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COUNTRY REPORT OF

THE PHILIPPINES

National Mapping and Resource Information Authority
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Geographical Context

The Philippines is an archipelagic country located in Southeast Asia. It has a total land area of approximately 300,000 sq. km. and 36,289 km. of coastline. Its neighbors include Taiwan in the North, Indonesia in the South and Vietnam in the West.

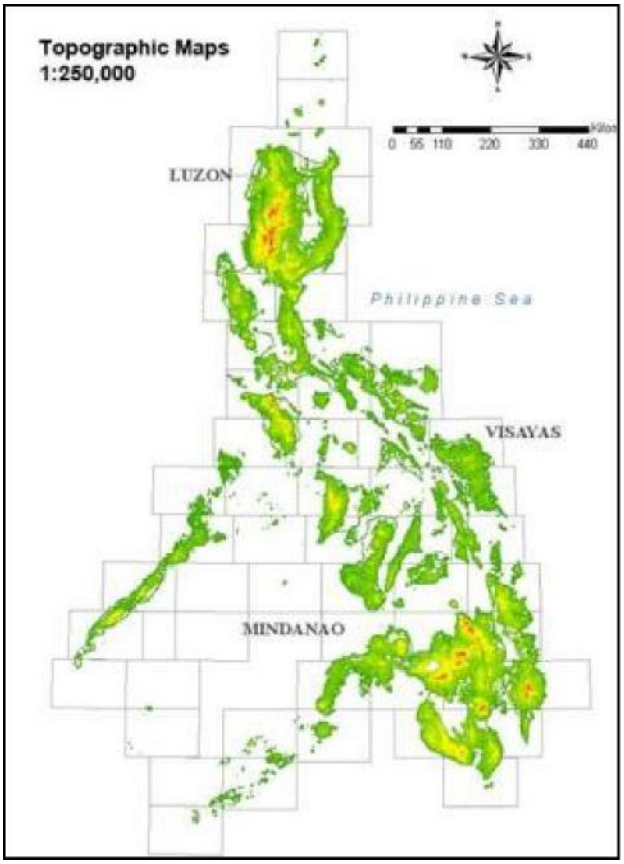
National Mapping Organizations

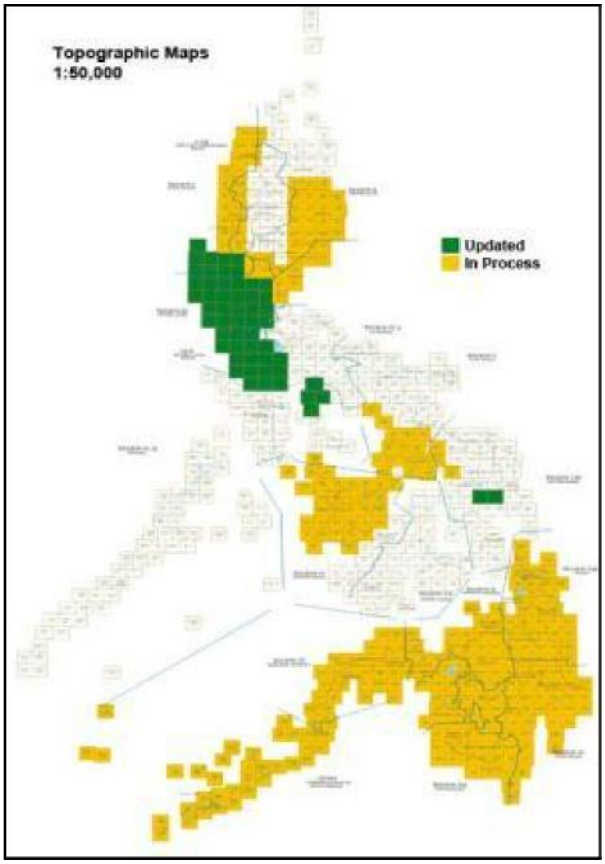
Two government organizations manage the country's base mapping and geospatial information activities.

National Mapping and Resource Information Authority

The National Mapping and Resource Information Authority (NAMRIA, namria.gov.ph), an office attached to the Department of Environment and Natural Resources (DENR, denr.gov.ph), is the central mapping agency of the government. NAMRIA is mandated to provide the public with mapmaking services and to act as the repository of and distribution facility for base maps, nautical charts and other resource data. Its core functions are topographic base mapping, development of the national geodetic network, land classification, hydrographic surveys and nautical charting, delineation of maritime boundaries, and geographic information management.

The map products of NAMRIA, in analog and digital forms, include: topographic maps (1:250,000; 1:50,000; 1:10,000 and larger), administrative maps, nautical charts, electronic navigational charts, land classification maps, and land forest/cover maps. For the 1:250,000 scale, there are 55 digital map sheets covering the country's entire land area and 675 map sheets for 1:50,000 with 165 map sheets updated and 227 in progress.





NAMRIA is set to embark this year (2012) on the updating of about 2,400 1:10,000 scale maps covering the urban areas or 20% of the country. This is to augment the agency's 441 vector maps on hand. NAMRIA is also in the process of updating the country's geographic features database consisting of key elements namely: total number of islands, total land area, total coastline length, and geographic feature names.

The agency has also established 13 out of the targeted 38 active geodetic stations in the country. These stations provide real time high precision geographic position data via the internet to the surveying community in the country.

Land Management Bureau

The Land Management Bureau (LMB, lmb.gov.ph) is a staff bureau of DENR which is responsible for administering, surveying, managing, and disposing alienable and disposable (A&D) lands and other government lands not placed under the jurisdiction of other government agencies. It provides advice to its Regional Offices on the efficient and effective implementation of policies, programs and projects for more effective public lands management.

LMB provides information on the country's status of land classification that are as follows: Three percent (3%) of the total land area of about 300,000 sq. km. are still unclassified, 50% are classified as forest lands, and 47% are classified as A&D, the latter being the bureau's area of responsibility.

LMB is in charge of managing the cadastral survey projects and the digital cadastral mapping in the country. A priority program of the bureau is the fast-tracking of the cadastral survey projects. The program is instrumental in patent distribution and accelerating countryside development.

As of 2011, a total 941 cities and municipalities (or 58% of 1,634) were covered under the bureau's cadastral program, which represent a total of 169,721 sq. km. or 57% of the approximate land area of the country. To date, around 49,200 sq. km. of cadastral projects are on-going and awaiting approval.

Most Recent Legislations Related to Geospatial Information Management

The country has no legislated issuances specific or directly related to geospatial information application and management. However there are issuances pertinent to this area, namely:

- Administrative Order 16, July 2011 which directs all government entities to coordinate with NAMRIA in the acquisition of data from airborne and spaceborne platforms for use in their respective projects, and

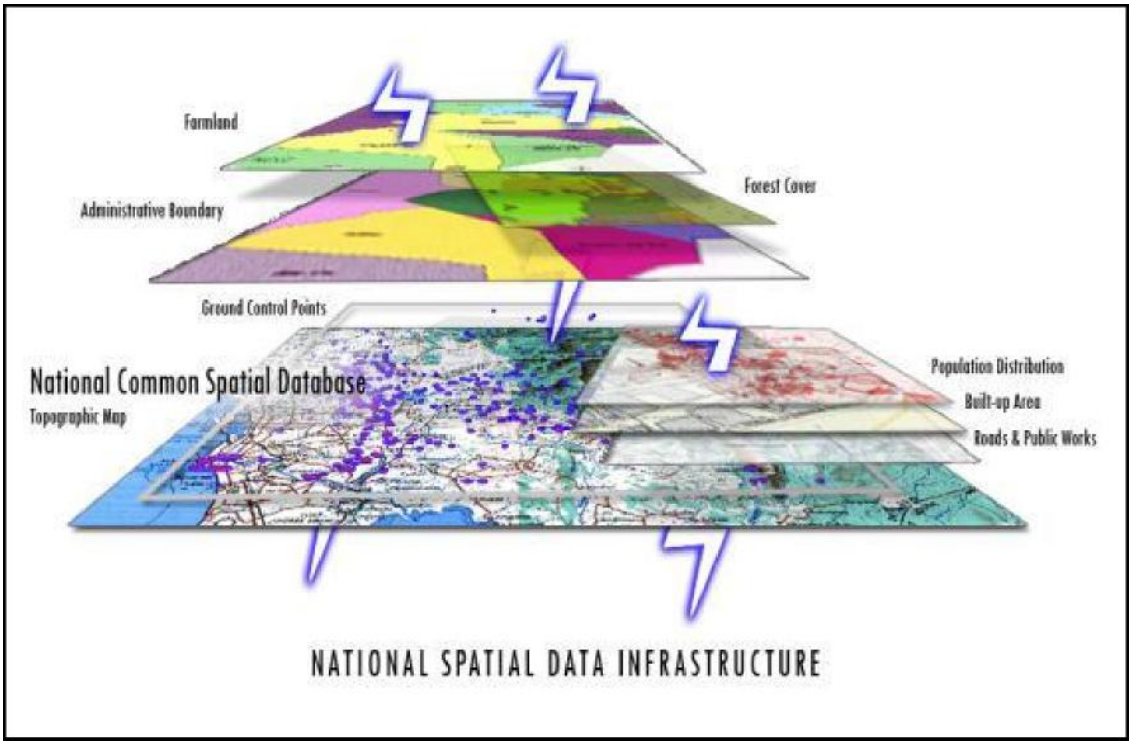
- Executive Order 45 s. 1993 (as amended and its appurtenant issuances) which established the Philippine Reference System, 1992 or PRS92, that serves as the standard reference for all surveys and mapping activities in the country.

National Spatial Data Infrastructure

The country's geospatial information development is generally covered by the Philippines' National Spatial Data Infrastructure (PNSDI, 2001). NAMRIA's functions make it the appropriate government agency to lead the development of the NSDI in the country which is currently being undertaken through the **Philippine Geoportal: One Nation One Map Project** (Philippine Geoportal, 2011).

Among NAMRIA's functions relevant to NSDI are: to integrate geographic and related information to facilitate access to and analysis of data and its transformation into useful information; establish and implement technical standards and quality specifications; operate information services and networks; and provide photogrammetry, cartographic and RS and mapping services to accelerate the development of a comprehensive databank and information systems.

In 2003, the development of the PNSDI Framework Plan was initiated by the Interagency Task Force on Geographic Information, a group led by NAMRIA and co-led by another government agency, the National Statistical Coordination Board.



The Philippine Geoportal: One Nation One Map Project

The Philippine Geoportal concretizes the ideas set forth in the PNSDI Framework Plan. It envisions *"a spatially enabled nation with a comprehensive and consistent geospatial datasets widely available and shared for sustainable economic, environment and social environment and management".*

The Philippine Geoportal is an e-government funded project that aims to establish a web portal that provides a system for sharing of and access to geospatial information using one common multiscale basemaps. The system will provide a mechanism for a clearinghouse network, data management and exchange standards and protocols, and institutional interface that will facilitate the flow of information across all levels of government, the private and non-profit sectors, the academia, and other stakeholders, with safeguards to protect misuse and potential risks to individuals, community and country.

The Philippine Geoportal intends to hold and serve to the general public the basemaps and fundamental datasets that NAMRIA produces and eventually all the thematic datasets of the other stakeholder agencies. It will also promote the participation of local government units having mandate to produce subnational level geospatial data, e.g., land use plans, which is otherwise not being carried out by the national government agencies. The continual build-up of data content, development of GIS-based applications, and development of agency/sectoral node portals, will be included in the succeeding phases of the Project.

The Philippine Geoportal intends to provide an ICT platform for collaboration, data and resource sharing, integration, transparency and resource optimization.

The Goals

In the long-run, the Philippine Geoportal should have realized the following outcomes:

- One multiscale framework map served and used for government planning, decision making, and monitoring of projects;
- Built-up, updated and maintained databases guided by standards and established data policies;
- Highly accessible and available map and geoprocessing services;
- Implemented policies and procedures on data access, sharing, standards, security and pricing;
- Improved service delivery of maps and data by government map/data producers;
- Citizen-centric portal enabling others to create value-added goods and services;
- Improved capability of government map/data producers to provide data in GIS format; and
- Broader private sector participation in ICT development

The Operational Components

The development of the Philippine Geoportal is divided into three phases, the first of which took off towards the latter part of 2011. The plan for the succeeding phases of the project is being prepared in time for the completion of the first phase in the third quarter of the year and for presentation to the approving government authority for funding thereafter.

Seven integral working components will run until the project's completion. These are: applications development, ICT infrastructure establishment, data build-up and integration, training and capability building, policy framework and institutionalization, forward and sustainability planning, and project management.

The Status

- To date, the Philippine Geoportal is undergoing intensive testing prior to its full commissioning in the last quarter of 2012. NAMRIA and the key stakeholder agencies are participating in the various stages of system trial runs. The Philippine Geoportal covers the

following web-based portals: central, system administration, data maintenance, metadata, and system application programming interface.

Screen Snapshots of the Philippine Geoportal

- The GIS software, hardware and network needed to operationalize the Philippine Geoportal are already in place. Competitive bidding was undertaken for the acquisition of these resources. The enterprise GIS software license was provided by ESRI. The main Philippine Geoportal data center was established by a government service provider, Advanced Science and Technology Institute, to complete the required servers and network installations. A data center was set up in NAMRIA to serve as the hub of the agency and backup of the Philippine Geoportal databases.

- For the data component, NAMRIA has uploaded the available topographic base maps namely, 1:250,000 (whole country), 1:50k and 1:10K (selected areas), LiDAR and orthophotos (Greater Metro Manila, 2011), geodesy (geodetic control points, gravity stations, declination; whole country), hydrography (bathymetry, lighthouses, tide stations), forest cover, and land classification. Key government stakeholder agencies also provided their fundamental datasets to the Philippine Geoportal and these include data on agriculture, environment, health, education, national roads and infrastructure, tourism, transportation and communication, climate and natural hazards.

- To ensure that the Philippine Geoportal will be sustained in terms of the required human resource capacity, key personnel from NAMRIA and stakeholder agencies have been undergoing technical trainings in software, hardware and network. The personnel from stakeholder agencies will be the focals for the development of the agency node portals and databases that will be shared to and published on the Philippine Geoportal. These government agencies will develop and continuously maintain their respective geospatial databases as the primary source of geospatial information for the Philippine Geoportal. They

will continue to provide and allocate funds for the acquisition, production and dissemination of their respective mandated geospatial data.

- NAMRIA is in the process of formulating the policy framework and its implementing rules and regulations on the protocols and standards for the sharing and exchange of geospatial data in government, with and to the private sector, academe, general public and other stakeholders. This policy also includes data management standards to ensure quality of geospatial data and full compatibility with acceptable standards. A critical element of the policy framework is the inclusion of a provision for funding required for the establishment and initial operation of the Philippine Geoportal through the e-Government funds. For financial sustainability, the policy proposes that the succeeding operational budget will be incorporated into the NAMRIA's regular annual budget. Likewise, agencies will include in their annual regular budget the funding for the development and maintenance of their respective agency node portals and for the acquisition, production and dissemination of their geospatial information.

- The overall success of the Philippine Geoportal rests heavily on the online availability and usability of geospatial the data; hence NAMRIA will continue to hold extensive information campaigns to ensure participation of data contributors in the broadest possible way. The plan for the succeeding phases of the Philippine Geoportal includes the full implementation of the data sharing and access policy, completion of the geodatabasing of the 1:50,000 scale topographic maps and nautical charts of NAMRIA, mobile application, crowd sourcing, other geospatial processing services, e-payment and data pricing, upgrade in network capacity, mainstreaming of GIS into the government's information strategic plans, expansion of stakeholder agency membership, and operational sustainability.

- At the helm of project implementation is a project management group led by NAMRIA officials who provide the overall direction for and completion of the project activities. The project management group reports to the Steering Committee which guides and oversees the project's progress and performance, supervises the technical working groups which implement the various components of the Philippine Geoportal, and coordinates with the consultants, service providers and stakeholder agencies.

Project Governance Structure

The Challenges

In the implementation of the project, it had been expected that some issues and concerns could arise especially on data sharing and coordination. This is because of perceived notions about data ownership, privacy and public access, unclear policies on sharing agreements, and liability, among others. These issues have been clarified and addressed in various consultations, roundtable discussions, and high-level meetings with the stakeholder agencies.

The other challenges that the project is facing or will face head on in the immediate future, which the project management group is optimistic in addressing, are:

- Quality of data shared and uploaded to the PGS;
- Low level of GIS development among agencies which may result in underdevelopment of agency/sectoral nodes;
- Low level of appreciation about the Philippine Geoportal among stakeholder agencies;
- Urgency of approval of policies on data acquisition/development, data sharing, data access, data ownership/custodianship, data security and data pricing; and
- Sustainability (cost recovery, revenue generation) of the Philippine Geoportal.