

GEOSUR

THE GEOSPATIAL INFORMATION
NETWORK OF LATIN AMERICA
AND THE CARIBBEAN

“GEOSUR DEVELOPS GEOGRAPHIC
SERVICES ON A FREE-ACCESS WEB
PLATFORM”

Inside this Issue:

- The interview of the month with **Jesús Suniaga**, Coordinator of the CAF GEOSUR Program.
- Special inputs of **Matthew Cushing (EROS-USGS)**, **Sebastian Mas (IGN-E)**, **Rolando Ocampo (UNGGIM)**, **Jean Parcher (PAIGH)**, **William Martinez (SIRGAS)**, and **Eduardo Freitas (MundoGEO)**.
- Permanent columns of **GEOSUR** and **PAIGH** highlighting main alliances and achievements of first 10 years of the **GEOSUR** Program.

The Editor's Note

The **GEOSUR** Program celebrates 10 years of operation and this edition of the Newsletter commemorates this anniversary. Actors from various organizations relevant to this progress share their perspectives as well as the milestones that deserve to be highlighted. The permanent columns underline the main achievements as well as the strategic alliances built for the benefit of the Spatial Data Infrastructure and the sustainable development of the continent.

GEOSUR newsletter seeks to disseminate GEOSUR Program's achievements and characteristics as well as events, projects and best practices for the application of geographic information into sustainable development and decision making in the region, as part of the Geospatial Data Infrastructure of the Americas. The Portuguese translation is performed by **Eduardo Freitas**, Manager of the GEOeduc Institute of Brazil. Please send your contributions and suggestions to: **Nancy Aguirre**, Editor of GEOSUR Newsletter, at: cnaguirre@ipgh.org.



Jesús Suniaga
Coordinator of the
GEOSUR Program

“To foster geographic information development in Latin America, a common initiative and a unique platform was necessary...”

GEOSUR contributes to regional integration, says Jesús Suniaga, Program Coordinator

In this commemorative edition of the 10th anniversary of GEOSUR, Jesús Suniaga, current coordinator of the Program, shares his perspectives on the motivation for the creation of GEOSUR, the role the Program has played in the region and within CAF, and its vision for the future:

In 2007, GEOSUR emerged as an initiative of the CAF. What moved a solid bank in the area of infrastructure, knowledge and comprehensive development, to take this step?

JS: The role of [CAF](#) as a bank that promotes sustainable development and regional integration also conveys a role as a direct user of geospatial information. In order to

work on issues of infrastructure, knowledge generation, regional integration, environment, energy, water, climate change and other topics of relevance to CAF, updated, available and standardized information across the region was needed; and although there was an increasing production of information 10 years ago, it was not easily accessible.

To foster geographic information development in Latin America, a common initiative and a unique platform was necessary for finding, storing, downloading and consulting pertinent information on development issues that would allow a regional vision to be easily assembled. In addition, it was essential to connect information

GEOSUR contributes to regional integration... *continues*

“Regional integration is one of main issues of the CAF mission. GEOSUR, since its inception, has contributed to geospatial information mapping and publication for regional integration projects...”

“GEOSUR has helped users to better understand and use the available tools and geospatial services that can be consumed through the geoportal, which facilitate project analysis and planning in our region. This has led to demand growing both externally and internally in CAF.”

producer-institutions in a platform that could facilitate both training as well as experience and asset exchange between those countries that could contribute their technological advancement on data service production with those who were starting their way.

That is why CAF committed to a program like GEOSUR as a tool to promote these developments in the region.

What are the central CAF-agenda topics and which of them are related in particular to the GEOSUR Program?

JS: Regional integration is one of main issues of the CAF mission.

GEOSUR, since its inception, has contributed to geospatial information mapping and publication for regional integration projects in South America, which began with the [IIRSA initiative](#) and also incorporates a subset of projects for "Infrastructure in Latin American Development" – CAF's [IDEAL](#).

Sustainable infrastructure development is approached with the implementation and provision of management and evaluation tools for road and energy infrastructure projects, thus allowing the incorporation of environmental sustainability criteria, which also contributes to achieving Sustainable Development Goals. Another manifestation of these themes is the

support for integrating topographic cartography of countries in the region with the aim of building a digital integrated map of the Americas at a scale of 1: 250,000; this is an effort that brings together national actors in a consensus work involving national geographical institutes and regional institutions such as the PAIGH, the [CNIG](#) of Spain, and the CAF, in realizing a product that well represents the integration of countries in the region.

GEOSUR users may not have sufficient knowledge on the internal use and potential of GEOSUR in the CAF. Is the internal demand for geographic information services growing and the development of spatial databases increasing in CAF?

JS: GEOSUR has helped users to better understand and use the available tools and geospatial services that can be consumed through the geoportal, which facilitate project analysis and planning in our region.

This has led to demand growing both externally and internally in CAF.

We have identified the need for strengthening assessment tools for environmental hazards and climate change, urban development, energy efficiency and potential, as well as for the implementation of spatial data management and analysis services for management of development projects in diverse action fields of the CAF.

"In the future, GEOSUR will continue working on the consolidation of its platform to offering innovative services and increasing its use; and for strengthening alliances with its peers for geospatial information and SDI development in the region, specialized training, and the intensive use of the Latin American Metadata Profile in LAC countries."

"From GEOSUR we want to thank the invaluable contribution of all those who have worked for this Program to reaching this 10-year milestone: our allied organizations; geographical, environmental and governmental institutes at different scales; private agencies; NGOs; technicians and specialists; editors; translators, and all those who in one way or another contribute their sand grain so that GEOSUR is a current reference in our region."

GEOSUR contributes to regional integration... continues

GEOSUR wants to continue innovating to offering solutions to CAF that may further enhance its role performance as a development bank.

GEOSUR is the first regional initiative on spatial data that reaches 10 years in the Americas. What does this milestone mean for CAF and how do you perceive the future development of the Program?

JS: Achieving 10 years for the GEOSUR Program is a very important milestone, especially when we think that it is a unique initiative in the region that has kept its breath by contributing to the construction of spatial data infrastructures.

By 2011, GEOSUR had a network of 25 institutions from 11 countries and provided access to 11,000 metadata records.

Today, it holds more than 100 participating institutions from 21 countries in the region allowing access to more than 59,000 metadata in its catalog, not counting the large number of global records that can be consulted in integrated catalogs through the geoportal.

Additionally, it has more than 1,100 maps available on topics including the environment, infrastructure, indigenous territories, land cover and use, hydrography, and other relevant issues.

Among significant contributions to the region are the training of more than 300 specialists for the implementation of mapping and

metadata cataloging services, support for the construction of the Digital Integrated Maps of Central and North Andean America (MIAC and MIAN), the implementation of a flood monitoring system and, currently, its support for the preparation of the South American Digital Integrated Map (MIAS) and second version of the Latin American Metadata Profile – LAMPv2.

In the future, GEOSUR will continue working on: the consolidation of its platform to offering innovative services and increasing their use; strengthening alliances with its peers for geospatial information and SDI development in the region; specialized training, and the intensive use of the Latin American Metadata Profile in LAC countries.

From GEOSUR we want to thank the invaluable contribution of all those who have worked for this Program to reaching this 10-year milestone: our allied organizations; geographical, environmental and governmental institutes at different scales; private agencies; NGOs; technicians and specialists; editors; translators, and all those who in one way or another contribute their sand grain so that GEOSUR is a current reference in our region.

Celebrating Ten Years of Collaboration

By Matthew Cushing



Matthew Cushing
USGS EROS Center
(USA)

“Since the GEOSUR Program launched in 2007, the U.S. Geological Survey (USGS) Earth Resources Observation and Science (EROS) Center has had the honor of collaborating with CAF, PAIGH, and others supporting the Latin America GeoSUR Program.”

“EROS strives to provide the infrastructure for GeoSUR to provide a community-based platform to share, discover, and distribute geospatial information.”

Since the GEOSUR Program launched in 2007, the U.S. Geological Survey (USGS) Earth Resources Observation and Science (EROS) Center has had the honor of collaborating with CAF, PAIGH, and others supporting the Latin America GEOSUR Program.

The catalyst for starting the program was the convergence of regional geospatial activities USGS, PAIGH, and CAF had been involved in and they seized the opportunity to consolidate, and increase the sharing of geospatial information at national and regional levels.

Following the tragic aftermath of Hurricane Mitch in 1998, EROS worked with the international community to help with recovery efforts. They provided satellite imagery from the Landsat program to aid in assessing the impact on the land surface and served as the primary distributor of the analysis data.

This event showed countries and nongovernmental organizations in Latin America that they needed to have a means to discover and acquire geospatial data for effective preparedness and recovery responses to large-scale disasters. Progress in this area soon followed from the geospatial community as a whole.

The Open Geospatial Consortium (OGC) defined new open standards for a common means to share, distribute and discover geospatial information. Additionally, Latin America and the Caribbean (LAC) countries embraced the use and sharing of spatial data. With this progress and the convergence of several Latin American activities from

USGS, CAF, and PAIGH, the GEOSUR Program and its Web GIS Environment was initiated to provide advanced maps services, apps and a regional catalog of spatial data.

Today USGS, CAF, and PAIGH continue their commitment to building the regional catalog, services and increasing accessibility. They remain focused on its initial objective to share scientific and technical capabilities in the earth sciences.

Now, GEOSUR leads LAC as the largest regional geoportal. With more than 100 partners and it houses the largest regional geospatial data repository—GEOSUR offers access to thousands of spatial data records. This achievement didn't suddenly happen—GEOSUR championed the fundamental concept of openly sharing information to its community to better plan and build a sustainable future for the region.

EROS strives to provide the infrastructure for GEOSUR to provide a community-based platform to share, discover, and distribute geospatial information. To accomplish this, it has assisted in the development of a decentralized network of map services to facilitate sharing, a regional geoportal catalog and Regional Map Viewer (RMV) for discovery, and the Topographic Processing Service (TPS) for distribution and analysis.

To complement these tools, EROS has had the privilege of providing training for GEOSUR's community on a diverse range of geospatial topics, such as using and developing geoportal catalogs, getting access to Shuttle Radar Topography Mission (SRTM) digital elevation models (DEM), developing hydrologic models

Celebrando diez años de colaboración, *continúa...*

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using acquired data, and continually providing technical support to its user community.

To continue building this program over the next ten years, GEOSUR will release a redesigned website this month with a simplified design, improved navigation and mobile access. In the following months, we will enhance geoportal search tools with an improved search engine and streamlined interface for discovering data more efficiently. Also during this time, the RMV will be replaced with a series of themed viewers focusing on specific topics and categories, along with an advanced viewer with similar functions as RMV with an improved interface and responsiveness.

USGS and GEOSUR are also pursuing initiatives to build tighter working relationships with other organizations with similar objectives to better use GEOSUR resources.

GEOSUR has been instrumental in making available regional geo-information and services that provide accurate and timely information to decision makers. With the infrastructure provided by USGS, and CAF and PAIGH's coordination and outreach, GEOSUR is excited to continue to build a solid base for LAC to meet its spatial data needs well into the future to help improve the decision support system to promote sustainable development and environmental assessments.

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This year the GeoSUR Program celebrates its tenth anniversary. The 10th GeoSUR Meeting will be held on October 25, 2017 in Panama City, in the framework of the 21st General Assembly of the PAIGH, which will take place from October 23 to 27.

GeoSUR Program: Basic Figures

Years in Operation (2007-2017)	10
Participating Institutions	106
Beneficiary Countries	26
GeoSUR Network Specialists	384
Officials Trained	316
Available Digital Maps	1,123
Available Metadata Files	17,956
Available Metadata in GeoSUR Catalog	58,675
Map Services (WMS) (complying with OGC and ISO 19115 standards)	459
WFS Services	39
Map Viewers	118
Catalog Services (CSW)	18

Webpage: <http://www.geosur.info>

From the PAIGH's Secretary General

By Rodrigo Barriga

The GEOSUR Program is a strategic alliance between CAF -the Latin American Development Bank- and the Pan American Institute of Geography and History

In 2005, when discussions began on the idea of developing a cooperation program between the Latin American Development Bank and the Pan American Institute of Geography and History, the successes and achievements that have materialized through this alliance between the PAIGH and CAF could not yet be seen. After ten years the vision of those who led this process has borne fruit, mainly through the institutional strengthening achieved through an effective geospatial coordination and cooperation mechanism in our region.

GEOSUR, which was created in 2007 in Brasilia, Brazil, has so far carried out eight cooperation instruments, which have mobilized more than one million dollars in direct contributions made by CAF to the Program, which together with contributions of the PAIGH and the indirect subsidies of the participating organizations, may well be estimated in at least three times this figure, on geospatial contributions to the region.

Undoubtedly, the efficient coordination undertaken in full communion between the work teams of PAIGH and CAF, has allowed high-level specialized assistance on geoinformation issues, directly contributing to

improving capacity of participating agencies for the mutual benefit of the region and of those organizations properly.

Indeed, the leadership developed by the GEOSUR Program was seen as a successful initiative, thus resulting in a project funded—in the context of the Eye on Earth Alliance—, by the Abu Dhabi Environmental Agency in the United Arab Emirates in order to convey to them the experience of GEOSUR, in which it was possible to train multiple specialists from Latin America, both through virtual learning and through technical visits made for the implementation of web map services (WMS) and for the application of environmental indicators; all of course with the cooperation of other organizations such as the National Geographic Information Center (CNIG) of Spain and the United Nations Environment Program (UNEP).

GEOSUR geoportal is an effective interrelation mechanism between users and beneficiaries of this Program; it has been present during these ten years in a continuous improvement process, where the organizational experience in geospatial issues from the CAF and the United States Geological Survey (USGS), the CNIG of Spain, and the PAIGH itself has been relevant.

An important and fundamental element has been the signing of the "Joint Action Plan" between the PAIGH - GEOSUR - SIRGAS and UN-GGIM: Americas, as a convenient strategy to achieving synergy and



Rodrigo Barriga-Vargas,
Secretary General of the PAIGH

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From the PAIGH's Secretary General... *continues*

to coordinating contributions for the establishment and strengthening of Spatial Data Infrastructures in the continent.

Therefore, GEOSUR is committed to enhancing its main role by continuing as an applications producer and by providing specialized support to the many institutions participating in the Program, —which has been received by different participating agencies as a key element in the awaited development of the Spatial Data Infrastructures of the Americas.

In this context, cooperation for the development of the Pan American Integrated Map has been particularly important. To date, progress has been made on the Integrated Map of Central America, the Northern Andean Map, and the Integrated Map of South America, which is expected to be completed during 2018 as a concrete contribution to the above mentioned Action Plan.

Not only is this cartographic integration project allowing a seamless geospatial database at the continental level, but it has also helped to form a real network of cooperation and professional friendship between specialists of geoinstitutes who have participated in different integration workshops, thus creating a special motivating environment both on the part of the executives as with technicians and specialists involved in the achievement of this objective.

In the last period, and given the relevance of interoperability procedures for the efficient use of

geospatial information, we have addressed the fundamental task of contributing to metadata cataloging.

Such is the case of the early publication of the "Latin American Metadata Profile" version 2 (LAMPv2), as a specific technical document to facilitating proper cataloging of respective metadata, and its adequacy to the continental level requirements.

Of course, the main role of the GEOSUR Program is to strategically integrate CAF and PAIGH, as coordinator and facilitator of highly specialized processes through the commitment and technological support of numerous institutions —including the geographic institutes, environmental and academic organizations, and private and diverse-nature initiatives linked to the GEOSUR Program—, as well as for the technological support of organizations such as the CNIG and the USGS, and of all who recognize and value the effort, experience, dedication and knowledge that has allowed consolidation of the GEOSUR Program, thus allowing its projection as the most successful initiative in the geospatial information fields in the Pan American region.

From the PAIGH, we give recognition to those who had the vision to create it and to all those who have contributed, from different positions, to the successes and achievements reached in these first ten years of the GEOSUR Program.

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Sebastian Mas-Mayoral
Deputy Director
of Cartography,
National Geographic Institute
(Spain)

"The [...] IGN-E) and its National Geographic Information Center (CNIG) have traditionally maintained close and intense collaboration with the Pan American Institute of Geography and History (PAIGH) and the Latin American Development Bank (CAF), especially for the development and enhancement of the GeoSUR Program."

"This collaboration was strengthened by the establishment on November 21, 2005, of a Memorandum of Understanding between IGN-E and the PAIGH, which has facilitated the joint implementation of actions training and specialized training, the publication of relevant institutional publications and other joint actions..."

Cooperation of the National Geographic Institute and the National Geographic Information Center of Spain with the GeoSUR Program and in support of the SDI of the Americas

By Sebastian Mas-Mayoral

The National Geographic Institute of Spain (IGN-E) and its National Geographic Information Center (CNIG) have traditionally maintained close and intense collaboration with the Pan American Institute of Geography and History (PAIGH) and the Latin American Development Bank (CAF), especially for the development and enhancement of the GEOSUR Program.

The work of IGN-E in Spain, in Europe, and in its projection towards Latin America, coincides except in the aspects related to History —being the object of the PAIGH that is reflected in its Organic Statute. For this reason, in 1994 Spain, represented by the IGN-E, was incorporated as a Permanent Observer Country of the PAIGH.

This collaboration was strengthened by the establishment on November 21, 2005, of a Memorandum of Understanding between IGN-E and the PAIGH, which through the establishment of specific Individual documents developing it, has facilitated the joint implementation of training and specialized training, the publication of relevant institutional publications and other joint actions.

On March 19, 2007, in response to the strong impulse of the Engineer Eric Van Praag and the support of the General Secretariat of the PAIGH, with backing of the Andean Development Corporation (CAF), the GEOSUR Program was created in Brasilia.

At that time the IGN-E and the CNIG were involved in the development and implementation of the Spatial Data Infrastructure of Spain, in application of the European Directive 2007/2/EC (INSPIRE), which was approved by the European Parliament and Council on March 14, 2007, and carried out a comprehensive training plan, both in person and online, of Spanish and Latin American technicians in spatial data infrastructure technologies. That is why, even before 2007, the contact between IGN-E and CNIG specialists with the Engineer Eric Van Praag was close and continuous.

In order to facilitate and ensure the implementation of joint actions between CAF, PAIGH, IGN-E and CNIG for the GEOSUR Program, in June 2011 a Memorandum of Understanding was signed between CAF and IGN-E, which purpose was to establish the conditions for the implementation of cooperation actions for training, research, diffusion and production on fields of geographic, cartographic, geodetic and geophysical information. This Memorandum was ratified by the President of the CAF and by the new Director General of IGN-E (appointed on January 5, 2012), on February 15, 2012.

Collaboration of the IGN-E and, above all, the CNIG in the development of various actions of the GEOSUR Program has been continuous since the beginning of the Program, but is currently formalized by the Single Document of Collaboration,

Cooperation of the National Geographic Institute... *continues*

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"...we can say that GEOSUR is contributing to the integrated network that must constitute the Spatial Data Infrastructure of the Americas, and the search and access technologies to geospatial data and services, doing these according to standard specifications and protocols, and helping to build a team of technicians trained in these matters in the American countries."

established in 2016 between PAIGH IGN-E and CNIG. Thus, CNIG is part of the GEOSUR Technical Steering Committee, in charge of providing technical advice to those responsible for the Program in the technical aspects related to its activities. It has also collaborated in the definition of the new LAMPv2 metadata profile and assists the organizations integrated in GEOSUR in everything related to metadata. It has collaborated in the second edition of the PAIGH Guide to ISO/TC 211, and in the generation of the consensual version of the multilingual glossary standardized by ISO/TC 211.

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But considering a Spatial Data Infrastructure as an integrated virtual structure network by georeferenced data and interoperable geographic information services distributed in different information systems, accessible via the Internet with a minimum of protocols and standardized specifications that, in addition to the data, their descriptions through metadata, and interoperable geographic information services, includes search and access technologies to such data; standards for production, management and dissemination; agreements on their pooling, access and use between their producers and between

producers and users; and the mechanisms, processes and procedures for coordination and follow-up, we can say that GEOSUR is contributing to the integrated network that must constitute the Spatial Data Infrastructure of the Americas, and the search and access technologies to geospatial data and services, doing these according to standard specifications and protocols, and helping to build a team of technicians trained in these matters in the American countries.

Therefore, in order to ensure the integrated virtual structure network that must form the SDI of the Americas, in the coming years it is necessary to prioritize data availability, accessibility, and harmonizing and integration capacity. At least of the Fundamental Data considered by UN-GGIM.

Actions such as the development of the Integrated Map of Central America, the Integrated North Andean Map, and the recent Integrated Map of South America, accessible through GEOSUR, in which the CNIG of Spain and the USGS collaborate, allow advancing harmonization and integration of data of American countries.

All of the above without forgetting to prioritize training for technicians of organizations, and the development and formalization of coordination mechanisms and procedures among SDI actors in the Americas.

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From the CAF-GEOSUR Program

By Santiago Borrero

10 years of GEOSUR realizations

The GEOSUR Program was born on March 21, 2007 in Brasilia at an IIRSA meeting that incorporated a workshop where this initiative was presented. Together with the President of CAF -by then Enrique García-, I was responsible for signing the first collaboration agreement for GEOSUR as General Secretary of the PAIGH. The achievement of 10 years of service of GEOSUR is important: it is the first regional program for the production, distribution, access and application of spatial data that in the Americas fulfills this milestone. For my part, as a promoter, and participant of its development at the time, I celebrate the first decade of GEOSUR highlighting those that in my opinion are the 10 main achievements of the Program, which undoubtedly have also contributed to the development of data infrastructure of the Americas:

(1) GEOSUR's geoportal, which has been the first of its kind in the region; (2) the launch of the first Topographic Processing Service in the developing world; (3) at the USGS facility in Sioux Falls, GEOSUR carried out the first regional training exercise for metadata registration and cataloging, since then, and in different SDI topics, about 500 specialists have been trained; (4) GEOSUR's geoportal provides access to the largest collection of spatial data on the Americas; (5) the GEOSUR Award, which comes this year to its sixth competition, is the only recognition originating in the region to highlight innovative and relevant initiatives carried out by data producers and service developers in the region; (6) the GEOSUR Newsletter, heritor to the

GSDI Regional Newsletter of the Americas, and produced on the basis of original information issued by the Program, is unique; (7) CAF has invested more than \$ 5 million in GEOSUR, a figure that indicates its commitment to the development of geographic information in the region; (8) the introduction of information services in The Cloud, both with commercial and open source SW, in the cases of El Salvador and Honduras, as well as the development of environmental indicators in The Cloud, was supported from GEOSUR; (9) GEOSUR initiated studies of hydroelectric potential from near-real time satellite and flood information, as a service developed by the University of Colorado's Dartmouth Laboratory, and (10) GEOSUR has contributed to the development of each one of the components of SDI in the Americas, suffice to note its contribution to the development of the Latin American Metadata Profile (LAMP v2), and the ongoing construction of the Integrated Digital Map of the Americas at scale of 1:250,000.

All this would not have been possible without the cooperation and enthusiasm of the institutions that lead GEOSUR, CAF, PAIGH and its strategic scientific and technical allies, such as the US Geological Survey (USGS), the National Geographic Information Center (CNIG) of Spain, and the national geographical institutes. The Program has had three coordinators: the inaugural, Eric van Praag, who conducted it from 2007 to 2014; during the years 2015 and 2016 GEOSUR was in my charge, and since April 2017 is led by Jesús Suniaga of the DAPS.

The challenges ahead are equally exciting; we will see what the next 10 years provide to the Program.



Santiago Borrero
External Consultant,
GEOSUR Program

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UN-GGIM 2.0 and its impact on UN-GGIM: Americas and the Joint Action Plan

By Rolando Ocampo-Alcantar

In July 2016, the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) submitted to the United Nations Economic and Social Council (ECOSOC) a comprehensive review of the first five years of work since its inception. This includes the Resolution adopted for the strengthening of national institutional arrangements on geospatial information management, which recognizes the significant achievements and progress made by the Committee of Experts, and the efforts to establish a strong regional and operational infrastructure, comprising five regional committees, including UNGGIM: Americas, composed of 38 member states of the continent. This Resolution recognizes the growing role and relevance of the Global Committee and generates a new stage in its history: UN-GGIM version 2.0.

This new agenda is made up of various provisions, including: the Sustainable Development Goals, the aforementioned ECOSOC Resolution, the decisions of the 6th Session of the Committee of Experts of 2016 as well as those of its Bureau at the December 2016 meeting. These components contribute to the UN-GGIM Global Agenda 2.0, which will guide the efforts of the Committee of Experts and its working groups over the next five years, through a Strategic Framework to be prepared considering the annual steps up to 2020.

The UN-GGIM Agenda 2.0 includes future steps, such as increasing awareness of UN-GGIM at the political-technical-scientific levels

within Member States; greater connection with the activities of regional committees, regional statistical agencies and the United Nations regional commissions; coordination and effective linkage between the subcommittees, groups of experts and working groups; the search for extra budgetary and funding options; and further development of the capacities of Member States over the next 5 years.

These guiding lines clearly mark the general direction that the Regional Committee of UN-GGIM: Americas should follow. The year 2017 has undoubtedly been one of transition, and its lessons and progress must be harnessed for the implementation of this new agenda, after being discussed among Member States during the Fourth Session of the Regional Committee and having reached agreement on aligning with the issues addressed by the Committee of Experts at the global level. These include: Focus on the integration of statistics and geography, support for the implementation of measurement and monitoring of sustainable development goals indicators and targets, and the use of geospatial information for disaster risk reduction.

Fulfillment of this Resolution, and rethinking of a new agenda of UN-GGIM: Americas, must be approached from the perspective of Spatial Data Infrastructures (SDI) in a transversal way. Therefore, the 2016-2020 Joint Action Plan to accelerate the development of SDIs in the Americas, between PAIGH, SIRGAS, CAF / IPGH-GEOSUR and UN-GGIM: Americas, will be a key part of this new stage for the region.



Rolando Ocampo Alcantar,
Co-director of UN-GGIM
and President of
UN-GGIM: Americas

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“Fulfillment of this Resolution, and rethinking of a new agenda of UN-GGIM: Americas, must be approached from the perspective of Spatial Data Infrastructures (SDI) in a transversal way.”

UN-GGIM 2.0 and its impact... *continues*

To illustrate some of the aspects of joint, potential or ongoing collaboration, mention may be made of the participation of the PAIGH in the UN-GGIM Fundamental Data Working Group, representing UN-GGIM: Americas, and their support to capacity building through Technical Assistance Projects; the participation of SIRGAS in the Geodesy Subcommittee and their contribution to the Global Geodetic Framework for the Sustainable Development Roadmap regional implementation. On the part of GeoSUR, their support in capacity building for SDI technological innovation as well as in

the construction of Geoportals to facilitating integrated access and use of statistical and geospatial information.

The attributions and fields of work of each of the four organizations that make up the Plan will allow, in a coordinated way, to address the priorities of the new UN-GGIM: Americas Agenda 2.0, taking advantage of the technical, financial and human capacities of each for the advancement in the development of SDI in the Americas.

“To illustrate some of the aspects of joint, potential or ongoing collaboration, mention may be made [...] On the part of GeoSUR, [to] their support in capacity building for SDI technological innovation as well as in the construction of Geoportals...”

The Integrated and Seamless Map of the Americas

By Jean Parcher

Implementing a participatory approach, the Pan-American Institute of Geography and History (PAIGH) is building an integrated, homogeneous and harmonized 1:250,000 vector cartographic database in the region to provide the territorial foundation for studies directly related to PAIGH's Pan-American Agenda and to contribute to the achievement of the UN Sustainable Development Goals. The initialization of this process began in 2011 with the Central America Integrated Map (Mapa Integrado de America Central-MIAC) using official geospatial data sources from the respective National Geography Institutes of the seven Central American countries and Mexico. Throughout the Central American process, PAIGH provides the political and financial support, the US Geological Survey (USGS) provides technical support, and the Latin American Development Bank's GeoSUR program provides additional financial support. The success of the

participatory approach has launched similar initiatives in South America (Northern Andes, Southern Cone, and Eastern South America) with solid financial support from GEOSUR, technical support from Spain's National Geography Institute (National Centre for Geographic Information of the National Geographic Institute of Spain - CNIG), and political and financial support from PAIGH.

The MIAC started out as a seed project under the PAIGH's technical grant program. The original objective of the Central American project was to build geospatial data production capacity and data sharing processes to better prepare the region for recovery efforts for extreme climate events and natural disasters in the Central American region.

The secondary objectives focused on exchanging GIS technology, incorporating data sharing and trust between the countries, and building capacity for applying these data for climate change adaptation and natural hazards in the region.



Jean Parcher
President of the
Geography Commission
of PAIGH

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The Integrated and Seamless Map... *continues*

The selection of the fundamental datasets (administrative boundaries, settlements, roads, land morphology, toponymy and hydrography) to be seamlessly integrated was based on key geographic features relevant to natural and cultural processes that affect territorial and environmental management and climate change.

The National Geography Institutes of the eight countries (Belize, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, and Mexico) committed to share their data and provide resources to build the integrated digital map of the region.

Technical specialists representing the Geographic institutes of the member countries played a critical role to define common standards and feature content for the data integration between countries.

In the months between the workshops, the technical experts completed tasks to fix inconsistencies, improve their data, and incorporate new technological processes.

The completed product of harmonized regional datasets at 1:250,000 scale are available as a Web Mapping Service (WMS) through the GEOSUR portal (<http://www.geosur.info/geosur/index.php/en/>) in compliance with OGC and ISO/TC 211 standards.

The technical specifications, catalog of geographic objects and representation catalog documents are available on the website.

The success of the MIAC project includes much more than the integrated map.

The geospatial experts in all seven Central American countries built life long relationships, exchanged technical expertise, and cooperatively developed best practices for geospatial technology.

For example, the USGS and the Mexican National Statistics and Geography Institute (INEGI) introduced the hydrography Integrated flow model, where each stream and waterbody are connected with direction of flow and watershed location.

This integrated hydrography network provides the technical model to monitor flood potential and water quality in real time within the region.

Using the synergy of the participatory process, the Integrated Map of the Americas has completed Central America and Northern Andes data integration, whereas the Southern Cone and Eastern South America, including Brazil are moving forward rapidly with the process.

Technical experts from CNIG and USGS, with financial and political support from PAIGH and GEOSUR have provided the solid foundation to complete the Integrated Map of the Americas. The next step is to develop the commitment of the North American countries of Canada, United States, and Mexico to complete the continent.

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Accelerating the development of the SDI of the Americas

By William Martinez



William Martinez
President of
SIRGAS

“...the second version - 2016-2020- of the Joint Action Plan [...] was signed with a fundamental purpose: to accelerate the development of the Spatial Data Infrastructure (SDI) of the Americas [which] includes the recognition that it is necessary to advance, faster, higher and stronger [...] in consolidating SDI at national levels and, therefore, at the continental level.”

“In one way or another, and understanding and managing local conditions, our countries have advanced in the construction of SDI [...] In spite of this, the circumstances of the time oblige to consider new approaches.”

The tenth anniversary of the GeoSUR Program provides an appropriate framework to celebrate and reflect on the overall state of regional efforts on geospatial information. In fact, based on a vision for the future, the second version —2016-2020— of the Joint Action Plan promoted by the Pan American Institute of Geography and History (PAIGH), the Geocentric Reference System for the Americas (SIRGAS), GeoSUR and the United Nations Regional Committee on the Global Management of Geospatial Information (UN-GGIM: Americas), was signed with a fundamental purpose: to accelerate the development of the Spatial Data Infrastructure (SDI) of the Americas.

In this objective, the addition of the verb “to accelerate” includes the recognition that it is necessary to advance, faster, higher and stronger (*citius, altius, fortius*, according to the Latin words), in consolidating SDI at national levels and, therefore, at the continental level.

A first image is provided by Ian Masser’s 1999 paper: *All shapes and sizes: the first generation of spatial data infrastructures*. Among the 11 initiatives studied, there is no Latin American country represented. Although this did not mean a problem for the SDI in the region to appear shortly after, it does indicate, to a certain extent that from the origin there is a regional backwardness, which set up an argument to consider this acceleration.

Notwithstanding, in 1993 the region consolidated the initiative to unify itself spatially from the same reference

system: SIRGAS was born in that year and since then it has become a successful effort. Thus, before 1999 Latin America already had the fundamental data of the fundamental data, beyond that in principle, this was not its designation.

The duality outlined here provides an idea of the complexity involved in conceiving, implementing and, in particular, sustaining SDIs in the region. In addition, a third element needs to be considered: the first edition of the United Nations vision of five to ten years on future trends in geospatial information management came to light in July 2013. However, the speed of progresses on the subject forced publishing the second edition in English in December 2015. Only two and a half years were enough for a global and decennial vision to be revised; thus another argument in favor of acceleration.

In one way or another, and understanding and managing local conditions, our countries have advanced in the construction of SDI. Of this there is no doubt. Policies have been drafted, and investments in human and technological resources have been made to align the region with global standards as far as possible. In spite of this, the circumstances of the time force to consider new approaches.

Among these circumstances are the Sustainable Development Goals, the ubiquity of geospatial information (not only because everything happens somewhere, but because technology has made geospatial information an everyday issue for virtually the entire population), and multidisciplinary, only to mention some of the most relevant.

Accelerating the development of the SDI... *continues*

These are huge challenges that demand reliable, wide-ranging and timely solutions.

This dimensions goes beyond the traditional conception of the work of agencies producing geospatial and socioeconomic data. Consequently, new perspectives are required to achieving the concept of acceleration: by way of example,

assume that the value of geospatial information does not depend on strictly monetary variables, but that the scale of value for geospatial information is determined by its use; or involve new actors —not necessarily specialized—; or replace traditional techniques, and even redefine the concept of authority to adapting to the vertiginous demands of the moment.

“...new perspectives are required to achieving the concept of acceleration: by way of example, assume that the value of geospatial information does not depend on strictly monetary variables, but that the scale of value for geospatial information is determined by its use...”

The alliance of MundoGEO and GEOSUR

By Eduardo Freitas

We have followed the evolution of the GEOSUR Program over the last 10 years.

In the name of MundoGEO, I thank you for this alliance as it is important for us to follow closely an initiative that integrates all of Latin America and the Caribbean in the field of geographic information science with the noble objective of regional development. This mission aligns itself to the goal of MundoGEO, which is to train people and connecting to the geospatial market.

Founded in 1998, MundoGEO is the leading communication company in Latin America in the area of geotechnology. It has several content channels —such as a magazine, portal, courses, webinars— and annually organizes the most important translation of the GeoSUR Newsletter into Portuguese since 2014 and the OGC newsletter for Ibero-America since 2012.

Prior to this, I translated GSDI newsletters for Latin America and the Caribbean between 2007 and 2013, participated in the QGIS freelance translation team in Portuguese between 2014 and 2015 and in the evaluation team of the gvSIG international conferences between 2013 and 2015.

Due to the fact that Brazil is a country with continental dimensions, sometimes we do not give due attention to our Latin American brothers.

With translations of information I hope to continue contributing so that the Portuguese language community can have more access to what is happening in other countries of our region.

I hope to continue contributing with GEOSUR for much longer.

May the next 10 years come.

Long live the GEOSUR !



Eduardo Freitas
Manager of the
GEOeduc Institute,
Brazil

“In the name of MundoGEO, I thank you for this alliance as it is important for us to follow closely an initiative that integrates all of Latin America and the Caribbean in the field of geographic information science with the noble objective of regional development.”

GEOSUR Newsletter, an effective contribution to the visibility of the Program and its community

By Nancy Aguirre

The GEOSUR Newsletter reaches 22 issues on this anniversary. Since its inception in July 2014, it has responded to a successful concept envisioned by Santiago Borrero, the application of geographic information to sustainable development and decision-making in the region as part of the SDI of the Americas, by including original contributions of main actors of the geospatial community. To achieving a greater impact it has been published in Spanish, English and Portuguese during these years. This journey has only been possible thanks to the collaboration of several actors that today attract close to 30,000 readers a month. Undoubtedly, the growing interest responds to more that 30 valuable contributions of this geospatial community, whose members deserve special recognition:

Sergio Cimbaro of the National Geographic Institute (Argentina); Wadih Scandar-Neto of IBGE Geosciences, Emerson Zanon of MundoGEO, and Eduardo Freitas of the GEOeduc Institute (Brazil); Rodrigo Barriga of the PAIGH, and Alvaro Monett of the National Territorial Information Coordination System (SNIT), Chile; Santiago Borrero from GEOSUR, Jasmith Tamayo from IDECA, Louis Reymondin from CIAT Terra-i, Felipe Fonseca from UPRA, Patricia León from IDEAM, and Daniel Páez from University "Los Andes", UN-GGIM: Americas, and FIG (Colombia); William Aragón of the Military Geographic Institute (Ecuador); Emilio Lopez of the CNIG (IGN) and the Geographical Information Infrastructure, Antonio F. Rodríguez and Alejandra Sánchez of the CNIG (IGN), and Álvaro Anguix-Alfaro of the gvSIG Association (Spain); Dave Lovell of EuroGeographics and GSDI (Great Britain); Valrie Grant of the Urban and Regional Information Systems Association (URISA), Jamaica; Carlos Guerrero, from INEGI (Mexico); Israel Sánchez of the National Geographic Institute "Tommy Guardia" (Panama); Adrian Neyra of the Ministry of the Environment, and César E. León of the Committee for the Implementation of Spatial Data Infrastructure (CCIDEP), Peru; Cesar Rodríguez of the Military Geographic Service (SGM), and Sergio Acosta y Lara of the GeoForAll Initiative (Uruguay); Barbara J. Ryan of the Group on Earth Observations (GEO), Robert Brakenridge and Albert Kettner of the Dartmouth Flood Observatory (DFO), USA; Eric van Praag, Jesús Suniaga, and Emily Carrera, of CAF (Venezuela) [I apologize for the involuntary omission of any name].

The effort of Miguel Blanco of GEOSUR (Nicaragua) and Claudia Young of USGS (USA), who have illustrated the use of the Program's geoportal data through the Newsletter, thus allowing their greater usability, is noteworthy.

This is how the Newsletter has been a useful capacity building tool on related issues, while arriving digitally and freely through GEOSUR, PAIGH, and issuu, among others.

To all those who have participated, sincere thanks and a renewed invitation to continue collaborating in the years to come. We celebrate the Anniversary of GEOSUR!

CAF - Development Bank of Latin America

investorinformation@caf.com

www.caf.com

PAIGH

secretariageneral@ipgh.org

www.ipgh.org

GEOSUR Program

geosur@caf.com

www.geosur.info



Collaborators of the geospatial community in the GEOSUR Newsletter 2014-2017