PAN AMERICAN INSTITUTE OF GEOGRAPHY AND HISTORY

Tri National Integrated Map Meeting
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Integrated Map of the Americas

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Outline of Presentation

- Objectives of the Integrated Map
- Background
- Participatory Process: Format and Results
- Methodology and database
- Status
- North America Integrated Map opportunity

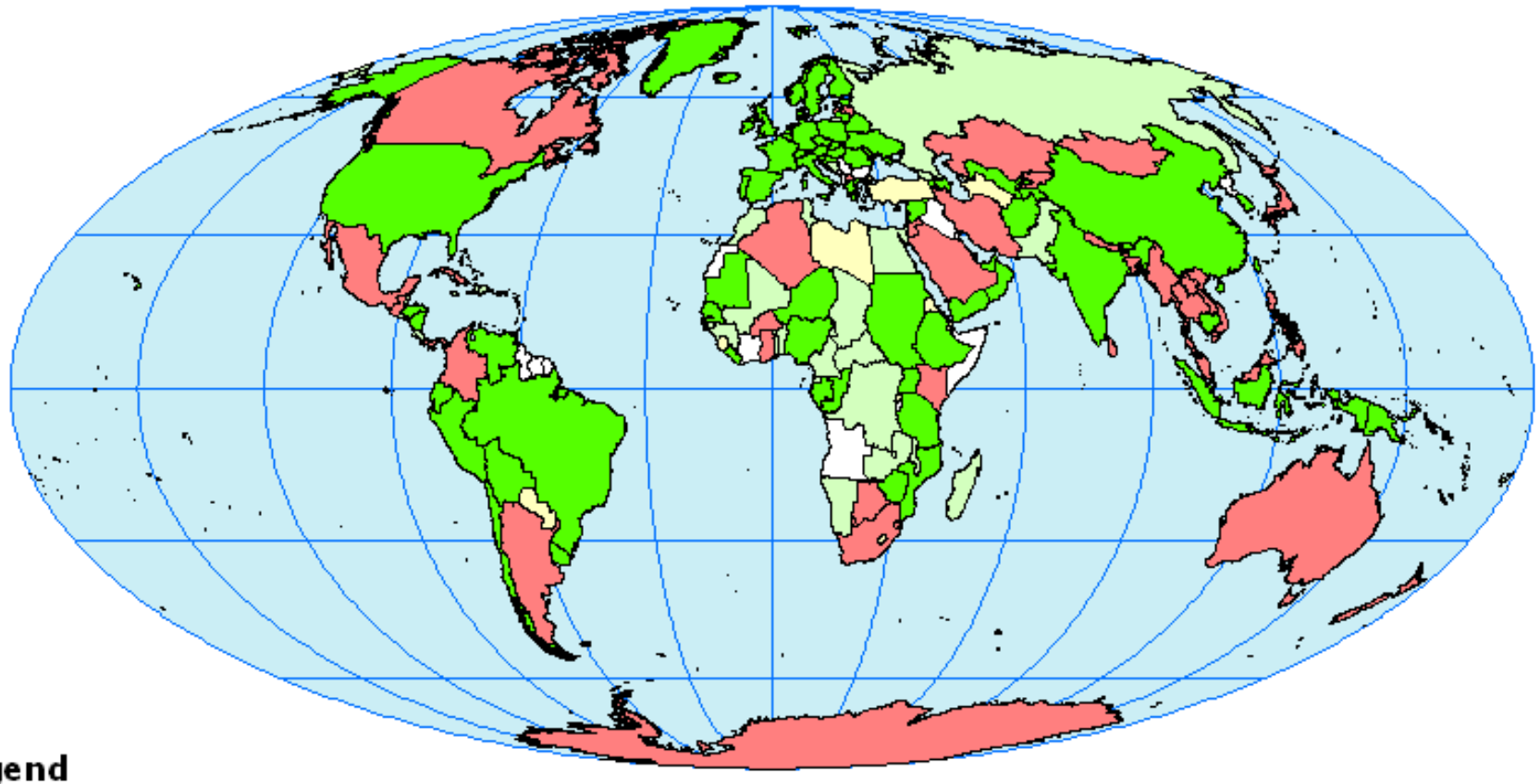
Objectives of the Integrated Map of the Americas

- Cooperatively produce in a participatory manner the first integrated map of the Americas using official data sources from all countries
- Reach consensus agreement on Technical Specifications, Object Catalogue, UML Model, Data Policy, Metadata, Users License.
- Share best practices and new applications: Networked Hydrography and Transportation, Statistical data, Data generalization, etc.
- Sponsor participatory technical workshops for harmonizing transboundary data
- Produce standardized technical documention and metadata

BACKGROUND
INTEGRATED MAP OF THE AMERICAS

Progress of Global Mapping Project

As of 2007-07-20
International Steering Committee for Global Mapping

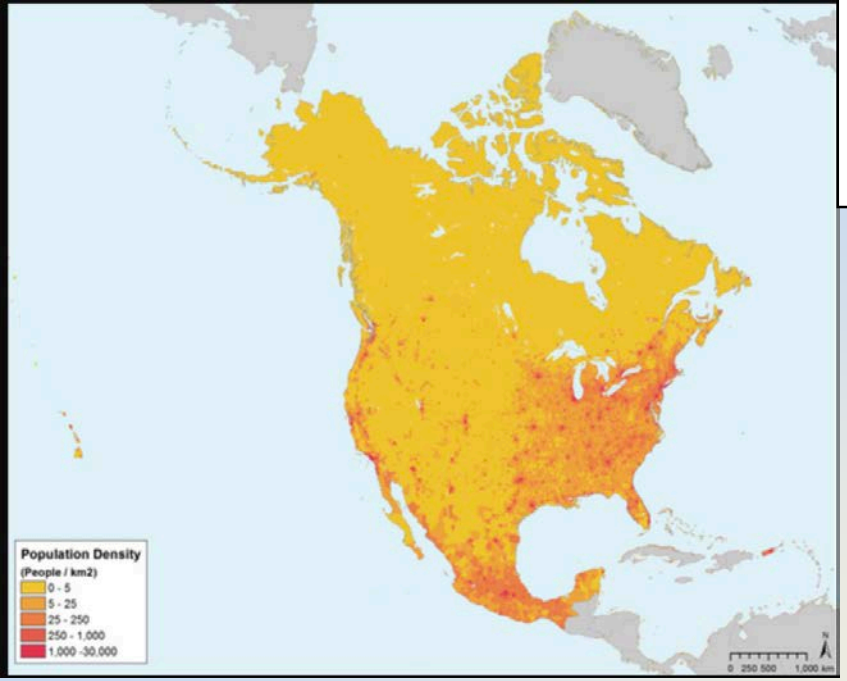


Legend

- data available
- data for verification
- developing data
- considering joining the project
- not participating in the project

Most raster data of current Global Map are compiled from GTOPO30 and GLCC, contribution of United States of America.

This map is for the purpose of reference and the boundaries in this map are not authorized by any organizations.

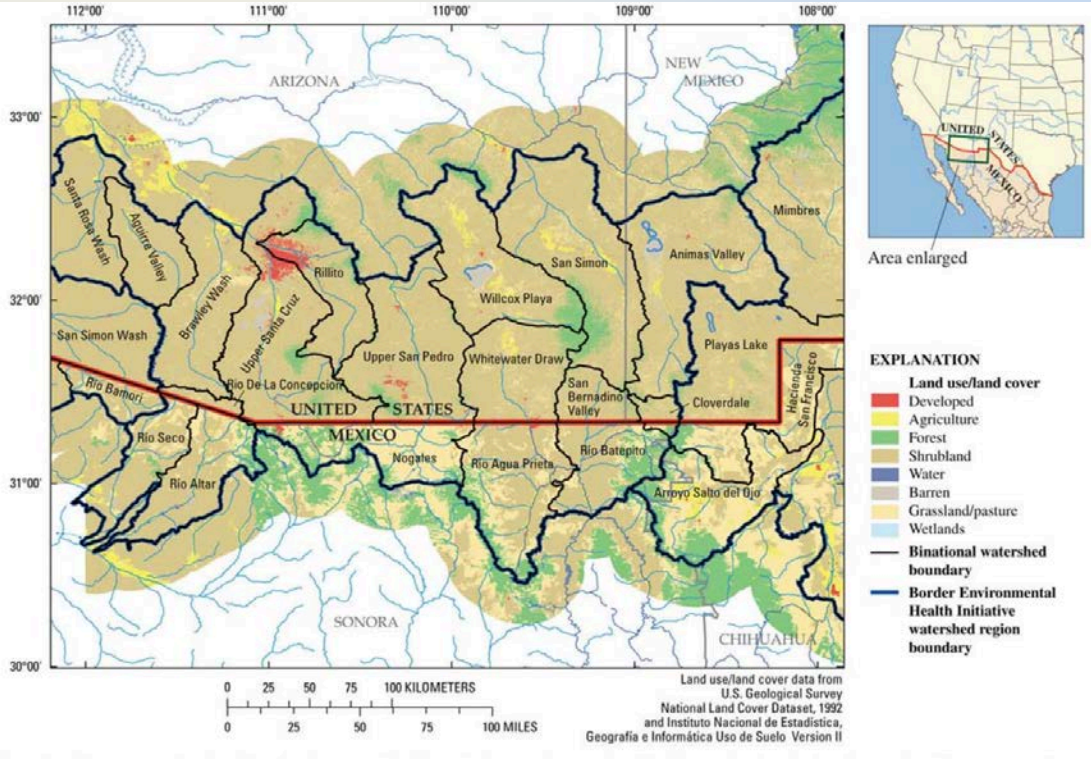


Pre Integrated Map Projects

Commision for Environmental Cooperation
North American Environmental Atlas

USGS Border Environmental Health Initiative 2005 to 2009

U.S.-Mexico Border Transboundary GIS



Central American Geospatial Data Integration Initiative

Circumstances:

- Central American National Geography Institutes were at a turning point to modernize their mapping programs
- To monitor environmental change on a global scale requires cooperation between nations,
- Improve collaboration to reduce risk and vulnerability for natural disasters requires transboundary data sharing
- Mexico and Central American countries at different technical levels of Geospatial data development
- Share best practices and share data

Central American Geospatial Data Integration Initiative

PAIGH Technical Assistance Project Proposal 2010

- Objective – Develop a seamless integrated geospatial dataset and map for Central America, working with the National Geography Institutes of Central America in a participatory manner
- Process – Participatory cartography using official datasets and technical experts to harmonize transboundary datasets
- Participation from 7 Central American nations and Mexico
- 1:250,000 scale datasets
- Support from PAIGH, Latin American Development Bank (CAF), ESRI, and USGS

PARTICIPATORY PROCESS: FORMAT AND RESULTS CENTRAL AMERICA (MIAC) NORTHERN ANDES (MIAN) AND SOUTH AMERICA (MIAS)

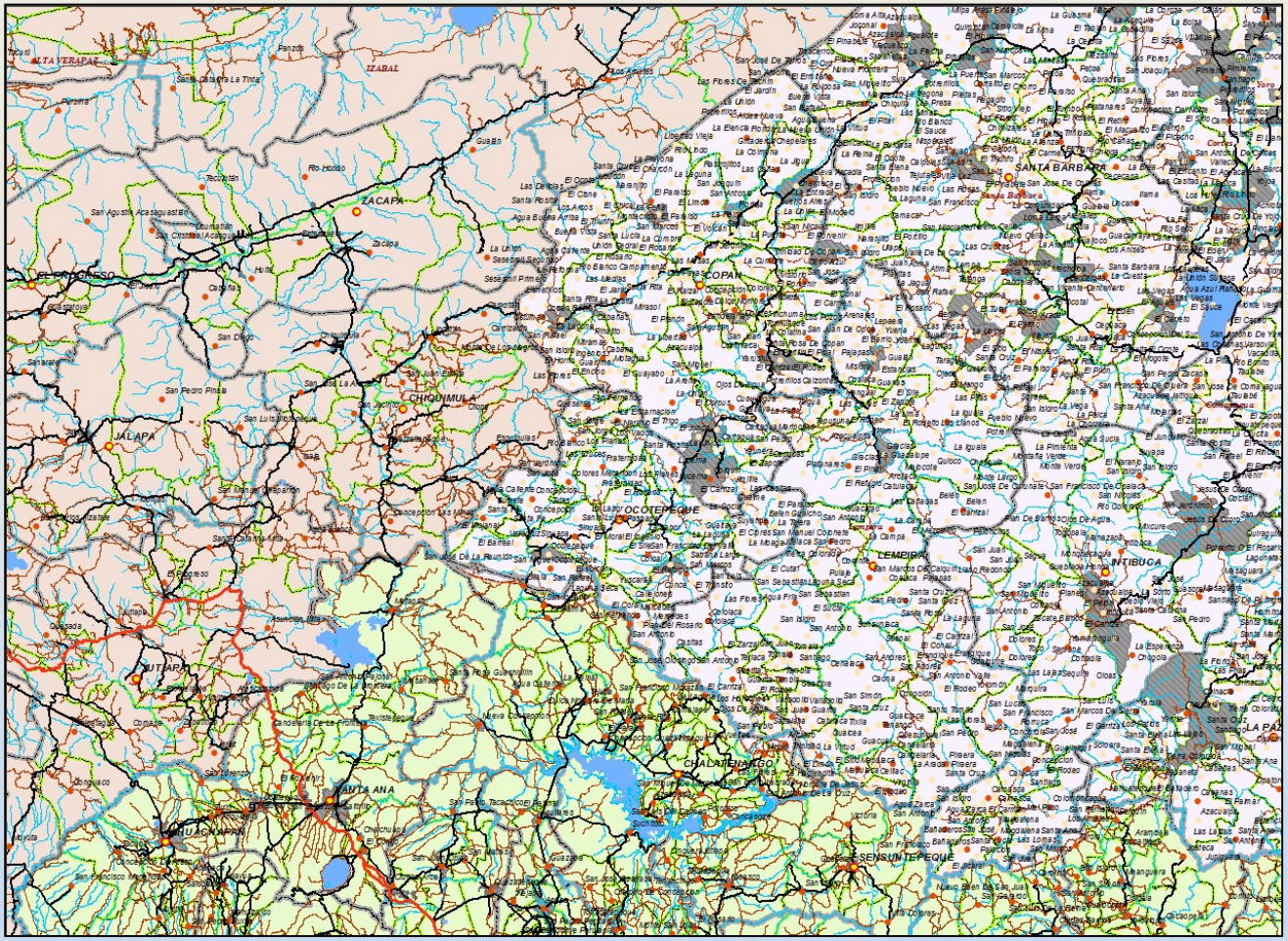
Central American Participatory Workshops

Atributos_de_Capas.xlsx

	A	B	C	D
1	**CAPA**	CAMPOS	Ejemplos de data en campos respectivos	
2				
3	**POBLADOS(puntos)**	PAÍS	MX, BE, GT, HN, SV, NI, CR, PA	
4		CATEGORÍA	Departamento, Estado, Municipio, Provincia, Urbana,Rural, District,Town,City	
5		COD_CATEGORÍA	1,2,3,4 IE. Dept(1). Estado(1).District(1).City(1). Town(2). Municipio(2).Rural(2)	
6		NOMBRE		
7		POBLACIÓN		
8		COD_ÚNICO		
9				
10	**MANCHA URBANA**	PAÍS	MX, BE, GT, HN, SV, NI, CR, PA	
11		NOMBRE		
12		POBLACIÓN		
13				
14	**LÍMITES ADMINISTRATIVOS**	PAÍS	MX, BE, GT, HN, SV, NI, CR, PA	
15		CATEGORÍA	Departamento, Estado, Municipio, Provincia, Urbana,District,Town,City	
16		COD_CATEGORÍA	1,2,3,4 IE. Dept(1). Estado(1).District(1).City(1). Town(2). Municipio(2).	
17		NOMBRE		
18		POBLACIÓN		
19		COD_ÚNICO		
20				
21	**CARRETERAS**	NOMBRE		
22		TIPO	Pavimentada. No Pavimentada, Otro	
23		NIVEL	Panamericana(1), Pavimentada(2), No Pavimentada, Otro(3)	
24		PAÍS	MX, BE, GT, HN, SV, NI, CR, PA	
25				
26	**RÍOS**	NOMBRE		
27		PAÍS	MX, BE, GT, HN, SV, NI, CR, PA	
28				
29	**CUERPOS**	NOMBRE		
30		TIPO	Perenne, Intermitente	
31		CLASIFICACIÓN	Lago, Laguna, Embalse, Corriente de agua,	
32		PAÍS	MX, BE, GT, HN, SV, NI, CR, PA	
33				
34				
35				

Campos-atributos | Campos-Definidos | Sheet3

Results of Central American Participatory Workshops

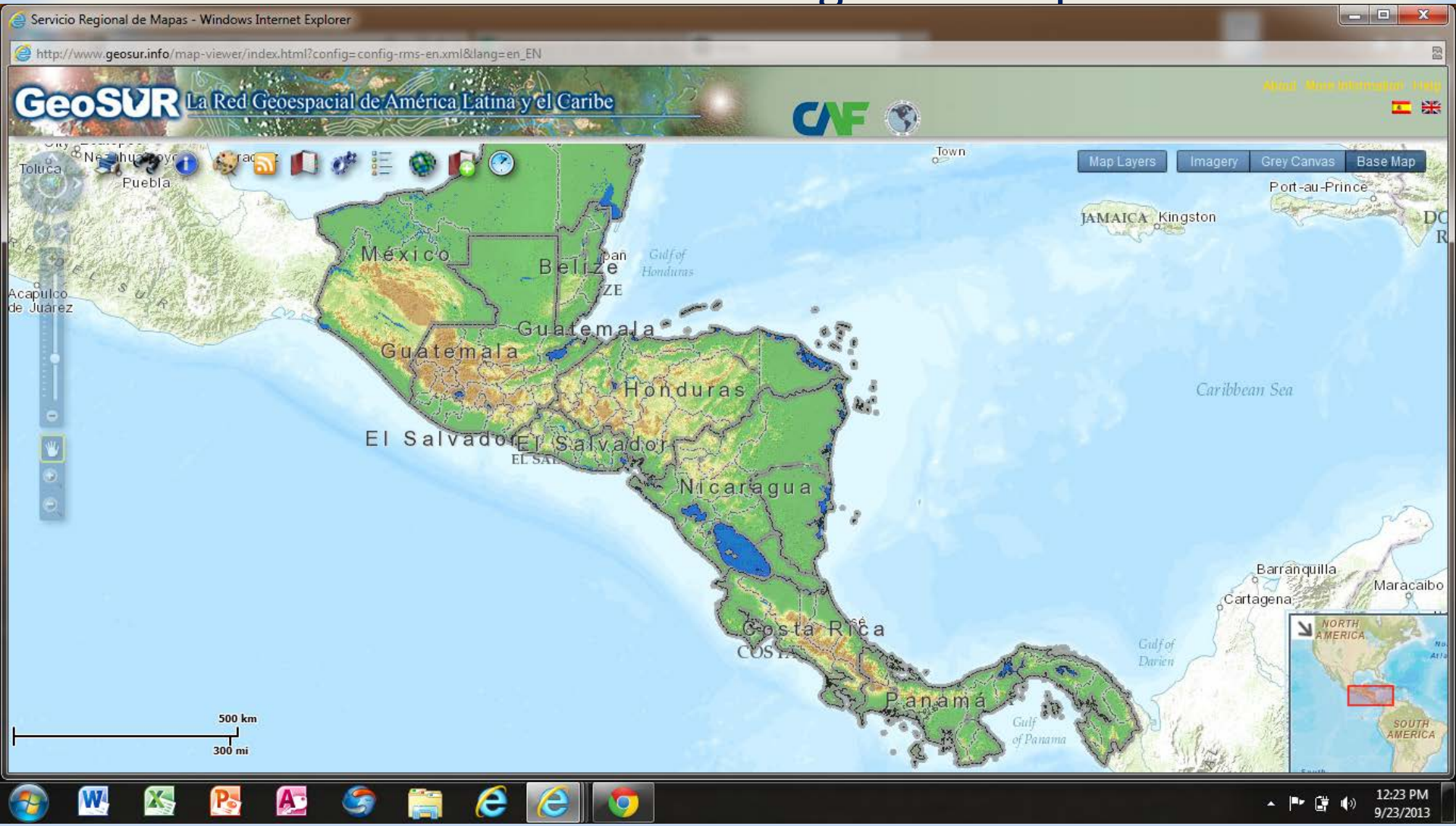


View of the integrated road network, hydrography, administrative boundaries, and populated places for Guatemala, El Salvador, and Honduras

Central American Integrated Data viewable in GeoSUR Web Portal

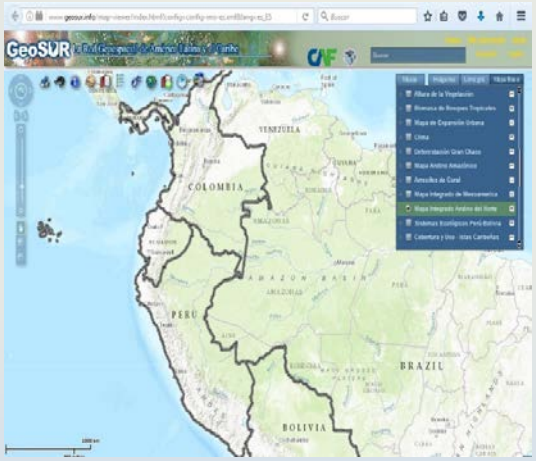
http://www.geosur.info/map-viewer/index.html

MesoAmerica Integrated Map

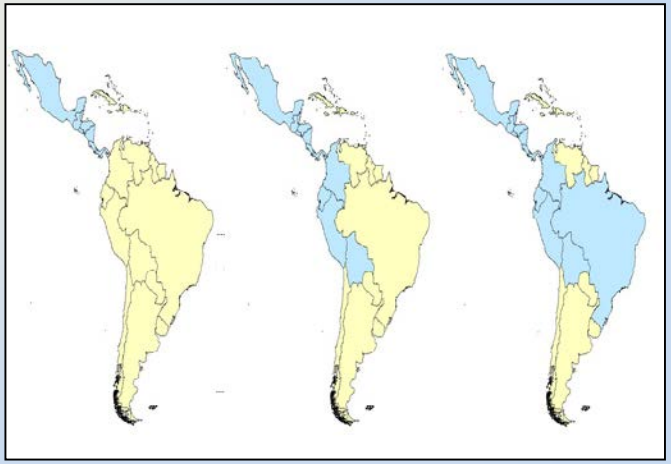


Progress of the Integrated Map

Integrated Map of Central America



Integrated North Andean Map in the Viewer of the GeoSUR Program

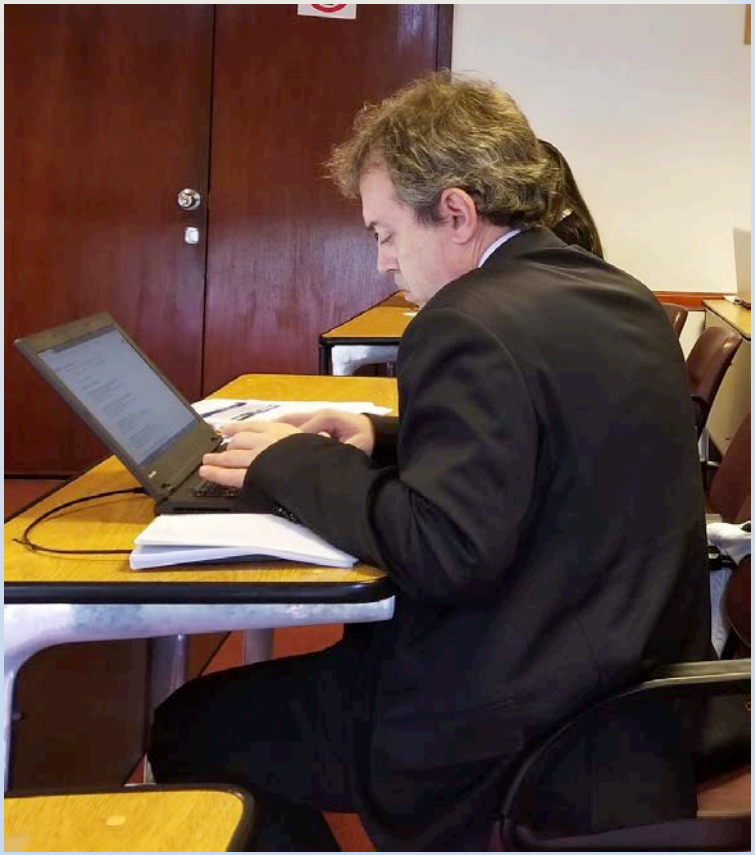


Integrated Map of Central America, the MIAN and the recent inclusion of Brazil

Facilitators

Antonio Rodriguez, (National Geography Institute, Spain)
and Roberto Lugo (USGS Emeritus)

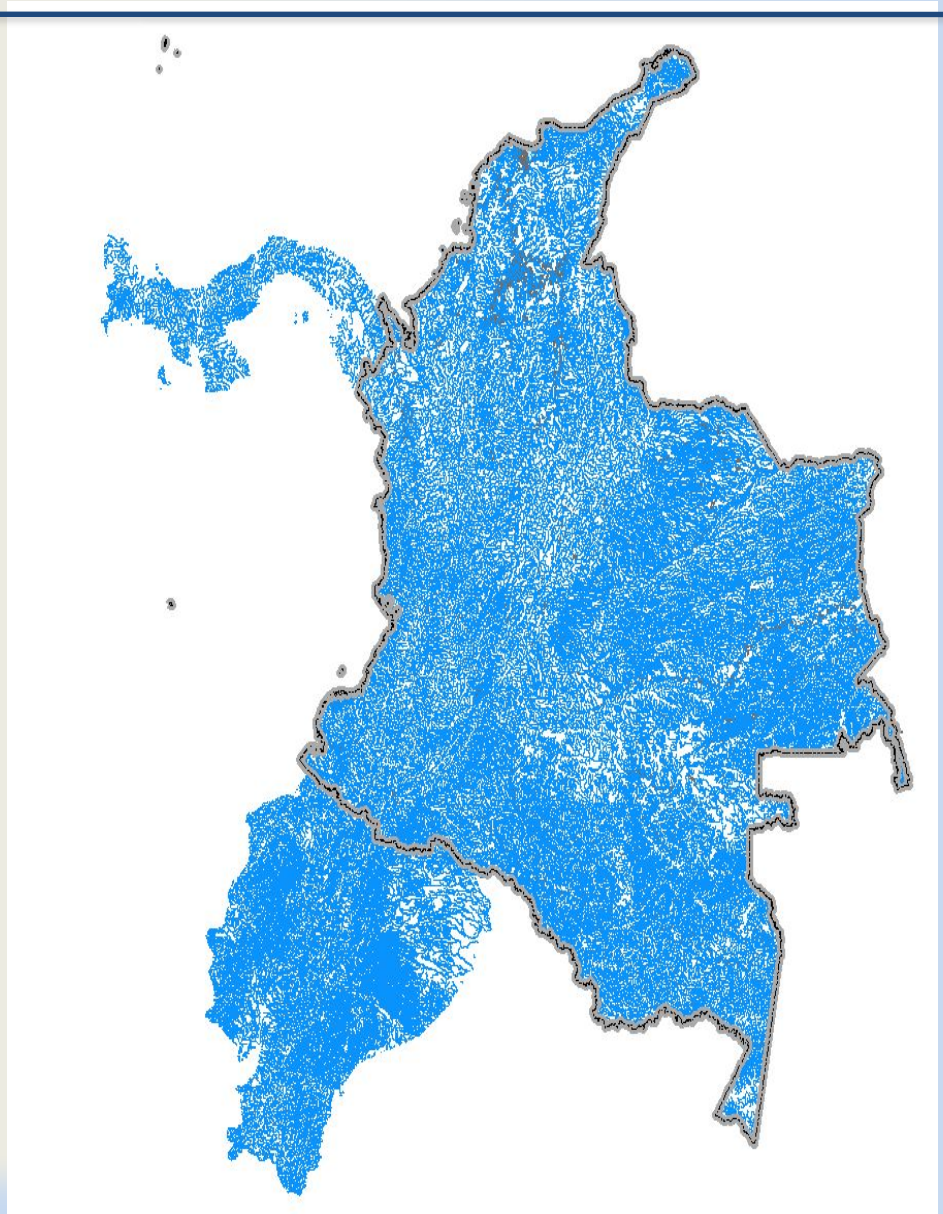
Luis Miguel Blanco
(National Geography Institute, Spain)



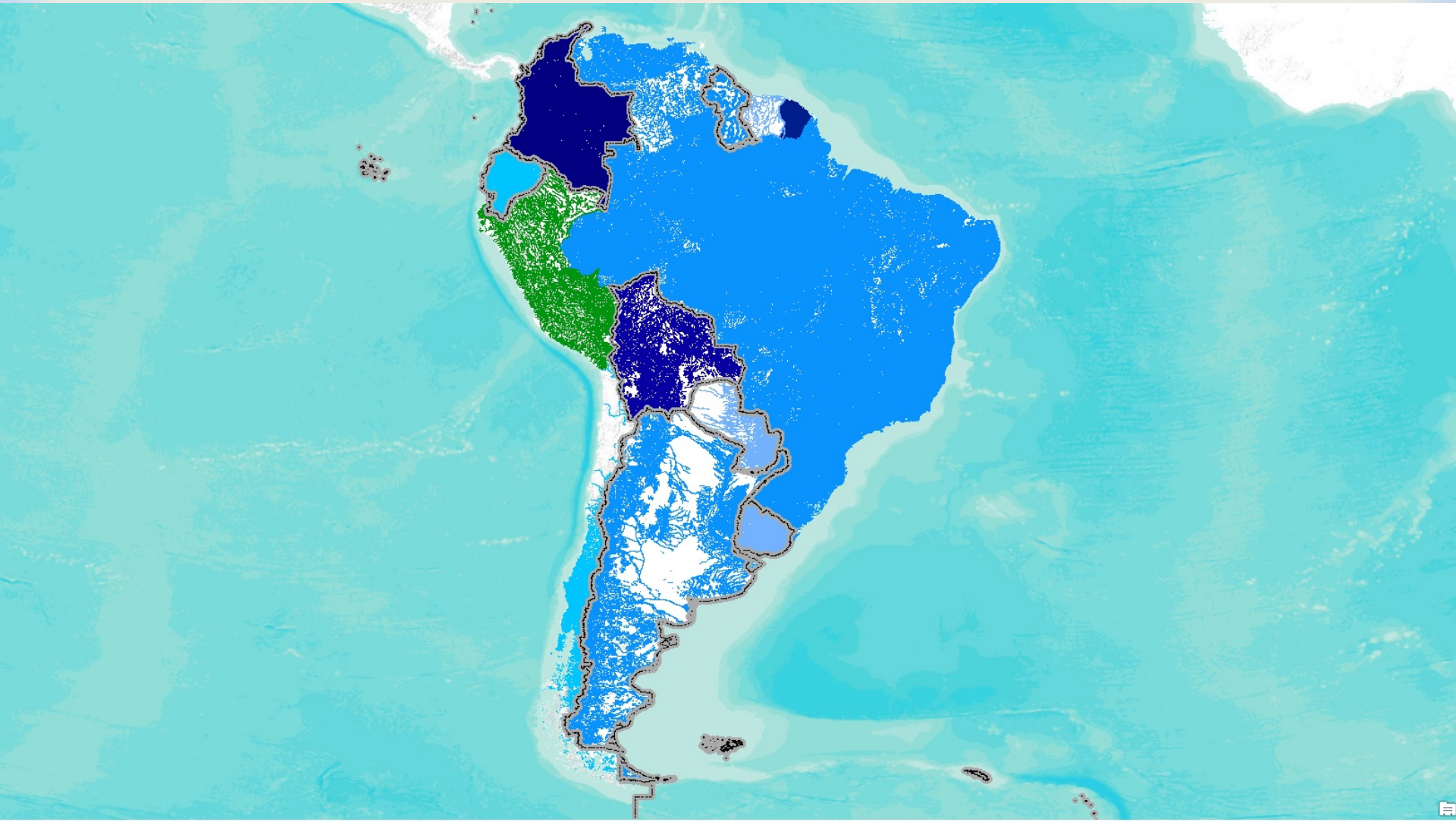
Workshops of the Andean Integrated Map

Hydrographic Network

The hydrographic network of three countries (Panama, Colombia and Ecuador). Note the density of the hydrographic data.

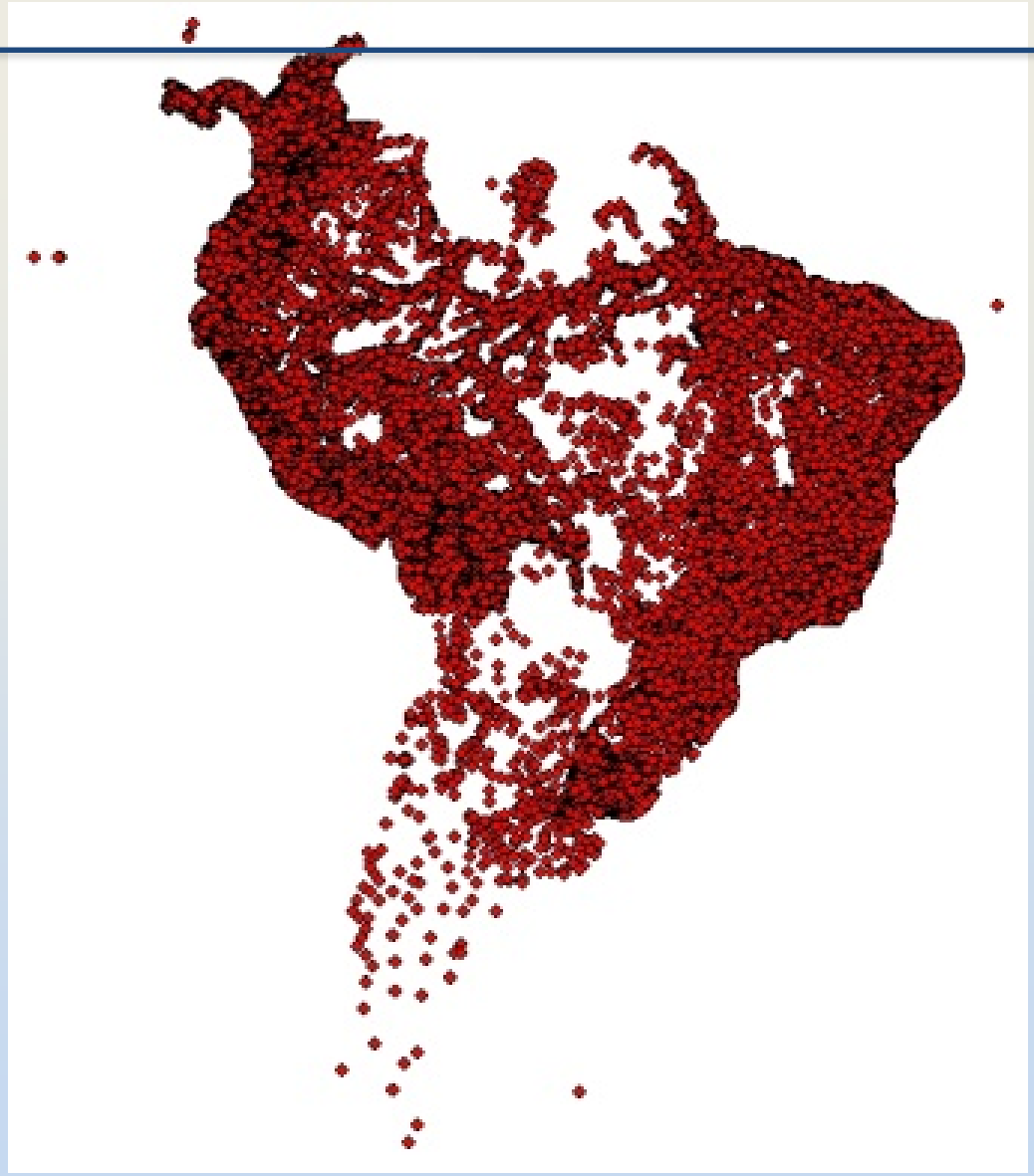


Hydrography of South America



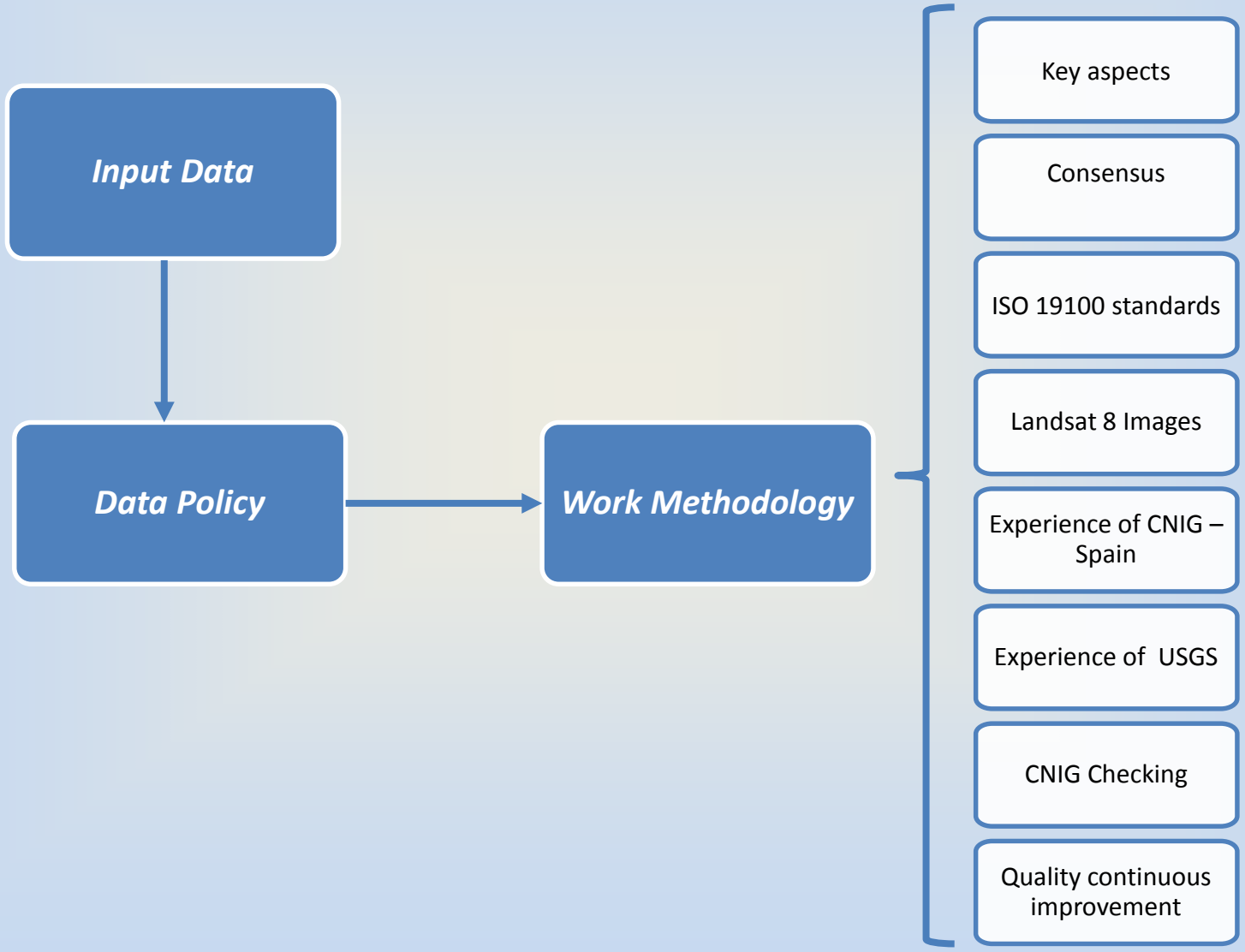
Transportation of South America

Populated Areas of South America

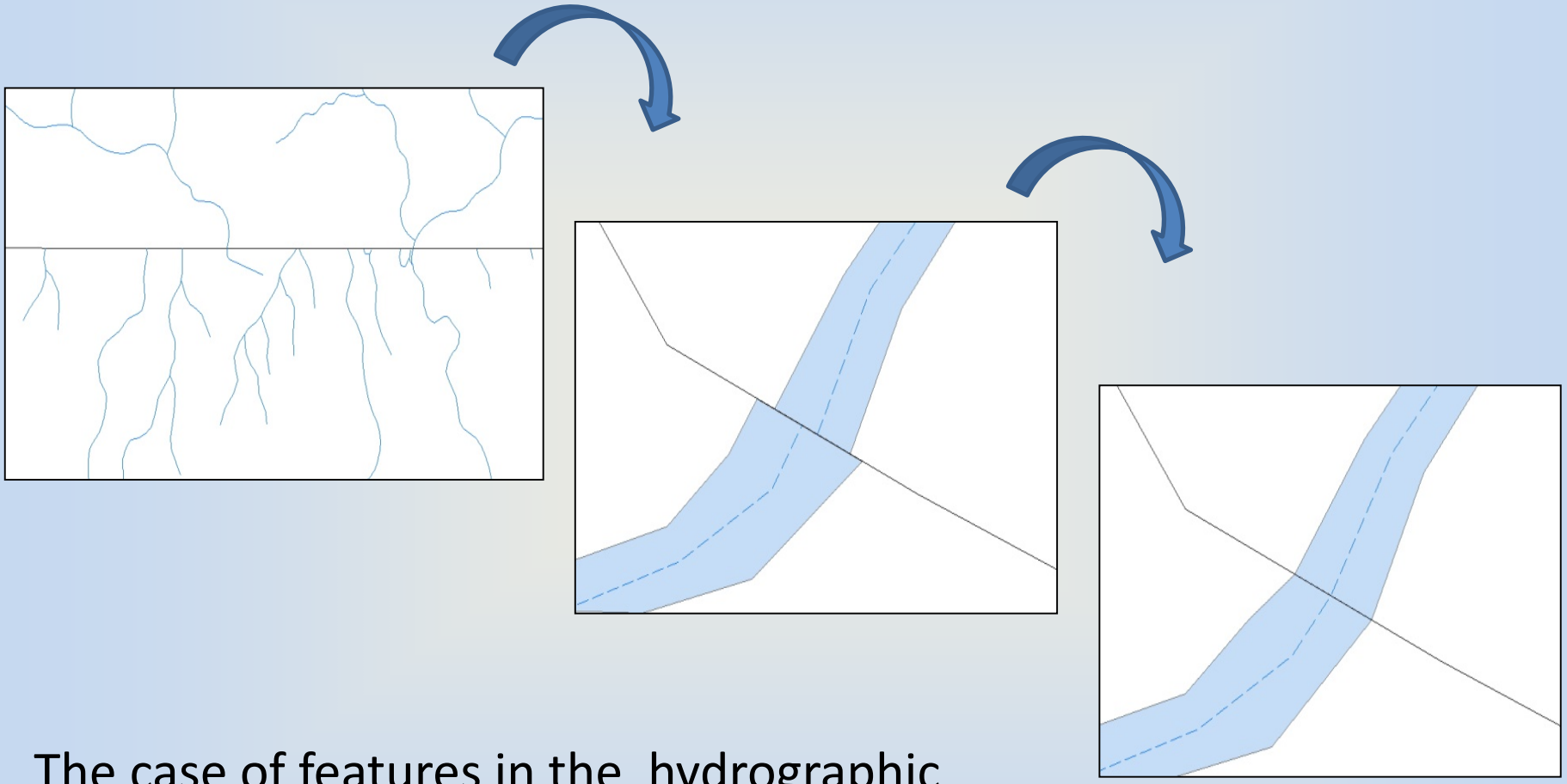


METHODOLOGY AND DATABASE

Methodology



Decisions about transboundary hydro



The case of features in the hydrographic network crossing international borders

Geographic Objects Catalog

Name of Object	Definitions

Theme 1 Administrative Boundaries	
Country (boundary of country outline)	Line object
Level 1 (departments, provinces, states ...)	Line object (optional area object)
Level 2 (municipalities, counties, cantons ...)	Line object (optional area object)
Level 3 (villages, towns, corregimientos ...)	Line object (optional area object)

Theme 2 Hydrography	
River (rivers, stream, canals, water courses, axis ...)	Line object
Coast Line	Line object
Water Bodies (lakes, lagoons, waterways, reservoirs, swamp, swamp, flood areas ...)	Area object
Hydrographic form (Mangrove, Sandbank)	Area object A mangrove is an area near the mouth of one or more rivers in which the dry and flooded areas are mixed in an indistinguishable manner and it is not possible to trace the geometry of the watercourses.

Theme 3 Population Locations	
Populated Places (Locality or specific city)	Point object
Urban sprawl (Boundary of urban fabric, city limits)	Area object

Status of Integrated Map Projects

- Central America
  - Five workshops (2011 to 2017) with seven countries
  - 2017 workshop focused on updating to new geospatial data model (WMS & WMTS)
  - Completion summer 2018
- Northern Andes
  - 2016 to 2017
  - Four Workshops with four countries and Panama
  - Developed catalog of geographic objects
  - Data published on GeoSur portal

Status of Integratd Map Projects

- South America
  - Three workshops
  - Participation of all countries in South America, including Northern Andes
  - Fourth workshop scheduled for May 13 – 18 in Santiago, Chile
  - Estimated completion time Fall 2018

Challenges for North America Integrated Map

Challenges

- Size of databases
- Scale differences
- Length of International Borders
- Languages – English, Spanish, French
- Resources

Opportunities for North America Integrated Map

Opportunities

- Networked hydrography for the continent
- Sharing and promoting open datasources
- Building technical capacity & sharing of best practices
- Familiarity with Geodatabase models
- Greater participation in PAIGH

Next Steps

- Consensus on participation
- Explore source datasets for each country
- Investigate compatibility with current geodatabase model
- Plan participatory workshops with technical representatives from each country/institution