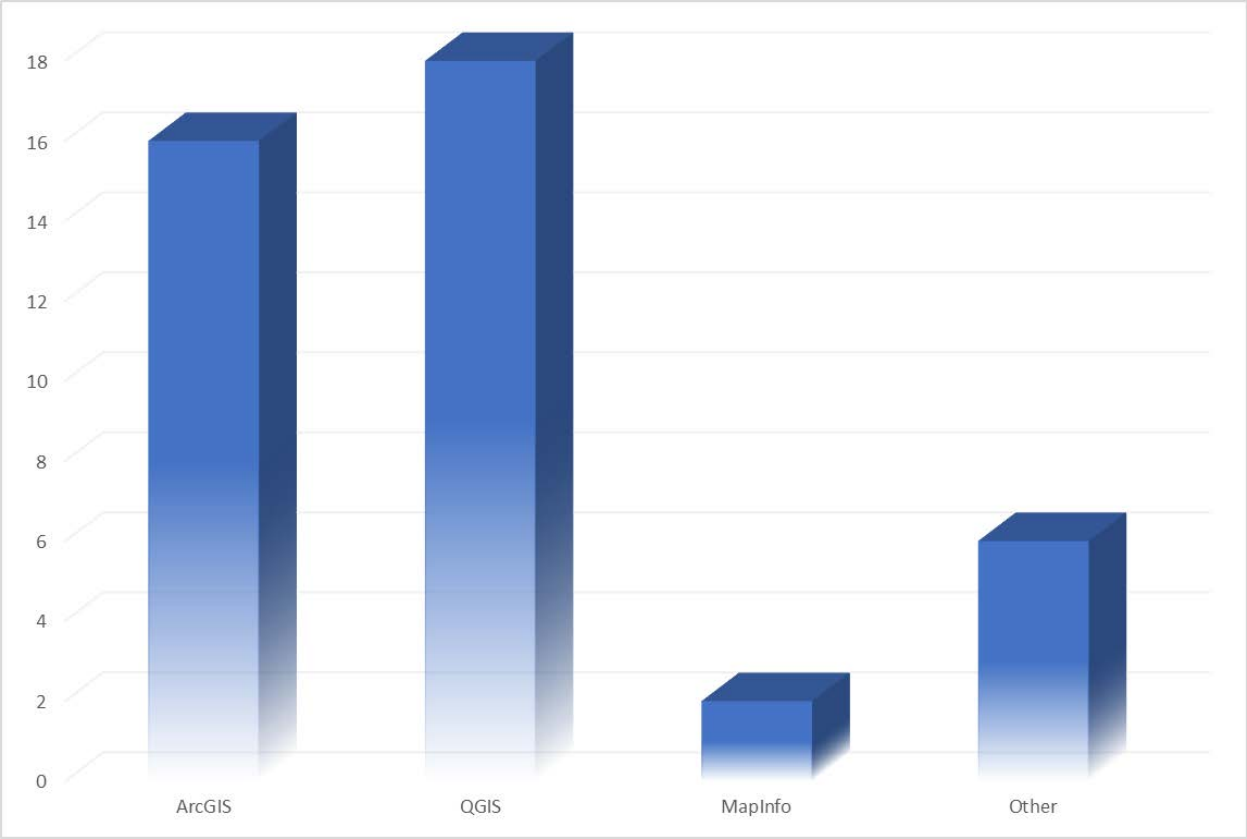
Question 17: In what ways is your organization currently integrating geospatial and statistical data? What tools or software are used in the integration process?

MapInfo and Qgis software is used to integrate geospatial and statistical data
For the integration process QGIS is used mainly with the pysal library and a bit of R
QGIS, GEONODE, ARCGIS, OTHERS
ORACLE with the feature space, Bentley, QGIS
Integration of national data based on an official national scale and database derived from the IGNm in data such as rivers, road network, coastal resource management and environmental media. Connectivity in integration in the MIAC (integrated map of Central America) at a scale of 1: 200,000 and 1: 250,000
GIS software
ArcGIS
GEOESPACIAL, THE ArcGIS, IN DATABASES, REDATAM
Department of Spatial Data: SQL server 2005 integrating ESRI Technologies for spatial DB
ArGIS 9.1 and QGIS 2.18, Under the SQL Server 2005 Database Manager
ArcGIS
The National Atlas is an example of integration the cartographic base is of the National Geographic Institute Tommy Guardia and the National Institute of Census and Statistics until now the presented maps are elaborated in ArcGis
ARC MAP 10.3 AND OWN APPLICATION FOR CAPTURE WITH DMC
Geomedia Professional
A first (and large) effort is currently underway to collect a building footprint for all buildings in the country. This effort is primarily for the Census 2020, where the data collected will be linked to its geographical component for analysis. Combination of open source, in-house build apps, and commercial software (ESRI) are being used

Question 18: What principles of the Global Statistical and Geospatial Framework (GSGF) does your organization adhere to?



Question 19: What GIS software does your organization use?



Question 21: The ultimate goal of this project is to analyze and display integrated geospatial and statistical data to inform decision making regarding an issue faced by the countries of Central America. What is one problem/issue that your organization would like to see addressed as part of this project?

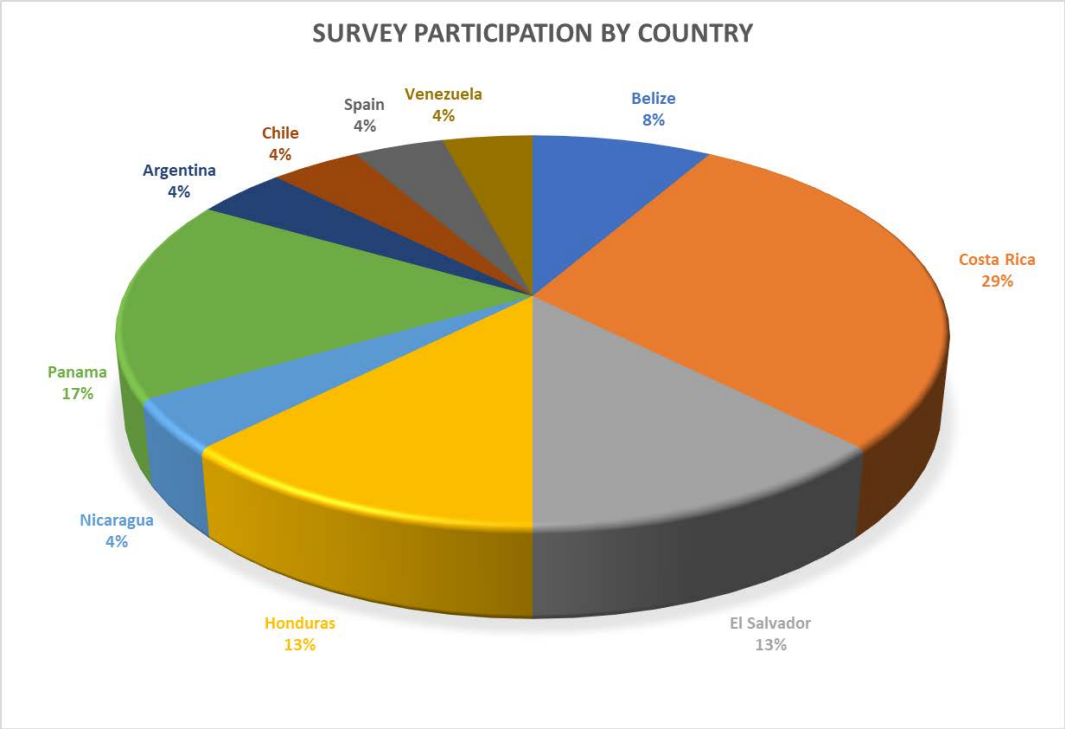
Analysis and Viewer
That there is an agile web viewer and with data analysis tools
Improvement in the processes of data analysis, sharing knowledge, experiences
Base Map
Base cartography for official Central America
Elaboration of the SHP at national level in several levels with an acceptable precision
THE POWER TO ESTABLISH MORE PRECISE AND STANDARDIZED GEOGRAPHICAL LAYERS FOR ALL GOVERNMENT ENTITIES
DEVELOP A DYNAMIC DEMOGRAPHIC ATLAS
Management of binational basins, connectivity in transport infrastructure, management of international natural resources, official limits
Standards and Data Sharing
The integration of maps and statistical data using open OGC standards and publishing open data according to opendefinition.org
The most clear law and internal regulations to share the information
Local networks of spatial data distribution
Standardization and standardization of databases (statistics and geographies) between countries
Obtaining the statistical data, because we do not have access to them, is the main problem. And the institution in charge does not respond to the call
Technical regulations and institutional agreements
The issue of data sharing. We currently see a need for sharing of geospatial information for decision making, we have experience situations where organizations have geospatial and statistical data at their disposal, however the access and sharing of information has shown to be challenging. Probably a protocol or data sharing standards can be addressed as part of this project
Metadata
Training
TRAINING IN DEVELOPMENT OF APPLICATION OF DATA CAPTURE WITH DMC AND DEFINITION OF GEOSPATIAL DATA INFRASTRUCTURE
Trainings, Standardize the types of Data worked in Databases and Legal Frameworks to share information
How to do the Interoperability of Geospatial and Statistical Systems
Access to recent Satellite imagery. Technical training for remote sensing and analysis on geo data in a DB

Other
The lack of continuity in a person responsible for the technical aspects
If you want to complement geospatial information with statistical information, you should include the National Institute of Statistics and Census of Costa Rica in the project, since they handle the subject of statistics in the country. The National Geographic Institute does not handle the statistical data in Costa Rica
Other support to the spatial data area
The need for these data to be integrated, because at the moment they are separate entities
I would like to include statistical topics regarding Education
Updating and maintenance of geodetic reference frames and consistent unification to SIRGAS

Summary of Survey

Participation

We received 24 responses including representatives from six of the seven Central American countries (Guatemala has yet to participate).



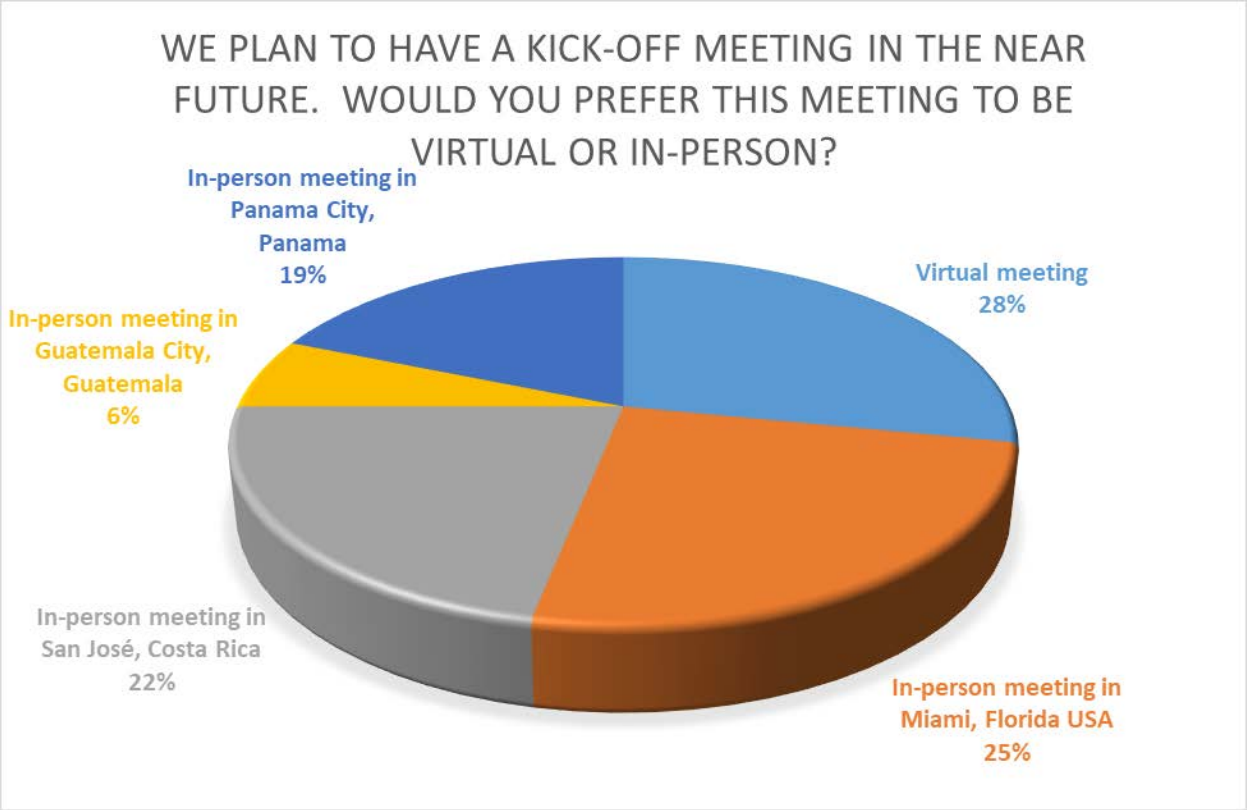
24 Participants:

Alfred Cal	Belize	Ministry of Natural Resources
Mark Noble	Belize	The Statistical Institute of Belize
Eduardo Sancho Hernández	Costa Rica	Instituto Geográfico Nacional
Max A. Lobo Herandez	Costa Rica	Instituto Geográfico Nacional
Leonardo Salazar Martínez	Costa Rica	Instituto Geográfico Nacional-Registro Nacional
Douglas Güell Vargas	Costa Rica	Instituto Nacional de Estadística y Censos
Melvin Lizano Araya	Costa Rica	Universidad de Costa Rica
Ramón Masís Campos	Costa Rica	Universidad de Costa Rica
Jonnathan Reyes Chaves	Costa Rica	Universidad de Costa Rica
Sonia Ivett Sanchez	El Salvador	Centro Nacional de Registros/Instituto Geografico y del Catastro Nacional
Cristofer Maruc Muñoz Aguilar	El Salvador	Direccion General de Estadistica y Censos (DIGESTYC) *
Francisco Javier Zepeda Peña	El Salvador	Direccion General de Estadistica y Censos (DIGESTYC) *
Victor Manuel Baquedano Caceres	Honduras	INE
Gerardo Hernan Torres Delgado	Honduras	INE

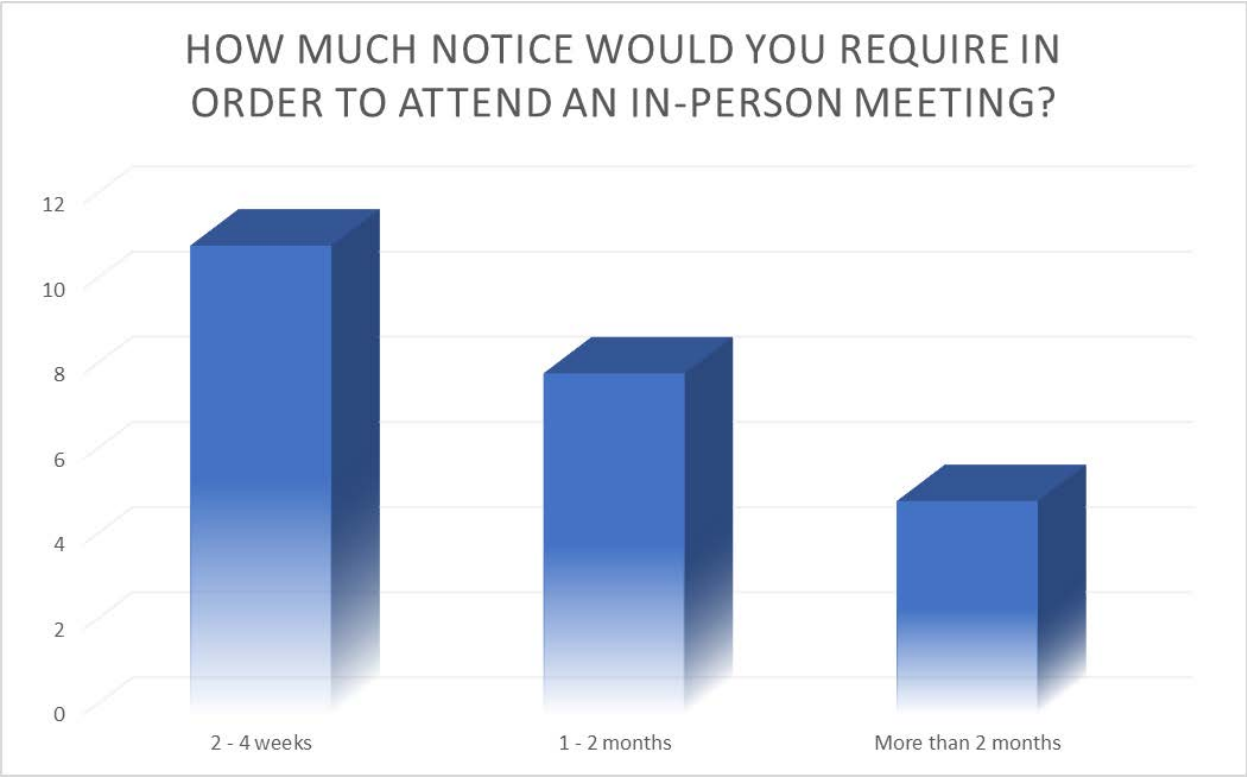
Yidda Handal	Honduras	Instituto de la Propiedad
Carlos Rojas Chavez	Nicaragua	Instituto Nacional de Informacion de Desarrollo
Gilberto Sánchez	Panama	Contraloría General de la República
Elizabeth Sámuels Cornejo	Panama	Instituto Geográfico Nacional "Tommy Guardia"
Elisenia Mendoza	Panama	IGNTG
Isis Tejada	Panama	Instituto Geográfico Nacional Tommy Guardia
Maria Virginia Mackern	Argentina	SIRGAS-en Argentina: Universidad Nacional de Cuyo
Alvaro Monett	Chile	Economic Commission for Latin America and the Caribbean ECLAC
Antonio F. Rodríguez	Spain	CNIG
Victor Cioce	Venezuela	Universidad del Zulia (LUZ) *

Logistics

Many questions on the survey focused on obtaining information to aid in planning meetings and moving the project forward. Conducting a virtual meeting was the most popular response. However, three respondents indicated Internet speeds that may not support teleconferencing.



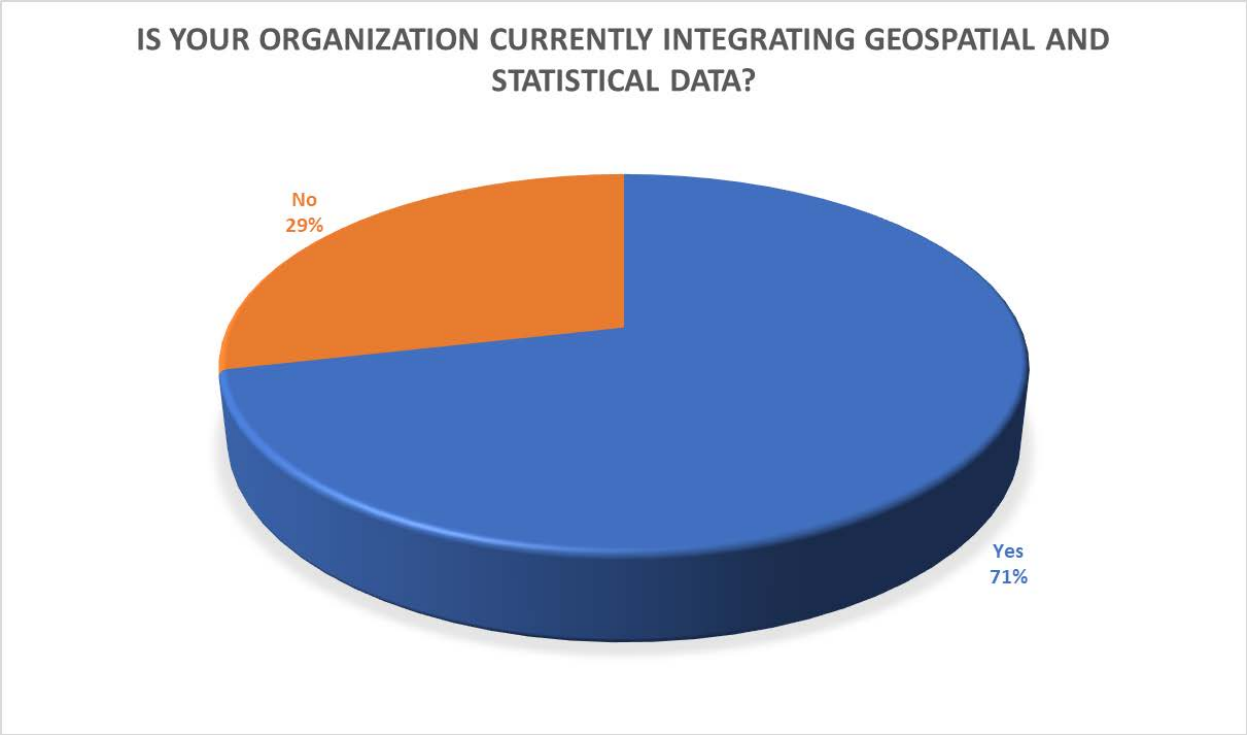
Based on the survey results, it seems that 2 months' notice should be given for any in-person meetings.

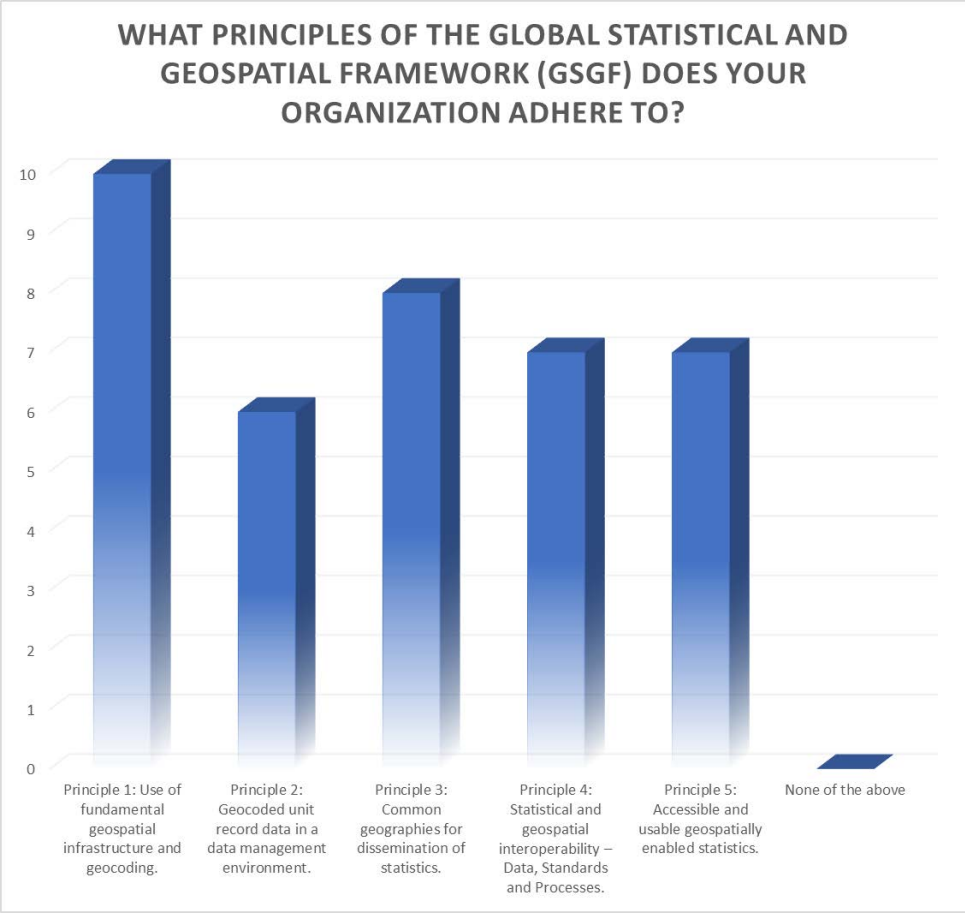


We asked participants about their plans to attend five conferences—the ESRI UC, the Ninth Session of UN-GGIM, the Fourth PAIGH Technical Meeting of the Commissions, the Latin America Geospatial Forum and Sixth Session of UN-GGIM: Americas, and URISA's Caribbean GIS Conference. While none of the conferences have significant planned attendance, 7 participants including 6 representing 5 of the Central American countries will be attending one of the conferences. The UN-GGIM: Americas meeting in Mexico City in October is the most popular. We used this information to plan a workshop for the UN-GGIM: Americas meeting.

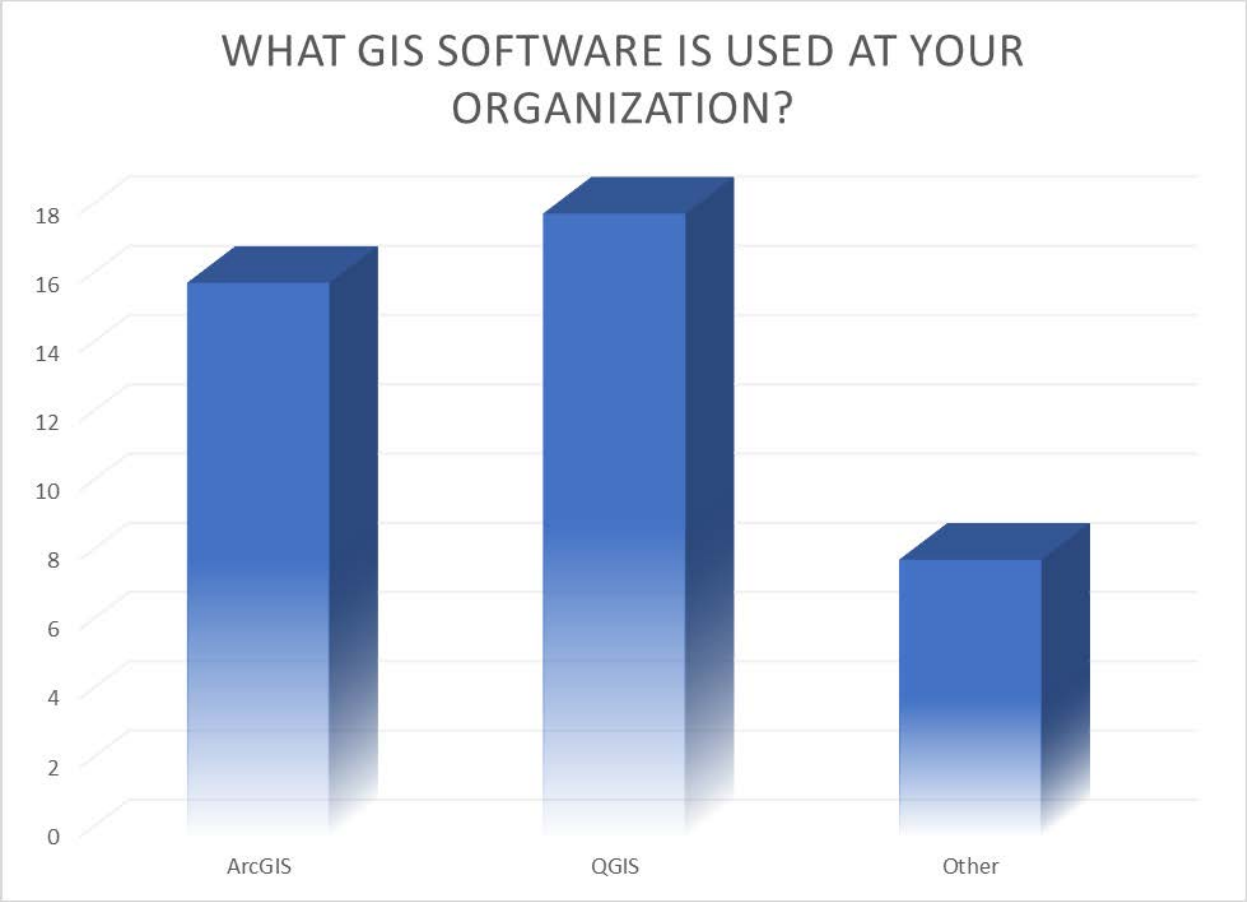
Current Status of Data Integration

The results show that a majority of organizations are currently integrating geospatial and statistical data and at least one participant from each of the six Central American countries represented in these results responded positively. There does not appear to be any correlation between those that responded negatively and country.


IS YOUR ORGANIZATION CURRENTLY INTEGRATING GEOSPATIAL AND STATISTICAL DATA?
No
29%
Yes
71%

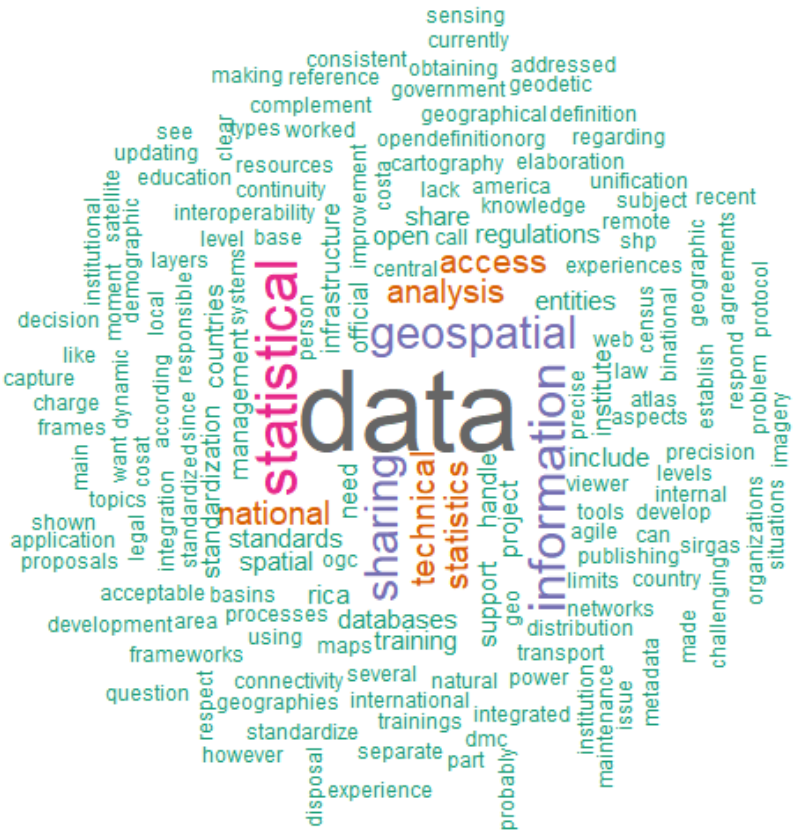

WHAT PRINCIPLES OF THE GLOBAL STATISTICAL AND GEOSPATIAL FRAMEWORK (GSGF) DOES YOUR ORGANIZATION ADHERE TO?
10
9
8
7
6
5
4
3
2
1
0
Principle 1: Use of fundamental geospatial infrastructure and geocoding.
Principle 2: Geocoded unit record data in a data management environment.
Principle 3: Common geographies for dissemination of statistics.
Principle 4: Statistical and geospatial interoperability – Data, Standards and Processes.
Principle 5: Accessible and usable geospatially enabled statistics.
None of the above

With regards to GIS software, ArcGIS and QGIS are both used equally with many organizations indicating they use both. Given that ArcGIS is widely used and the recently signed MOU between PAIGH and ESRI, ArcGIS may be the best environment for spatial data management and integration among countries.

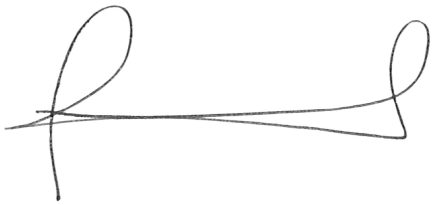


What is one problem/issue that your organization would like to see addressed as part of this project?

The responses to this survey question can be grouped into the following five categories: (i) Analysis and Data Viewer, (ii) Base Map, (iii) Standards and Data Sharing, (iv) Training, and (v) Other. Below is a wordcloud created from the responses received.



Authorizing Officials



Paloma Merodio Gómez Date
President
UN-GGIM: Americas

Deirdre Dalpiaz Bishop

03/19/2020

Deirdre Dalpiaz Bishop Date
President
PAIGH National Section
United States of America