Geoinformation Technologies in Land Management and Beyond: Case of Georgia

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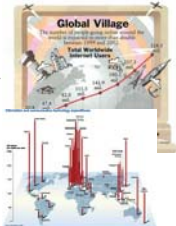Co-team Leader, Cadastre and Land Register Project,
Co-financed by KfW

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The Fast World vs The Slow World:
Global Context

- The fast world is a product of steady acceleration of pace of life in the era of globalization
- Expansion of highly competitive economic and political systems causes endless race to seek out new markets and areas of influence
- Reduction of the "turnover time" of not only capital, but also information becomes crucial - "time costs money"
- Spatial Information, i.e. geographical data (geo data) becomes increasingly demanded asset for various activities and purposes
- Modern IC technologies- with Internet as the leading edge of the fast world- are being increasingly used in capturing, processing, storing and disseminating of (geo)data

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The Fast World vs The Slow World:
Development Context

- The differences are huge between continents, regions, countries
- The fast world coincides with the core, developed economies and some more affluent regions and countries that are "plugged in" to the contemporary world economy, whether as producers or consumers of its products (*Knox & Marston, 2004*)
- The rest (less developed) countries, including the most of so-called transitio... belong to the s...
- Georgia is among the latest

World Internet Connectivity (in 2002)

Russian Federation
Georgia
Turkey
Armenia
Azerbaijan

a) Land structure
Non-agricultural 19%, Urban 1%, Agricultural 43%, Woodland 37%
arable, perennials, hayland, pasture
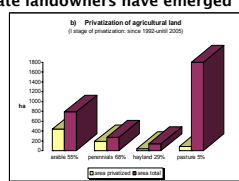

Why is Georgia Slow? Soviet Legacy

- Extremely centralized (land) management system
- Exclusively the State ownership of land
- Highly complicated access to land for individuals
- Hardly accessible, usually inaccurate (except of data produced for military purposes) land related data
- High level of secrecy of geographical data
- Application of primitive and obsolete technologies in civil land administration

Consequences:
These conditions significantly hindered establishment of transparent and effective land management system

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Land Reforms: Main Aspects

- **Privatization of state land**
  - By 2005 over 25% of agricultural and almost 40% of urban land was privatized
  - More than 1 million private landowners have emerged

b) Privatization of agricultural land
(I stage of privatization: since 1992-until 2005)
arable 55%, perennials 68%, hayland 29%, pasture 5%
area privatized, total

- **Introduction of a modern land administration system**
- **Emergence and development of a free real estate market**

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Land Administration: Cadastre and Property Registration

- Emergence of private real property and landowners caused necessity of implementation of a new land administration
- *Main purpose* of reformed land administration – *creation of a unified national cadastral and registration system*
- Participation of multiple donors since 1996:
  - WB/IFAD
  - GTZ
  - USAID
  - UNDP
  - KfW
  - SIDA
- Introduction of different approaches, methods, technologies by the donor projects
- Improvements in co-ordination, data integration, etc. by the donor projects since 2004

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Progress in Data Acquisition and Processing
(assistance of international donors)

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Multifunctional Land Information

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Cadastral Field Survey with DPT

- In 2001-2006 some 15-20 DPT sets have been working simultaneously for capturing cadastral and other data
- Over 400 individuals were trained on job
- Almost 40 newly established surveying private companies have been operating in the field

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(Geo)data Production Cycle
Orthophoto > GIS > Database > Cadastral map > Registration card

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Additional data and documents

Building photos

Soil quality

Building inventory

Construction/reconstruction "red lines"

Land Use

Geographical Database (GeoDB)

- GeoDB allows an integration of different features in one database
- It ensures implementation of these features for cadastral and registration purposes simultaneously
- Existence of the additional features (layers) allows to use the same data in different universal applications, e.g:
  - soil cadastre
  - physical planning
  - environmental monitoring
  - statistical analysis
  - spatial analysis

Cadastre
Soil Classification
Topography
Slope
Relief

Collected Data

Cadastral Data (Spatial Information: Parcel, Building)	Registration Data (Objects: Parcel, Flat)	Additional Information on all objects: Parcel, Building, Flat, Soils
•Parcels •Buildings/Constructions •Servitudes/Deeds •Roads/Streets/Railways •Communications/Connections •Land Use •Rivers/Hydrographic •Woodland •Soils	•Parcel Number (Code) •Flat (Code) •Address •Ownership Type/Description •Use/Deeds Type (Responsibilities) •Description/Legal Attributes	•Land use type details •Object/Building/Flat Description: Building age, Floors, Building material, Digital photograph •Communication/Connection description •Other notes

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Collected Data

Cadastral Data (Spatial information: Parcel, Building)

Registration Data (Objects: Parcel, Flat)

Additional Information on all objects: Parcel, Building, Flat, Soils

Multipurpose Data for Geo DataBase

Institutional Changes:
National Agency of Public Register (NAPR)

- **Founded in 2004 after abolit...**
  Department of Land Manage...
- **The organizational changes ...**
  with important improvement...
- **It allowed the country to lea...**
  reformers in property regist...

Top 10 reformers in property registration in 2004

Average improvement

12% 16% 43%

Top reformers
Georgia
Slovakia

Making property registration easier in Georgia

Time (days)
Time reduced from 39 days to 9
Procedures reduced from 8 to 6
2005
Procedures

Cost (% of property value)
Cost reduced from 2.4% to 0.6%
2005
Procedures

Source: Doing Business database.

NAPR: Procedural Changes

Customer

Documents

Paper Archive (NAPR)

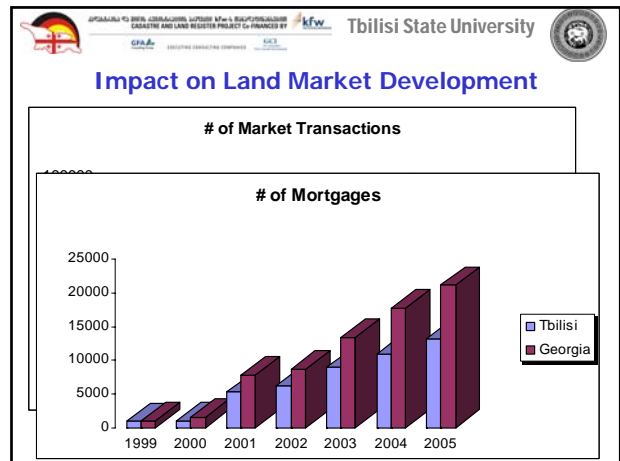Territorial Registration Office

Central DB (NAPR)

- Concept of data flow between local and central levels
- Customer service

NAPR: Technological Changes

- Information accessibility
- Supplementary services to customers
- E-registration system

Central DB

WAN, WWW

Territorial Offices

External Users

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NAPR: Information Policy
www.napr.gov.ge

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Impact on Land Market Development

# of Market Transactions

# of Mortgages

Legend: Tbilisi, Georgia
Years: 1999, 2000, 2001, 2002, 2003, 2004, 2005

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Impact on Land Market Development

What does this trend indicate?
- The need for property registration becomes generally recognized and accepted;
- Offered registration procedures and services are not very cumbersome, time-consuming and expensive. The number of informal transactions decreases steadily and rapidly;
- Banking sector recognizes validity and safety of the information and documents issued by the Public Registry and accepts registered property as a collateral when giving loans. Credits are becoming more available;
- Disposable personal income relatively grows and so does an interest of investing in real property;
- As market value of real estate grows fast, buyers are willing to make further purchases of property more rapidly.

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Beyond Land Management

- Land data and geoinformation technologies are widely used in the fields other than land management by different users, namely:
  - Local governments and administrations
  - Architectural and town-planning agencies
  - Communal infrastructure and utility companies (roads, electricity, sewage, etc.)
  - Construction companies
  - Environmental and coastline protection
  - Police, defense and security
  - Different projects
  - Private companies
- IT-oriented private sector grows fast and becomes reliable guarantee for sustainability of the system; The leading companies appear in the international market
- Another effective measure for sustainability is introduction of new Master's courses in Land management and land tenure at Tbilisi State University and Spatial planning at Georgian Technical University

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Development of IT-oriented Private Sector

Example: Corporate member of FIG since 2005

www.lkn.ge

LKN

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Development of IT-oriented Private Sector

On 8.10.2006 the Georgian Society of Professionals of Land Information Technologies – SPLIT becomes the full Member of FIG

CADASTRE AND LAND REGISTER PROJECT Co-FINANCED BY   kfw   **Tbilisi State University**

GFA   EXECUTIVE CONSULTING COMPANIES   GICS

Conclusions and Endnotes

· Obvious progress of Georgia in building up of a modern land management system, especially in the part of cadastre and registration, is largely based on extensive application of geoinformation technologies

· Implemented systems prove to be cost efficient:
Total costs ~ 35 million US$ vs 4-5 million US$ annually generated by NAPR (2004-2006)

· Main shortcomings and deficiencies:
 - Insufficient use of geodata, mainly by state institutions and authorities
 - "Capability gap" between the private sector, producing high quality (geo)data, and state bodies, using and maintaining it.
 - Only partial use, so far, of modern (geo)information technologies in land management and beyond it in Georgia. Huge possibilities of Internet and other electronic communication and technical facilities for data acquisition and distribution, learning, advertising, planning, monitoring, participation in decision-making, etc. are still insufficiently explored and utilized.

It is *naïve* to think that application of modern geoinformation technologies will solve the problems of overall development alone but it definitely assists to progress in many ways. Application of advanced technologies doesn't eliminate gap between the fast world and the slow world. Nonetheless, it makes this gap smaller. All the rest largely depends on the good governance, of which land management and land administration are essential parts.