Geo-Statistical integration and Institutional Arrangements for better policy outputs:: Lessons learned in Mexico

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CONTENT

THE NATIONAL SYSTEM

THE GEOSTATISTICAL FRAMEWORK

THE SYNERGIES
The National Institute of Statistics and Geography

Key Elements
- Statistical and Geospatial Information within the same institution, since 1983
- Constitutional-level autonomy, since 2008
- Coordination of the National System of Statistical and Geographic Information (SNIEG)

Statistical and Geographical Information of National Interest
National System of Statistical and Geographical Information (SNIEG)

INEGI as Information Coordinator

Organized through National Information Subsystems:
- Geographic & Environmental
- Socio-demographic
- Government & Justice
- Economic

Articulated by the

In order to produce and disseminate

Information of National Interest

SNIEG
- Federal Public Administration
- Supreme Court
- States & municipalities
- Congress
- Central Bank
- Other autonomous organizations

Coordinated by

INEGI

National Interest Network
National Information Subsystems
Specialized Technical Committees

Demographic and Social
12 Specialized Technical Committees
- Sustainable Development Goals
- Population and Dynamics

Geographic and Environmental
8 Specialized Technical Committees
- Climate Change
- Energy

Economic
11 Specialized Technical Committees
- National Accounts
- Tourism

Government, Public Security & Justice
6 Specialized Technical Committees
- Government
- Justice
INEGI as Producer

Cartographic Database components:

National Geostatistical Framework

Topographic Map of Mexico

Integration of various sources of information in support of official statistics and the monitoring of global goals

Official Statistics — Policy-making — SDG monitoring
THE GEOSTATISTICAL FRAMEWORK

NATIONAL GEOSTATISTICAL FRAMEWORK:

- 32 STATE-LEVEL GEOSTATISTICAL AREAS
  - 32 States

- 2,457 MUNICIPAL GEOSTATISTICAL AREAS
  - 2,457 Municipalities

- 299,662 GEOSTATISTICAL LOCATIONS
  - 4,547 Urban
  - 295,115 Rural

- 2'220,103 GEOSTATISTICAL BLOCKS
Update of the national geostatistical framework
Provides support for censuses and surveys
Update of the National cartographic database
Support for the activities of the Units of State
Strengthens the Public Information Service

The Cartographic Database concentrates all updates provided by the Federal Government and Institutions to share them.

Electoral Mapping
Taxes Geographic Framework
Zip Codes and Settlements

Homologation of catalogs and creation of a Single Cartographic Database
THE SYNERGIES

Synergies from integrated Socio-Demographic and Geospatial Information
National Housing Inventory

SCINCE
Population Census Information System
Social Programs Georeferenciation

Synergies from integrated Economic and Geospatial Information
Economic Census Atlas

Total economic units by state
Total economic units by block in Mexico City’s downtown

National Statistical Directory of Economic Units (DENUE)

A comprehensive national business registry
Economic Units: 4.9 million
Operational stages of the Agricultural Census

- Printed and Digital Cartographic Package
- Design of Informatics applications
- Field verification of divided land
- Delivery of Satellite Images
- Incorporation of divided land and plots of the RAN to the layer of the Agriculture Census

- Planning
- Survey
- Operational planning module
- Cartographic module to update the census frame
- Monitoring, progress and geographic coverage module
- 337 Technicians in cartography
- 64 Orthoimagery
- 1239 Spot images
- Digitalization
- Validation
- Integration

Results - Update of the:
- Census frame
- Producers directory

Synergies from integrated Environmental and Geospatial Information
Land Use and Vegetation Map

Big Data for the environment
Modelling meteorological data to identify climate change trends over the last century

Mapping of 5,454 individual meteorological stations, with temperature and rainfall data from the last 100 years

Pilot Project proposed by Mexico within the WG on Big Data for official statistics (Task Team on Satellite Imagery, Remote Sensing and Geospatial Information)
Annual Operation Certificate
COA Web

- An online tool for the official reporting of emissions and pollutant transfers to air, water, soil, land and hazardous materials and waste, from industries and establishments from all productive sector
- Reporting is compulsory and free of charge.
- Information is validated and updated in real time

Annual Operation Certificate COA Web

- All information about the location of the industries is geo-referenced, considering Technical Geographic Standards (Geographic Addresses)
- Currently, COA has a >70% coverage of the industry universe in all of Mexico

- Chemical, petroleum, automotive, pulp & paper, metal, glass, electric power generation, asbestos, cement, hazardous waste treatment, etc;
- Waste management providers,
- Those discharging wastewater into national water bodies, or
- Those emitting 25,000 tones or more of CO2 or equivalent compounds
- Greenhouse Gases (GHG) Transport, agricultural, trade & services, etc.
Synergies for the State Units

Collaborative Site for Disaster Relief

Exchange site Working Group

Available Layers

Download

Temporary layers by phenomenon or event
46 Gender-related indicators (geo-referenced)

10 main areas:
- General population
- Education
- Health
- Labor
- Decision making
- Use of time
- Poverty
- Entrepreneurship
- Violence
- % Indigenous population
North America Energy Map
North American Cooperation on Energy Information

Geographic energy information:
Renewable Power Plants, 1 MW or more

Energy Infrastructure of North America
Geographic energy information:
Tools to display detailed view and individual facility information

Digital Map of Mexico
Open-source geomatic platform that allows the visualization and analysis of geographic and georeferenced statistical information that contains:

- 208 vector data layers
- More than 71 million geographic objects
- 4 raster layers covering the entire country.
Conclusions

Geospatial information, Earth Observations, Big Data and Statistics can and should be integrated in support of national policies and the implementation of international agreements.

Geospatial information facilitates the monitoring of social, economic and environmental indicators to support, design and monitor public policies.

Powerful synergies emerge in the production and use of geography and statistics.

Integration facilitates location & assessment of policy/SDG progress over time.

Institutional capacity and inter-institutional coordination matters.

Participation from all sectors of society is key, including academia, civil society and the private sector.