A Land Information System for Turkey – A Resource for Future Sustainable Development

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Overview

- Introduce GDRS in context
- Describe Soil and Water National Information System
- Outline the key project objectives
- Present the principle data issues
- Identify user community
- Look to future developments

KHGM or GDRS

Köy Hizmetleri Genel Müdürlüğü
General Directorate of Rural Services

- Integrating services in soil and irrigation, rural roads, potable water and electricity affairs and land and settlement
- Providing rural, agricultural and social services to 76,457 communities
- Over 40,000 employees
- Operational, Research, Training arms

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Turkish Rural Environment

- Rural sector key to national economy
- 78 million hectares total land
  - 28 million hectares under arable farming
  - 4 million hectares irrigated production
    - stated aim to increase by 1.6 million hectares by 2001
- Rural areas need significant and guided investment
  - relating to sustainable agricultural production and to social infrastructure and education

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Supporting the Decision Makers

- Sustainable stewardship and prudent management of rural resource
- Availability of contemporary information
- Information Technology as a key management tool
- Alignment with European methodology

GDRS Soil and Water National Information Centre

- **To collect and organise both point and spatial data on natural resources and the environment**
- **To develop a computerised Information System to store, manipulate and maintain such data**
- **To act as a repository for publications containing rural environmental information on Turkey**
- **To provide information to policy makers**

GDRS Soil and Water National Information Centre

- **To identify data users and establish their requirements**
- **To develop GIS expertise within GDRS**
- **To increase awareness of other organisations collecting and disseminating rural environmental data in Turkey**
- **To facilitate and encourage the exchange of ideas among resource information agencies at national and international levels**

NIC Areas of Application

- The facilitation of planning and operational activities through the timely provision of quality information;
- The provision of data resources for the Research Programmes;
- The spatial representation of the Inventory data resource for investment management research.

NIC Data Environment

- Data held in common reference base
- Based upon the UTM 1:25,000 topographic mapping of the General Command of Mapping
- Incorporate spatial and aspatial data
- Oracle and TNT MIPS software tools
- NT and UNIX server platforms

Core NIC Data Themes

- Soil mapping at 1:25,000 1:100,000 and 1:200,000 scales
- Administrative Boundaries / Locations
- Geological maps at 1:25,000 scale
- Climate and Meteorology
- Topography
- Cadastral data
- Hydrology
- Remote sensing and aerial imagery
- Land use, type and capability
- Demography
- Cartographic
- Urban zones

Soil Mapping

- 1:800,000 reconnaissance 1952-54
- 1:200,000 1966-71, 75 surveyors
- 1:25,000 mapping derived
- 1:100,000 general mapping
- Digital map construction underway

- Major soil types, erosion, land use, land classification and suitability

Soil Map Legend

- Major Soil Group
- Soil-classification combination
- Other soil classes
- Erosion classes
- Current Land Use
- Land Use Capability Class
- Sub-class
- Land Type
- Agricultural Land Class
- Slope (A-F)
- Depth (A-E)
- Texture (A-H)
- Drainage (A-G)
- Salinity (A-F)

Soil Map Digitisation

- Case study in Ankara Province
- Thrace and further 10 provinces
- 25% of country now completed at 1:25,000 scale
- Further provinces now underway
- Publish data on Internet and GDRS Intranet to widest audience

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Inventory, Census and Hydrology

- **Sub-districts**
- **Villages**
- **Sub-villages**
- **Resettlement**
- **Bridges**
- **Agriculture**
- **Rural roads**
- **Drinking water facilities**
- **Land consolidation**
- **Electricity plants**
- **Income sources and settlement places for migrating families**
- Irrigation dams
- Water pipes
- Hydrogeological information
- Wells
- Pumps
- Co-operatives
- Economic plants
- Ground and underground water wells
- Land development services
- Collector pipes
- Soil conservation and new settlements

NIC User Community

- GDRS Operational Managers in Regions and Provinces
- GDRS Research Institutes
- Other Turkish Government Directorates
- Public Interest Groups
- International Community

NIC Applications

- Disseminate information
- Managed core data repository
- Software utilities
- Internet/Intranet/WAN delivery

- Browsing tools
- Modelling tools

Future Challenges and Direction

- Environmental
  - 1.5 million hectares of arable land threatened by salinity
  - 2.8 million further hectares threatened by waterlogging
  - Water and wind erosion has major impact
- Resourcing
  - Allocating scare resources
  - Funding post-TARP

Conclusions

- NIC offers cost-effective management DSS and research tool
- Timely contribution to contemporary sustainable natural resource stewardship
- Draws together pertinent existing thematic datasets
- Construction of new datasets
- Widest delivery mechanisms sought

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