GEOSUR PROGRAM

Geospatial Information for the South American Integration





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IIRSA Information Needs

ASSUMPTION: Regional information, developed under common standards, integrated to different resolutions and having consistent quality will contribute to decision-making.

Spatial information in South America has the following deficiencies:

- There are information gaps.
- Information cannot always be integrated across borders.
- There are only few regional standards.
- It is hard to locate and access some information.
- Efforts in data generation processes are usually duplicated.
- . . . . . .

Use of Technology in other Regions

IABIN: Development of geospatial network for Meso-America and the Caribbean (2004 – 2006).

SNIT: National System of Territorial Information in Chile

ICDE: Colombian Spatial Data Infrastructure

GeoNetwork: UN Spatial Data Network

GOS: Geospatial One Stop, from the USA.

Global Map of the Americas: National maps at a scale of 1:1.000.000

CONDOR: Interactive SIG developed by CAF and CI for the Andean region

... and similar initiatives in Europe, Asia… including Africa

Objectives of the GeoSUR Program

- Provide decision makers with national and multinational digital maps that should facilitate physical infrastructure planning and regional development.
- Facilitate and promote cooperation among institutions generating geographic information in the region so as to update, share and work geospatial information in an integrated manner.

Profile of the GeoSUR Program

Geographical area: The 12 South American countries and Panama

Implementation Period: 2007 – 2010

Agencies with a coordination role

- Andean Development Corporation (CAF)
- Instituto Panamericano de Geografía e Historia (IPGH)
- Inter-American Network of Biodiversity Information (IABIN)

Agencies with a technical assistance role

- Geological Service from the USA – EROS Center
- Military Geographical Institute in Chile
- Geographical Institute Agustín Codazzi in Colombia
- Environment Secretariat in Mexico

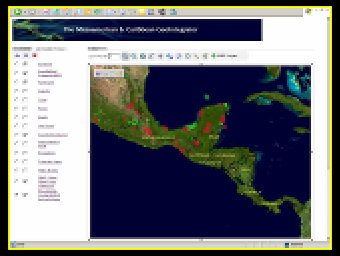
Participating agencies

- National Geographical Institutes
- Environment Ministries
- Infrastructure/Planning/Public Works Ministries

Collaborators

- Andean Community of Nations (CAN) and PREDECAN
- Economic Commission for Latin America and the Caribbean (ECLAC)

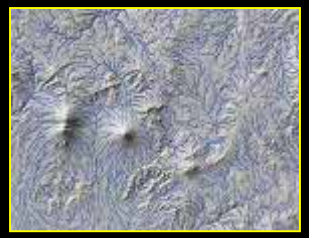
GeoSUR Products



GeoPortal: System that will integrate spatial data uploaded in the map services of participating institutions.

Map service network: Operational map services in each participating institution.

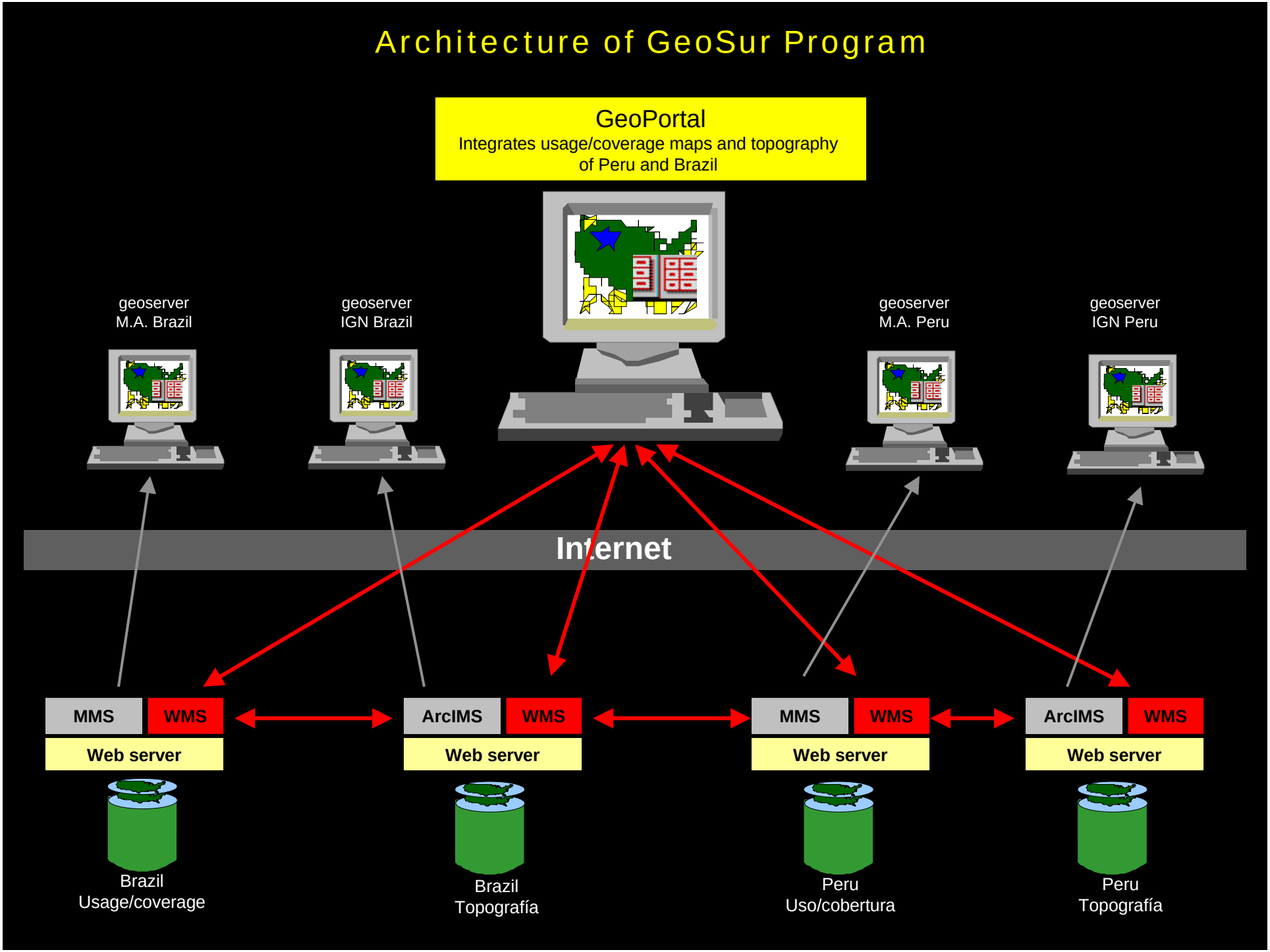
Geospatial catalogs: Generation of metadata and catalogs (clearinghouse)



Maps derived from elevation: Suite of integrated, standardized and consistent maps derived from MED SRTM, 30 m.

Core maps of South America: Integration of core national maps in a mosaic of regional maps (road system, urban locations, etc)

Architecture of GeoSur Program



Philosophy behind the Project

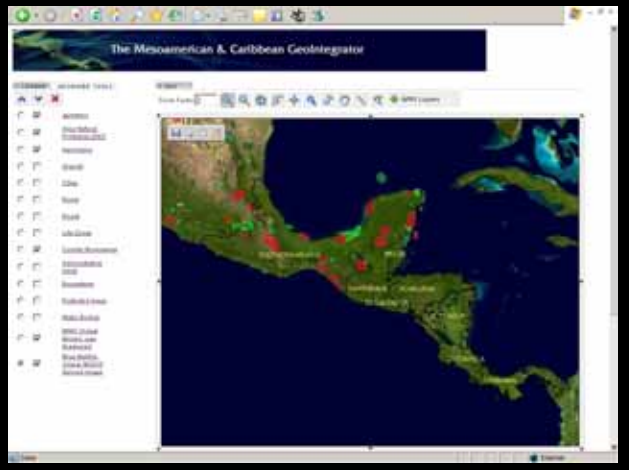
- This is a decentralized network, each producer is responsible for keeping its own catalogs and map services.
- It applies a methodology already proven in initiatives conducted in Colombia, USA, Europe and Chile, among other.
- This first stage concerns official and national data generators.
- The project works with the IDE structures of each country.
- Both free and commercial SW are used. Technology will not be a barrier for participation.
- Emphasis is placed on standards and protocols rather than on specifric programs.
- Specialist networks to be created should ensure sustainability.

Experiences in Latin America

ICDE Colombia

SIAPAD / CAN

SNIT Chile



IABIN

Regional GeoSUR Map Service

http://igskmncngs553.cr.usgs.gov/iirsa_ims/

Search Option

Examples:

- Locate proyects financed by IDB in the Andean Hub, transport sub-sector, already completed for an amount higher than US$ 20 million.
- Locate projects in Brazil, of a private nature, such as pavements, being executed with CAF financing, scheduled to be completed in 2009 and having an environmental impact study.
- Locate all IIRSA projects with guaranteed funds for a detailed engineering study in South America.

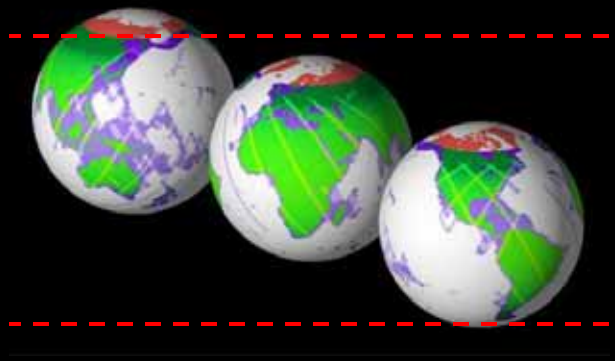
Option to be implemented in the next release

Next Steps

- IIRSA representatives should validate the information in the regional map service.
- Information will be edited in the SIG IIRSA.
- An induction workshop on SIG and GeoSUR tools is scheduled for the first semester of 2009.
- The functionality of the map service will be defined with the support of IIRSA representatives.
- The architectural design of the system is finished, the Geoportal is established and the map services of the region will become integrated.

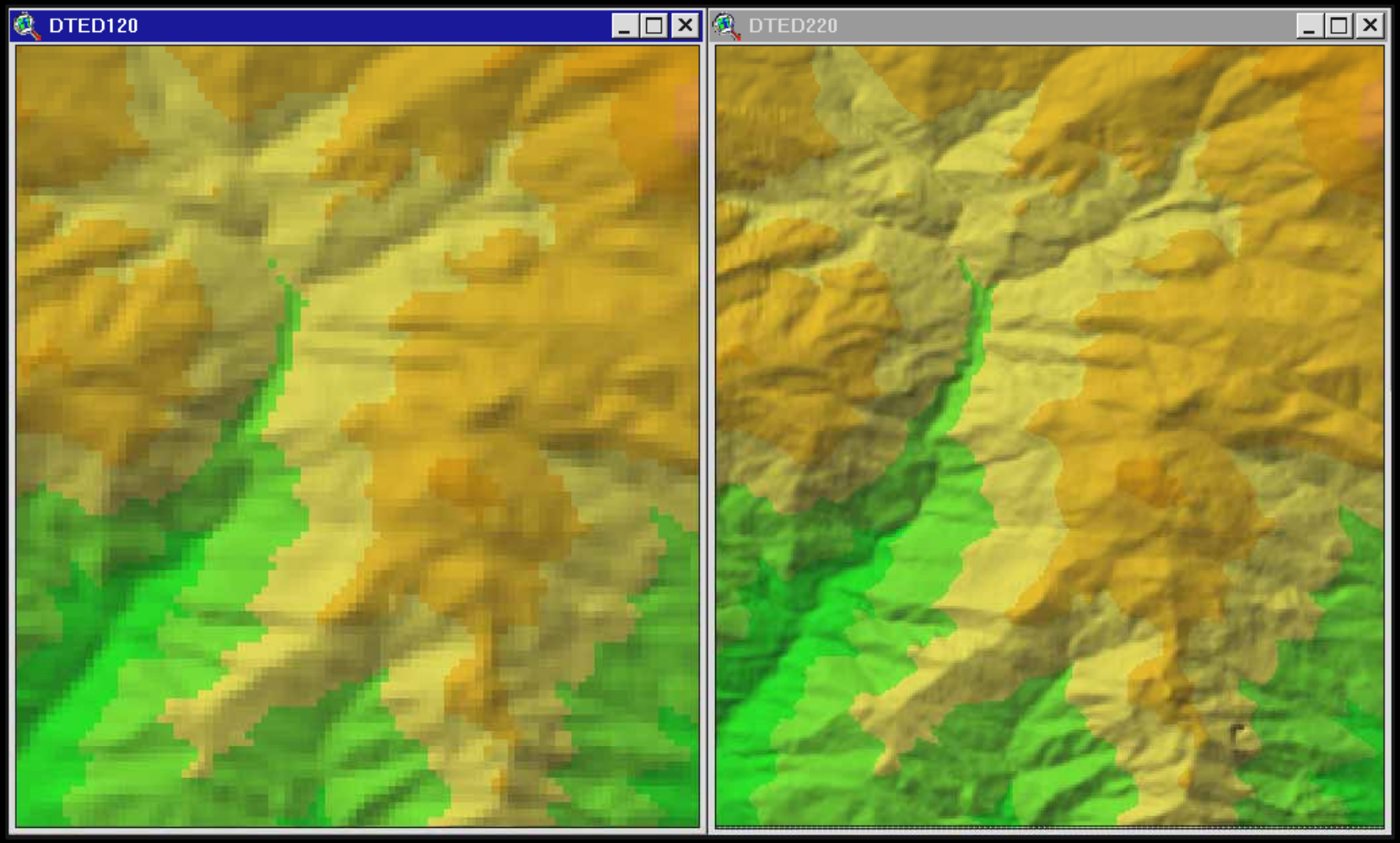
Data derived from SRTM

Mission coordinated by NASA and NGA. Elevation data were obtained for 80% of the Earth. Data are available at Level 1 (90 meters, public) and Level 2 (30 meters, limited distribution). USGS has obtained SRTM Level 2 data for South America. The GeoSUR Program can support the generation of derived data but not the delivery of source data.



DERIVED DATA

- Digital relief map (hill shade).
- Digital basin map.
- Digital sub-basin map.
- Hydrography map (stream network)
- Aspect map.
- Slope maps.
- Water accumulation map.
- Flow map.
- Pour point map.



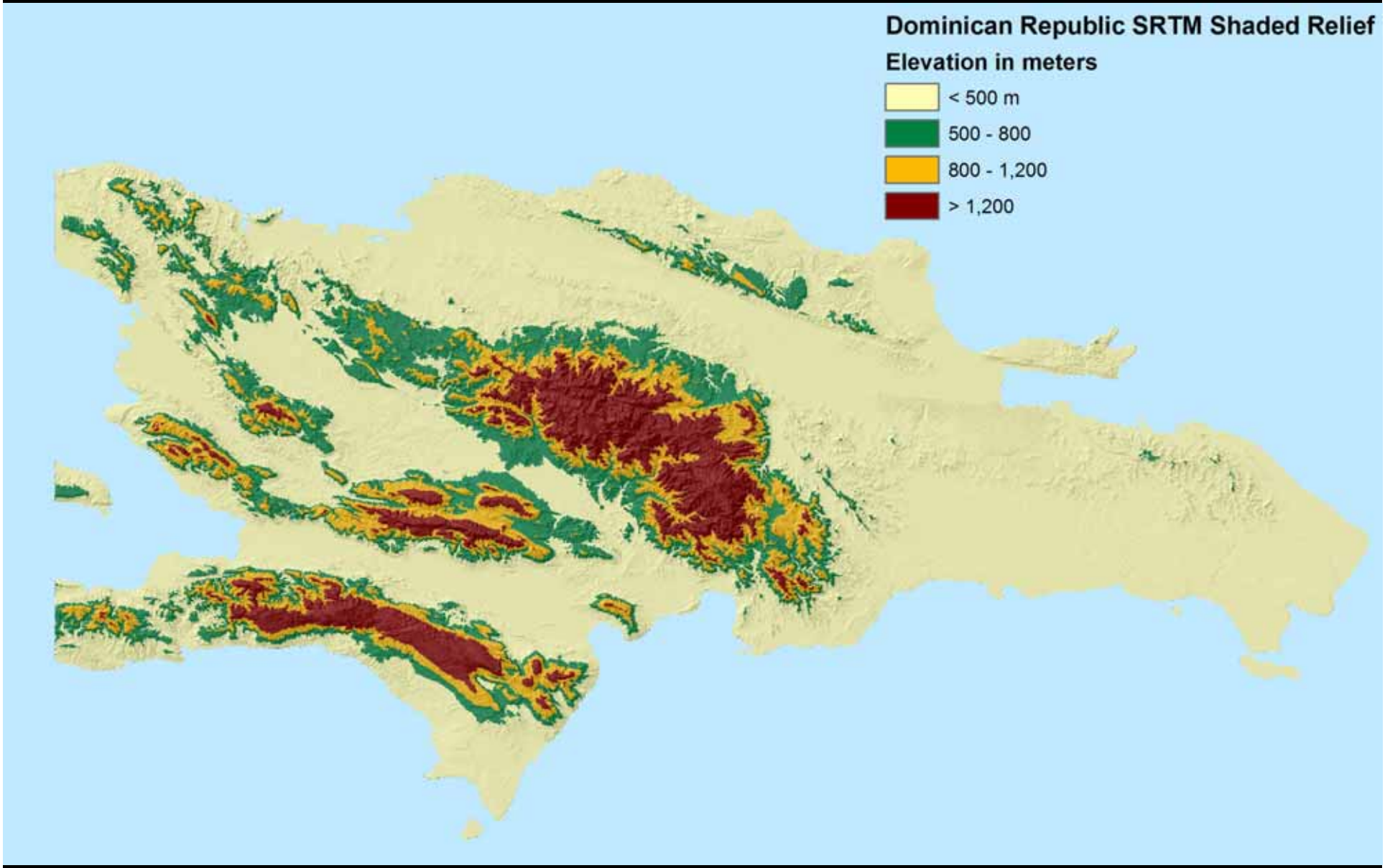
Adapted from NGA material

Comparison of SRTM data - 30 and 90 meters

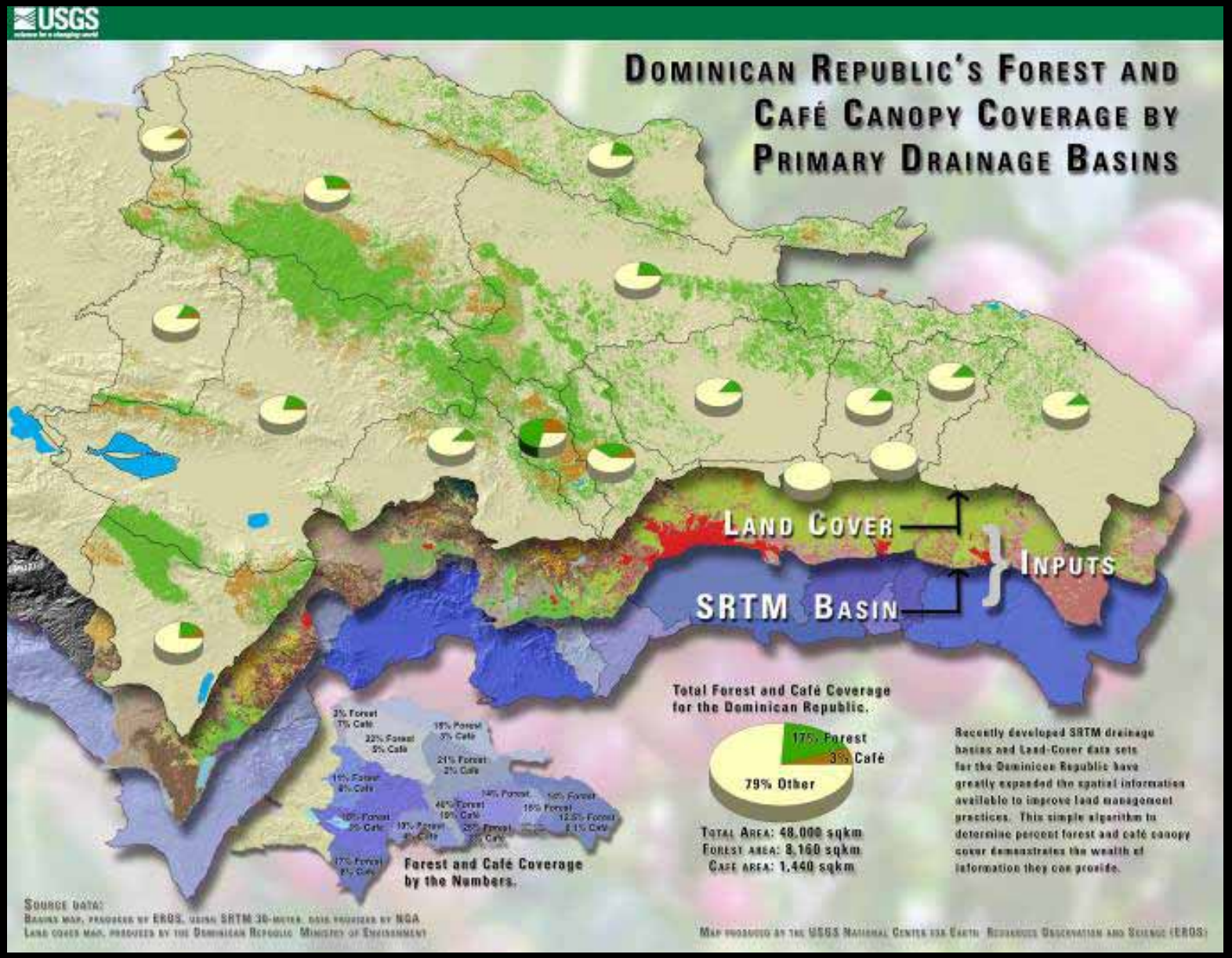
Example of SRTM data applications

- General planning tool for the development of infrastructure.
- Analysis of visibility (for example: planning the installation of TV, microwaves and mobile telephony antennas)
- 3D simulated flight between two selected sites in South America.
- Mapping of areas likely to suffer from collapses and floods.
- Creation of level curves.
- Development of basin and sub-basin maps.
- Prevention and response to natural disasters.
- Analysis of the distribution of species.
- Modeling the distribution of vector-borne diseases.

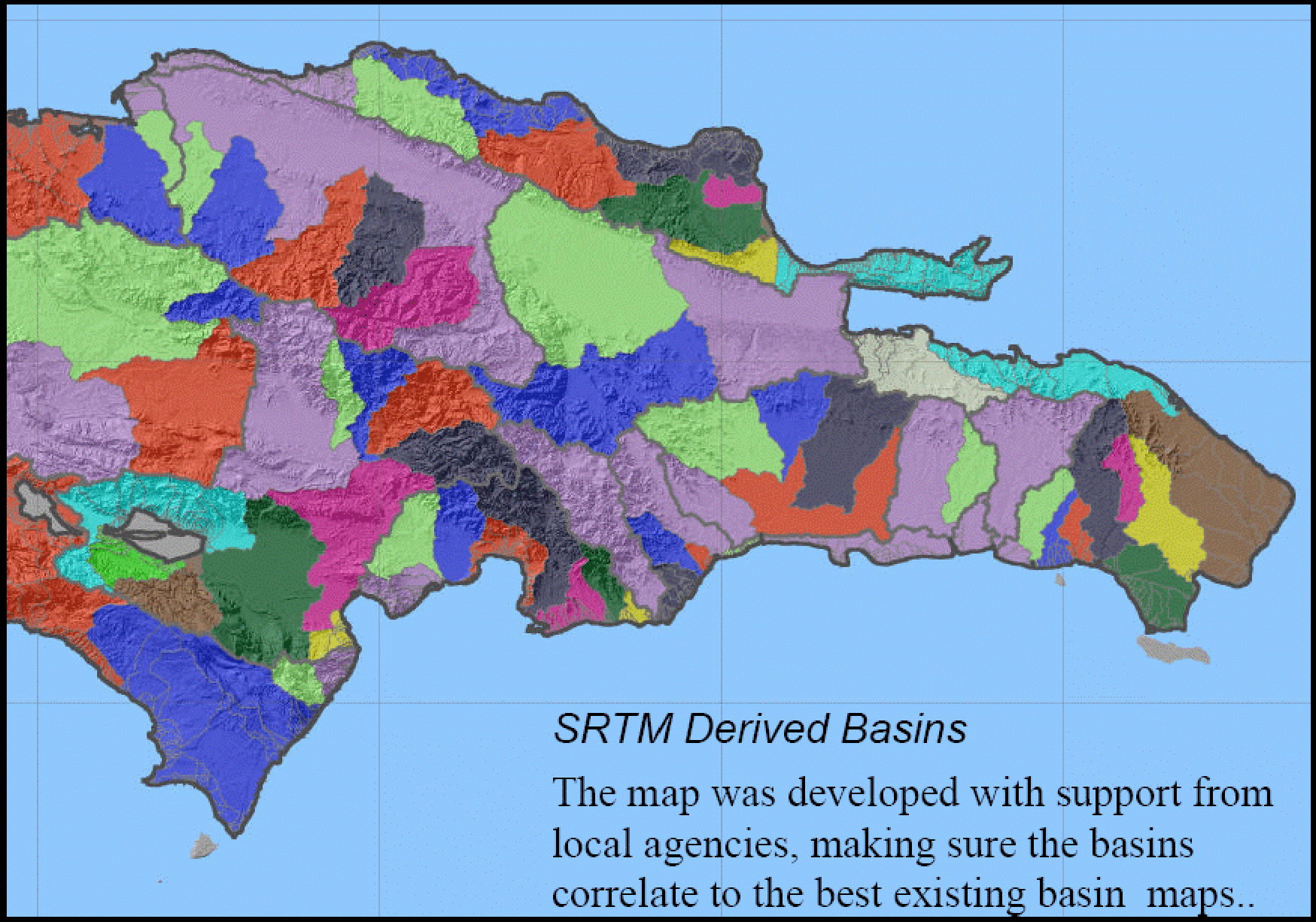
Contour and café maps - Dominican Republic



Estimation of Environmental Services



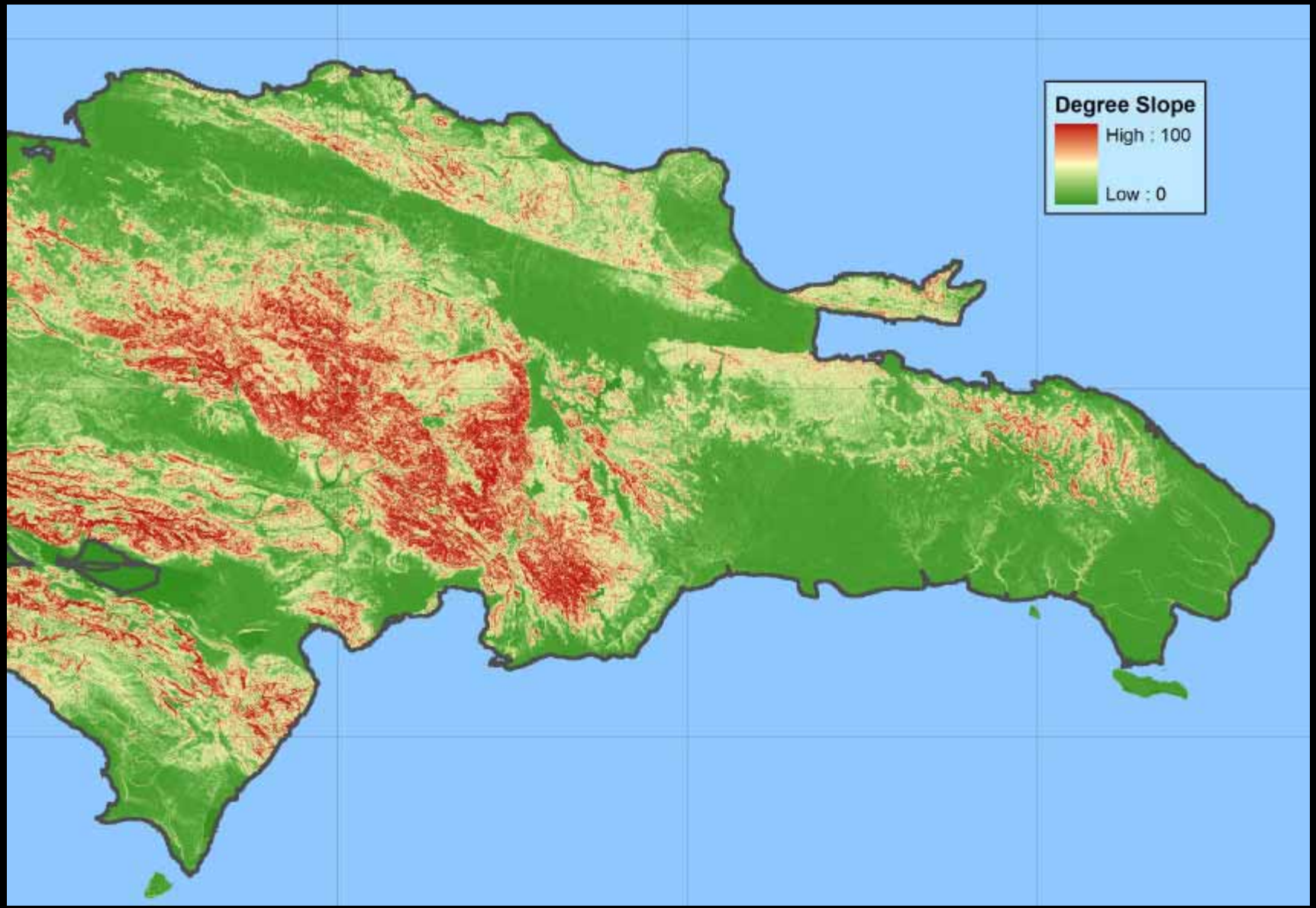
Basin Map – Dominican Republic



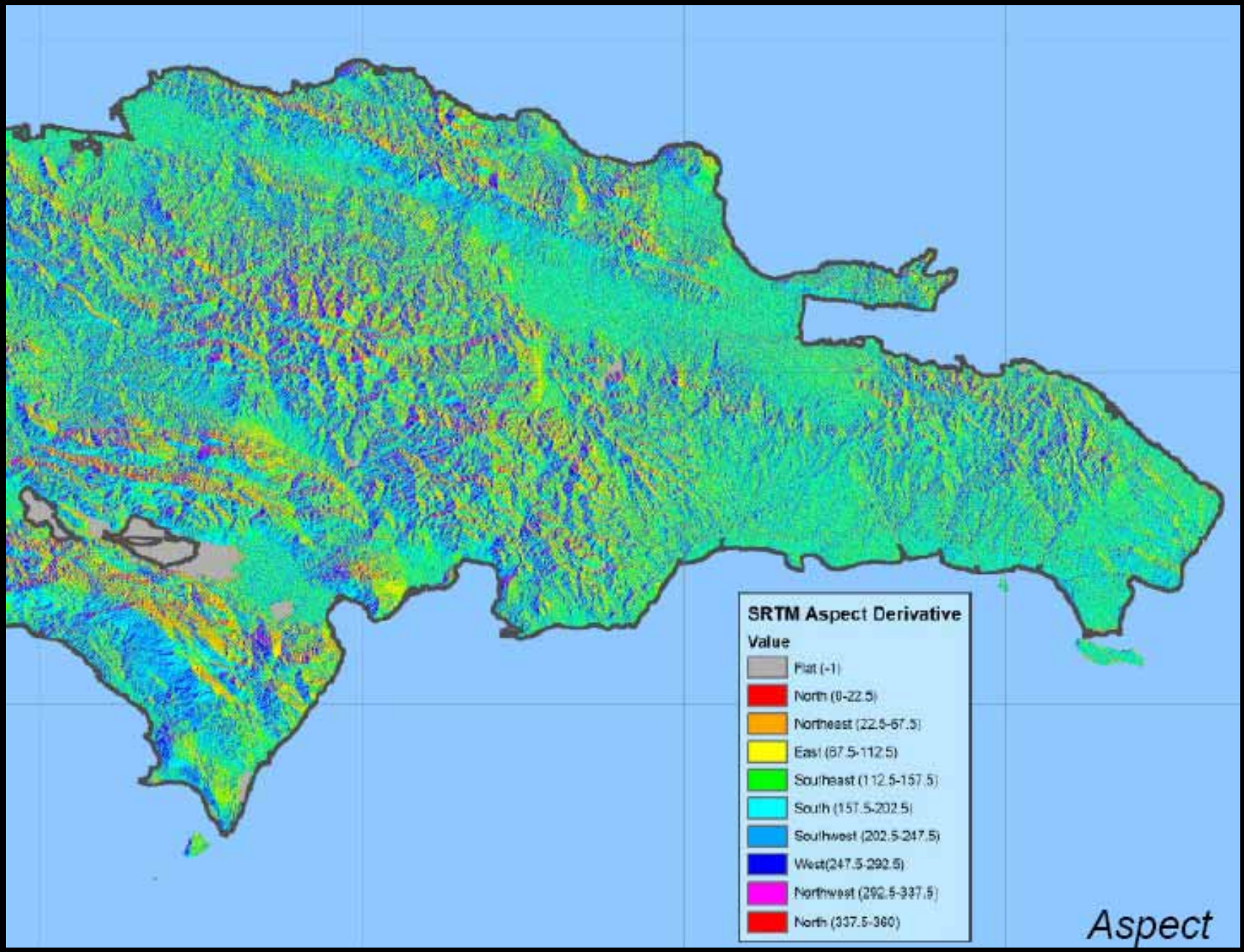
SRTM Derived Basins

The map was developed with support from local agencies, making sure the basins correlate to the best existing basin maps..

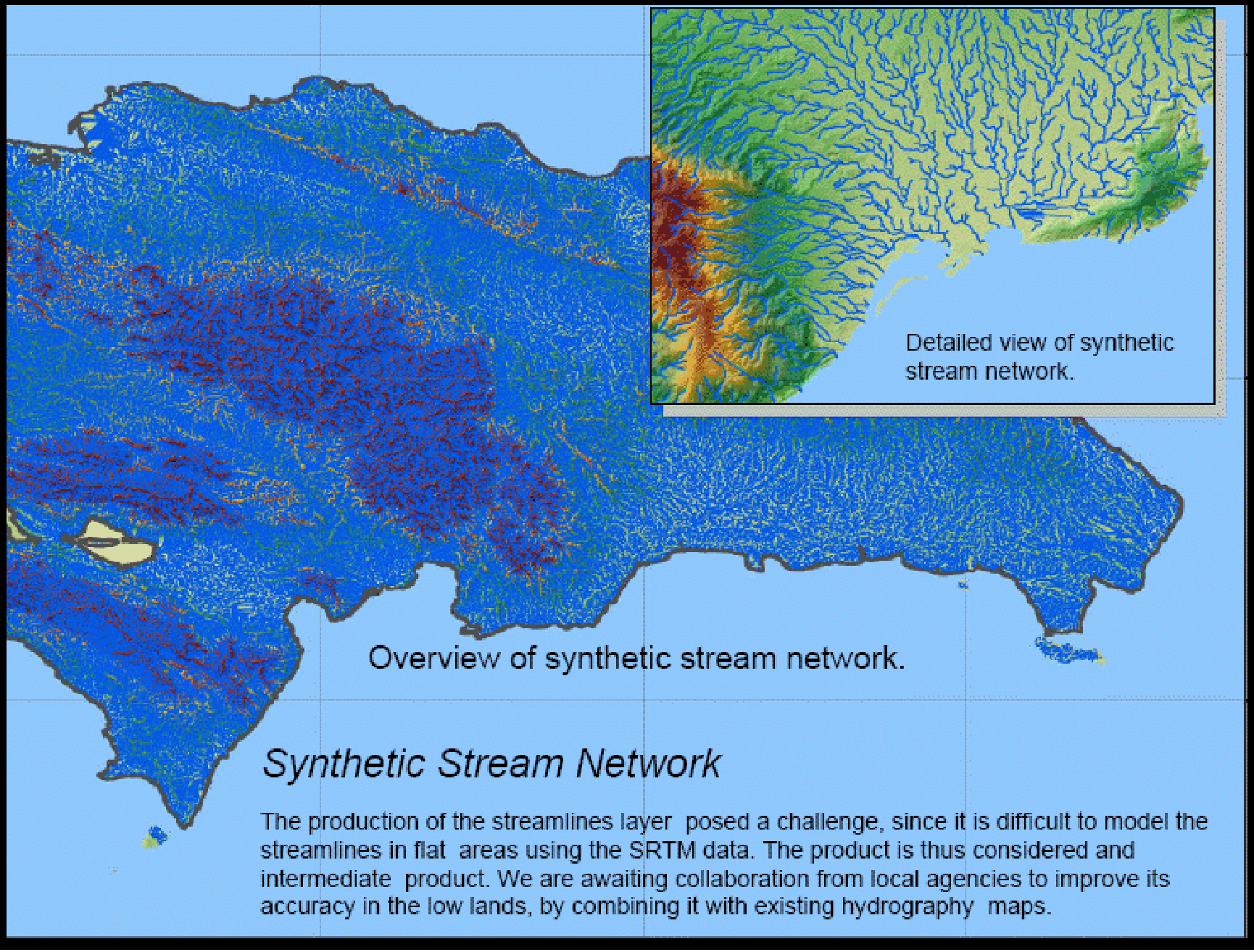
Slope Map- Dominican Republic



Aspect Map- Dominican Republic



Stream Network Map - Dominican Republic



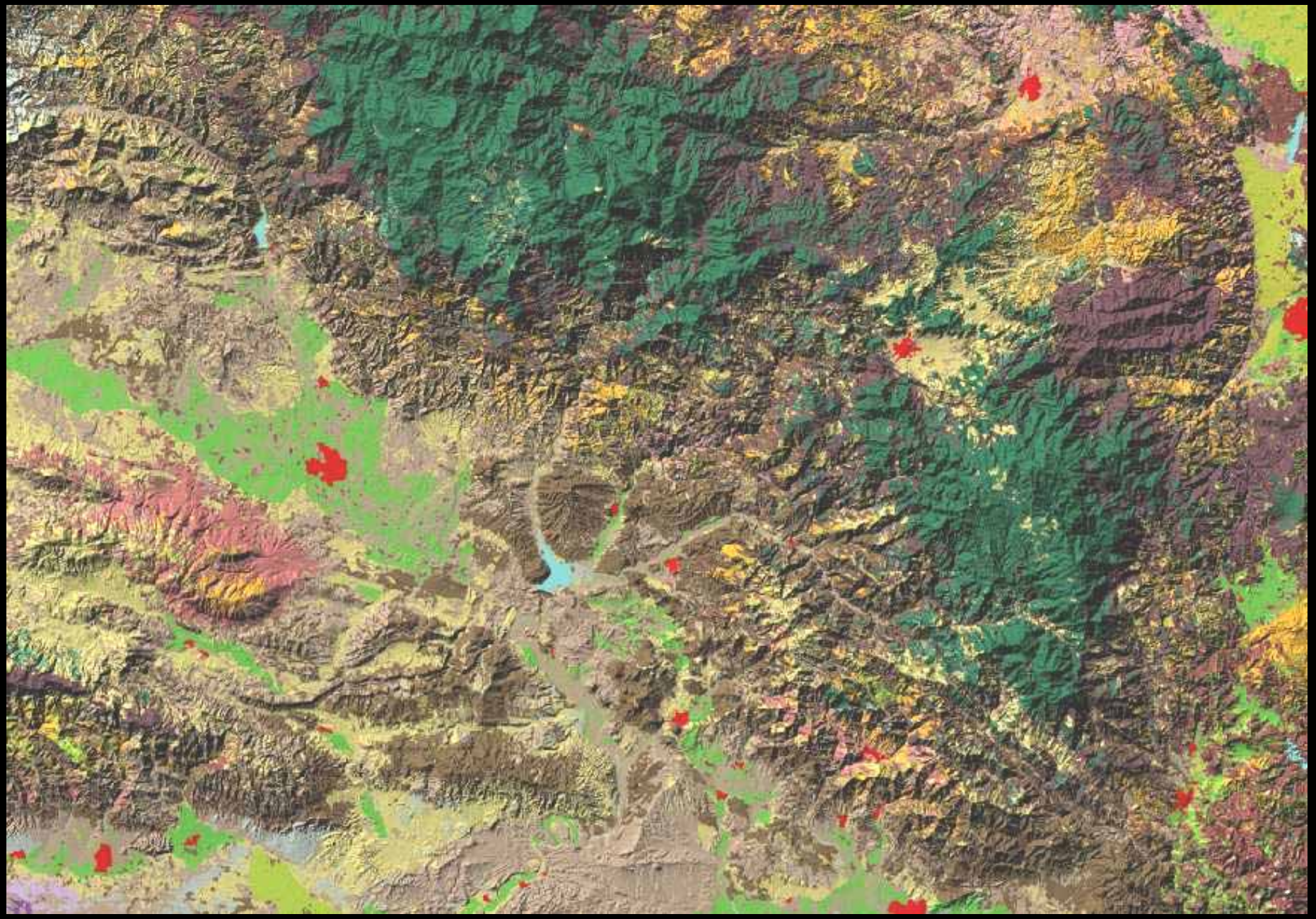
Detailed view of synthetic stream network.

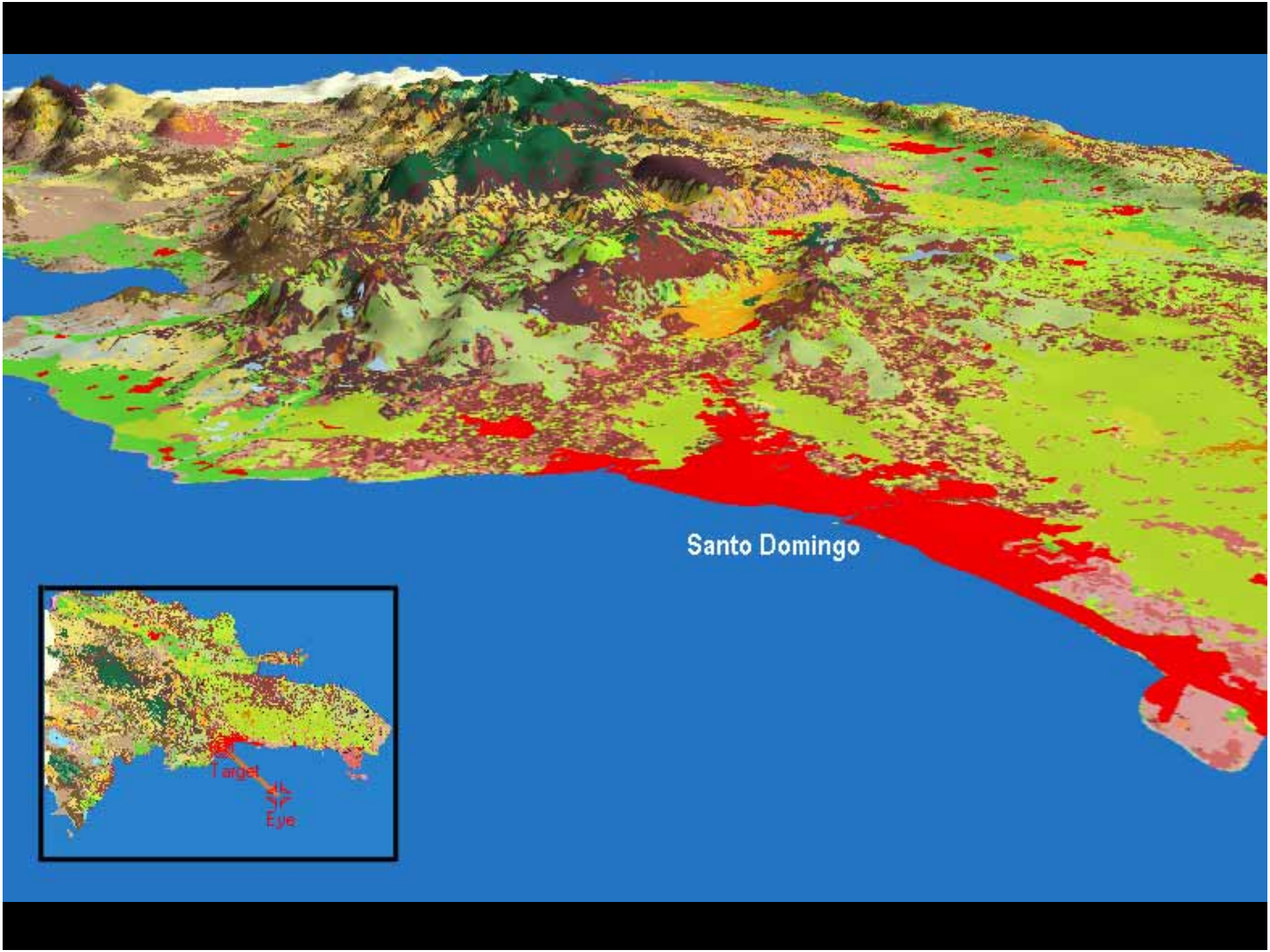
Overview of synthetic stream network.

Synthetic Stream Network

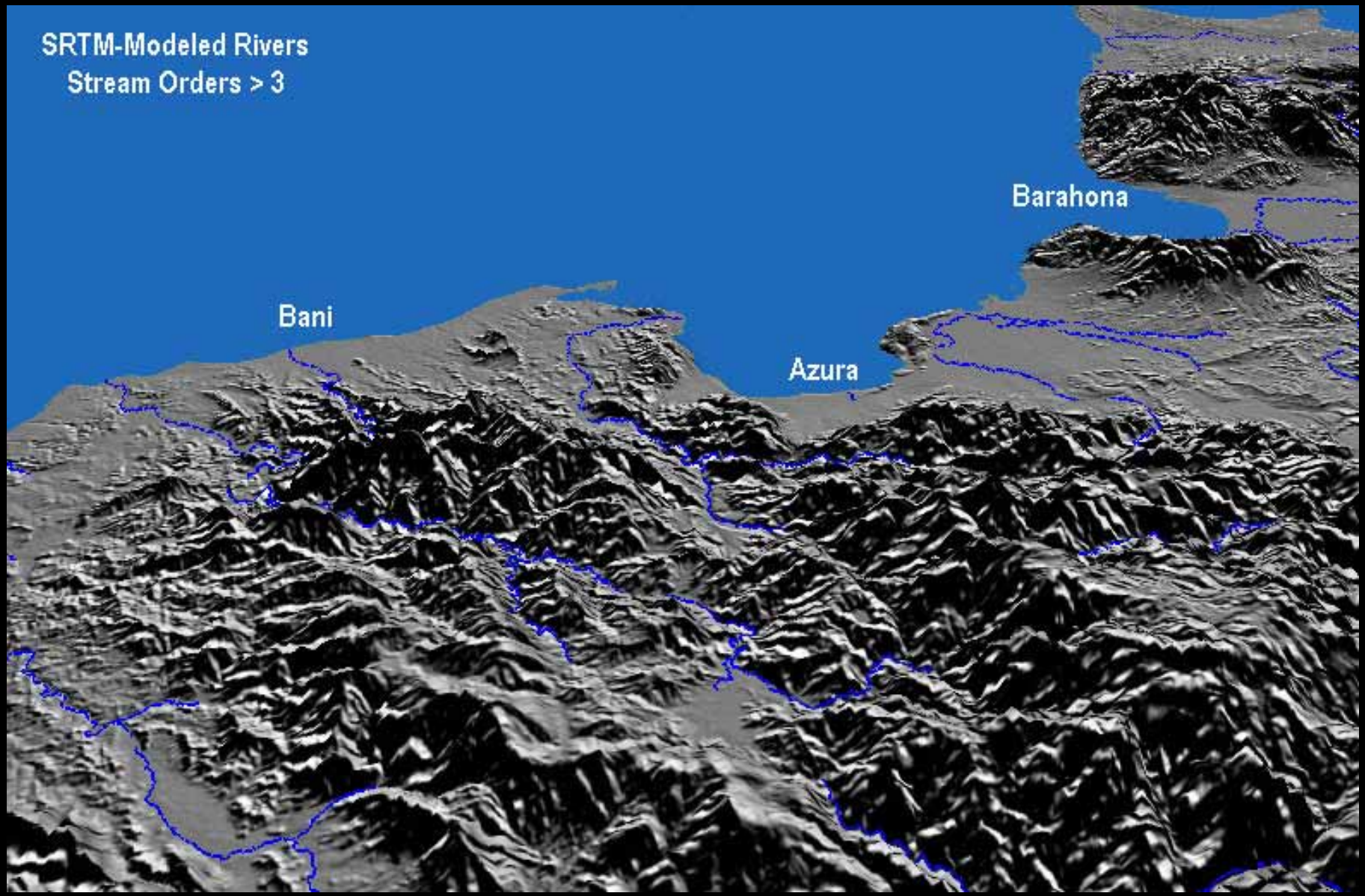
The production of the streamlines layer posed a challenge, since it is difficult to model the streamlines in flat areas using the SRTM data. The product is thus considered and intermediate product. We are awaiting collaboration from local agencies to improve its accuracy in the low lands, by combining it with existing hydrography maps.

Usage and coverage with SRTM contours




Santo Domingo
Target
Eye

Miscellaneous



Achievements of the Program (1)

- Action Plan: An Action Plan was developed and the budget for the GeoSUR Program was estimated in cooperation with all participating institutions.
- Agreements: Cooperation agreements were subscribed with IPGH, IABIN, USGS and IGAC.
- Meetings to introduce the Program: With geographical institutes (March 07) and environmental institutions (May 07). *20 institutions have agreed to participate.*
- Phase I systems: The prototypes for the geoportal, regional geoserver and a tool in Google Earth have been completed.
- Software donation: A request for donation of SIG and IMS software was submitted for four environmental institutions in the region and for various IGN.

Achievements of the Program (2)

- Surveys: 24 participating institutions completed a survey on their technological infrastructure.
- IIRSA Maps: CAF created seven digital maps with information related to IIRSA projects to be incorporated in the regional map service of GeoSUR.
- Training: 23 South American specialists attended a 2-week training course on map service implementation (Sioux Falls, SD, August 2007).

Achievements of the Program (3)

- Training workshop on geo-catalogation: Targeted for 30 CAN experts. A second workshop is scheduled for July 2008.
- Implementation Plans: 11 participating institutions have concluded and subscribed their map service development plans .
- Regional map service: The first version will be completed in July 2008.
- Technical assistance: The Technical Assistance Program was launched in December 2007.
- MDE-SRTM plan and architectural design: Relevant studies were initiated in May 2008.
- Launching of the Program subportal

Subportal


CAF
GeoSUR La Red Geoespacial de América del Sur
buscar
Acerca de GeoSUR · Participantes · Documentos · Eventos · Contacto · Registro
29 de Mayo de 2008
Inicio
Mapas Interactivos
Noticias GeoSUR
Galería de Imágenes
Vínculos
Preguntas Frecuentes
Visite el Geoportal
Servicio que ofrece acceso libre a mapas regionales y subregionales, mapas nacionales y locales, catálogos geoespaciales (metadatos), imágenes de satélite y datos generales de Suramérica.
Recomendar GeoSUR
Programa Geosur
Esta iniciativa coloca a disposición del público mapas interactivos nacionales y regionales de Suramérica con el fin de mejorar el conocimiento de nuestro subcontinente y apoyar actividades de planificación para el desarrollo.
El Programa se desarrolla bajo el auspicio de la CAF y cuenta con la participación del Instituto Panamericano de Geografía e Historia (IPGH), la Red Interamericana de Información sobre Biodiversidad (IABIN), el Instituto Geográfico Agustín Codazzi, el Instituto Geográfico Militar de Chile, el Servicio Geológico de los Estados Unidos y más de veinte instituciones de Suramérica."
Noticias
Taller de Capacitación para la Implementación de Servicios de Mapas en Internet
5/18/2008 1:08:10 PM
CAF suscribe convenios de cooperación con la Red Interamericana de Información
5/18/2008 1:04:21 PM
Once instituciones suscriben sus planes de implementación de geoservidores
5/18/2008 12:42:42 PM
GeoSUR inicia su Programa de Asistencia Técnica ofreciendo asistencia remota
5/18/2008 12:38:38 PM
Socios
IIRSA
iabin
USGS
science for a changing world
Participantes
arg
bol
bra
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col
ecu
guy
pan
par
Listo
Internet

Implementation Plan Model

6. CRONOGRAMA DE ACTIVIDADES

Cronograma Modelo

Actividad	Responsable	Fecha
Elaboración de plan de trabajo institucional para el Programa GeoSUR		
Selección del equipo de trabajo		
Selección y adquisición de hardware, software y conectividad necesarios para operar el geoservidor		
Instalación del software IMS en servidor físico		
Identificación de datos espaciales para geoservidor		
Obtención de datos espaciales para geoservidor		
Homogeneización de datos (formato, proyección, estándares)		
Selección de estándares a utilizar para catalogar metadatos		
Catalogación de los datos a colocar en geoservidor (metadatos)		
Desarrollo de geoservidor prototipo y control de calidad		
Generación de directorio WAF para indexar metadatos para portal GeoSUR		
Desarrollo de versión pública del geoservidor		
Registro del geoservidor en portal GeoSUR y en otros portales		

INSTITUCION se compromete a establecer un geoservidor que cumpla con los parámetros y las especificaciones acordados en el presente documento y bajo los lineamientos de GeoSUR.

Por **INSTITUCION**

Nombre: _____

Cargo: _____

Fecha: _____

Firma: _____

Implementation Plans Subscribed

- CLIRSEN (Ecuador)
- CONAM (Peru)
- DINAMA (Uruguay)
- IGM Bolivia
- IGM/CONAMA (Chile)
- IGM Ecuador
- Environment Ministry (Ecuador)
- Environment Secretariat (Paraguay)
- Military Geographical Service (Uruguay)

For further information:

- Eric van Praag, Technical Coordinator GeoSUR, CAF, evanpraag@caf.com
- Jesús Suniaga, Specialist SIG, CAF, jsuniaga@caf.com

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