NATIONAL REPORT

Geospatial Information Management

National Spatial Data Infrastructure of the Republic of Armenia

1. The strategy and legal basis for the implementation of the Republic of Armenia's National Spatial Data Infrastructure

The 2021-2026 programme of the Government of the Republic of Armenia emphasizes the importance of creation of a unified national spatial data infrastructure. This initiative aims at enhancing the management process by increasing the efficiency of spatial data creation, collection, maintenance, processing, dissemination, and use.

In 2021, the Cadastre Committee developed and the Government of the Republic of Armenia approved Decision N 505-L "On Approving the Strategic Plan for the Creation of an Integrated Cadastre." This plan outlines the development of a national spatial data infrastructure (NSDI).

The NSDI strategy establishes a unified methodology for public administration bodies to organize their work. This framework has led to the development and adoption of several legislative acts. These acts enable collection, processing, storage, and exchange of standardized spatial data within a single system. The system relies on base cartographic layers managed by the Cadastre Committee and prioritizes data reliability, timely updates, and protection.

Currently, one of the challenges in the field of public administration in the Republic of Armenia is the issue of having complete, systematic and reliable data on the natural elements of the territory of Armenia and the changes caused by anthropogenic influence and managing them effectively. Similar information is the set of collected data, in different types of sectoral databases, some of which have a spatial character.

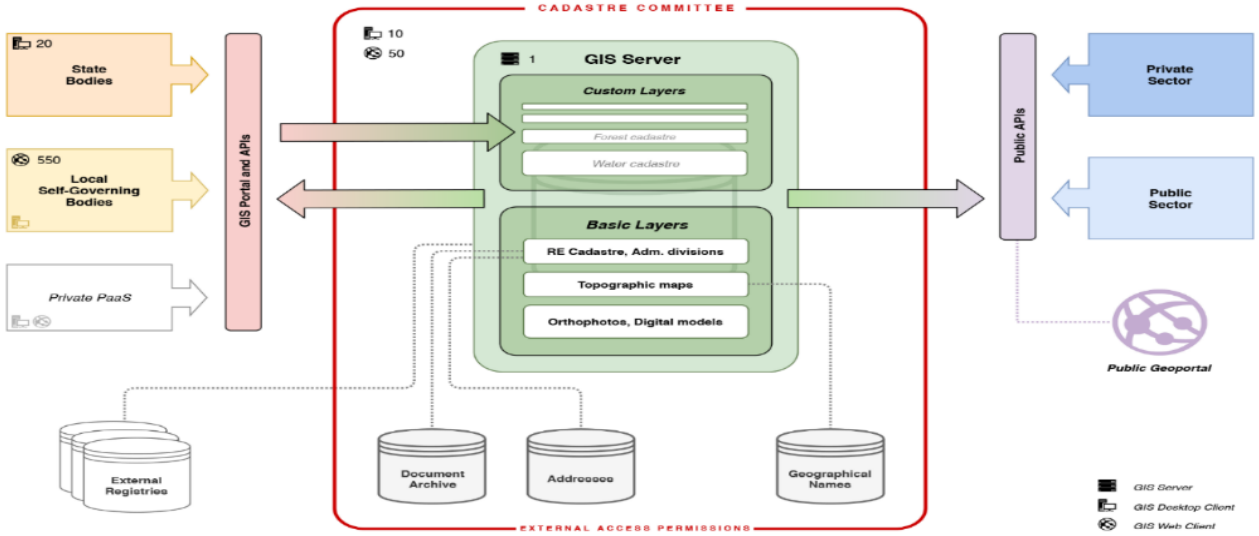

Figure 1: The structure and components of the Armenian NSDI

After the strategy was approved, the Laws "On Spatial Data" and "On Geodetic and Cartographic Activities" were adopted in 2023 in order to fully implement the National Spatial Data Infrastructure in the Republic of Armenia. Previously, the field was regulated by the Law “On Geodesy and Cartography”, but there were gaps in the spatial data management.

For the first time in the Republic of Armenia, the rights of state administration and local self-government bodies, as well as officials’ rights, the basic principles of spatial data collection, creation, provision, distribution, use, exchange and management, the components and management features of the national spatial data infrastructure, the principles of creation and maintenance of the national geoportal, as well as classified spatial data groups was defined by Law.

Launch of the National Geoportal of the Republic of Armenia's National Spatial Data Infrastructure

In 2022, the Cadastre Committee launched the National Geoportal (geoprtal.am), which is part of NSDI and its cartographic component (maparmenia.am). The Geoportal includes basic cartographic layers such as cadastral maps (cadastral district, land parcel, buildings), land use (intended purpose and significance), property information, addresses, geographical names, orthophoto plans and relief.

Layers and data in the National Geoportal are constantly updated, and new tools with new features are introduced. The platform provides OGC WFS, WCS, and WMS web cartographic services.

A constituent part of the Armenian National Spatial Data Infrastructure (NSDI), the "Metadata Catalog" module contains metadata on over 600 vector and raster spatial data sets available from the Cadastre Committee. The metadata is continuously updated and new entries are added. The "Metadata Catalog" module allows users to both create and search for metadata.

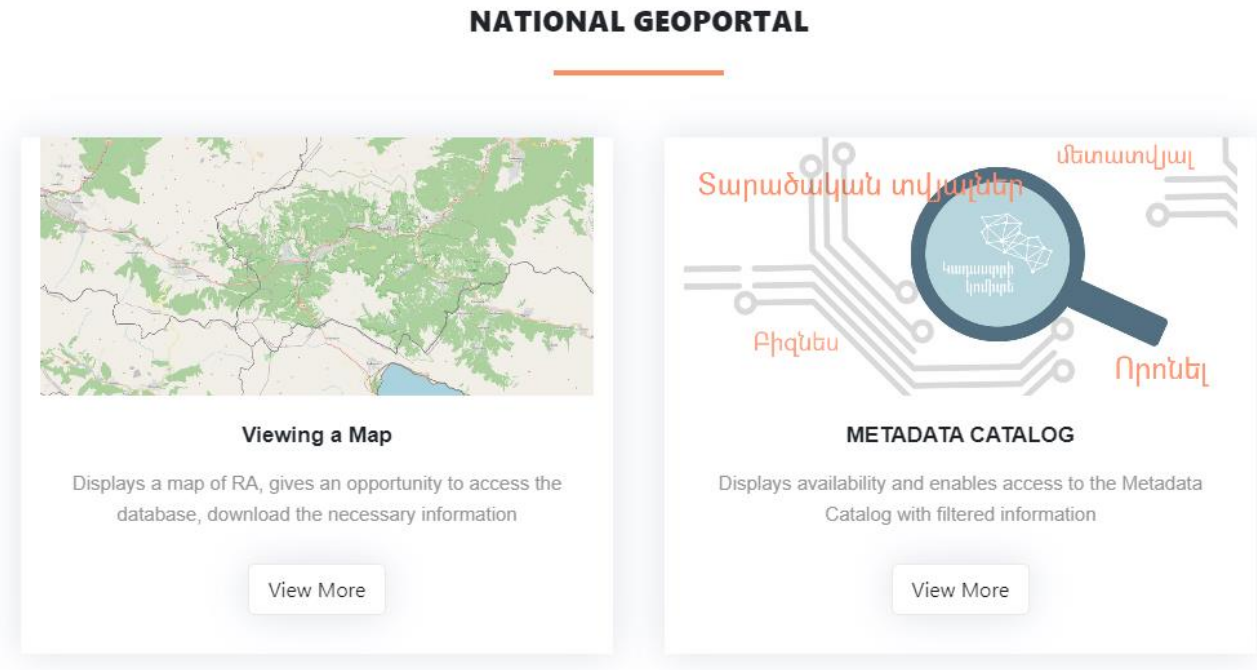

Figure 2: geoportal.am

Due to the importance of spatial information systems, some elements of the implemented systems are open to citizens and legal entities in Armenia. Government agencies involved in various sectors, including inspection bodies, ministries, province administrations, and other interested bodies, have been provided with wider access and tools to analyze data comprehensively, obtain multi-faceted information, and make accurate decisions using the National Geoportal.

3. The development of national standards for the Republic of Armenia's National Spatial Data Infrastructure and the creation of spatial data

Standardized data is a crucial prerequisite for ensuring efficient integration of spatial data into the national geoportal. Guidelines for the standardization of basic and thematic spatial data were approved to emphasize this importance and provide a legal framework. Furthermore, with the

support of the Asian Development Bank, the process of developing 12 national standards has been completed. The adoption of these standards will enable the integration of a wider range of data into a single system.

The Cadastre Committee is responsible for creating and maintaining an up-to-date, unified geospatial database of basic cartographic layers that comply with international standards. This ongoing process involves the creation, digitization, and modernization of these layers using advanced methods.

Following the established schedule, the Cadastre Committee is creating the basic group cartographic layers and integrating them into the National Geoportal. The respective authorized bodies of state administration are responsible for creating and managing the thematic cartographic layers, which are essential components of the NSDI.

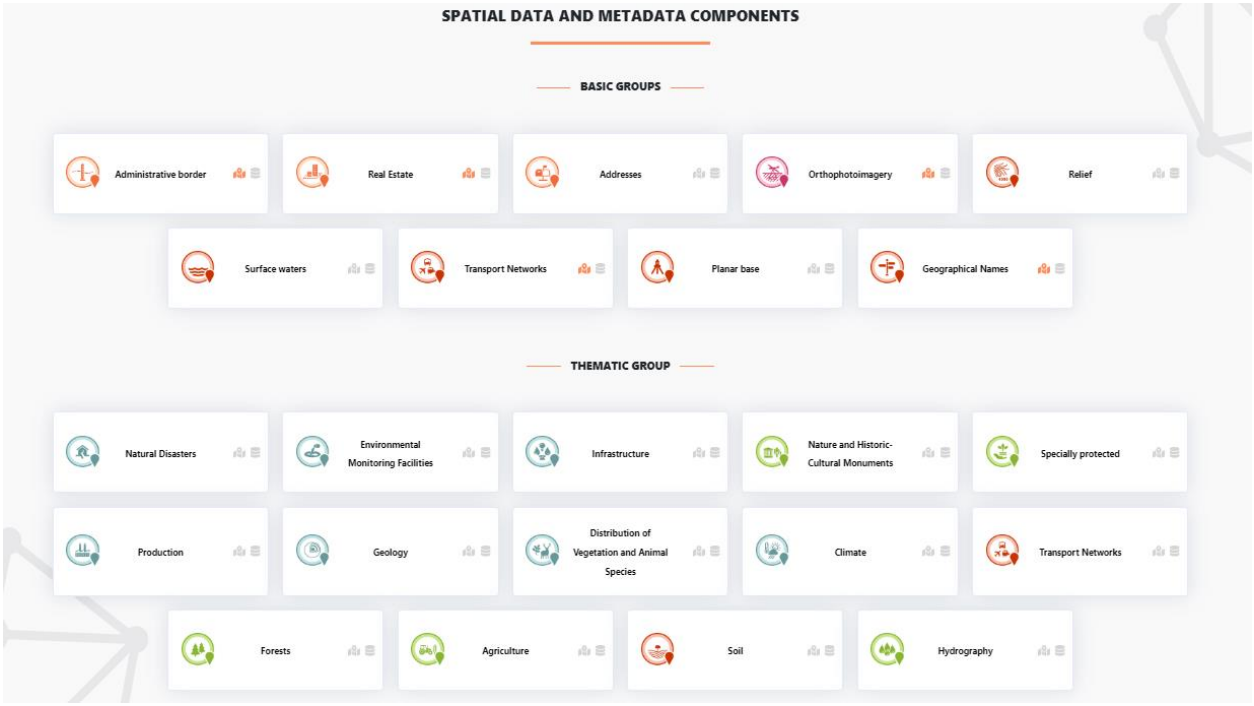

Figure 4: Basic and thematic spatial data groups

The Cadastre Committee manages various basic layers already integrated into the RA National Geoportal, following relevant Armenian legislation. Notably, they oversee the National Information Bank of Geographical Names and the state card catalogue. This responsibility includes implementing national policy for geographical names. Consequently, a "Geographic Names" layer

was added to the National Geoportal, utilizing data from the information fund. This resulted in a standardized database of approximately 36,000 geographical objects in the national coordinate system, now accessible within the Geoportal.

To complete the geocoding of geographical names, it is planned to create a passport describing each object, which will visualize input data from already collected and adjusted bases, such as province, settlement, and code. Additionally, the passport will include information about the genealogy of each geographical name and a photo reflecting the object.

The Cadastre Committee has initiated the creation of a unified address register for Armenia, a single standardized database of immovable property addresses. This project has involved the adjustment and standardization of around 1 million addresses, along with the creation of a GIS database that serves as the foundation for the register. The "Addresses" layer has also been integrated into the National Geoportal.

To ensure spatial data quality, the Cadastre Committee actively corrects errors in basic cartographic layers, such as cadastral maps. This process leverages orthophoto plans, a highly efficient method that minimizes resource requirements.

To maintain the integrity of the basic cartographic framework, the Cadastre Committee, as the authorized body for spatial data, also creates and digitizes road, hydrology, transportation, and relief layers.

4. Summary

The implementation of a national spatial data infrastructure (NSDI) in Armenia is driven by both the 2021-2026 government plan and sectoral strategic documents. This initiative leverages the experience of leading countries, particularly by adapting the European Union's INSPIRE directive to Armenian conditions.

A fully implemented NSDI will provide comprehensive, reliable, and up-to-date spatial data on various objects through the national geoportal. State and local governments, individuals, businesses, and other stakeholders will benefit from this by being enabled to make faster and more effective decisions, conduct multi-faceted analyses, and promote sustainable economic development.