

# **Electronic Minutes Application - Catalyst for Systematic Land Registration in Georgia**

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**Key words:** Access to Land; Informal settlements; Security of Tenure

## **SUMMARY**

To address the challenges related to land registration and cadastral coverage in Georgia and improve the efficiency and speed of the registration process necessitated by the upcoming national systematic land registration program (2022-2024), the National Agency of Public Registry (NAPR) of the Ministry of Justice of Georgia, with the World Bank support, developed and launched innovative Electronic Minutes Application (EMA) in April, 2021.

EMA integrated the systems of NAPR (immovable property registration, archive of Bureau of Technical Inventory, systematic land registration), National Archive of Georgia, Revenue Service (tax services), Public Services Development Agency (population registry) as well as Digital Signature and Geographic Information Systems. This comprehensive information on a particular land plot streamlines registrar decisions and speeds up the registration process.

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## **1. INTRODUCTION**

After the collapse of the Soviet Union, Georgia underwent a challenging political and socio-economic environment, economic strife and unrest brought on by the civil wars. To ease off the economic situation of the country and gradually transition from the planned, soviet styled economy to that of the free market oriented economy, government initiated a land reform in 1992, aiming to distribute land among the Georgian population. As a result, numerous small-scale family farms emerged across Georgia, each typically averaging around 1 hectare of land, with often fragmented land plots, that numbered in the range of 3-4 plots. The average size of these privatized agricultural landholdings varied from 0.3 ha in districts with a low land-man ratio to 1.25 ha in districts with more available land. (USAID Report) Notably, the land registration reform was not fully implemented in the highland regions and the Autonomous Republic of Adjara.

At the initial phase of land privatization (1992-1998), procedural and qualitative mistakes were made. Throughout the 1990s, land privatization was implemented quickly, but with some inaccuracies. For example, land plots were allocated via field works without identification of borders and without cadaster drawings, which caused a high number of mistakes in the documents confirming ownership rights.

Additionally, over the years, the registration body collected the cadaster data of individual land plots (e.g., location, configuration, area, etc.) according to the legislative requirements valid at the time of registration (e.g., based on survey drawings with or without coordinates and without on-site verification). Furthermore, there was no defined common technical standard for surveying activities, resulting in surveying results from different periods being implemented according to various methodologies and with various levels of accuracy. The standards of surveying activities varied not only for different time periods but also for different regions of Georgia.

Based on the resolution No. 800, dated 13 December 2006, on “Approval of Instruction for the Registration of Rights on Real Estate” by the Minister of Justice of Georgia, the electronic cadaster system was established, and it became mandatory to prepare survey drawings in WGS 84 coordinate system and UTM projection (state geodesic coordinate system) formats. Furthermore, it became mandatory to present electronic and paper versions of cadaster survey drawings to the registration body.

Still, there was no mechanism to verify the accuracy of submitted survey drawings in Georgia. Instead, the responsibility for the accuracy of the survey drawings was assigned only to the owner, meaning that the registration body was not able to determine the accuracy of cadaster survey drawings submitted by interested parties and in this regard, the registration body was fully dependent on the objectivity and fairness of surveyors and interested parties.

Georgia faced a significant national problem to land registration in rural communities across Georgia, in that rural land registration of both agriculture and urban lands remained very low,

less than 50% registered based on municipalities, ranging from less than 5% for most municipalities of Racha-Lechkhumi and Kvemo Svaneti, and Imereti to 25-50% in Kakheti and Kvemo Kartli (Land Registration Strategy, 2015).

Following the completion of the first stage of agricultural land reform in Georgia, under which over 1 million certificates confirming land ownership were issued, more than 1.5 million agricultural land plots were still unregistered by 2000. Although there are no accurate statistics, the estimate of registered agricultural land plots (primary registration) is around 20%. Based on estimations, at least 1.2-1.4 million agricultural land plots were not registered.

Among the significant problems faced by the GoG were: i) Incomplete Legal Documentation on Land Parcels; ii) Unofficial Transactions; iii) Land Fragmentation; iv) Boundary Disputes and Overlapping Boundaries, Incorrect Cadastral Drawings; v) Squatted Lands; vi) Unregistered State-Owned Lands.

### **1.1 Launch of Land Reform and National Rollout**

Government of Georgia initiated a new ambitious land reform in 2016, following the enactment of the Law on Special Procedures for Systematic and Sporadic Registration of Land Titles and Improvement of Cadastral Data under the State Project (SLR Law). Reform had two main directions: i) Sporadic Land Registration and ii) Pilot Project on Systematic Land Registration. Reform which will be completed by the end of 2024, was spearheaded by the National Agency of Public Registry of Georgia (NAPR).

Established in 2004 as part of Georgia's broader modernization efforts, the NAPR's mandate encompasses registering and maintaining real estate titles and transactions, issuing certificates for land titles and other property rights, and facilitating public access to information on property ownership and related legal documents. The collaborative efforts of additional stakeholders in this process included the National Bureau of Enforcement, Notary Chamber of Georgia, Revenue Service, National Archives, Local Municipalities, and Private Survey Companies.

In 2016, Georgia passed Law on Special Procedures for Systematic and Sporadic Registration of Land Titles and Improvement of Cadastral Data under the State Project (SLR Law) to address issues related to incomplete documentation, unofficial transactions, boundary disputes, overlapping boundaries, inconsistencies between actual occupation and ownership documentation, unregistered state-owned lands, and the absence of information on property rights. To tackle incomplete documentation, the law streamlined bureaucratic processes and legitimized documents that would have previously been considered invalid, such as those lacking necessary stamps or signatures.

Pilot Project on Systematic Land Registration was carried out through the financing of the World Bank, under Component 2 of the Irrigation and Land Market Development Project. Project was designed to redefine and test the policies and procedures for registration and “results from pilots would inform the design of national program of land registration in years 3-5 of the Project by the government” (IDA PAD).

Pilot project was implemented in 11 pilot areas consisting of 12 settlements across Georgia, selected by the Government of Georgia, to represent geographic variety and land tenure situations in the country (GoG Regulation N351, 2016).

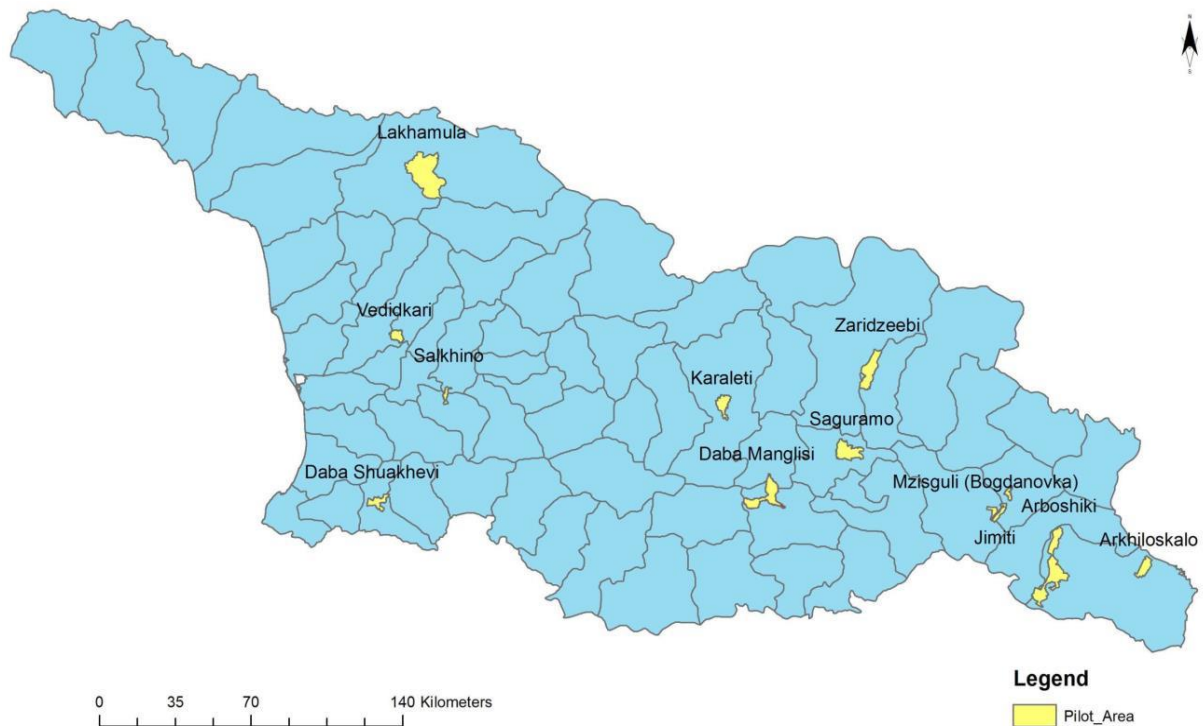


Figure 1 – Map of Georgia with Pilot Areas

Following the successful completion of the Systematic Land Registration in the Pilot Areas, Georgia scaled up systematic land registration activities in the irrigated areas approved by the Government of Georgia through the support of the World Bank (Loan Agreement IBRD 9043-GE). Government of Georgia also expanded the coverage of systematic land registration area in Kakheti region (Order 681, 2021) and selected areas located in Mountainous regions of Georgia (Order 562, 2020). Throughout the years, as SLR was implemented in various areas, sporadic land registration progressing in parallel to the SLR throughout the country. As a result, government launched a National Rollout of systematic land registration, on January 01, 2022. According to the World Bank Disclosable Restructuring Paper - Irrigation and Land Market Development Project - P133828, “The further scale up [National Rollout] of the SLR became possible thanks to the introduction of the fully automated data collection and processing tool “Electronic Minutes” developed under the Project and do it in-house. This increased the efficiency in the overall management of the land registration process and generated substantial financial savings under Component 2. The savings will be used to finance training, equipment, and work of the survey teams and thus, will enable surveying an additional 270,000 parcels.” (Disclosable Restructuring Paper).

## 2. THE ELECTRONIC MINUTES APPLICATION

Prior to developing the EMA, NAPR launched the transformation of its IT capabilities. It invested in agile trainings and gradually transformed its IT Department over the period of five months. During this process new software development project management methodologies

were implemented and tested, specifically AGILE practices like Scrum and Kanban. Consequently, IT teams transitioned all their projects to JIRA in a bid to enhance the development process.

## 2.1 Introduction to EMA

To address land registration and cadastral coverage challenges, secure property rights of its citizens and streamline the registration procedures, the NAPR, with financial support of the World Bank, developed and launched Electronic Minutes Application (EMA) in April, 2021. EMA integrated the systems of NAPR (property registration, cadastre, NAPR archives, systematic land registration), National Archive, Revenue Service (tax services), Public Services Development Agency (population registry), Forestry, as well as Digital Signature and Geographic Information Systems. These databases are accessible in real-time, during cadastral survey to ensure maximum data reliability. Citizens receive all survey data in the field, upload documents, digitally sign e-minutes, and have them certified by the e-signature of NAPR. Such comprehensive information on a particular land plot streamlines registrar decisions and speeds up the registration process.

EMA is an innovative system in terms of:

1. **Fully digitized registration:** By eliminating paper-based operations and making land registration fully electronic, EMA redefined the land registration procedure in Georgia.
2. **Efficiency and Cost Savings:** Streamlining the business process of land registration drastically reduced data processing time (by 50%) and registration costs;
3. **Improved access to land registration services** through integration of various governmental agency systems and enabling real-time service delivery.
4. **Improved Community Engagement:** Real-time data processing and improved cadastral data visualization facilitates better community outreach, enabling on-site cadastral plan viewing and real-time corrections, reducing re-measurement requests by 70%.
5. **Conflict Resolution:** Real-time data processing eliminated plot overlaps and other survey related disputes, which dramatically decreased number of complaints (0.0003% for 142,000 Registration Applications – Pilot Data).

As a result, EMA received the most successful IT innovation award at the 12<sup>th</sup> Regional Cyber Security and IT Innovation Event - GITI 2022.

## 2.2 Development of the EMA

EMA was developed through AGILE method, Agile Project Management Methodology was adopted, with the project team organized into scrum teams, all with a primary objective to constantly enhance the product through cross-functional collaboration with end-users. It followed a structured approach, breaking down the project into modules and increments to facilitate iterative development. Considering the end users are surveyors and registrars, their input and feedback played a pivotal role throughout the development process.

The time between releases, or the delivery time, was kept to a tight schedule, averaging approximately one week. The project's modular structure allowed for efficient development, ensuring that different aspects were systematically addressed. Notably, during the initial phases

of development, the insights and remarks provided by surveyors and registrars were carefully considered and incorporated into the system to align with user requirements.

The iterative development process involved thorough testing and refinement of each increment before moving on to the development of a new one. This stepwise approach ensured that all parts of the application met the desired standards. Once all parts were finalized, comprehensive system testing and implementation commenced.

Throughout the entire project lifecycle, all teams actively engaged on an as-needed basis. This collaborative effort was essential in maintaining alignment with evolving user needs and ensuring that the application remained responsive to the demands of the working environment. The development also continued despite the raging COVID 19 pandemic.

NAPR incorporated following systems/processes into the EMA: i) Geographic Information System (QGIS / QFIELD) – Software used for surveys in the field; ii) Immovable property registration (LANDREG) – NAPR registration software, which is developed in house and is tasked with immovable property registration in the country; iii) Bureau of Technical Inventory (BTI) – Database of immovable property (buildings) created prior to the creation of the NAPR; iv) The National Archives of Georgia (ARCHIVE) – Database of relevant title documents stored at the archives; v) The Revenue Service (RS) – Taxpayer list from the Revenue Service of the Ministry of Finance of Georgia; vi) State Service Development Agency (SDA) – Database from the civil registry, personal identification data of citizens; vii) Digital signature (DSSI) – Digital signature module; viii) Systematic Land Registration (SLR); ix) Information gathered during the systematic land registration process.

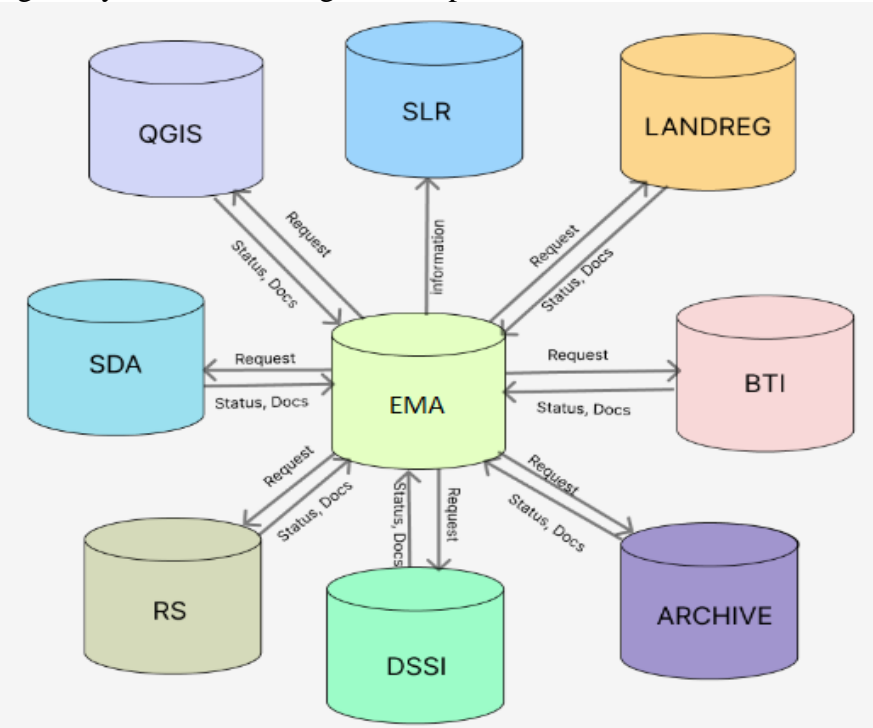


Figure 2. Systems/Processes Connected to EMA.

EMA is available on both PCs through a web platform and mobile phones (Android).

### 2.2.1 Testing

EMA underwent rigorous testing, involving surveyors and registrars on the ground, to ensure it achieved optimal performance and usability in practical work environments. These tests were predominantly conducted under pilot land registration activity involving surveyors and citizens in pilot areas and registrars, encompassing a range of scenarios aimed at refining the application.

For instance, in the initial stages of testing, a collaborative field approach was employed, where both registrars and surveyors worked together in tandem. They gathered data jointly in the field, which was subsequently transferred and entered into the system upon returning to the agency. However, through this process, it became evident that this cooperative fieldwork model wasn't the optimal solution to meet the demands of the working environment.

Subsequently, an alternative scenario was tested, wherein the surveyor operated in the field while the registrar maintained distance communication from the office. This revised approach proved to be more effective.

Additionally, registrars actively contributed feedback during the testing phase, articulating their specific requirements to enhance efficiency and speed. Their valuable input led to the integration of features such as calculation bars and other data essential for land surveying into the system. These improvements were pivotal in ensuring that the Electronic Minutes Application evolved to better align with user needs and requirements in the working environment.

### **2.3 Digitalization of the Paper Based Model**

The process of data collection during the surveys utilized paper-based methods. During the data collection phase, field teams used field inspection manuals to gather information, manually completing documents in the field. At the end of each working day, these documents were brought to the NAPR office, where they were scanned and sent to registrars for data processing.

Additionally, transfer of survey data from GPS rovers to their PCs to create cadastral drawings, also occurred in the offices after the completion of the long working day. As a result, cadastral survey and measurement plans often exhibited overlaps with already registered plots or protected areas. Errors, both factual and mechanical, were present in the field-collected data, which teams could only identify after returning to the offices or later during the registration process. This resulted in backlogs, and interested parties hesitated to register their land titles due to the requirement of submitting documents to either the Public Service Hall or community centers, demanding both time and funds.

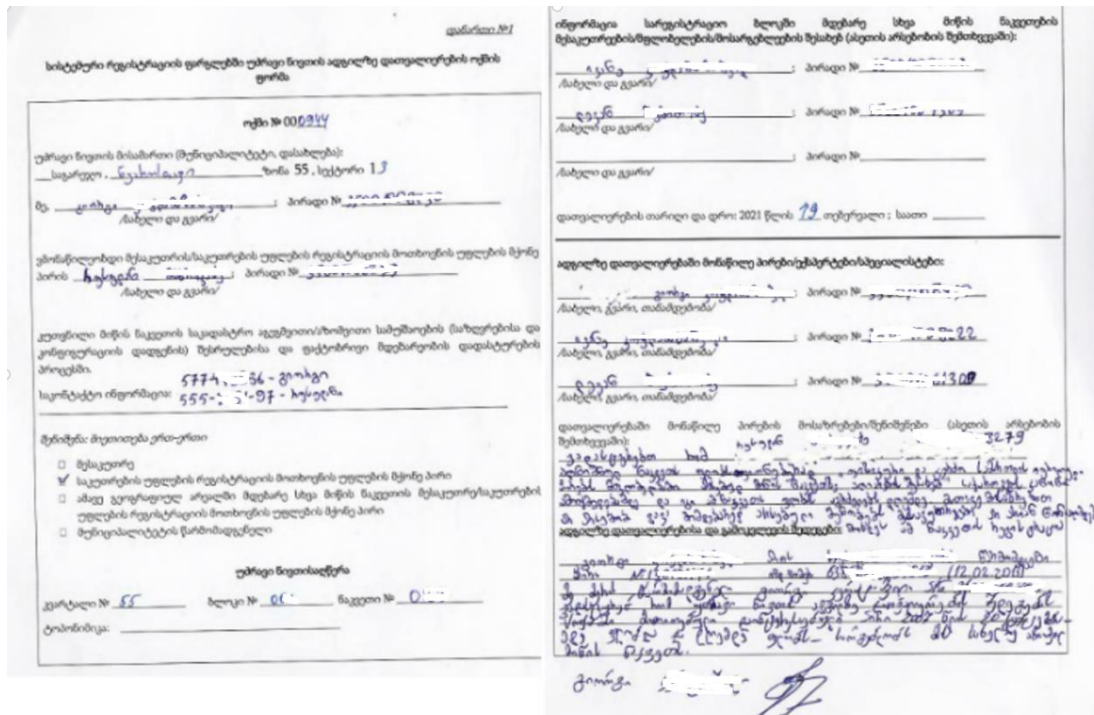


Figure 3 – Paper based field inspection minutes

### 2.4 EMA Operation

The measurements are carried out using GNSS SMART antenna and Android Smartphones with QFIELD field program installed. All the survey teams now can carry out surveys simultaneously, in real time. After the completion of technical works, a field team enters a unique identification number (TAG) of a land parcel in the electronic minutes and the program automatically generates cadastral data of a land parcel, which includes: i) Land parcel location/shape; ii) Location of buildings-structures/shape/numbering/number of floors; iii) Area; and iv) Types of land parcel borders.



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Figure 4 Same Plot in QFIELD and EMA Generated Cadastral Data of the Parcel

### 2.4.1 Overlap Reports

At the fieldwork stage, it is possible to see the reports of overlaps with geographic layers kept in NAPR databases and inform the relevant interested persons to make immediate corrections.



Figure 5. Report on Overlaps generated by EMA

### 2.4.2 Checking Data against Other Databases

At the fieldwork stage, it is possible to see the reports of overlaps with geographic layers kept in Surveyor or other interested parties may retrieve information on:

- Land plot cadastral map, with respective boundary lines, GPS points, building description and other cadastral information;
- Data on the owners, interested persons, family members, household members;
- Ownership Data, Area According to the respective legal documents, data on the title documents and possibility to attach the electronic copy if needed;
- Data on other residents of the registration block, bordering land plots etc;
- Land usage data, information on crops, buildings etc. which is generated from GIS;
- Electronic Signatures and other modules as required.

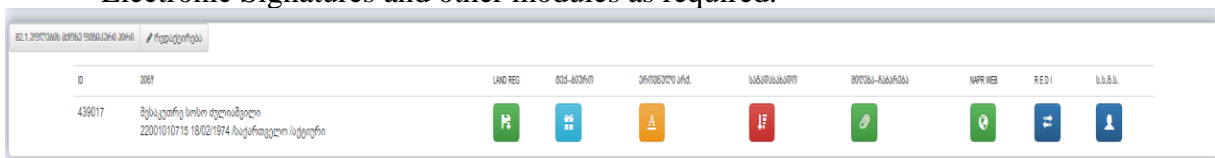


Figure 6. User Panel for Retrieving Information from other Databases via EMA

If the filed team requires to check the data on land titles, they may access LANDREG service to search for the required data (of a surveyed land parcel with the registered data, information and other archived geoinformation data).

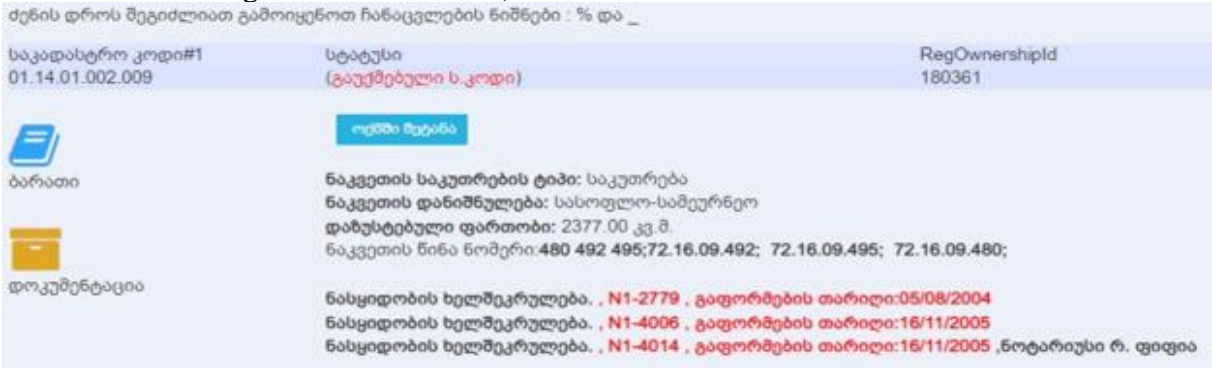


Figure 7. User Panel for Retrieving Land Title Documentation

2.4.3 Area Calculator

During the fieldwork stages, this the module allows operator (Registrar or a Surveyor) to choose documents for land title registration, select areas which are already registered based on the title document and automatically calculate the remaining area that can be registered based on the selected title document. This function is used also for the cases of so called squatted lands – property rights recognition procedure over illegally occupied state lands.

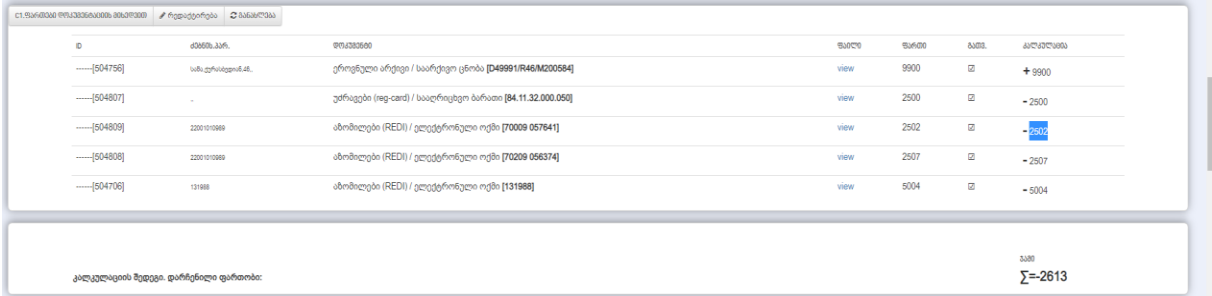


Figure 8. Area calculator Panel in EMA

Following the successful completion of the electronic minutes, program generates a PDF version of the minutes and cadastral drawing. Interested person has the opportunity to review the data and sign the generated PDF document electronically. The document then is certified by the qualified E-signature of the NAPR.



Figure 9. Sample Signature of the Interested Person with date and ID

#### 2.4.4 Public Display and Registration

Upon certification of the minutes by the qualified E-signature of the NAPR, data is sent for public display to [www.slr.napr.gov.ge](http://www.slr.napr.gov.ge). Completed registration packages include both survey and legal information and form a part of a registration block. Registration blocks which are put on public display contain information on owners, interested persons, land plots and other relevant data required by law.



Figure 10. Sample of the Registration Block Map for Public Display

In the 30 day period data is on public display, parties are authorized to request reviews, resurveys, challenge the decision of the NAPR. However as the registration data is compiled with the help of EMA with participation of the interested parties, it resulted in 70% reduction in the number of applications for cadastral data check/verification during the public display process. Following the completion of the public display process, if there are no complaints registered, data updated and NAPR issues electronic certificate of ownership – extract from public registry, a publicly accessible document, which contains all the registration data on the land plot.

### 3. CONCLUSION

EMA provided unique possibility to integrate cadastral survey and data collection/processing, leading to the elimination of flaws and discrepancies. It saved human resources and reduced data processing time by 50%, it eliminated plot overlaps and other survey related disputes, which dramatically decreased number of complaints (0.0003% for 142,000 Registration

Applications – Pilot Data). EMA supported the Government of Georgia in providing land tenure security to its citizens, facilitated state land management and spatial planning. As a result of the EMA, NAPR is surveying and registering approximately 2500-2700 parcels per day, which is a significant milestone compared to the early days of the paper based registration process.

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## **BIOGRAPHICAL NOTES**

Mr. Teimuraz Gabriadze is a Senior Project Officer at the World Bank funded Georgia Resilient Agriculture Irrigation Land (GRAIL) project administered by the National Agency of Public Registry of Georgia. GRAIL aims to enhance land administration service delivery and building digital governance infrastructure by focusing on enhancing NAPR's IT Systems, Electronic Services and building National Spatial Data Infrastructure. Prior to GRAIL, Teimuraz was a chief lawyer at the World Bank financed Irrigation and Land Marker Development Project implemented by NAPR. Teimuraz participated in the implementation of the pilot project for systematic land registration and design and implementation of the subsequent scale up. Teimuraz is responsible for legal support of the SLR project. As part of his duties Teimuraz supported all aspects of the SLR project including but not limited to IT modernization and Procurement. Mr. Gabriadze is also tasked with international relations and communication with the World Bank team.

Ms. Elene Grigolia – is an experienced, PMP certified project manager with an in-depth knowledge of the land sector working in public service delivery for land administration and innovation technology in the National Agency of Public Registry (NAPR), Ministry of Justice, Georgia. Among her professional achievements, Elene as a Component Lead, successfully completed a large scale \$US50 million World Bank land market reform program in Georgia. Within this program Elene was responsible for overseeing and communicating results of the ICT assessment to key stakeholders, ensuring uptake and smooth implementation of the new systems as a basis for national systematic land registration rollout. Elene has a proven track record of working with government stakeholders and the private sector to collect data, analyze results. Currently Elene serves as a Project Manager at the World Bank funded Georgia Resilient Agriculture Irrigation Land (GRAIL) project administered by the National Agency of Public Registry of Georgia. GRAIL aims to enhance land administration service delivery and building digital governance infrastructure by focusing on enhancing NAPR's IT Systems, Electronic Services and building National Spatial Data Infrastructure.

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