

**UN COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT**

COUNTRY REPORT OF

THE PHILIPPINES

National Mapping and Resource Information Authority
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1. Introduction

The Philippines has had a long journey toward strengthening its geospatial information management. It started as early as 1993, with the creation of the Inter-Agency Task Force on Geographic Information (IATFGI) by the National Statistical Coordination Board (NSCB)¹ Memorandum Order No. 01-93 to promote and coordinate the efficient development, management, and utilization of geographic information in the country.

The Philippine National Spatial Data Infrastructure (PNSDI) was realized through the development of the “Philippine Geoportal: One Nation One Map Project” in the later part of 2011. The Philippine Geoportal, an e-government-funded project, aims to develop a web portal that provides a platform for sharing, integration, and access to geospatial information using a common multi-scale base map. The National Mapping and Resource Information Authority (NAMRIA), as the Agency that advocates the establishment of the national spatial data infrastructure, took the lead in implementing the project alongside the various government agencies and other stakeholders in the geospatial community. The Philippine Geoportal project was envisioned to continue in three phases focusing on the five developmental components: Data, Policy and Standards, ICT Resources, Human Resources, and the Distribution System.

This country report provides a narrative of the status of the Philippine National Spatial Data Infrastructure (PNSDI) through the lens of the Integrated Geospatial Information Framework (IGIF). It should be noted that this report is based on the perspective of NAMRIA and not of the entire geospatial community/stakeholders in the country.

2. The Philippine National Spatial Data Infrastructure (PNSDI) and the Integrated Geospatial Information Framework (IGIF)

A quick assessment on the implementation of the Philippine National Spatial Data Infrastructure relative to the nine strategic pathways identified in the Integrated Geospatial Information Management Framework (IGIF) was conducted with NAMRIA by the World Bank using the IGIF Diagnostic Tool. The assessment shows weak alignment in the areas of Governance and Institutions, Policy, Financial, Standards, Capacity and Education, and in Communication and Engagement. Better alignment can be seen in terms of Data, Innovation, and Partnerships (Figure 1).

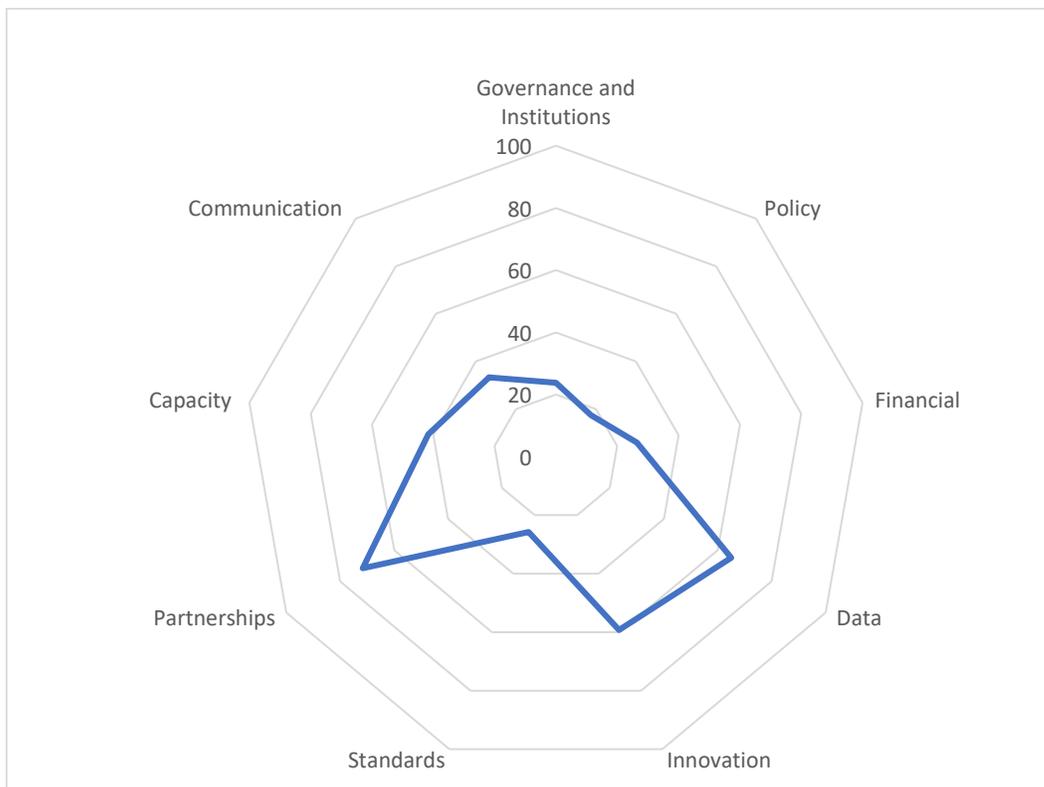


Figure 1. Results of the IGIF Diagnostic

Pathway #1. Governance and Institutions

The IGIF calls for a clear governance model, leadership, institutional structures, and a clear value proposition in order to strengthen the commitment and participation of the various stakeholders toward the effective implementation of integrated geospatial information management. A clear governance structure includes all the actors, processes, standards, and resources involved to strengthen multi-disciplinary and multi-sectoral participation.

NAMRIA, based on its mandate, has taken the lead in the implementation of the NSDI and has been pursuing this role to further expand its implementation. The Agency recognizes the importance to attain political endorsement in order to strengthen institutional mandates in geospatial information management. Attempts were made earlier to facilitate the issuance of an Executive Order creating the highest policy and coordinating body for geographic information in the country. A draft policy was crafted with the aim of establishing a PNSDI Steering Committee tasked with providing overall direction and overseeing the development and implementation of the PNSDI. However, this was overtaken by the developments in geospatial information management with the adoption of the UN-GGIM's Integrated Geospatial Information Framework (IGIF). Currently, NAMRIA is in the process of reviewing such policy in order to align with the UN-GGIM's IGIF.

Pathway #2. Policy and Legal

Currently, there is no existing legal framework dedicated to the use and management of geospatial information. Geospatial information is governed by existing national policies as well as agency-initiated policies as the authoritative source of geospatial data. Current national policies that impact the use, distribution, and accessibility of geospatial information include the following:

1. Intellectual Property Code of the Philippines (Republic Act No. 8293)
2. Data Privacy Act of 2012 (Republic Act No. 10173)
3. Open Data Policy (Open Data Philippines, 2014)

4. Freedom of Information (Executive Order No. 02, series of 2016)

Geospatial data producers align their respective policies with the above issuances. Data protection and sharing are usually bound by Data Sharing Agreements (DSAs) or Memorandum of Agreements (MOAs) by contracting parties.

At present, NAMRIA is set to implement an Open Data Policy for its geospatial data products. It is envisioned to serve as a template and encourage other geospatial data producers to implement a similar policy. The Open Data Policy of NAMRIA describes the controls that facilitate the exchange of sharing of data within the context of Geoportal Philippines (GeoPH) implementation. It covers all technical branches of NAMRIA including the GeoPH stakeholders. The Policy shall represent the NAMRIA's position on how data in the public domain should be treated; that is, all government-owned data which do not contain personal information, and do not create any threat to national security should be made freely available in an easily reusable format by default.

Pathway #3. Financial

The benefits of PNSDI have been recognized early in its conception. This narrative is appreciated at least in the geospatial information community but there has been no formal study done to basically assess GI's current and prospective contribution to the country's socio-economic development.

GI-related activities and projects are largely funded by the government through funds allocated among agencies based on their respective mandates and functions. These are subject to the usual budget and audit procedures imposed by the government. Other funding sources include official development assistance, grants, and loans from international development partners. Income of local governments, private sector investments, and public-private sector investments were also envisioned as possible funding sources under the PNSDI Framework Plan, 2003.

Pathway #4 Data

One of the major developmental components of the PNSDI is the data component. This component defines the geospatial data and information critical to the requirements of any user on any thematic map application. This component covers the framework dataset (basemaps) and other fundamental datasets produced by other agencies.

The PNSDI data roadmap has identified about 100 fundamental datasets and priority data themes to be produced by different agencies (Annex A). These are composed of common operational layers and the primary reference/framework datasets produced and maintained by NAMRIA. These data themes are aligned with the UN-GGIM Global Fundamental Data Themes. The data roadmap charts the build-up of the fundamental datasets for the different agencies, based on respective mandates, to plan for subsequent collection.

As the country's authoritative source of primary reference/framework datasets, NAMRIA embarked on projects to ensure the modernization of the Philippine Geodetic Reference System and the provision of quality topographic, hydrographic, and other thematic datasets. On the other hand, the Land Management Bureau (LMB) – the government agency responsible for cadastral mapping, started building the digital cadastral database for the country.

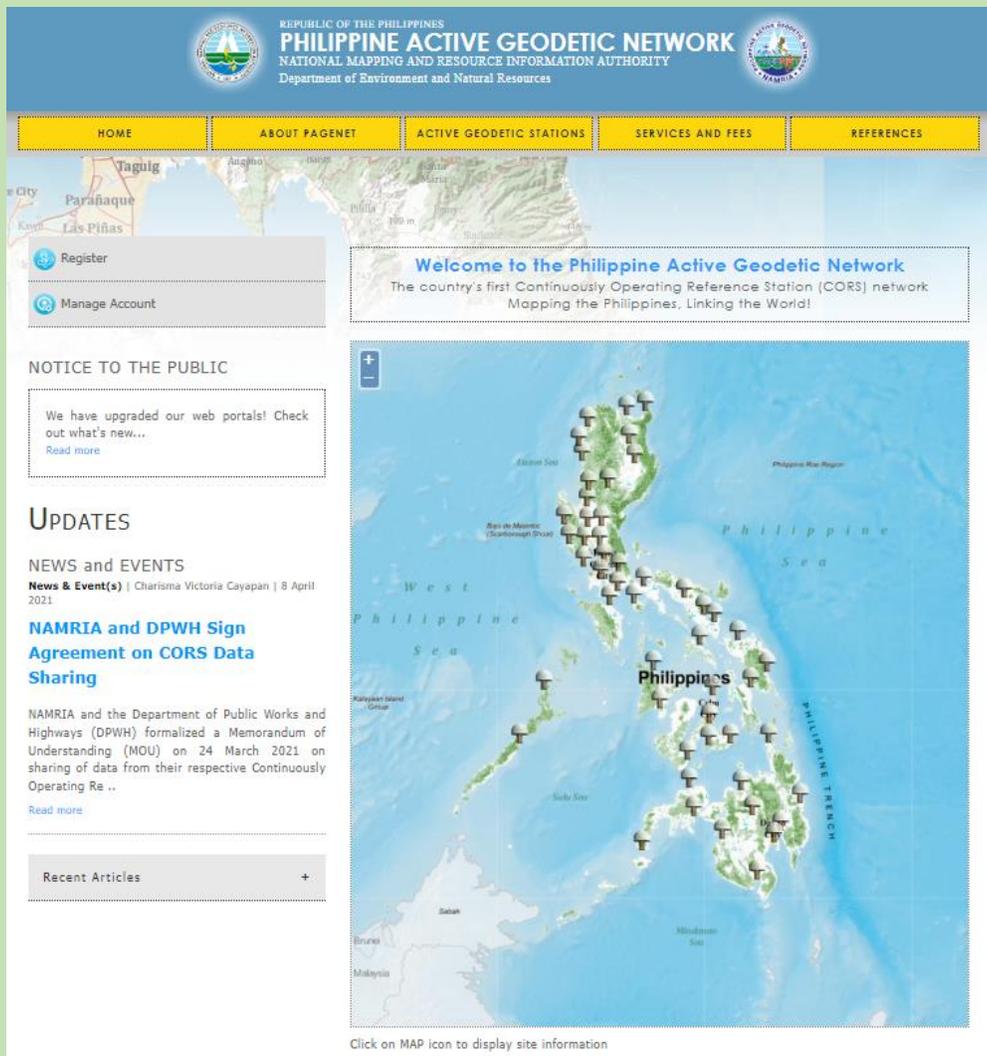
Other Agencies continued with building their respective geospatial datasets for use in various applications including disaster management, environmental management, health, land use, and others.

NAMRIA shall yet again play a critical role in the present administration's directive to establish the national geospatial database for natural resources in the country. NAMRIA's expertise in geospatial information and related technologies will strengthen the capacity and capability of the Department of Environment and Natural Resources (DENR), as it takes the lead to pursue an appraisal of natural resource conditions and trends.

Box 1

Philippine Geodetic Reference System (PGRS)

NAMRIA is continuously promoting the modernization of the PGRS to provide access to an authoritative and globally consistent geodetic reference. The PGRS will serve as the foundation for attaining the country’s sustainable development goals. Over the years, the modernization of the PGRS has made significant progress in all its components. As of 2021, NAMRIA densified the Philippine Active Geodetic Network (PAGeNET) to 55 active geodetic stations nationwide, densified land gravity observations with 8,168 gravity stations densified, and conducted troubleshooting of the level network with 3,356 km. of level lines releveled.



Box 2**Other Fundamental Datasets****Topographic Maps**

NAMRIA continuing with its topographic mapping projects, including the Unified Mapping Project, has finished a number of map sheets in varying map scales. As of 2021, it has completed 12,600 map sheets at 1:10,000 scale, 2,583 map sheets of 1:4,000 scale, and 675 mapsheets (1st cycle) and 60 map sheets (2nd cycle) of medium-scale maps at 1:50,000.

Land Cover and other Thematic Maps

Land cover maps covering the 81 provinces of the country, coastal resource maps, and vulnerability maps of low-lying areas at various scales.

Hydrography, Oceanography, Charting, and Maritime Boundaries

As of 2021, NAMRIA completed 954,213 sq. km. (58%) of bathymetric data as part of the hydrographic survey of the Exclusive Economic Zone (EEZ), 304,380 sq. km. (52%) of bathymetric data as part of the hydrographic survey of archipelagic waters and sea lanes, hydrographic survey of 40 ports and harbors, and assisted the LGUs in the delineation of Municipal Waters (MW).

Geographic Names Database

Continuous updating of the Philippine Gazetteer is being under by NAMRIA. The geographic names database contains the updated and standardized geographic names of all geographic features based on the 1:50,000-scale topographic maps.

Digital Cadastral Database¹

The Land Management Bureau, the agency in charge of managing the cadastral survey projects and digital cadastral mapping in the country, has completed the Digital Cadastral Database (DCDB) of the country. The DCDB is undergoing cleansing activities to further refine the uploaded data holdings. As of December 2021, the cleansing of the DCDB managed to complete 24.27% of the 1,516 cities/municipalities. The remaining 1,151 cities/municipalities (77%) still need to be cleansed.

¹Land Management Bureau, Annual Report 2021. (<https://www.lmb.gov.ph>, last viewed: June 22, 2022)

Pathway #5 Innovation

At the national level, the Department of Science and Technology (DOST) and the Department of Information and Communications Technology (DICT) are at the forefront of promoting innovations and advancing science and technology and information and communications technology.

The DICT through its National Broadband Plan (NBP) aims to improve the ICT infrastructure through the deployment of technologies that ensure the delivery of universal, fast, reliable, and affordable broadband services throughout the country. Meanwhile, the Advanced Science and Technology Institute (ASTI) of the DOST is dedicated to conducting research and development and providing technology solutions in ICT, microelectronics, technology transfer, and space technology. There is also the Philippine Space Agency (PhilSA), an attached agency of the Office of the President, that addresses all national activities related to space science and technology applications in key development areas including national security and development, space research and development, hazard management and climate change, space education and awareness, space industry capacity building, and international cooperation.

Innovation in the field of geospatial information management is driven by the need to improve processes as a result of the increasing demand for geospatial data and the advent of new technologies. With the use of existing web technologies, the Geoportal Philippines (GeoPH) was developed by local talents within NAMRIA using open-source tools. The availability of web technologies also paved the way for the development of similar systems by other national government agencies.

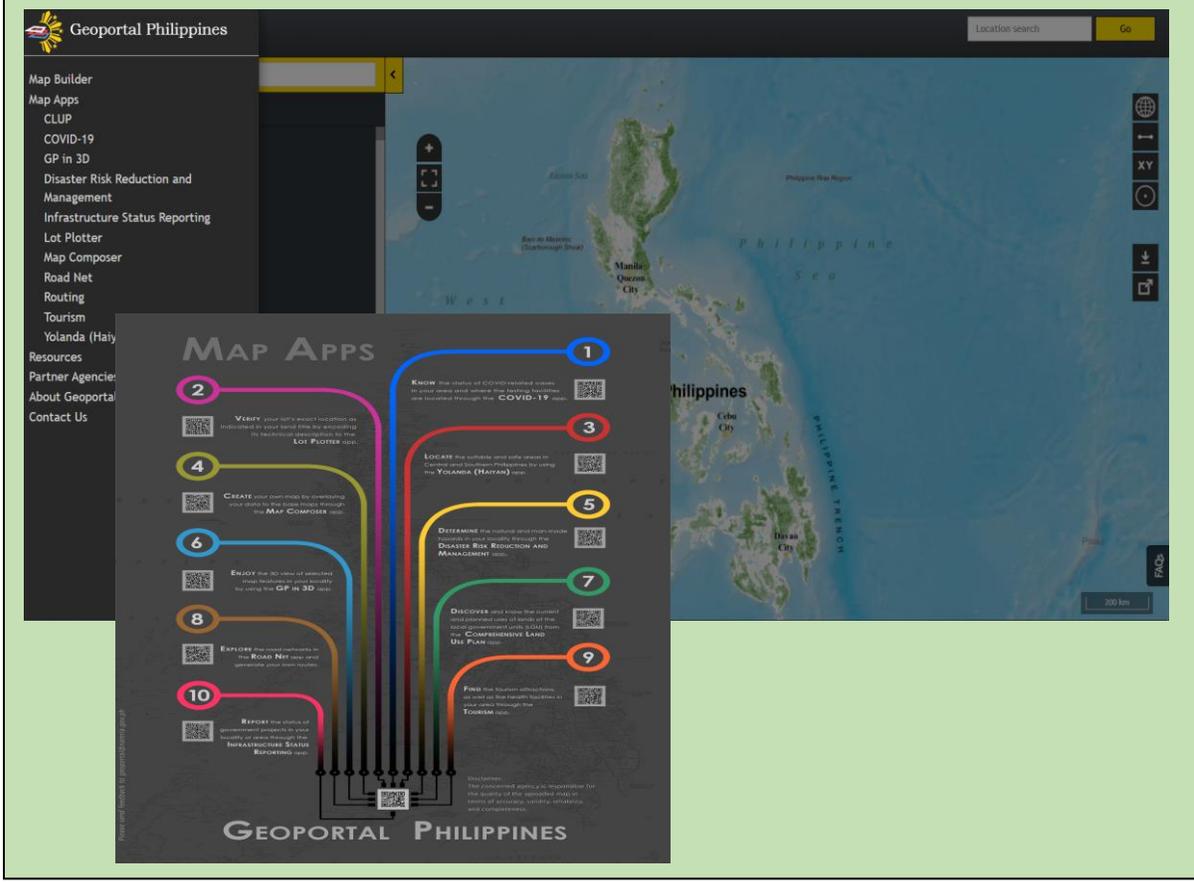
In line with improving the capture, storage, and dissemination of geospatial data, NAMRIA leverages available technologies such as the GNSS, UAVs, very high-resolution satellite imageries, cloud technologies, and others. In collaboration with the DOST, the Agency also explores the use of artificial intelligence including machine learning, and its prospects for automated extraction of geographic features.

Box 3

Geospatial Distribution Facility – Geoportal Philippines (GeoPH)

The Geoportal Philippines (GeoPH), officially launched in 2014, was developed by local talents within NAMRIA. With the tagline “One Nation One Map”, the platform made available to the geospatial community and the general public the country’s multi-scale topographic maps through a web map service. This ensures access to a common authoritative base map to serve the mapping needs of the government and other stakeholders.

The GeoPH also functions as a repository of geospatial data entrusted to NAMRIA as a custodian by the geospatial data producers. It provides browsing capability and basic GIS functionalities. Data downloading is also allowed in accordance with the data sharing agreement between the data producer/owner and NAMRIA. Currently, 85 entities consisting of national government agencies and local government units contribute data to the system. This brings to about 3,391 geospatial layers shared and made available to the public by these partner agencies. As of late, Geoportal offers various applications to cater to the data needs of users in the field of disaster risk management, land use planning, infrastructure management, and surveying, among others. In line with these developments and the IEC initiatives of NAMRIA, Geoportal has gained usage averaging 10,000 hits per month.



Pathway #6 Standards

The Philippine NSDI recognizes the value of adopting national and international standards in order to ensure the interoperability of data and systems. However, there is no baseline survey conducted that determines national and international standards adopted by the different communities in geospatial information management.

Recognizing its functions, NAMRIA is the agency that the geospatial community refers to concerning geospatial information standards. For its survey and mapping activities, NAMRIA implements national mapping standards that adhere to well-known international standards such as the International Hydrographic Organization (IHO), of which NAMRIA is a member, American Society for Photogrammetry and Remote Sensing (ASPRS) for its topographic mapping, and Food and Agricultural Organization (FAO) standards for land cover mapping.

The PNSDI also appreciates the distinct data standards adopted in various disciplines such that standard data nomenclature, definitions, and coding schemes were developed and adopted in support of the GI-related activities of the different agencies. Metadata standard was also implemented to describe geospatial datasets.

Pathway #7 Partnerships

Partnerships and collaboration are inherent in the establishment of the PNSDI. Partnerships in the PNSDI can be in the form of data sharing, development of information systems, capability building through training, and research opportunities. Partnerships may be shaped among agencies of government, with the private sector, academe, and international partners. Generally, partnerships and cooperation are managed through a Memorandum of Agreement (MOA) which clearly define the roles and responsibilities of the parties concerned.

The development alone of the GeoPH involved engagement with 85 data contributors, stakeholders from national government agencies, local government units, and private partners.

The PNSDI also paved the way for cooperation. For instance, the Collective Strengthening of Community Awareness on Natural Disasters (CSCAND) comprised of five agencies established a system that allows data sharing and access in support to disaster risk reduction and management. This also fostered community participation with the availability of a platform where citizens can engage in information sharing and reporting.

Pathway #8 Capacity and Education

Many national government agencies and local government units realize the value of geospatial information and services in their respective domains. It is also common knowledge that varying levels of technical capacity, both in ICT and human resources, are observed among these agencies. To address the seeming knowledge gap in geospatial technology, NAMRIA through its Geomatics Training Center (GTC) has been conducting specialized/customized training on GIS and other geospatial-related technologies. The Agency continues to engage with the local government units and other national agencies to promote innovative use of geospatial information and technologies in their work processes.

As NAMRIA envisions a geospatially-empowered citizenry, it has also adopted a strategy to capacitate high school geography teachers on geographic information. Plans are also underway to engage with the Department of Education (DepEd) and Technical Education and Skills Development Authority (TESDA) to integrate geospatial information into the curriculum for senior high school geography classes.

Formal education in geography, geodetic engineering, and other allied disciplines both at the undergraduate and graduate levels is also offered by major universities and colleges in the country. As such, NAMRIA also encourages and provides opportunities for its staff to engage in higher studies in mapping and surveying, GIS, remote sensing, and allied domains.

Pathway #9 Communication and Engagement

The IGIF recognizes that the successful implementation of integrated geospatial information management rests heavily on mutual understanding, commitment, and active participation of stakeholders at all levels. The framework recognizes the need for stakeholder and user engagement, strategic messaging and engagement, monitoring and evaluation, and communication strategy, plans, and methods.

The development and implementation of the PNSDI put forth a convincing message geared towards using a common national map for the public and private sectors in support of their geospatial-related activities and processes. This messaging also advocated the value of findable, accessible, interoperable, and reusable geospatial information. As NAMRIA assumed the lead in the implementation of the NSDI, the Agency acknowledged the importance of advancing this message and considers stakeholders' engagement as one of its priorities reflected in its Strategic Plan. Its geospatial information services develop information materials, and conduct information, education, and communication (IEC) and awareness-raising campaigns through webinars and training. In addition, the Agency regularly produces an annual publication that features studies, projects, technologies, innovations, and activities at the local and international levels.

Continuous stakeholders' coordination is likewise conducted in support of the GeoPH's aim of enhanced availability and accessibility of geospatial information.

3. Alignment of PNSDI with IGIF Conclusion

A semblance of alignment between the PNSDI and IGIF can be deduced. Each developmental component of the PNSDI also addresses some of the elements of the 9 strategic pathways identified in the Integrated Geospatial Information Framework.

For instance, the PNSDI component on Data lays out the general road map on building the fundamental data themes, integration of geospatial and statistical data, etc. which are also highlighted in the Strategic Pathway-Data of the IGIF. The PNSDI's Policies and Standards component, however, encompasses some elements of IGIFs Governance and Institutions, Financial, Standards, Partnerships, Capacity and Education, and Communication and Engagement.

The PNSDI however was constrained by the lack of a national policy on geospatial information management. NAMRIA, being the country's national mapping agency, assumed leadership in promoting and establishing the PNSDI. As a multi-sectoral endeavor and taking a whole-of-government approach, the Agency recognizes the need for establishing a governing body and a champion that will provide leadership, direction, and oversight for geospatial-related activities and projects. The PNSDI's Policy and Standards Roadmap, explicitly underscored the need to identify a champion, possibly at the Secretary/Minister level, that will advance its objectives.

NAMRIA has drafted an Executive Order and the corresponding implementing rules and regulations (IRR) for the establishment of the PNSDI and the creation of a National Geographic Information Council (NGIC). Though, this is subject for review to align with the IGIF.

Annex A
Fundamental Geospatial Data Themes

Geospatial Fundamental Data Theme

- A **reference frame, foundation, or base** for the development and integration of geospatial data sets at a national, regional and global level.
- Should constitute the **building blocks** for the planning and design of spatial data infrastructures (SDI).
- For this to be accomplished it is necessary for the data to be **available, standardized** and widely **accessible**, to permit new geospatial data sets to be developed through the cooperation of users.

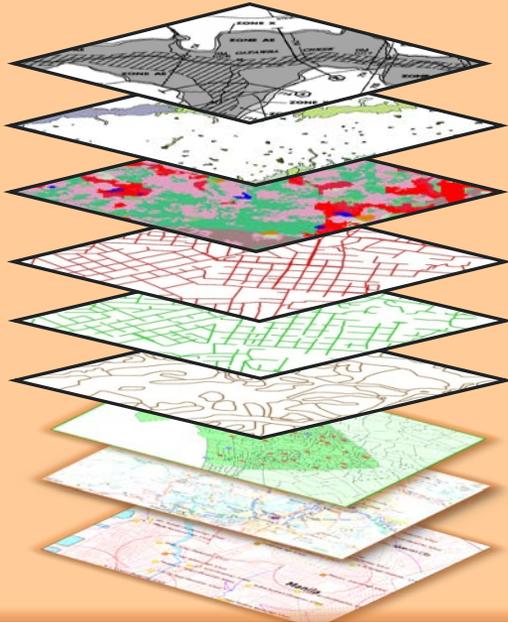
GEOSPATIAL FOUNDATION DATA THEMES

Theme	Description	Custodian
Geocoded Addressing	Unique street address of parcels/property	Philpost, PSA, Comelec, LGU Assessors
Administrative Boundaries - International, National, Regional, Provincial, City, Municipal & Bgy - Electoral Boundaries - Zip Code	- Jurisdictional Boundaries - Precinct Boundaries, Cong Districts - Post Code Boundaries	DENR-LMB (with NAMRIA; NSO; LGUs; other Agencies) COMELEC; (with NSO; DENR-LMB); Philpost
Feature Names/Place Names	Official and local names of cultural and geographic features	NAMRIA (with NHI & LGUs)
Land Parcels	A consistent framework of land parcel boundaries defined for land tenure purposes, referenced to a common datum and including road casements	DENR-LMB (with LRA; Registers of Deeds; LGU Assessors; DPWH)

GEOSPATIAL FOUNDATION DATA THEMES

Theme	Description	Custodian
Imagery	Aerial photo and satellite image	NAMRIA (Other users, producers)
Transport	Physical roads, airports, navigation routes, railways, ports, harbors, wharfs	DPWH, DOTC, PPA, PNR, NAMRIA, MARINA
Hydrology	Streamlines and Inland Water bodies	NAMRIA (Other users, producers)
Elevation and depth	Terrain and surface elevations and depths	NAMRIA
Geographic Features	Building footprints, other structures, and place names	NAMRIA
Land Cover	Vegetation, rocks, and human modified surfaces such as buildings	NAMRIA

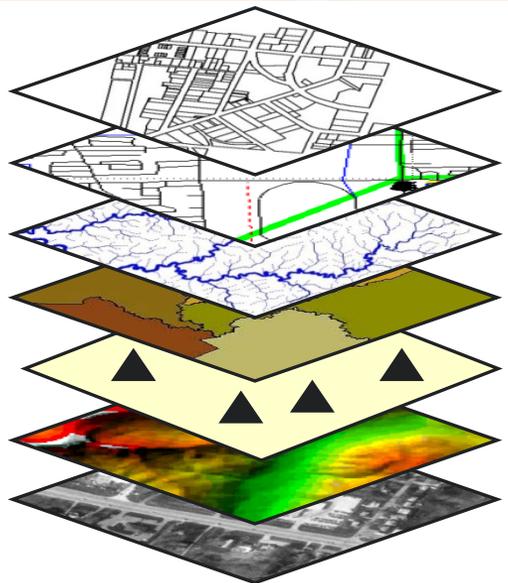
GEOSPATIAL DATA FRAMEWORK



Hazard areas - Phivolcs/PAGASA/MGB
School Locations - DepEd
Health Centers - DOH
Road Network - DPWH/DOTC
Precinct Districts - Comelec
Parcels - LMB/LRA
SAFDZ areas - DA
Barangay boundaries - LGUs
Environment data - DENR

Operational Layers

Thematic data specific to the agency/organization



Hypsography
Hydrology
Roads
Boundaries
Geodetic Control Points
DEM/DSM
Building Footprints
Orthoimage

NAMRIA Basemap

As primary reference or framework dataset

PRIMARY REFERENCE

Theme	Description	Custodian
Geodetic Control Points	Geodetic control points; Geodetic survey marks (horizontal stations) and benchmarks (vertical stations)	NAMRIA; DENR-LMS
Hypsography	Contour line - 1:250K (100m) 1:50K (20m) 1:10K (10m)	NAMRIA
Elevation	Terrain and surface elevations	NAMRIA
Geographic Features	Building footprints, other structures, and place names	NAMRIA
Hydrology	Streamlines and Inland Water bodies	NAMRIA (Other users, producers)
Orthoimage	Aerial photo and satellite image	NAMRIA (Other users, producers)

Proposed Fundamental Datasets
for the
Philippine Geoportal

As of 19 September 2012

FRAMEWORK DATASETS (FIRST PRIORITY)

Theme	Description	Custodian
Geodetic Control Network	Geodetic Survey Marks (horizontal stations) and Bench Marks (vertical elevation); Definition of vertical datum surface; Geoid-ellipsoid separations (N values) to convert from GPS observations to PHD heights	NAMRIA; DENR-LMB
Topographic Map Database (National Common Spatial Database)	Contour, national road network, natural drainage system, settlement, vegetation	NAMRIA; DENR-LMB
Aerial Photography (Orthophoto/Orthoimage)		NAMRIA

FRAMEWORK DATASETS (FIRST PRIORITY)

Theme	Description	Custodian
Satellite Imagery (VHR Orthoimage)		NAMRIA
Administrative Boundaries (National, Regional, Provincial, City, Municipal and Barangay)	Jurisdictional Boundaries	DENR-LMB (with NAMRIA; NSO; LGUs; other Agencies)
- Electoral Boundaries	Precinct Boundaries, Congressional Districts	COMELEC; (with NSO; DENR-LMB)
- Zip Code	Post Code Boundaries	Philpost
Coastline	The limit of land features usually at mean high water level	NAMRIA

FRAMEWORK DATASETS (FIRST PRIORITY)

Theme	Description	Custodian
Populated Places	Settlements in cities, towns, villages, barangays	NSO (with LGUs)
Streamlines and Inland Water bodies	Location of water courses and all inland water bodies	NAMRIA (with DENR and NWRB)
Hydrography, Bathymetry	Vertical distance of earth's land surface from base defined by Lowest Astronomical Tide	NAMRIA
Soils Classification	Boundaries and classification of terrestrial soil resources	DA-BSWM (with DENR-FMB)
Land Parcels/ Cadastre Fabric	A consistent framework of land parcel boundaries defined for land tenure purposes, referenced to a common datum	DENR-LMB / LRA / DAR / LGU Assessors
Road Parcels	road casements	DPWH / LGU Engineering-Assessors

FRAMEWORK DATASETS (FIRST PRIORITY)

Theme	Description	Custodian
Road Parcels	road casements	DPWH / LGU Engineering- Assessors

COMMON DATASETS (FIRST PRIORITY)

Theme	Description	Custodian
Land Tenure – depending on owner	Current, proposed and historical details of tenures; details of ownership, etc.	DENR, DOJ-LRA, DOE, DAR
Climatology	Macro climate for a specific region	PAGASA
Demography and socioeconomics	Population and housing statistics linked to statistical areas	NSO; NSCB
Land Classification; Forest Cover	Boundaries of land as classified into alienable and disposable land or public forest	NAMRIA, FMB
Feature Names/Place Names	Official and local names of cultural and geographic features (including roads)	NAMRIA (with National Historical Institute and LGUs)
Schools	Location of public and private schools (all levels)	CHED, DepEd

COMMON DATASETS (FIRST PRIORITY)

Theme	Description	Custodian
Health Facilities	Location of Public and Private Hospitals and other Facilities	DOH, PhilHealth
Geology	Boundaries and classification of geological units, both terrestrial and marine	DENR-MGB (with PHIVOLCS)
Mineral Resources	Boundaries and classification of mineral occurrence, both terrestrial and marine	DENR-MGB
Census Collection Districts or Statistical Boundaries	Boundaries of areas defined for collection of demographic census information (i.e. enumeration areas)	NSO
Labor and Employment	Labor and employment statistics linked to statistical areas	DOLE
Agriculture and Fisheries	Agriculture statistics linked to statistical areas	DA

COMMON DATASETS (FIRST PRIORITY)

Theme	Description	Custodian
Planning Zones	Boundaries of areas of permitted land use defined by planning authorities	HLURB (with DILG, LGUs; NEDA-RDCS, MARINA, DENR)
Rural and Urban Land Use	Rural and urban actual land use activities	HLURB (with DILG, LGUs, NAMRIA, DENR Regional Offices, NSO)
Cultural Features	Location of built environment, buildings, structures and other cultural features	NAMRIA; NHI
Aviation Features	Location of airports and navigation aids	CAAP-DOTC
Maritime Transport	Ports, harbors, wharfs, shipping routes	PPA-DOTC
Road Centerlines	Centerline of physical roads and carriageways with attribute data	DPWH;LGUs

COMMON DATASETS (FIRST PRIORITY)

Theme	Description	Custodian
Rail Centerlines	Location of trunk rail centerlines with attribute data	PNR-DOTC
Water supply, waste water, irrigation and drainage networks	Location of trunk networks and major assets with attributes of classification and ownership	NIA, Water Districts, MWSS, MWS; Maynilad Water, LGU Waterworks, LWUA, NWRB
Electricity and Gas Networks	Location of trunk networks and major assets with attributes of classification and ownership	NEA, Electric Coops, DOE, NPC
Telecommunication Network	Location of trunk networks and major assets with attributes of classification and ownership	DOTC –NTC
Areas subject to natural hazard	Spatial definition of such area with attribute data on periodic level of probability (include permanent danger zones)	NDCC- OCD (with Phivolcs, DENR-MGB, PAG-ASA)

COMMON DATASETS (FIRST PRIORITY)

Theme	Description	Custodian
Tourism	Tourist spots and zones (existing and for development)	DOT
Constraining or Major Interests in Land	<p>Heritage sites – polygon or point locations and details of significance</p> <p>Indigenous Peoples Sites – Polygon or point locations and details of significance</p> <p>Restricted Sites – Boundaries of other restricted areas for example contaminated sites</p> <p>Ancestral Lands/Domain: Title Applications/Determinations – boundaries of applications and/or areas claimed/determined</p> <p>Indigenous Land Use Agreements – boundaries of registered agreements</p>	<p>DOT, National Historical Institute NIPC (with DENR)</p> <p>DENR</p> <p>NIPC (with DENR)</p>

OTHER DATASETS (SECOND PRIORITY)

Theme	Description	Custodian
Street Address	Unique street address of parcels/property	PhilPost and LGU Assessors
Earth's Land Surface	Vertical distance from the earth's surface to a base defined by Philippine Height Datum	NAMRIA
River Catchments/ Drainage Areas	Boundaries of catchments/drainage areas	NAMRIA (with DENR-FMB)
Hydrogeology	Boundaries and classification of aquifers	DENR-MGB (with Academe and Research Organizations; NWRB)
Oceanography	Boundaries of physical and chemical characteristics of parts of the ocean	NAMRIA (with MSI)
Biodiversity Regions	Interim biogeographic regionalization of the Philippines (terrestrial, marine, coastal)	DENR-PAWB

OTHER DATASETS (SECOND PRIORITY)

Theme	Description	Custodian
Vegetation Classification (Flora)	Boundaries and areas of vegetation and associated entity description of dominant life form (terrestrial/marine)	NAMRIA (with DENR-FMB, DA, CRMP)
Animals (Fauna)	Classification and location of native and introduced animals (fauna- terrestrial/marine)	DENR-PAWB
Marine benthic substrate Classification	Boundaries and classification marine benthic substrates	DA- BFAR
Land and marine systems	Areas or groups of like topology, soils and vegetation (often modeled), throughout which can be recognized a recurring pattern	DENR- NAMRIA (with BSWM)