



PAKISTAN

Strategy Support Program



Introduction to Geographic Information Systems (GIS) Using the ArcGIS Desktop

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December 4-7, 2012

Inaugural Session: December 4, 2012

- 08:30 a.m. Registration
- 09:00 a.m. Recitation from the Holy Quran
- 09:05 a.m. Welcome Remarks
Dr. Hina Nazli – PSSP
- 09:10 a.m. Introduction to the GIS Training
Dr. Stephen Davies, COP – PSSP
(Stand by: Dr. Sohail Malik)

DAY ONE: December 4, 2012

09:20-10:30 **The Principles of GIS**

- Basic functions of GIS; Real-world applications
- Building maps and layering shapefiles
- Exploring attribute tables; Identifying features; Symbolizing features based on their attributes; Labeling features based on their attributes.
- Understanding data view and layout view; Using the Layout toolbar.

10:30-10:45 Tea break

10:45-11:30 **Acquiring geographic data**

- Using ArcCatalog to explore geographic data; data format; metadata

- GIS resources at IFPRI and on the internet

11:30-13:00 **Exploring spatial relationships using choropleth mapping**

- Spatial relationships: Infrastructure and population density / count
- Building a map with multiple data frames

13:00-14:00 Lunch

14:00-15:00 **Manipulating attribute tables in ArcGIS**

- Aggregating data by geographic administrative unit
- Summary statistics

15:00-15:45 **Introduction to projections**

- Understanding projections and preserving specific geographic measurements
- Pakistan projections

15:45-16:00 Tea break

16:00-17:30 **Exploring and utilizing georeferenced data**

- Projections and projecting data
- Integrating GPS data from the field

DAY TWO: December 5, 2012

9:00 – 11:00 **Spatial Data Integration and Data query**

- Merging georeferenced census and HHS data into Arc-GIS
- Thematic mapping
- Understanding and performing attribute queries

11:00-11:15 Tea break

11:15-13:00 **Spatial Data Integration and Data query**

- Understanding and performing spatial queries.
- Basic spatial statistics

13:00-14:00 Lunch

14:00-15:00 **Spatial Measurements and Statistics**

- Calculating Euclidean distance using Spatial join
- Calculating and querying travel time data using Sample and Zonal Statistics

15:00-15:15 Tea Break

15:15-16:45 **Spatial Measurements and Statistics**

- Buffering areas to extract / include specific area calculations
- Basic area statistics based on buffered zones
- Travel time calculations and analysis

16:45-17:30 **Basics of GPS**

- GPS settings and data collection using GPS
- Waypoint Marking (point data)
- Setup GPS for tracking (lines and polygons) data collection

DAY THREE: December 6, 2012

09:00-10:30 **Practical - Data collection using GPS**

10:30-10:45 Tea break

10:45-12:15 **Downloading GPS data using DNR Garmin**

- DNR Garmin configuration
- Downloading and saving GPS point data (waypoints)
- Downloading tracking or lines and area (polygon) from GPS

12:15-13:00 **Presentation of GIS applications in Urbanization Analysis**

Waqas Ahmad and Helina Tilahun, IFPRI (PSSP and ESSP)

13:00-14:00 Lunch

14:00-15:00 **Geodatabase basics**

- Creating and adding GIS data into Geodatabase
- Updating shapefile
- Updating attribute table

15:00-15:45 **Group mini-project**

15:45-16:00 Tea break

16:00-17:30 **Group mini-project**

DAY FOUR: December 7, 2012

09:00-09:30 **Presentation of GIS applications in Water Resources**

Dr. M. Jahanzeb Masud Cheema
Department of Irrigation and Drainage,
University of Agriculture Faisalabad, Pakistan.

09:30-11:00 **Presentation of mini-project**

11:00-11:15 Tea break

11:15- 12:25 **Evaluations**

Closing Session

12:30 p.m. Recitation from the Holy Quran

12:35 p.m. Chief Guest's Address
Dr. Muhammad Shareef – DG, NARC

12:40 p.m. Remarks by USAID Representative
Dr. Michael Wyzan – EGA/USAID – Pakistan

12:45 p.m. Distribution of Certificates
Dr. Michael Wyzan – EGA/USAID – Pakistan

12:55 p.m. Closing Remarks
Dr. Stephen Davies, COP – PSSP
(Stand by: Dr. Sohail Malik)

13:00 p.m. Lunch