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A CONCEPT OUTLINE ESTABLISHING THE

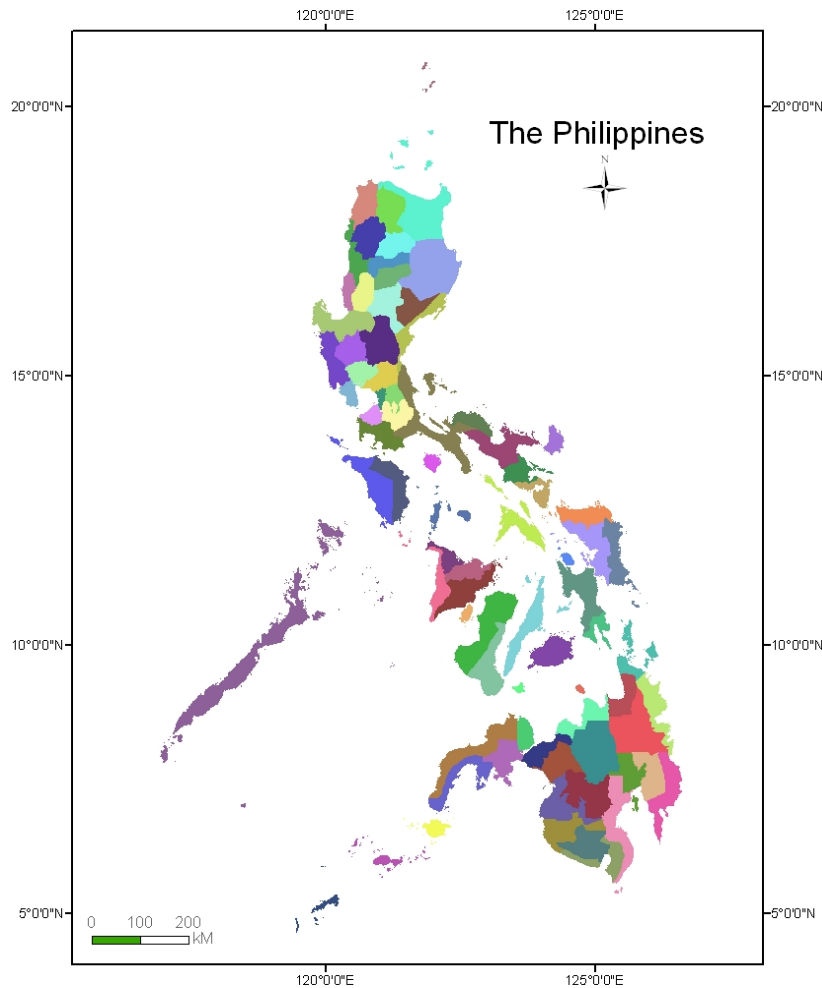
Philippine GIS Data Clearinghouse (PhilGIS)

www.philgis.org

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Introduction

The concept of the Philippine GIS Data Clearinghouse (known simply as **PhilGIS**) is advanced to support and supplement the spatial data needs of research, projects, and decision making of individuals, government agencies, and organizations working for the good of the Philippines.



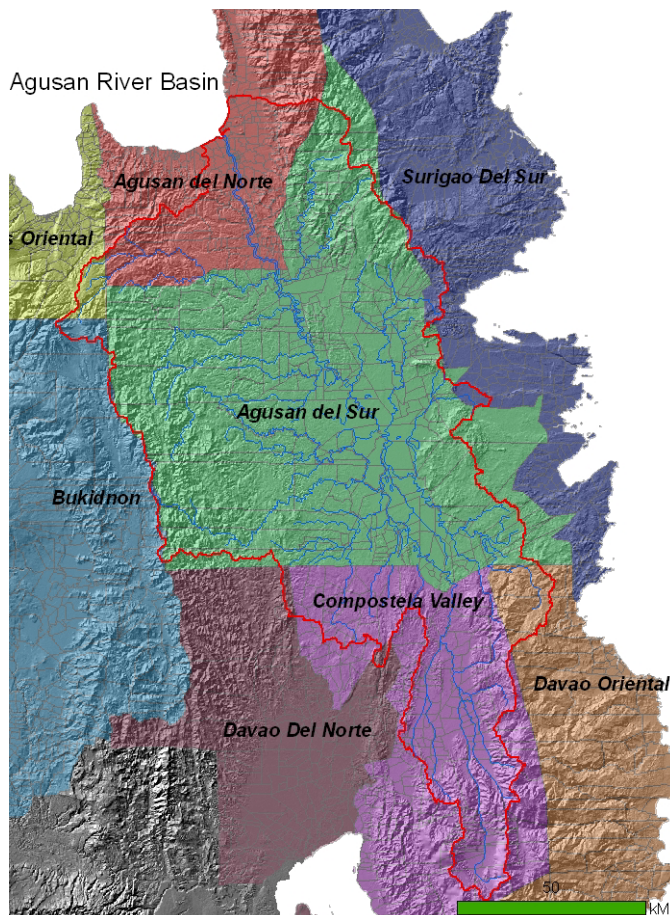
Faced with a myriad of challenges, most notably, socioeconomic, environmental, and natural resources management, the country is an ideal venue where researchers and development organizations can make a tangible impact. As with any development intervention, some kind of base data, however, is needed before any project plan can be initiated.

In recent years, many research studies and development projects have started using geographic information systems (GIS) and geographically-referenced data. As software tool, it leverages geolocational feature differences through spatial analysis – a valuable technique to help make sound decisions.

GIS requires different kinds of spatial data, which unfortunately are in dearth supply, unprocessed, or not easily accessible by end-users. PhilGIS intends to address these inadequacies through easy data accessibility.

PhilGIS concentrates initially on collecting already available spatial data, processing them into GIS software-ready formats, and distributing them to GIS end-users. It intends to provide researchers, project initiators, and decision-makers with free downloads and sharing of GIS data, as well as basemap data sourcing and development. Eventually, PhilGIS shall venture into custom data processing to address specific spatial data output requirements of data users and to implement its financial self-sustainability goals.

PhilGIS, therefore, depends heavily on data collectors and unselfish spatial data donors to share their data so as to populate PhilGIS' data bank. PhilGIS shall act as the custodian of data deposited by data donors - the backbone that supports the growth of PhilGIS. In no way shall PhilGIS claim ownership of these data.



(The Agusan River Basin boundary [redline] processed from 90-m resolution SRTM digital elevation data.)

PhilGIS Core Features

- Non-profit, non-governmental organization
- Public service orientation
- Environmental sustainability focus
- Free GIS data access and sharing
- Self-sustaining
- Open-source software implementation
- Relevance, adaptability, and innovation

Vision of PhilGIS

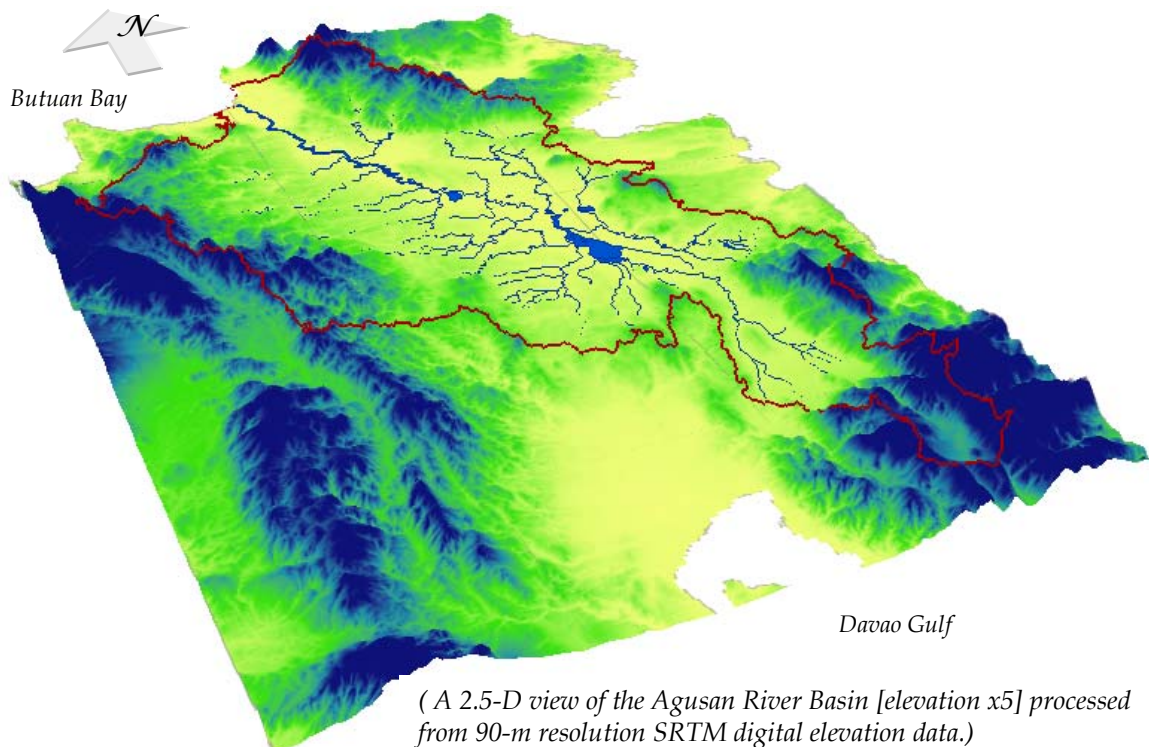
Free GIS data to any Filipino who needs it.

Mission

To serve as the central repository and single-access, data-sharing point for free GIS or geospatial data that focus on sustainable development and good governance of the Philippines.

Goals

1. To provide concerned individuals and entities – environmentalists, conservationists, students, academicians, scientists, planners, researchers, economists, NGOs, LGUs, local and national government agencies, and citizens – with GIS spatial data, free of charge, to enhance activities and decision-making primarily related to environmental conservation, sustainable development, disaster mitigation, and good governance of the Philippines.
2. To support the collection, development, cataloguing, presentation, and dissemination of spatial and non-spatial data, as well as conduct related training, to assist research, projects, and sound decision making.
3. To provide an infrastructure for GIS data distribution and sharing with organizations and Philippine LGUs in order to reduce data duplication, minimize GIS data development costs, promote collaborative and participative GIS development efforts, and seek GIS standardization.

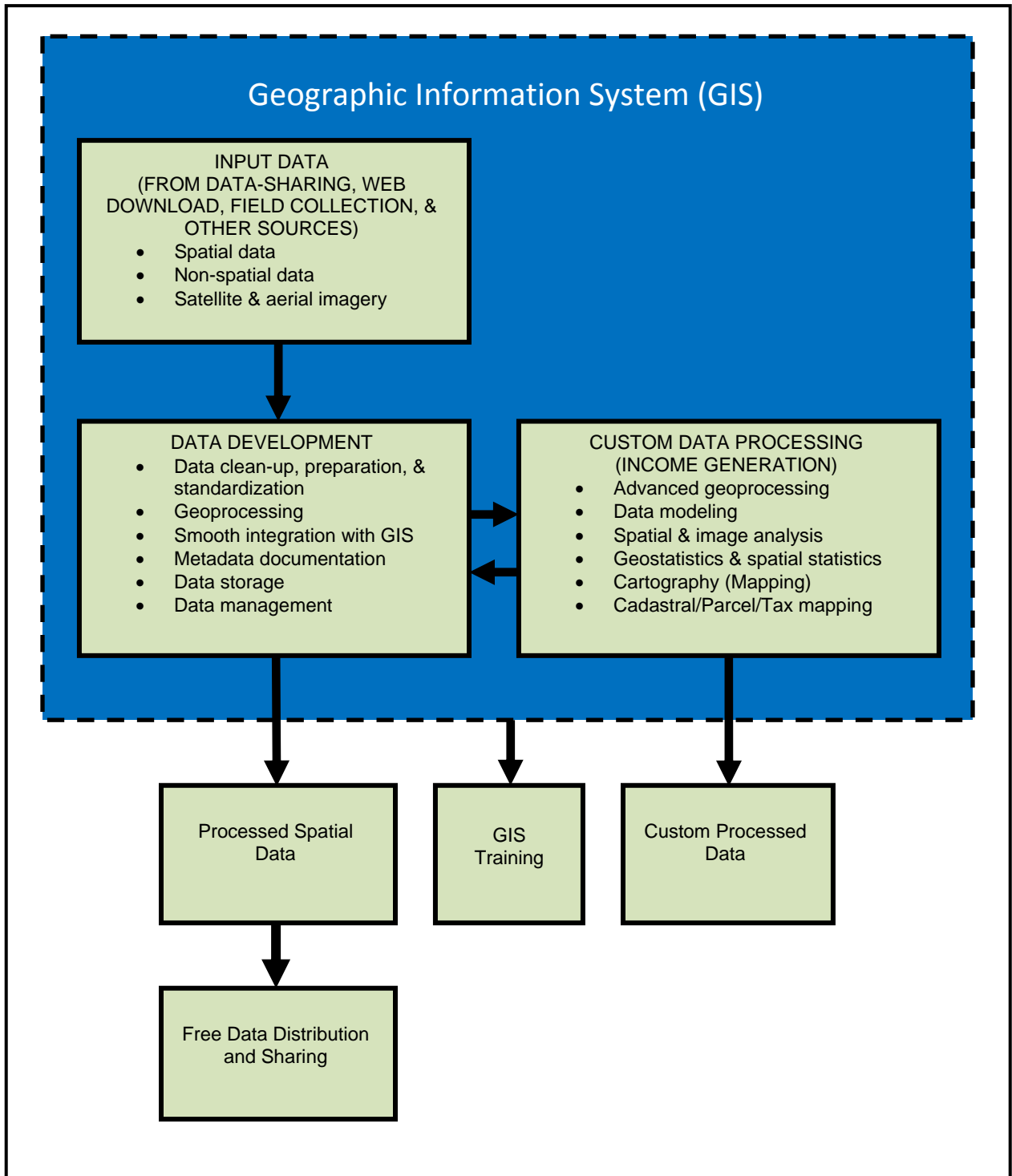


Major Activities (partial list)

1. Collect spatial and non-spatial data about the Philippines.
 - Scour internet sites of local, national, and international agencies, as well as NGO's that may have spatial data about the Philippines. These data include spatial or geospatial data (e.g. geo-referenced digital data), non-spatial data (e.g. tabular, text, images, and paper maps), survey data (GPS and Total Station), and satellite and aerial imageries.
 - Provide easy and direct data transfer from source (donor) to PhilGIS data server.
 - Contact appropriate entities and send request for Philippine-related spatial data.
 - Collect satellite and aerial images, recent and historical, where available.
 - Develop a data collection guideline.
2. Prepare and process collected spatial and non-spatial data for quick integration in a geographic information system (GIS).
 - Clean up and prepare non-spatial tabulated data to make them ready for integration in the GIS of end-users, e.g. apply a single uniform geographic coordinate system and projection for all datasets; define maximum physical geographic coverage of the Philippines.
 - Further develop spatial data.
 - Format and package spatial data to be compatible with popular commercial and open source GIS, remote sensing (RS), and image processing software.
3. Store and maintain datasets.
 - Create infrastructure for data storage and management
 - Document metadata for datasets planned for distribution
4. Provide easy access, download, and upload of data.
 - Create and maintain the PhilGIS website.
 - Create interface for easy spatial data distribution, download/upload, and monitoring.
5. Provide training on GIS, remote sensing, and data clearinghouse aspects
 - Conduct training on GIS including geographic data collection, development, standardization and integration.
 - Conduct training on metadata documentation and custom and advanced data processing such as geoprocessing, image analysis, and parcel mapping.
6. Seek funds and develop and maintain self-sustaining schemes
 - Seek funds for the procurement of computer hardware and equipment such as wide-format scanner, large-format printer, GPS receivers, and DLP projector.
 - Seek donations for the purchase of high-resolution satellite and aerial imageries to be used in the production of base maps such as land cover classification, coastline delineation, roads, and elevation mapping.
 - Devise self-sustaining schemes such as training, map production, custom data processing, and project collaborations.
 - Develop grant writing skills.
7. Continually upgrade and enhance PhilGIS usability, functionality, and service-oriented efforts.
 - Seek registration of PhilGIS as a legally approved and legitimate NGO.
 - Seek volunteers (may work online part-time) – such as data collectors and processors, computer and database specialists, GIS/GPS/RS specialists, metadata specialist, and training specialists – to man the operation.
 - Seek an enabling institution to host PhilGIS, such as a government agency, academic institution, or NGO with capable data web server and fast Internet connection.

- Draft memorandum of agreement for data sharing with LGUs, organizations, and stakeholders that are willing to participate in data sharing and exchange.
- Market and promote PhilGIS mission, capabilities, and development efforts by actively participating in venues such as conferences, seminars, workshops, and trade fairs.

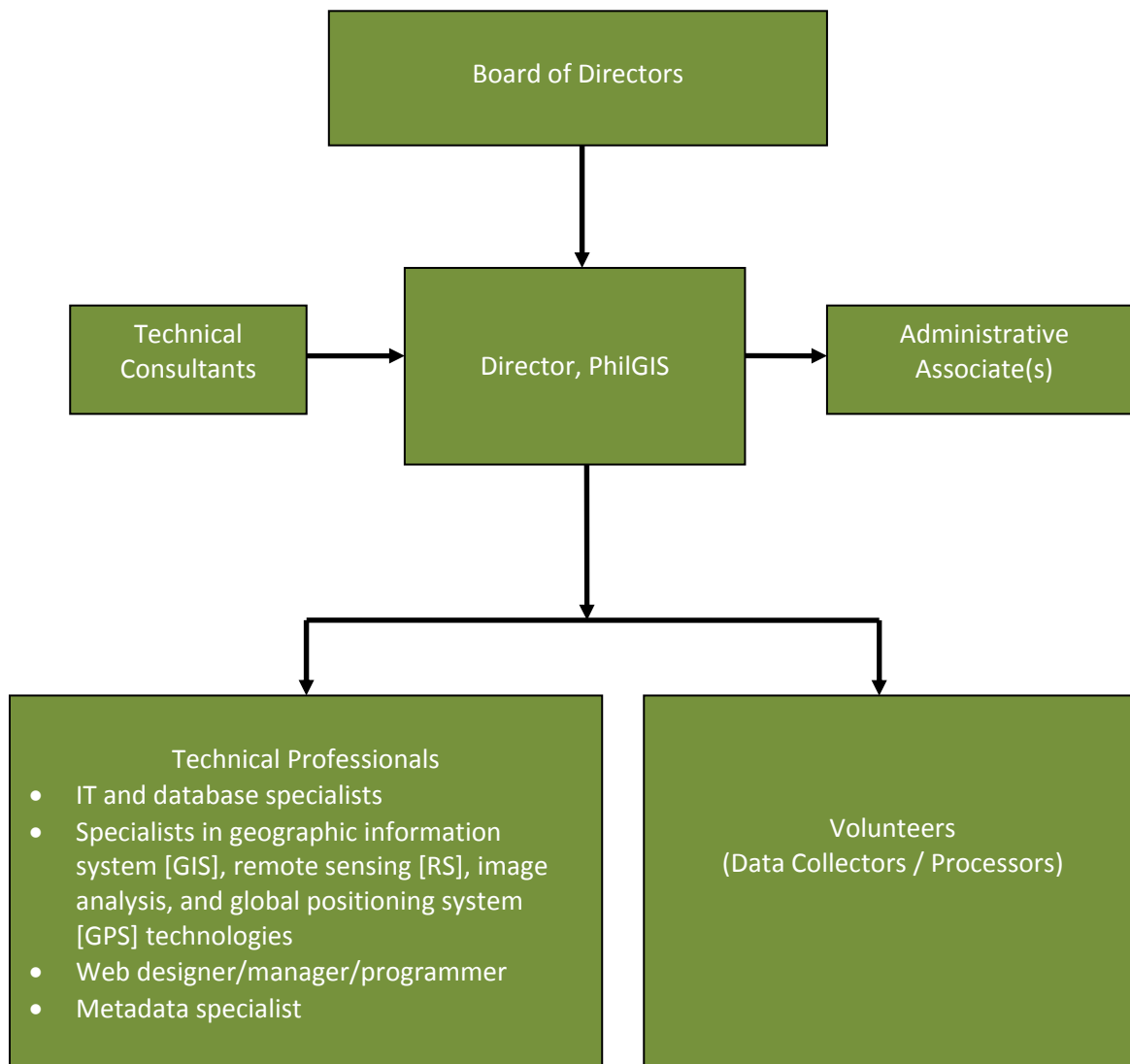
PhilGIS Concept Model



Organizational Diagram

At the heart of PhilGIS is a GIS. The GIS gathers input data from data-sharing, web upload, field collection, and other spatial data. These will all undergo spatial preprocessing to prepare them for quick integration with the GIS of end-users. The processed output spatial data shall be distributed free of charge.

A twin function of PhilGIS is income generation. To make PhilGIS financially self-sufficient, it shall pursue custom data development for a reasonable fee depending on client's specific needs. The custom-processed data may not be distributed free of charge by PhilGIS.



Functions

1. Board of Directors (Composed of four members, plus the Director, who are knowledgeable about GIS and its significance in the overall development of country)
 - Assumes ultimate accountability of PhilGIS's actions
 - Ensures that PhilGIS functions what it's supposed to do.

- Provides advice as to the direction and focus of PhilGIS based on its mission and purpose.
 - Oversees and continually assesses and updates the relevance of PhilGIS's programs.
2. Director
 - Implements the goals, objectives, and planned activities of PhilGIS.
 - Supervises and provides guidance to manpower in the organization.
 - Maintains rave rapport with benefactors, server host institution, data providers, data beneficiaries, and PhilGIS volunteers.
 - Seeks linkages with similarly focused organizations.
 - Continually upgrades the relevance, leverage, and adaptability of PHILGIS.
 - Seeks grants, funds, and donations from various sources for the organization's hardware and operational needs.
 - Provides avenues and opportunities for relevant professional development of its manpower.
 - Devises schemes to make the organization financially sound and self-sustaining.
 - Prepares regular and annual performance reports.
 - Draft PhilGIS constitution and by-laws.
 - Develop plans for the registration of PhilGIS as a bona-fide NGO.
 3. Administrative Associate(s)
 - Deals with NGO issues and affairs such as application, certification, compliance, and requirements.
 - Takes care of office administration tasks including accounting, purchasing, payroll, and personnel management.
 - Assists the Director in carrying out his/her functions.
 4. Technical Consultants (PhilGIS strongly welcomes retired volunteer experts in various fields to provide technical advice.)
 - Provide technical advice in areas such as, but not limited to, GIS (geographic information systems), GPS (global positioning system), RS (remote sensing), image analysis, general IT (information technology), sociology and anthropology, archeology, environmental and agricultural economics, rural development, natural resources development, environmental science and management, wildlife biology, conservation management, local governance, land use and urban planning, security, NGO management, and grant proposal writing.
 5. Technical Professionals (Composed of volunteer and permanent technical professionals such as IT and web specialists, spatial database experts, GIS/GPS/RS specialists, metadata and training specialists, as well as spatial and image analysts. Part-timers and online volunteers are welcome.)
 - Provide hands-on, operational integrity of the organization's hardware, software, and technical processes.
 6. Volunteers (Part-timers, online workers, and retired professionals are most welcome.)
 - Provide front-line data collection/processing hard work for PhilGIS.
 - Insure integrity of collected data.
 - Establish and maintain good relationship and coordination with data sources and with fellow volunteers.
 - Make initial data processing for cleaner data turnover and faster GIS integration.

Wish List (Immediate term)

1. Spatial data about the Philippines
2. IT Volunteers (Data Collectors and Technical Professionals)
3. Website and server host institution
4. Internet connection

5. Hardware: State-of-the-art desktop computers with large dual LCD monitors; high-capacity data server; wide-format scanner and printer, handheld GPS units, and DLP projector
6. Software: Commercial office, graphics, database, server, and GIS/RS software. (For initial implementation and transition purposes only. Eventually software implementation will be all opensource.)

Attachments

1. *PhilGIS Geospatial Data Checklist* (See separate report.)
2. *Guidelines for Data Collectors* (Under development.)

Glossary

(References: ESRI GIS Dictionary, 2009; Wikipedia, 2009; Webopedia, 2009)

ASTER GDEM (Advanced Spaceborne Thermal Emission and Reflection Radiometer - Global Digital Elevation Model -- Released to the public on 29 June 2009. A joint operation between NASA and Japan's Ministry of Economy, Trade and Industry (METI), GDEM is the most complete mapping of the earth ever made, covering 99% of its surface at 30 meter (98 foot) elevation resolution. The previous most comprehensive map, NASA's Shuttle Radar Topography Mission (SRTM), has a global resolution of 90 meters and a resolution of 30 meters over the USA. Current version of the GDEM product is "research grade" as confirmed by METI and NASA.

Attribute data - Tabular or textual data describing the geographic characteristics of features.

Clearinghouse - A repository structure, physical or virtual, that collects, stores, and disseminates information, metadata, and data. A clearinghouse provides widespread access to information and is generally thought of as reaching or existing outside organizational boundaries.

Geographic data – See Spatial data.

Geospatial - a term widely used to describe the combination of spatial software and analytical methods with terrestrial or geographic datasets.

Geospatial data – See Spatial data.

Geospatial technology - A set of technological approaches, such as GIS, photogrammetry, and remote sensing, for acquiring and manipulating geographic data.

GIS - Geographic Information System; an integrated collection of computer software and data used to view and manage information about geographic places, analyze spatial relationships, and model spatial processes. A GIS provides a framework for gathering and organizing spatial data and related information so that it can be displayed and analyzed.

GPS - Global Positioning System; a global navigation satellite system (GNSS) developed by the United States Department of Defense. It uses a constellation of between 24 and 32 medium Earth orbit satellites that transmit precise radiowave signals, which allow GPS receivers to determine their current location, the time, and their velocity.

Landsat Program - The longest running enterprise for acquisition of imagery of Earth from space. The first Landsat satellite was launched in 1972; the most recent, Landsat 7, was launched on April 15, 1999. The instruments on the Landsat satellites have acquired millions of images. The images, archived in the United States and at Landsat receiving stations around the world, are a unique resource for global change research and applications in agriculture, cartography, geology, forestry, regional planning, surveillance, education and national security. Landsat 7 data has eight spectral bands with spatial resolutions ranging from 15 to 60 meters.

LGU – Local Government Unit; the term is used to contrast with offices at nation-state level, which are referred to as the central government, national government, or (where appropriate) federal government.

NGO - Non-governmental organization; a term that has become widely accepted for referring to a legally constituted, people from non-governmental organization created by natural or legal persons with no participation or representation of any government. In the cases in which NGOs are funded totally or partially by governments, the NGO maintains its non-governmental status therefore it excludes government representatives from membership in the organization.

Non-spatial data - Data without inherently spatial qualities, such as attributes.

Portal - a Web resource that provides access to a broad array of related resources and services.

Raster data - A spatial data that defines space as an array of equally sized cells arranged in rows and columns, and composed of single or multiple bands. Each cell contains an attribute value and location coordinates. Unlike a vector structure, which stores coordinates explicitly, raster coordinates are contained in the ordering of the matrix. Groups of cells that share the same value represent the same type of geographic feature.

Spatial data – also known as **geospatial data** or **geographic data**; it is the data or information that identifies the geographic location of features, attributes, and boundaries on Earth, such as natural or constructed features, oceans, and more, including their shapes and representation. Spatial data is usually stored as coordinates and topology, and is data that can be mapped. Spatial data is often accessed, manipulated or analyzed through Geographic Information Systems (GIS).

Spatial database - A structured collection of spatial data and its related attribute data, organized for efficient storage and retrieval.

RTM - Shuttle Radar Topography Mission; an international research effort that obtained digital elevation models (DEMs) on a near-global scale from 56 °S to 60 °N, to generate the most complete high-resolution digital topographic database of Earth to date.

Vector data - A coordinate-based data that represents geographic features as points, lines, and polygons. Each point feature is represented as a single coordinate pair, while line and polygon features are represented as ordered lists of vertices. Attributes are associated with each vector feature, as opposed to a raster data model, which associates attributes with grid cells.

*A popular government without popular information or the means of acquiring it,
is but a prologue to a farce, or a tragedy, or perhaps both.*

- James Madison

One of the Founding Fathers and 4th President of the United States of America