GIS Digitization Training Program

Date: June 19-22, 2024

Location: RRC, MYRADA-Kadiri

WASSAN conducted a 4-day training program focused on "GIS-Digitization using QGIS" for Community Resource Persons and staff engaged in the Rayalaseema Water Initiative (RWI) program. Held from June 19-22, 2024, the training aimed to equip participants with essential skills in Geographic Information Systems (GIS) and digital mapping using QGIS software.

The program attracted 22 participants from 8 partner NGOs, including APMAS, CSA, FES, JJ, REDS, RIDS, TIMBAKTU, and WASSAN. It featured comprehensive sessions covering the fundamentals of GIS, practical exercises in QGIS operation, and hands-on training in various GIS applications. Topics ranged from basic shapefile creation and digitization to advanced techniques such as geo-referencing, data joining, and layout design within QGIS. Additionally, participants gained exposure to Google Earth for exploring key features and measurement tools.

Throughout the training, emphasis was placed on practical learning experiences, enabling participants to complete a project involving digitization, data creation, and presentation using QGIS tools. This introduction outlines the commitment of WASSAN to enhance the capacity of RWI program stakeholders in leveraging GIS technology for effective water resource management and community development initiatives in the Rayalaseema region.

Day 1 Highlights:

we began with introductions, getting to know each other and our backgrounds. On the first day, introduced us to Google Earth, a powerful tool for visualizing geographic information. We began by installing Google Earth and familiarizing ourselves with its interface and basic functionalities. This included navigating through maps, using various tools such as search, zoom, and pan to explore different locations.

We then explored the fundamental features of Google Earth, including creating and annotating spatial data. This involved adding placemarks, lines, and polygons to maps, and styling them to enhance their visual appeal and clarity. We also learned how to save our work in formats like .kml and .kmz for sharing and further analysis.

We then delved into the fundamentals of Geographic Information Systems (GIS). We learned why GIS is essential across different sectors, from urban planning to environmental management. The session covered important concepts like projection systems, data types (vector and raster), and the practical applications of GIS in real-world scenarios.

After understanding the theoretical aspects, we moved on to practical application by downloading and installing QGIS, a popular GIS software. This hands-on session helped us familiarize ourselves with the software interface and its basic functionalities.

A significant part of the day was dedicated to mastering the creation of shapefiles in QGIS. We learned how to efficiently handle different types of spatial data such as polygons, points, lines, and raster data. This included creating and editing these files, which are fundamental for mapping and spatial analysis tasks.

The day concluded with a practical session on digitization where we applied our newly acquired skills to draw village boundaries. This exercise allowed us to practice precision in digital mapping, which is crucial for accurately representing geographical features.

Day 2 Highlights:

Day two focused on applying our skills in practical scenarios. We started by learning how to generate grids effectively, a task essential for organizing and analyzing spatial data. This session helped us understand how to divide geographical areas into manageable sections for detailed analysis.

Following grid generation, we delved into attribution creation in QGIS. This involved adding different types of attribute fields to our maps, which are essential for storing additional information about geographic features. Learning to manage and populate these fields properly is crucial for comprehensive data analysis and reporting.

In the afternoon, we explored QGIS layout design, where we learned how to create professional-looking maps suitable for printing. This session emphasized the importance of presenting spatial data in a clear and informative manner, essential for effective communication in various applications.

The day concluded with a practice session where we consolidated our learning by working on practical exercises. These exercises allowed us to apply our skills in different scenarios and gain confidence in using QGIS for real-world projects.

Day 3 Highlights:

Day three introduced us to more advanced topics in GIS, starting with geo-referencing scanned maps. This process involves aligning digital maps with real-world coordinates, making them accurate and usable for spatial analysis and integration with other datasets.

We then moved on to plots digitization, where we learned techniques for digitizing different types of geographic features such as points, lines, and polygons from various data sources. This skill is crucial for updating and creating new digital maps based on existing physical maps or data.

Another significant session was data join, where we explored how to combine different datasets based on common attributes. This process allows for more comprehensive analysis by integrating information from multiple sources into a single dataset.

Day 4 Highlights:

A significant part of the day was dedicated to exploring Google Earth's measurement tools. We practiced calculating distances for lines and areas for polygons, which are essential for quantitative spatial analysis and planning. we focused on preparing maps for reports, emphasizing how to format and present spatial data effectively. This session covered techniques for creating visually appealing maps that convey complex information clearly and concisely.

The training concluded with a session on file conversion, where we learned how to convert files between KML and Shapefile formats. This skill is crucial for interoperability between different GIS software and systems.