

# MILLENNIUM CHALLENGE ACCOUNT OF MONGOLIA (MCA-M) PROPERTY RIGHTS PROJECT (PRP)

## Registry Systems Process Study: Updated Performance Evaluation Design Report



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## ABBREVIATIONS

ADB	Asian Development Bank
ALACGaC	Administration for Land Affairs, Construction, Geodesy, and Cartography
ALAMGaC	Administration for Land Administration and Management, Geodesy and Cartography
CORS	Continuously Operating Reference Stations
ePRS	electronic Property Registration System
ERR	Economic Rate of Return
ESGT	Ecole Supérieure des Géomètres et Topographes
FGD	Focus group discussion
GAIPSR	General Authority for Intellectual Property and State Registration
GASR	General Authority of State Registration
GoM	Government of Mongolia
GPS	Global Positioning System
IPA	Innovations for Poverty Action
KII	key informant interview
LMS	Land Market Specialist
LRC	Legislative and Regulatory Commission
MCA-M	Millennium Challenge Account of Mongolia
MCC	Millennium Challenge Corporation
N	Number of Respondents
NGS	National Geodetic Survey
NLIS	National Land Information System
NOAA	National Oceanic & Atmospheric Administration
PII	personally identifiable information
PRP	Property Rights Project
RSPS	Registry Systems Process Study
SHPS	Special Hashaa Plot Survey
UB	Ulaanbaatar

## INTRODUCTION & BACKGROUND

### COUNTRY CONTEXT

Though urbanization also occurred in the 20<sup>th</sup> century in Mongolia, an increasing number of rural Mongolians have been migrating to cities since 2000, leaving behind their traditional nomadic life style in search of greater opportunities. According to UNICEF, between 2000 and 2013 the percent of the population living in urban areas in Mongolia increased from 57% to 70%<sup>1</sup>. This rapid urbanization of cities such as Ulaanbaatar, Erdenet and Darkhan, which have limited available and affordable housing, has led poor migrants to dwell in unplanned and underdeveloped peri-urban settlements, known as “ger areas”. The continued growth of ger areas highlights the need for stronger property rights regulations, improved municipal land use planning, and a more streamlined and accessible pathway to land and property ownership.



Example of “ger areas” which continue to increase in prevalence, size, and population.

Under Mongolian law, all Mongolian citizens, regardless of age, are entitled to acquire a parcel of land for free one time in their lives. The size of the parcel that the government will allocate depends upon the location, and in the ger districts of Ulaanbaatar (UB), citizens may apply for parcels of 0.07 hectares. Land ownership and rights are defined under the Law on Allocation of Land to Citizens of Mongolia, passed in 2002. This law was first amended in 2005 to allow each *household* to have one parcel of land free of charge and then amended again in 2008 to allow every *citizen* to own one parcel of land free of charge. The free provision of land was set to expire in 2012 but has been extended to 2018. In addition to legislation governing land ownership, the Government of Mongolia (GoM) passed a law on property ownership that governs ownership registration, capitalization of property, and property's relationship to the land.

Most ger area residents live on informally settled land plots (known as *hashaas* in Mongolian), which means they lack formal addresses and land and property rights. Disputes over overlapping boundaries are common, and documenting and affirming property rights by GoM is challenging. The issue is further complicated by the existence of the two independent, and potentially competing, land-related agencies that have purview over land registration. Since these agencies do not have a universal platform to share information, citizens must first visit the Administration for Land Administration and Management, Geodesy and Cartography (ALAMGaC, previously ALACGaC) to verify that the land they want to register is not already

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<sup>1</sup> <https://esa.un.org/migmgmprofiles/indicators/files/Mongolia.pdf>

claimed or does not have an existing land conflict. After verification, they must then apply for a governor's certificate of land ownership. Finally, registrants apply for a land title at the General Authority for Intellectual Property and State Registration (GAIPSR, previously GASR). This requires multiple trips to several agencies. In some provinces (known as *aimags*), these agency offices are not located near one another, demanding more time and effort from citizens to complete the process. Furthermore, central GAIPSR offices have experienced a large volume of residents trying to complete their land transactions, leading to overcrowding and bottlenecks in the workload given the volume of applications and insufficient number of registry officers. Due to several factors, including frustrations with the demands of this lengthy process and ignorance of the distinction between the governor's ownership certificate and the full property title, many applicants decline to pursue full registration after obtaining the governor's certificate.

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## OBJECTIVES OF THIS REPORT

This report describes the design of the follow-up Registry Systems Process Study (RSPS) evaluation of the Land Privatization and Registration System activity of the Property Rights Project. This project occurred under a compact between the Millennium Challenge Corporation (MCC) and the GoM that was in effect from 2008 to 2013. Baseline data was collected in 2010-2012 and 2013 by Innovations for Poverty Action (IPA). The Cloudburst Group has been contracted by MCC to conduct the follow-up data collection and analysis.

This document is divided into three sections. The first section presents an overview of the compact and the interventions evaluated. The second section contains the follow-up evaluation design. The final section includes administrative information about the follow-up evaluation timeline, roles, ethical clearance and proposed findings dissemination strategy.



## OVERVIEW OF THE COMPACT AND THE INTERVENTIONS EVALUATED

### OVERVIEW OF THE PROJECT AND IMPLEMENTATION PLAN

#### PROPERTY RIGHTS PROJECT

The MCA-Mongolia Property Rights Project followed the Asian Development Bank's (ADB) Cadastral Survey and Land Registration Project (2001-2010). The ADB project was designed to create an institutional environment to support the efficient issuance and administration of property and land lease certificates and other land documentation, support the development a private land market, collection of land fees and property taxes, and promote urban and agricultural development. This project had two components: 1) a component focused on carrying out a systematic cadastral survey and mapping; and 2) the other component focused on creating a National Land Information System (NLIS) that would provide a foundation for the legal description of property and property registration<sup>2</sup>.

The project's cadastral surveys were designed to cover up to 3 million hectares of settlement, cropland and livestock areas (approximately 2% of Mongolia). The NLIS effort was designed to create a computerized data base that could be used by UB City and provincial land management offices to facilitate the issuance of lease certificates, collection of land fee payments and organization of public records related to rights of possession. The NLIS was supposed to form the basis for a future land registry that supported an efficient real property market.

The project only partially met its objectives: it did support cadastral mapping for approximately 83% of the target 3 million hectares. However, only 50% of anticipated aerial and orthophoto mapping was completed. In total 364,117 parcels covering 1,549,158 hectares were surveyed and land rights registered. The number of landowners applying to register immovable property rights increased from 8,747 in 2004 to 112,779 in 2009. In parallel, ADB provided Technical Assistance to build capacity to the government and the private sector to improve land management and administration institutions and deliver survey and cadastral services.

However, the certificates that were provided when land was registered at ALACGaC were not fully processed into legal title but instead largely remained as governor's certificates. Many parcels could not be formalized because they were considered as "in conflict" due to a subdivision or transfer. And many land owners had not paid land fees, so the government would not allow registration of these lands. In addition, although the NLIS was designed, established and made functional, problems of poor data quality, system architecture, internet

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<sup>2</sup> By the (then) State Immoveable Property Registry (SIPR) and subsequently the Agency for State Registration of Title (ASRT), now GAIPSR, under the Ministry of Justice.

In 2002, Mongolia's land-related agencies were consolidated into the Agency of Land Affairs, Geodesy and Cartography (ALAGaC) under the Ministry of Infrastructure Development (MID). In 2006, the ASRT became a separate agency and ALAGaC merged with the Construction and Public Services Center to become the Agency of Land Affairs, Construction, Geodesy and Cartography (ALACGaC).

connectivity issues, and the operating environment limited the usefulness of the system. The MCA-Mongolia Compact built upon some of this work.

In 2008, the GoM entered into a compact with the MCC and the Government of United States. The compact consisted of five projects: health, vocational education, energy and environment, transportation and the Property Rights Project (PRP), which included an urban and a peri-urban component. To enhance tenure security, address challenges associated with expanding informal settlements in Mongolia's urban areas and to expand access to credit, the urban component of the PRP focused on streamlining the complex and time-consuming process of privatizing and registering land and property rights. Two main initiatives comprised the urban component of the PRP: registration of ger area land plots, and the land registry system strengthening.

The former initiative provided direct technical assistance to support the privatization and registration of hashaa plots in ger areas. This component of the PRP—direct assistance to privatize and register land in ger districts—is not part of the current evaluation. The latter initiative, the land registry system strengthening, is the focus of this evaluation. These project components worked to improve the national property registration system by:

- Supporting physical, IT, and geospatial infrastructure upgrades;
- Digitizing property records;
- Creating new registration software system;
- Decentralizing registration services by supporting the creation of new district registry offices in Ulaanbaatar;
- Training GoM staff to increase their capacity to implement improved registration processes and address gender equality;
- Improving and clarifying roles and responsibilities of GAIPSR operating and administrative units to improve business processes, functionality, efficiency, communications and enhance customer service;
- Conduct strategic planning and training to improve GAIPSR's budgeting and accounting procedures with a goal of promoting accountability, improving the financial reporting structure and tracking of revenues and costs;
- Strengthening and expanding the role and capacity of the Human Resources service and its senior staff at GAIPSR, through development of a Strategy and Work Plan, staffing changes and recommended trainings; and,
- Supporting efforts to strengthen the legal environment to enhance transparency and facilitate private sector engagement in land and property registration efforts.

Together, these efforts were designed to: a) expand land and property registration and increase tenure security; b) reduce the time and costs associated with citizens' registration of land and property rights and issuance of private land titles in Mongolia's eight regional centers and the capital city of Ulaanbaatar; and c) increase investment in land and expand access to credit based on the use of land and immovable property as collateral.

To improve physical, IT and geospatial infrastructure, project activities included providing Continuously Operating Reference Stations (CORS) to the GoM, as well as Global Positioning System (GPS) equipment to the eight regional land offices with which the project worked.

In 2012, the Property Rights Registration Department was merged into the Registration Department, creating a new Property Ownership Rights Registration Division. This new Division included all registration functions and decentralization of registration activities. However, in 2013 the Property Rights Registration Department was re-established. The Department required new office space because its old space was unsafe. A condition precedent for MCA-Mongolia Compact activities was the creation of environmentally and structurally sound building spaces for the Capital City and regional property registry offices.

As a result, the physical infrastructure of the GAIPSR central office in UB City was refurbished upgraded and four new registration offices were opened in districts within the city. By providing additional service locations within UB City, the project aimed to reduce the travel and wait time associated with registering immovable property. Eight regional offices were also improved to remove hazardous materials and improve infrastructure. These offices were linked by a fiber optic network to create safer, more accessible, and more user-friendly environments for citizens. The project also supported the development and deployment of a new software program to register land and immovable property (the electronic Property Registration System, or ePRS).

To increase the capacity of GAIPSR to provide efficient services in a cost-effective and accountable manner, the project worked to improve business processes by streamlining the operational and administrative functions of the Agency and strengthening financial and human resources capacity. The project supported the development of a Strategy and Sustainability Plan as well as an Annual Business Plan and Operations Process Manual, curriculum and training materials and delivered numerous trainings. The project also sponsored a Study Tour to enhance understanding of International Best Practices in land administration and property registration.

As part of its efforts to improve service delivery to citizens seeking to register claims to land, the project also trained Land Market Specialists (LMS) at ALAMGaC. LMS received training that enabled them to advise families and individuals who had settled informally in ger districts about the process of hashaa plot registration and privatization. The LMS staff also received training on the use of GPS and satellite imagery and on gender equality and women's property rights, however, this component of Compact activities started only in the 3<sup>rd</sup> year of the project and so did not have a great deal of time to take hold. This training was designed to enhance the staff's capacity to support women and men in the complex registration process and to enhance the accuracy of cadastral mapping efforts. The project also designed and implemented awareness-raising campaigns to highlight the benefits associated with women registering real property claims in their own names.

As outlined previously, ALAMGaC received support from a separate donor (the Asian Development Bank) to develop a National Land Information System (NLIS). The project hoped to integrate with GAIPSR's database and create a unified land information system, but, to date, this has not happened.

Additionally, the project supported efforts to improve Mongolia's legal environment by creating a commission of stakeholders and technical experts who identified barriers to a more efficient land and property privatization system and gaps in the existing legal framework that



created ambiguities or bottlenecks in the process. The Commission made a set of recommendations to improve the legal and institutional environment. The project used these recommendations as a basis for developing draft amendments to key laws and regulations, including a revised draft of the Law on Registration of Immovable Property Rights<sup>3</sup>, a set of draft policies and a proposal for future organizational options. Enacting recommended legislative amendments has been substantially delayed, and while the Parliament of Mongolia appeared set to discuss and vote on key amendments in the fall 2017 session, this legal adoption has not taken place to-date.

By making the process of registering land and property easier and less costly, the project expected to encourage investment in these assets and expand the use of mortgages and collateralized lending. Data from the Bank of Mongolia (Sept. 2016, the most current figures available) show that the number of mortgage borrowers has risen steadily since 2013<sup>4</sup>. However, it is important to note other factors that may encourage Mongolians to borrow to purchase or leverage real property, such as increased household incomes that resulted from recent expansion of mining activities, government-provided services and infrastructure, rising real property market values, and a subsidized government mortgage loan program.

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## PROJECT PARTICIPANTS

The PRP was designed to increase the tenure security of Mongolians and expand capitalization based on the use of land and immovable property as collateral. The project sought to achieve these goals by strengthening land governance capabilities and raising awareness among citizens of land rights. As a result, the project worked with four groups of participants: a) staff at the GAIPSR central and district offices in Ulaanbaatar and in eight regional offices; b) ALAMGaC staff and particularly 13 Land Market Specialists (LMS) who served as a resource for citizens seeking to privatize and register property; c) members of a Commission focused on improving the legal and regulatory environment (LRC); and, d) citizens using the above land administration services, as well as land holders in Ulaanbaatar and the eight aimags targeted by the registry strengthening component.

PRP's efforts to improve physical infrastructure are expected to have made property registry buildings and offices safer while improving the Agency's document storage facilities. This work provided benefits to GAIPSR staff and citizens who, as a result of upgrades to facilities and equipment and the opening of new City offices, experienced improved working conditions, reduced travel times, more accessible facilities and records, and some consolidation of services (such as adjacent windows for property registration and notary services at these offices). The project supported the digitization of land and property records, which had been paper-based but which became more easily accessible and easily useable once converted to digital form. By providing new software to manage property

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<sup>3</sup> Key elements of the revised law include: identifying a single authority for property rights registration; viewing property as a unified object (land plus real property); adopting a unified parcel identify number; and improving access to land information to support new services and products.

<sup>4</sup> See: Bank of Mongolia, Mortgage Loan Report, September 2016, available at: <https://www.mongolbank.mn/documents/statistic/mortgage/2016/09e.pdf>.

registration and training, the project is expected to have reduced the time and costs associated with processing applications and help improve the accuracy of application information.

PRP's efforts to improve the geospatial infrastructure are expected to have enabled ALAMGaC staff to increase the accuracy of cadastral maps and conduct land use planning based on more accurate information. Through this project support, ALAMGaC should be able to demarcate parcel boundaries with greater accuracy. The project trained the 13 ALAMGaC staff who served as LMS, building their capacity to support citizens who wanted to register applications for land. In addition, by providing trainings on gender equality to LMS, the project aimed to raise awareness of the opportunities women in Mongolia have to register land rights. For example, the evaluation team was told that LMS would routinely discuss women's land rights and the opportunity to register an application for land with women during field work. Television-based awareness-raising efforts were used to improve understanding among citizens of the process for land registration and the benefits associated with property formalization, including increased access to credit.

To improve the institutional environment for registering and transacting land, the PRP drew on a comprehensive list of recommendations from a committee of stakeholders to draft amendments to key land-related laws. The amendments had several goals including increasing coordination and collaboration among GoM agencies and private sector actors—particularly banks and notaries—and increasing transparency and accuracy of land information. This work has moved slowly due to changes of administration, new GoM priorities, limited coordination between GAIPSR and ALAMGaC, and a lack of a clear political champion to encourage needed changes and inter-agency coordination. This environment means that some of the concerns addressed by the committee have not yet been addressed, though in some cases workarounds have been created (such as the use of kiosks to speed the process of acquiring validated documents to speed up loan processing times).

Finally, the project supported ALAMGaC's work in the 8 regional offices and targeted UB ger districts to map and privatize land. As a result of this intervention, just under 20,000 people received formalized land title.

Overall, the project is expected to have increased the tenure security of Mongolian citizens in UB and the 8 regional centers by registering land rights and making it easier and less costly to register and transact land rights. It also believed to have raised citizen awareness of land and property registration processes and of women's legal rights to land. By providing the GoM with improved technology and capacity building, it is hoped that the project increased accuracy, security and efficiency processing of land records. In turn, as more Mongolians are able to acquire and transfer formal rights to land and immovable property, those who are bankable and interested in a formal bank loan are expected to be able to better access commercial credit.

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## GEOGRAPHIC COVERAGE

Different PRP components had different levels of geographic coverage across Ulaanbaatar and the rest of Mongolia.

The infrastructure support provided to ALAMGaC was intended to improve cadastral mapping capabilities nationally. Physical improvements were made to the GAIPSR's Central Office space, and new offices were established in four districts of Ulaanbaatar (Baganuur, Bayanzurkh, Chingeltei, and Songinokhairkhan).

The document digitization and electronic registry upgrades to the under-resourced Property Rights Registration Department (which eventually merged into GAIPSR, at the time called GASR) were implemented in the Capital City of Ulaanbaatar and in eight provinces around the country [City of Erdenet (Orkhon aimag); City of Darkhan (Darkhan-Uul aimag); City of Arvaikheer (Uvurkhangai aimag); City of Uliastai (Zavkhan aimag); City of Khovd (Khovd aimag); of Zuunmod (Tuv aimag); City of Undurkhaan (Khentii aimag); and City of Choibalsan (Dornod aimag)]. These locations were chosen to produce maximum benefits as these provincial centers comprise Mongolia's main populated areas.

Finally, the land titling support was provided in three districts of the capital city of Ulaanbaatar (Bayanzurkh, Chingeltei, and Songinokhairkhan) and eight other regional centers around the country (Darkhan, Erdenet, Khovd, Choibalsan, Uliastai, Kharkhorin, Zuunmod and Undurkhaan).

In the interest of cost effective learning, the primary focus of this evaluation is changes in land transactions and market participation in Ulaanbaatar with limited supplemental data collection in other provinces.

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## DESCRIPTION OF IMPLEMENTATION TO DATE

The PRP was implemented between 2009 and 2013, as summarized in Table 1, below.

Table 1: Implementation Timeline of Activities Included in Evaluation		
	Activities	Date Completed
Legislative and Institutional Strengthening	Legislative and Regulatory Commission (LRC) is formed	7/2008
	LRC presents a comprehensive set of recommendations	12/2009
	Developed draft law for recommended legal reforms	7/2013
	Gender Integration Plan developed	7/2011
	Gender Integration Plan Review and Update	2012
	"Strengthening Women's Land Ownership in Mongolia: A Survey of Impacts on Women's Voice, Bargaining Power and Household Well-Being"	2013
	Law on the Promotion of Gender Equality	2/2011
	Law on Electronic Signatures	12/2011
	Piloting and establishing a centralized electronic registration system	8/2013-12/2013
	Digitalization of 354,224 property registration archive folders or 27,000,000 pages	9/2013
	Support changes in organizational structure and HR practices to be consistent with streamlined process and ePRS	8/2013

Table 1: Implementation Timeline of Activities Included in Evaluation		
	Activities	Date Completed
	Collaborated w/ ALAMGaC and banks to make ePRS data specification compatible with other agency data and systems	8/2013
Upgrading Geospatial Infrastructure	Two experts from National Geodetic Survey (NGS) of National Oceanic & Atmospheric Administration (NOAA) visit Mongolia	2/2009
	6 CORS and 16 GPS worth one billion MNT are installed and delivered to beneficiaries	12/2010
	High resolution satellite imagery is captured for Ulaanbaatar and eight regional centers	6-9/2010
	Satellite imagery of hashaa plots is acquired and consolidated, covering a total of 190,000 ha of land encompassing Ulaanbaatar and eight regional centers	1-3/2011
	Supplied IT equipment and standard software. Supplied equipment, hardware, software and related services	9/2011-1/2013
Capacity Building for Land Offices	MCA-M hires and trains thirteen LMS in order to train registry officers and land officers as well as to reach closer to citizens and educate them	1/2010
Upgrading Registry Offices	Four property registration offices in Ulaanbaatar are newly established and upgraded and one office in each of the eight regional centers are refurbished, furnished, and fully equipped	2/2010-5/2012

The PRP provided substantial support to build capacity and improve infrastructure for GAIPSR and ALAMGaC (though the integration of the GAIPSR database and the NLIS has not occurred). The project did improve the physical infrastructure of GAIPSR buildings including the main property registry office in Ulaanbaatar. The project supported the development of four additional offices in the Capital City which expanded services for city residents, and is expected to have reduced related wait- and travel-times as well as costs. Further, the project supported the digitization of millions of property documents, which have been consolidated into archived digital folders. This effort is believed to have reduced time and costs associated with verifying property records.

In addition, the project supported the development of, and training for, a new registration software program: ePRS. ePRS is being used at all GAIPSR offices in Ulaanbaatar, in the eight MCA project provinces and, thanks to support from the GoM, in two additional provinces. The World Bank is supporting the development of a second iteration of ePRS which will help improve functionality and support integration between GoM offices and private sector actors (should enabling legislation to support this be passed). The ePRS system seems robust and it enables quicker processing of property registration, supporting goals of enhanced tenure security and the delivery of timely and cost-effective land administration services.

Since the MCA compact ended, GAIPSR has not only completed the digitization of all property records in the Ulaanbaatar district offices and the eight regional offices, they have also digitized property records in two additional districts and extended the ePRS system to those districts. GAIPSR has also introduced the use of self-serve kiosks in locations around Ulaanbaatar and in other areas. Citizens can use kiosks to acquire reference letters within moments. These letters are required by banks to process loan applications. In the past, citizens needed to go to GAIPSR offices to acquire these letters then take them to banks. By installing kiosks, the GoM has made it faster and easier for citizens to acquire some of the documents they need to apply for credit using land and property as collateral. Banks also appreciate the kiosks, which provide documents that can be verified as authentic, thereby reducing some concerns related to the use of fraudulent documents—a problem that seems to be widespread.



A self-serve kiosk to acquire land documentation reference letters.

At ALAMGaC, the project supported training for LMS while also providing the GoM with GPS equipment, CORS stations, and satellite imagery. The scoping team was told by a former LMS at the Darkhan office of ALAMGaC that the MCA-provided technology is used “on a daily basis”. In addition, the team was told that the training manuals developed for the ger district outreach efforts are also still used to conduct awareness raising and support registration. It seems that MCA support to enhance cadastral mapping, improve land use planning and raise awareness among applicants for land rights has had lasting impact.

It is less clear how impactful project activities to address gender equality have been over time. ALAMGaC and GAIPSR staff said they no longer receive gender equality training. Some key informants expressed a belief that the gender equality components of the project were not as culturally sensitive as they might have been, were “forced” by MCC, and would have been better framed in terms of “equal opportunity” rather than “gender equality”. Finally, it is important to note that despite project efforts, ALAMGaC and GAIPSR continue to function separately and have developed separate databases to maintain land and property information. It is not clear how feasible (and costly) it will be to integrate these systems.

Through two different consultancies, the PRP drafted amendments to key laws including the Land Law and the Law on Property Ownership, in addition to developing of a set of recommendations for needed amendments to other related laws (e.g., Law on Gender Equality, Law on Notary, Law on e-Signature) with a goal of enhancing access to information and improving transparency and the accessibility of land data. Unfortunately, these amendments have not yet been passed. They were scheduled to be considered by a



Parliamentary committee during the Fall 2017 session, but this does not appear to have taken place. These amendments would establish a unified land and immovable property unit, create a new requirement to tax use and possession rights (only ownership rights are taxed currently), and enable a single signature on property certificates—which will make it easier for Mongolians overseas to conduct land transactions. Amendments to the property registration law would address concerns around violations of existing privacy laws to enable private sector actors such as banks and notaries to access the ePRS database directly—a change that would further reduce the time/cost associated with registering property rights.

Overall, the PRP components included in this evaluation were implemented in line with project goals. The major project delay centers on the delays associated with amending the legal framework.

## THEORY OF CHANGE

The short-term expected outcome of the PRP activities focused on institutional strengthening measures is to reduce the time and costs associated with registering and transacting in land and immovable property. The project's sub-activities were designed to:

- Streamline and clarify processes and regulations related to land transactions by: providing recommendations through the land committee; organizing workshops to build citizen awareness; and training LMS who would help citizens to register hashaa plots and engage more effectively with banks and land markets;
- Increase the accuracy of land-related information by updating the geospatial infrastructure, supporting the development of a new registration software system called ePRS, and conducting ePRS trainings; and,
- Reduce the time and costs associated with registering and transacting property while also improving the experience of engaging with GAIPSR staff by increasing the number of access points and improving the physical infrastructure at GAIPSR offices.

Through these actions, the project was designed to strengthen institutions by improving the timeliness of service, heightening the accuracy of land information, and reducing the costs associated with transacting and registering land rights. With stronger land institutions, citizens would benefit from increased security (particularly for lower-income Mongolians) and capitalization of land and real property assets by encouraging more investment in land and property and more collateral-based lending/borrowing.

## COST BENEFIT ANALYSIS & BENEFICIARY ANALYSIS

The Economic Rate of Return (ERR) indicator is an important metric for summarizing project benefits net of costs in a single number which makes it easy to compare with other investments and will be used to analyze the project. The evaluation design proposes to update the pre-project ERR model and calculate a new ERR based on the main streams of benefits obtained from the institutional strengthening activities. These institutional land

registry system strengthening activities became the centerpieces of the project investment and are the focus of the current evaluation.

The rationale for the expected economic return on MCC's investment in the urban registry component of the PRP was primarily based on expectation of increasing investments in property. Two channels of increased investment were foreseen in the original design. The first channel is higher propensity to own investment (i.e. "sweat equity"), and the second channel is higher propensity of financial institutions to provide investment capital. These are explained in the following two paragraphs.

In the first channel, increased security of ownership is expected to lead to a higher propensity to invest, as enforceability of property rights becomes both more credible and less costly under the project. The higher propensity to invest is expected to be capitalized into higher market values for properties benefitting from the formal protections of registration. These benefits would be realized primarily at the level of individual properties. One component of the project aimed to provide direct assistance to approximately 53,000 households seeking to privatize and register land plots in urban ger areas, to help them to realize these benefits. This component was included in the pre-compact and updated ERR calculations, but it is not the focus of the current evaluation.

In the second pathway of investment boosting, more secure property rights and efficient land governance system are expected to increase financial institutions' willingness to lend. In the longer run, as a track record with the use of property as collateral develops, terms of secured loans more favorable to borrowers are expected to emerge, leading to increased loan volumes for residential and small commercial lending. These expected increases in loan volume and decreases in cost are expected to emerge at the system-wide level, as the institutional strengthening of the registry system would facilitate greater participation in the property sector by banks and other lenders. Following from the institutional strengthening and greater efficiency in services, benefits will include decreased transaction time and cost for key land transactions, as well as reductions in risks from dependable records and security for the banks that records are reliable and do not require costly field checks. The reduction in transaction costs is expected to create efficiencies that would eventually lead to more loans, increased formal land transactions, and related land market activity.

A second component of the PRP consisted of a series of activities that were meant to strengthen the institutions administering property rights and is the focus of the current performance evaluation. In addition to investment benefits, streamlining the registry's business processes and making its information available through the NLIS is expected to reduce costs associated with property transactions. These steps are expected to lead to modest savings in loan processing and other administrative costs, and direct benefits to registry system clients in terms of time and cost savings.

The updated ERR for this evaluation will thus focus on the benefit streams generated by the project through the institutional land registry strengthening, specifically through the investment promotion pathway of increased commercial financial involvement in the property market and the reduction of transaction costs. To do this it will rely on updated data from the

ePRS about the volume and size of collateralized lending transactions, validated by interviews and data from banks.

The benefit stream will be constructed as the increment of additional returns to lending with the project compared to without-project scenarios. The benefit stream from the reduction of transaction time and costs will be derived from GAIPSR system data and the banking client survey. The costs of the institutional strengthening component will be subtracted from the combined total of the benefit streams and the rate of return derived. The ERR calculated for this evaluation is expected to be less than the original ERR because it will only focus on the benefit streams from the institutional strengthening component of the project. The evaluation team will also seek to consult with the members of the MCC team responsible for previous iterations of the ERR model to ensure the consistency of approach in dealing with the mortgage and loan data, including the handling of the subsidy components.

## LITERATURE REVIEW

### SUMMARY OF THE EXISTING EVIDENCE & GAPS IN LITERATURE

In addition to identifying PRP accomplishments, issues, and constraints, analysis within this evaluation will engage with the existing body of literature surrounding tenure security and development outcomes, such as land investment and credit market participation. However, since this evaluation lacks a causal design, we do not expect to contribute substantially to existing evidence gaps on the impact of land formalization on access to credit, which are summarized below.

Greater tenure security and property rights may lead to several positive social and economic outcomes. Proponents argue that secure and well-defined land rights advance increased land-related investment, enhanced agricultural productivity, improved access to credit, and intensified operation of land markets (de Soto, 2000; Deininger and Feder, 2009; Feder, 1988; Besley 1995), culminating in higher welfare of landholders, as measured by income and consumption (Lawry, et al., 2014).

These theories postulate that the intermediate outcome of enhanced tenure security (proxied by formalized ownership rights) will improve ability to use land as collateral for credit, leading to another critical short-term outcome in this chain: credit access among landholders to facilitate increased land investment (Besley, 1995; Feder, 1985; de Soto 2000). According to this logic, often referred to as the 'credit access effect', scholars argue that when land offered as collateral is secure and free from competing claims, lenders face less risk and are therefore more willing to make loans, leading to increased ability to monetize land value and transfer land to its most productive use (Holden and Ghebru, 2016; Carter and Olinto, 2003; Field and Torero, 2006). If this explanation is accepted as the critical link between property rights and economic development, then the widespread lack of formal ownership rights in the developing world and the inability of borrowers to offer secure land as collateral for loans is a critical barrier to credit access (Holden, 1997; Feder et al. 1988; Feder and Feeny, 1991).

However, studies that have explored the relationship between augmented tenure security and access to credit to-date have produced mixed results. For instance, using evidence from Indonesia, Dower and Potamites (2005) show that property titles represent one of a variety of factors influencing a borrower's creditworthiness, rather than the property title alone acting as a sufficient condition to increase access to credit. Indeed, current information suggests that the overall creditworthiness of prospective borrowers is the most important factor influencing credit access, regardless of land rights status, and that if borrowers are not bankable (i.e., their income is too low or land holdings too small), a land title alone will not improve access to credit (Sanjak 2003; Boucher et al. 2008).

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## POLICY RELEVANCE OF THE EVALUATION

While the development context in Mongolia is unique in many ways, this evaluation of the PRP project may, nonetheless, hold useful lessons for policy makers and development practitioners more broadly, particularly regarding the question of what may work to increase the efficiency and accessibility of formal land and property administration services.

The evaluation may shed light on the following policy-relevant questions:

- What are the benefits and costs of systematic digitization of land and property data for different stakeholders?
- What technology innovations help to decrease the time and costs associated with land and property registration? Do these innovations seem to have any gendered impacts?
- When women register rights to land and property, do they also seek collateral-based loans in their own names?
- How can private sector actors, including notaries and loan officers, best access government databases to support land and property registration and increase access to credit without violating privacy concerns of citizens?

## EVALUATION DESIGN

### EVALUATION QUESTIONS

This is a follow-up endline evaluation that adapts an existing evaluation design developed by IPA. The original evaluation design called for two separate studies of the PRP activities.

The first study was a randomized control trial of the land registration (titling) support activity through the Special Hashaa Plot Survey (SHPS). This study was subsequently discontinued by MCC due to loss of evaluation power after two rounds of data collection. More information about the SHPS design and limitations is available in the original design report on MCC's website<sup>5</sup>.

The second study—the Registry Systems Process Survey (RSPS)—comprises the core of this follow-up evaluation and it entails a pre-post comparison of conditions on key outcomes before and after MCC support to GAIPSR. Specifically, the RSPS aims to capture changes to the efficiency of land transactions due to the digitization of property records and the introduction of the ePRS system, including downstream effects on collateral-based lending patterns. While not designed to assign causality to observed changes, this study was intended to provide information about project performance along intended outcomes. More information about the RSPS design, including revisions made due to additional information about GAIPSR procedures and the activities under evaluation, and concomitant limitations, is available in the original design report on MCC's website<sup>6</sup>.

Five research questions drive this follow-up evaluation:

- 1) Did the land registry system strengthening component of the PRP lead to increases in demand and volume of formal land transactions, including land registration and related transfers at GAIPSR and mortgages at the banks?
- 2) What were the characteristics of those who conducted formal land transactions before and after the introduction of ePRS?
- 3) Did the land registry system strengthening component of the PRP result in changes in land transaction costs/time for land transactions?
- 4) Were there changes in gender ratio of land owners? Were there any differences in results for parcels held by women/men?
- 5) Did the land registry system strengthening component of the PRP lead to improvement in quality of property registration services? What was the significance of the land registry system strengthening component of the PRP?

In addition, the evaluation will produce a final ERR calculation of this activity of the PRP based on the benefit streams outlined in the 'Cost Benefit Analysis & Beneficiary Analysis' section of this report.

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<sup>5</sup> The SHPS baseline evaluation design document, instruments, data, and report of baseline findings are available online in MCC's evaluation catalogue: <https://data.mcc.gov/evaluations/index.php/catalog/93>

<sup>6</sup> The RSPS baseline evaluation design document, instruments, data, and report of baseline findings are available online in MCC's evaluation catalogue: <https://data.mcc.gov/evaluations/index.php/catalog/134>.



## EVALUATION DESIGN OVERVIEW

This follow-up evaluation draws upon six main sources of primary and secondary data to answer the evaluation questions: ePRS land transaction data, pre-ePRS land transaction data, a banking customer survey, structured key informant interviews (KIIs) with GAIPSR registrars and bank loan officers, focus group discussions (FGDs) with key beneficiary groups, and open-ended KIIs with key project stakeholders. A summary of primary outcomes and data sources used to answer each evaluation question is presented in Table 2 (below).

Table 2: Summary of Evaluation Questions, Key Outcomes, and Data Sources			
Evaluation Question	Key Outcomes	Unit of Analysis e.g., the types of respondents	Data Source e.g., quantitative or qualitative collection
Did the land registry system strengthening component of the PRP lead to increases in demand and volume of formal land transactions, including land registration and related transfers at GAIPSR and mortgages at the banks?	Increased demand and volume of formal land transactions and collateralized lending	<ul style="list-style-type: none"> <li>Land transactions</li> <li>Individuals in targeted areas</li> <li>Project partners (GAIPSR employees, loan officers)</li> </ul>	<ul style="list-style-type: none"> <li>Pre-ePRS transaction data</li> <li>ePRS transaction data</li> <li>Focus group discussions</li> <li>Structured key-informant interviews</li> <li>Open-ended key informant interviews</li> </ul>
What were the characteristics of those who conducted formal land transactions before and after the introduction of ePRS?	Improved access to land and property ownership and collateralized lending	<ul style="list-style-type: none"> <li>Land transactions</li> <li>Individuals in targeted areas<sup>7</sup></li> <li>Project partners (GAIPSR employees, loan officers)</li> </ul>	<ul style="list-style-type: none"> <li>Pre-ePRS transaction data</li> <li>ePRS transaction data</li> <li>Focus group discussions</li> <li>Structured key-informant interviews</li> </ul>
Did the land registry system strengthening component of the PRP result in changes in land transaction costs/time for land transactions?	Increased efficiency of land registration (Reduced time and cost to register land) Decreased time and cost for land transactions (8 key transactions)	<ul style="list-style-type: none"> <li>Land transactions</li> <li>Individuals who engage in collateralized lending</li> </ul>	<ul style="list-style-type: none"> <li>Pre-ePRS transaction data</li> <li>ePRS transaction data</li> <li>Banking customer survey</li> </ul>

<sup>7</sup> In addition to the follow-up data collected for analysis, the evaluation will use the SHPS baseline data for context and background understanding about registration.

Table 2: Summary of Evaluation Questions, Key Outcomes, and Data Sources			
Evaluation Question	Key Outcomes	Unit of Analysis e.g., the types of respondents	Data Source e.g., quantitative or qualitative collection
Were there changes in gender ratio of land owners? Were there any differences in results for parcels held by women/men?	Improved access by women to land and property ownership and collateralized lending	<ul style="list-style-type: none"> <li>Land transactions</li> <li>Women in targeted areas</li> </ul>	<ul style="list-style-type: none"> <li>Pre-ePRS transaction data</li> <li>ePRS transaction data</li> <li>Focus group discussions</li> </ul>
Did the land registry system strengthening component of the PRP lead to improvement in the quality of and property registration services? What was the significance of the land registry system strengthening component of the PRP?	Improved legal environment Improved institutional capacity Increased awareness of women's legal rights to land	<ul style="list-style-type: none"> <li>Individuals in targeted areas</li> <li>Project partners (GAIPSR employees, loan officers)</li> </ul>	<ul style="list-style-type: none"> <li>Focus group discussions</li> <li>Structured key-informant interviews</li> <li>Open-ended key informant interviews</li> </ul>

This evaluation also tracks secondary outcomes and outputs to further assess program progress and effects. The full list of evaluation indicators mapped to outcomes and data sources is included in Annex 3.

## METHODOLOGY

This follow-up evaluation includes subsequent rounds of surveying using one adapted pre-existing instrument from baseline (banking customer survey). It also includes new methods of data collection adapted for the current registry context and expanded quantitative and qualitative data collection (ePRS transaction data, structured KIIs, FGDs). As introduced in the above subsection, the evaluation tracks changes across different levels of data for various user groups.

The administrative data will be collected at the level of the transaction to compare elapsed times and characteristics of individuals/properties pre- and post-introduction of the ePRS system. Please refer to following subsection, 'Timeframe of exposure', for more information about how time elapsed will be defined.

During baseline design development IPA selected eight key types of transactions to track through this evaluation, and these eight transactions are listed in Table 3, below<sup>8</sup>.

<sup>8</sup> Please note that what were originally transaction numbers 6 and 7 at baseline (registering a mortgage and registering of assets as collateral) were recorded in the ePRS system as a single transaction type. The subsection entitled 'Risks to the study design' further discusses this limitation.

Table 3: Land Registry Transactions		
No.	Transaction Type	Description
1	Registration of ownership rights of immovable property	Individuals obtain property ownership rights for non-land immovable property
2	Registration of ownership rights of land	Individuals establish proof of land ownership
3	Buying, selling, or subdividing property	Individuals transfer property title from their name to the name of the purchaser
4	Gifting property	Individuals gift property title to someone else
5	Inheriting property	Individuals claim land they inherited
6	Registering a mortgage	Individuals register bank mortgage contract with GAIPSR
7	Registration of assets as collateral (Land or Property)	Individuals apply to use land or property as an asset to obtain a bank loan
8	Reference letter of immovable property	Individuals apply to obtain reference letter from GAIPSR proving ownership of immovable property, which is required by banks when applying for loan

In addition to the transaction-level data, individual-level data will be collected for several critical user groups: individuals obtaining loans, GAIPSR registrars, loan officers, and individuals in areas targeted by decentralization activities. The baseline study team determined that it is important to collect data on both the transactions themselves and the user experience because of the use of 'official processing times' in the GAIPSR workflow. The official time taken to process a given transaction determines the time at which an individual will be instructed to return to the GAIPSR office to retrieve their completed paperwork, no matter whether the transaction was processed faster than that or not. For this reason, it is possible that ePRS could increase internal processing times but those time savings are not passed along to the customers, who continue to return at the instructed time set by the official schedule.

Collecting quantitative and qualitative information about individual users and their properties will also allow the evaluation team to compare the demographic characteristics of people engaging in formal land transactions and their properties before and after the introduction of ePRS, both in a systematic fashion through their inclusion in statistical models and also to descriptively understand how service providers and users understand any shifts in the kinds of customers accessing these services.

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## TIMEFRAME OF EXPOSURE

As described above, the PRP took place from 2008 to 2013, so this follow-up endline evaluation is occurring approximately five years after the close of project activities. Because of challenges in the evaluation design phase, baseline data collection took place during project implementation. The timing of the RSPS baseline survey elements in relation to PRP activities is summarized in Table 4, below.

**Table 4: Timing of PRP Implementation and RSPS Data Collection**

May 2012	Upgrading of registry offices ends
July 2013	Back Office Time Tracking Survey
August 2013	ePRS fully established in project areas
September 2013	Registry document digitization ends; Banking Customer Baseline Data Collection Begins
December 2013	Banking Customer Baseline Data Collection Ends

The quantitative analysis of ePRS data will capture time savings within the registry process (focusing on time of application to registry and time of approval at registry). In addition to the quantitative analysis of changes in transaction times due to registry strengthening support, the evaluation will also track indications in the qualitative data of time savings for the customer at other points in the registration process, such as efficiency improvements at ALAMGaC and the Land Administration department due to streamlining procedures.

The timing of the baseline banking customer surveys is not expected to affect the evaluation's ability to discuss changes in the time required to engage in collateralized lending because the predicted change for mortgages hinges on the introduction of direct access by the banks to reference letters and property data. The banking customer survey was designed to be re-administered during a second round of data collection after the passage of the legal amendment granting banks access to the ePRS system to directly reference and register ownership and mortgage information. However, to date this legal amendment has not passed, so instead of measuring changes following from direct access by banks to ePRS, this evaluation will measure changes to loan application processing time and cost due to the introduction of the kiosk system for obtaining a reference letter.

The proposed quantitative and qualitative instruments and approaches are described in further detail below. All instruments will be adapted or developed in the Spring 2018 when this follow-up evaluation enters the option period in consultation with MCC and local stakeholders.

## QUANTITATIVE APPROACH

The proposed quantitative instruments, timing, respondents, sample size, sample units and key modules are summarized in Table 5, below.

**Table 5: Summarized Quantitative Approach**

Source / Instrument	Timing of Collection	Timeframe of Data	Sample Unit / Respondent	Sample Size	Key modules
Historical (pre-ePRS) registry transaction data	May-July 2018	Prior to mid-2013 <sup>9</sup>	GAIPSR office transactions	TBD	Transaction times (8 key transactions) Transaction volume Characteristics of individuals requesting transactions
ePRS registry transaction data	May-July 2018	2014-2016	GAIPSR office transactions	TBD	Transaction times (8 key transactions) Transaction volume Characteristics of individuals requesting transactions
2 <sup>nd</sup> round banking customer survey	Sept-Dec 2018	2018	Banking customers	900	Land or property-based loan time and cost
Structured KIIs with GAIPSR registrars	Sept-Oct 2018	2018	GAIPSR registrars	~150	PRP activities
Structured KIIs with loan officers	Sept-Oct 2018	2018	Loan officers	~100	PRP activities

## PRIMARY DATA COLLECTION

### Instruments

The evaluation team proposes to collect and analyze primary and secondary quantitative data from five key sources:

- Historical (pre-ePRS) registry transaction data
- ePRS registry transaction data
- 2<sup>nd</sup> round banking customer survey (N=900)
- Structured KIIs with GAIPSR registrars (N=~150)
- Structured KIIs with loan officers (N=~100)

The historical (pre-ePRS) data will provide baseline values of the indicators of transaction time for the transaction types included in the evaluation and characteristics<sup>10</sup> of people engaging in transactions. The evaluation team will work to determine the best source of this baseline data, as there are several potential options. To maximize the sample size of baseline transactions, the first-choice source would be the historical electronic registry datasets that

<sup>9</sup> The final selection for an end date for the baseline data will be made when that final source of baseline data is identified.

<sup>10</sup> Based on the paper forms available to the evaluation team, possible characteristics for inclusion in this analysis are: property size, price, type (land or immovable property), purpose, number of owners, gender(s) of owner(s).



were maintained at the district level prior to the PRP. However, if the data contained within them does not allow for immediate analysis and requires further capture of information contained within the documents (for example, if they do not contain transaction time information that is comparable to the transaction time information contained in the ePRS system), the evaluation team would propose to use data from a sample of the digitized paper registry records<sup>11</sup>.

The ePRS data will provide multiple data points about post-ePRS values of the indicators of transaction times, transaction volumes, and characteristics<sup>12</sup> of individuals engaging in transactions. This data will be obtained through an export of the ePRS transaction data by the central Database Software Division of GAIPSR. This export will include all transactions for the years with complete data (2014, 2015, 2016, and 2017) from Ulaanbaatar and the cities in the eight aimags digitized through the PRP (Erdenet, Darkhan, Arvaikheer, Uliastai, Khovd, Zuunmod, Undurkhaan and Choibalsan).

The banking customer survey data will serve as the main source of information about changes over time in the average time and cost to obtain a loan and the types of loans obtained between the 1<sup>st</sup> and 2<sup>nd</sup> round banking customer surveys. The banking customer survey is designed to track eligible loan applications (land or property based transactions, such as mortgages or collateralized loans) from submission to approval, including the processing of document requests to GAIPSR, to provide a picture of how the improvements within GAIPSR (ePRS, document digitization) translate into time savings when accessing credit.

The 150 structured KIIs will be collected with all GAIPSR registrars employed at each district and province office within the MCA project area (Ulaanbaatar, Erdenet, Darkhan, Arvaikheer, Uliastai, Khovd, Zuunmod, Undurkhaan and Choibalsan) to understand the effects of the PRP infrastructure and capacity building interventions, including ePRS, as comprehensively as possible. The approximate sample size is estimated based upon the fact that the GAIPSR offices visited during follow-up evaluation scoping had seven to nine registrars employed per location.

Another approximately 100 structured KIIs will be collected with loan officers in Ulaanbaatar, Erdenet, Darkhan to understand the effects of registry strengthening on the lending process and general trends in the lending environment.

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<sup>11</sup> While they present challenges in terms of feasible sample size, analysis methods, and level of transaction time detail contained within them, paper registry records do have the advantage of being highly accurate. The scoping team learned during GAIPSR office visits that Registry offices maintain the system in duplicate (electronic and paper-based), and personnel still frequently refer to the paper records.

<sup>12</sup> At minimum, the characteristics available for export from the ePRS system and quantitative analysis are: district, aimag, parcel/property size, parcel/property value (price per square Meter), parcel/property type, number of registered owners, gender of registered owner(s).

## Rounds and Timing

Table 6 below summarizes the timing of the quantitative data collection activities.

Table 6: Gantt chart—Quantitative data collection								
Activity	May 18	Jun 18	Jul 18	Aug 18	Sep 18	Oct 18	Nov 18	Dec 18
Historical (pre-ePRS) registry transaction data								
ePRS registry transaction data from GAIPSR								
2 <sup>nd</sup> round banking customer survey								
Structured key informant interviews with GAIPSR registrars								
Structured key informant interviews with loan officers								

This follow-up evaluation design covers a single round of follow-up data collection across the five aforementioned sources of quantitative data during 2018. This data collection is proposed to begin in May 2018 with the collection of the historical (pre-ePRS) registry transaction data and the ePRS registry transaction data from GAIPSR. Then, after the Mongolian summer holiday in August, Cloudburst's Evaluation Specialist will travel to Ulaanbaatar to train and launch the field teams for the banking customer survey and the structured KII.

The timing of the 2<sup>nd</sup> round banking customer survey is designed to coincide with the original timeframe of the baseline banking customer survey to control for seasonal variation. The data collection plan calls for banking customer survey data beginning in September 2018 and concluding when a sample size of 900 respondents is reached, or at the end of December 2018 (whichever comes first). The evaluation team has budgeted for this effort to occur over four months because that was the length of time required at baseline, but it may be possible to reach this sample size in less than four months by applying lessons learned from baseline at the outset, such as providing compensation not only to respondents for participating in the survey but also to loan officers for referring respondents.

The team of enumerators collecting the structured KIIs will complete that survey data collection by the end of October 2018.

## Study Sample

The evaluation team proposes to replicate the sampling strategy of the banking customer survey. Accordingly, we would return to the same 26 bank branches that participated in first banking customer survey and aim to interview another 900 eligible loan applicants. These respondents would be different from the original loan applicants because of the need for respondents to be applying for an eligible loan at the time of the banking customer survey. As such, no data collection activities will involve tracking panel respondents.

All available GAIPSR registrars from offices within the project area will be selected for inclusion in the structured KII. Loan officers will be selected for inclusion in the structured KII

in consultation with the Mongolian Bankers' Association and its member banks. All loan officers in banks participating in the banking customer survey will be interviewed, as well as loan officers from other banks.

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### Staff

A data collection partner will be hired through a competitive RFP process. Specific requirements for field staff qualifications and performance during the competitive RFP process to select a data collection partner will help ensure the timely collection of high-quality data. Through the RFP process, the evaluation team will prioritize the selection of quantitative data collection team members with prior experience with surveys of similar size and with electronic data collection. The evaluation team will communicate these desired qualifications for selecting field staff in the RFP that is released and review the qualifications of proposed personnel during data collection launch preparations to ensure compliance. An experienced Field Manager will travel with the data collection teams and remain in the field throughout data collection. The Field Manager will serve as the primary point of communication between the project Field Coordinator and the enumerators.

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### Data Processing

All quantitative data collection—such as the 2<sup>nd</sup> round banking customer survey—will be conducted electronically using SurveyCTO, a flexible computer-assisted interviewing platform. Once all quantitative data is collected from the field it will be compiled together with the baseline data and de-identified, cleaned and labeled to produce a final STATA dataset and csv file that will be made available to the public.

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### Data Quality

Quality control begins well before data collection, with careful programming and testing of electronic survey instruments. Electronic data collection offers numerous benefits over paper data collection, both in data quality and in the cost of data collection. Electronic data collection allows data quality control checks, such as automated skips and restrictions on the ranges of data entered. It also enables the collection of geospatial, audio, and visual data, and the ability to upload data daily from the field. These benefits of electronic data collection ensure that data are accurate, can be reviewed in real-time and can be cleaned and analyzed quickly after data collection is complete.

Research analysts on the evaluation team will program all survey instruments, including automating skip patterns, restricting the ranges of acceptable responses, and eliminating the ability to leave questions blank. Doing so will reduce several major sources of enumerator error. Then they will perform multiple rounds of testing and revisions in-house before sharing the instruments with the survey firm. Additional edits will be made during enumerator training, pre-testing and initial days of data collection as appropriate. All quantitative surveys will be programmed in Mongolian and English.

The selected data collection partner firm will be responsible for translating survey instruments, protocols and training materials into Mongolian. The evaluation team will work closely with the data collection partner to ensure fidelity of translations by requiring the use of certified professional translators to undertake this work whenever possible and the

employment of an additional round of back translation of the translated material by a different translator, for review by the evaluation team.

As soon as data collection preparations begin, the evaluation team will institute frequent communication with the data collection partner (Field Coordinator). These include multiple required virtual planning meetings at key points in the lead up to data collection and review and revisions of all firm deliverables, such as the training plan and manual, field plan, field checklist and data quality control plan. During data collection, Cloudburst's Evaluation Specialist will ensure that the quality of data collected is high through direct observation of the initial field activities and then by maintaining substantial involvement and oversight in data collection through frequent data quality checks and communication with the Field Coordinator.

The evaluation team will employ a training-of-the-trainers' method for enumerator training. The training will be led by key data collection firm personnel, such as the Field Coordinator and Field Manager, and will include supervisors and any other field-level leaders. This training will include instruction on SurveyCTO and mobile phones or tablets used for data collection, review of all quantitative and qualitative instruments, instruction on sampling methodology, research ethics and IRB compliance, informed consent, personally identifiable information (PII) and data security.

Following the training-of-trainers, the Field Manager, with support from the Field Coordinator, will conduct a weeklong training and pre-test with the full survey team. The training agenda and all training materials used will be co-produced by Cloudburst's Evaluation Specialist and the local data collection partner firm and translated into Mongolian. Training sessions will use instruction on SurveyCTO and the mobile phones or tablets used for data collection, review of survey instruments, surveying best practices, role-playing exercises and instructions on research ethics and IRB compliance. The qualitative research team will be trained separately on the qualitative instruments and protocols, as well as on modified research ethics training focused on qualitative research methods, as described in further detail below.

After four days of classroom training, the quantitative and qualitative teams will conduct pre-tests of all quantitative and qualitative survey instruments with respondents similar to those in the sample. During the survey pilot and pre-tests, feedback is encouraged from supervisors and the field team on ways to strengthen the instruments and maximize their relevance to the local context—for example through the addition of locally relevant response categories on the survey, or ensuring appropriate terminology is used. Quantitative data will be uploaded to the project server and reviewed by the Field Coordinator for errors, misunderstandings, or necessary revisions to the survey instruments.

Once data collection is underway, field teams must upload quantitative data to a shared server daily, when internet connectivity permits, or at least once per week. If applicable for RSPS, 15% of all quantitative surveys will be audited by data collection firm auditors using an abbreviated version of the survey designed by the evaluation team. All enumerators will also undergo spot-checks on 10% of their surveys, conducted by their team supervisor. The evaluation team will design a short paper checklist for supervisors to provide enumerators

with feedback on their performance and ensure that enumerators are following protocols, particularly the informed consent process. Both the audit and spot-check results will be used to assess each individual enumerator's understanding of the survey and the integrity of the data collected. Team supervisors will share the audit and spot-check results with their enumerators weekly, along with suggestions for improvement.

Finally, the evaluation team will use in-house high-frequency checks on 100% of data collected to monitor for errors and make corrections to data in real-time, as an additional quality control procedure. High frequency checks will be performed at least once a week, and more frequently in the first weeks of data collection. This process uses a R script to review key variables for variability, check for outliers by enumerator, look for patterns in enumerator responses that may suggest data falsification, check for missing responses, and ensure adherence to important protocols. This real-time monitoring of data, combined with field-level audits and spot-checks ensures the highest quality data possible.

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## SECONDARY DATA

The secondary registry transaction data (historical pre-ePRS data and ePRS data) will be supplemented by secondary bank data on their loan portfolios. In particular, the evaluation team will work with the Mongolian Bankers Association and other bank contacts to obtain data on the numbers of loans and loan values supported by mortgages or other guarantees of immovable property and land over the last ten years, and some characteristics of these loans (type of loan, interest rate, average term, average default rate).

Particularly during the updating of the ERR and the construction of the CBA model, the secondary bank loan data will be used to quantify how loan transactions secured by immovable property and land have been strengthened by the project's support to the property registry system. The aim of these activities is to show whether the strengthening of the property registry system has improved the ability of financial institutions to lend based on guarantees of immovable property.

In addition, the evaluation team will use compact and post-compact M&E data and available GAIPSR administrative data to track progress on PRP outputs and secondary indicators, and where appropriate, within the updated ERR. The GAIPSR administrative data available includes customer satisfaction surveys from some branches and monthly internal branch reporting data.

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## ANALYSIS PLAN

The ePRS registry transaction data will be analyzed alone and in a pre-post comparison with the historical registry transaction data described above. Where possible, the evaluation team believes that the best quantitative strategy for analysis of this data is a pre-post time series model. This strategy is similar to a regression discontinuity design, but where a comparison group trend is modeled rather than observed. The equation that will be estimated is listed below.

$$Y_t = B_0 + B_1 \text{Treatment} + B_2 f \text{ Time } t + B_3 \text{Treatment} * f \text{ Time } t + e_t$$



Where  $Y_t$  is the outcome of interest in time  $t$ , and Treatment is an indicator of inclusion in the observed treated transactions or the modeled control transactions, and Time is a binary indicator for after the improvements to the registry systems. If seasonality is detected in the transaction data, a variable to control for this will be added to the model.

The quantitative analysis of changes to the time and cost to obtain a loan from the banking customer survey data will compare means of the outcomes of interest before and after the completion of the improvements to the registry systems. The equation that will be estimated is listed below.

$$Y_{it} = B_0 + B_1 \text{Time}_t + B_2 X_{it} + e_{it}$$

Where  $Y_{it}$  is the outcome of interest for individual  $i$  in time  $t$ , Time is a binary indicator for after the improvements to the registry systems, and  $X$  are controls for characteristics of the individuals and properties. The evaluation team will explore using matching methods to match baseline and follow-up respondents on key observable characteristics to improve the ability to detect changes.

Based on the program theory and literature, we expect to find variation in the program effect by gender, and we will test outcomes for heterogeneous treatment effects of the improvements to the registry system. To do so, we will also estimate the following equation:

$$Y_{it} = B_0 + B_1 \text{Time}_t * \text{Gender}_{it} + B_2 \text{Time}_t + B_3 \text{Gender}_{it} + B_4 X_{it} + e_{it}$$

This specification includes the interaction between the time indicator and the indicator variable for the subgroup of interest, gender.

Analysis of the structured key informant interviews will entail descriptive summary statistics to elucidate qualitative information about the PRP assistance to GAIPSR and changes since the close of the project. These secondary indicators, outputs, and outcomes will help the evaluation team to track program performance and identify potential explanations for the observed quantitative findings.

## QUALITATIVE APPROACH

The proposed quantitative instruments, timing, respondents, sample size, sample units and key modules are summarized in Table 7, below.

**Table 7: Summary data collection information—Qualitative instruments**

Source/Instrument	Timing of Collection	Timeframe of Data	Sample Unit/ Respondent	Sample Size	Key Modules
Focus group discussions	Sept 2018	2018	Individuals	18	Tenure security (incl land conflict), land investment, formal land market participation
Open-ended key informant interviews with key PRP implementers and stakeholders	Sept 2018	2018	Project implementers and 20 stakeholders	20	PRP activities

## PRIMARY DATA COLLECTION

### Instruments/protocol/interview guide

The evaluation team proposes to collect and analyze qualitative data from two key sources:

- Focus group discussions (FGDs) (N=18)
- Open-ended key informant interviews (KIIs) with key PRP implementers and stakeholders (N=21)

Four to five FGDs with subgroups of interest are proposed in each of the four districts covered by the decentralization activities in Ulaanbaatar: with women, with residents engaging in land transactions (both men and women), with ger area residents (both men and women), with loan officers (both men and women), and with real estate agents (both men and women). FGD will be conducted with real estate agents in each of the four districts to better understand how the real property market has changed, what kinds of investments people are making in property and their perception of how mortgage markets and land-based lending markets are evolving. FGD will be conducted with ger area residents in the two targeted districts that have the largest population living in ger areas. Table 8 below summarizes the planned FGDs by location.

**Table 8: Focus group discussions by location**

	Ulaanbaatar District				
Groups	Bayanzurkh	Chingeltei	Songinokhairkhan	Baganuur	Total by group
Women	1	1	1	1	4
Residents engaging in land transactions	1	1	1	1	4
Ger area residents	1	-	1	-	2
Loan officers	1	1	1	1	4
Real estate agents	1	1	1	1	4
<b>Total by district</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>18</b>

Three of these subgroups were selected for inclusion in the follow-up evaluation because they were specifically targeted as subgroups of interest to the PRP: women, residents engaging in land transactions, and ger area residents. The final two subgroups have been selected to provide more nuanced information on one of the main research questions—whether the PRP led to changes in demand for land. This question is difficult to measure quantitatively given the absence of a counterfactual. Using qualitative data to triangulate quantitative findings on this research question will lead to greater confidence in the evaluation findings, even though we will not be able to definitively establish causality.

Informants for the open-ended KII include:

- Former LMS (4);
- PRP stakeholders / representatives at ALAMGaC central, Darkhan, and Erdenet offices (3);
- PRP stakeholders / representatives at the GAIPSR central property registry department and Darkhan and Erdenet offices (4);
- PRP stakeholder / representative at the Land Administration department of Capital City (1);
- Former Mongolia compact Chief of Party (1);
- Former MCA Mongolia PRP Director (1);
- Former MCA Mongolia gender and social specialists (2);
- President of the Chamber of Notaries at the time of the PRP (1);
- Real estate representative (1);
- Current president of the Chamber of Notaries (1); and,
- Representatives of PRP-implementing subcontractors (2).

The open-ended KII will provide additional nuanced context information about PRP implementation and changes since the end of the project, which will be crucial for disentangling observed changes that may be due to the PRP versus other developments since the close of the compact.

## Rounds and Timing

Table 9 below summarizes the timing of the qualitative data collection activities.

<b>Table 9: Gantt chart—Qualitative data collection</b>		
<b>Activity</b>	<b>Sep 2018</b>	<b>Oct 2018</b>
Focus group discussions		
Open-ended key informant interviews with key PRP implementers and stakeholders		

To allow for a single round of data collection training activities, qualitative data collection will launch at the same time as the quantitative data collection. The qualitative team undertaking the FGDs and open-ended KIIs should complete this work during the month of September 2018.

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## Study Sample

Respondents for the FGDs with women, residents engaging in land transactions, and ger area residents (women and men) will be randomly selected from the ePRS transaction data for each sub-geography. Women who engaged in any land transaction will be eligible. The ger area residents will be sampled from people who registered land or property in ger areas. The residents engaging in land transactions will be sampled from people within the district who engaged in secondary land transactions. Respondents for the FGDs with loan officers and real estate agents will be selected in consultation with the relevant professional organizations, such as the Mongolian Bankers' Association and the American Chamber of Commerce.

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## Staff

Since the collection of high quality qualitative data is dependent on experienced interviewers, qualitative enumerator recruitment will take into account prior experience, training in qualitative methods, local language ability, and gender balance. Cloudburst's Evaluation Specialist will work closely with the local data collection firm to ensure the recruitment of the required qualitative team. Qualitative data collection with women will be led by women.

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## Data Processing

FGDs and open-ended KIIs will be audio recorded on digital voice recorders, transcribed and then translated (if not conducted in English). Qualitative data transcription will be undertaken by the same researchers who conducted the discussion or interview as soon as possible after the discussion or interview takes place. This practice ensures the full and seamless integration of additional context information and inaudible information (body language, etc.) into the transcript. The qualitative researchers leading the interview or FGD will transcribe the audio recording into Mongolian within 7 days. This transcription is then translated into English, back translated, and corrected before a final translation from Mongolian to English.

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## Data Quality

Qualitative enumerators will receive a separate four-day training on best practices for FGDs and participation, including exercises in managing the discussion, probing for details, the unique ethical challenges of confidentiality and informed consent in a focus group setting, qualitative data management and transcription guidelines. In addition, they will be trained on the substantive subject issues of the qualitative data collection to strengthen the depth and quality of information they collect. Enumerators will conduct all FGDs in pairs, where one enumerator leads the discussion and the second assists and takes notes. Each pair of enumerators will contain at least one woman, and the woman will take the lead role during FGDs with women.

Cloudburst's Evaluation Specialist will also provide training on detailed guidelines for the transcription of qualitative data for survey firms. These guidelines specify the formatting and conventions to be used in all transcriptions and translations, ensuring that transcription is always undertaken as a word-for-word written record of exactly what was said by participants and that all transcripts can quickly be redacted of identifying information.

The local data collection partner will submit one sample transcription and one sample translation of the qualitative data to the evaluation team for comment and approval to ensure compliance with the transcription and translation guidelines. This quality control check is critical for ensuring that transcriptions and translations are of a standardized high quality.

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## ANALYSIS PLAN

All FGD and open-ended KII will be translated from Mongolian to English, and de-identified to the fullest extent possible. Analysis will involve reading and re-reading the transcripts of the exercises and carefully coding and grouping responses in a consistent manner according to similar or related pieces of information presented, allowing comparison of responses and identification of common themes and trends.

Two evaluation team members will be trained to code the qualitative data. To ensure reliability, both team members will code an initial transcript and compare codes to identify and resolve discrepancies. In addition, one evaluation team member will review a subsample of coded data to check reliability as coding proceeds. Thematic coding will be accomplished manually in Microsoft Excel in a single master coding repository to ensure consistency and ease of reference. Quotations will be selected from the transcripts to illustrate the findings with simple, focused pieces of information representing key themes.

This qualitative data analysis process will allow the evaluation team to organize and compare similar and related pieces of information in the qualitative data and to identify key themes and trends across the project area. The analysis will therefore evaluate progress made on qualitative only indicators, add depth and social context to inform the interpretation of the results of the quantitative analysis, and shed light on the multiplicity of perspectives and potential mechanisms surrounding outcomes of interest to the evaluation.

The analysis of qualitative data will especially allow the evaluation team to better understand the gendered effects of the PRP. The qualitative FGDs will provide data about changes in the knowledge and awareness of women and men of the importance of legal land rights. The open-ended key informant interviews will provide data on gender-focused administrative changes, such as changes in government officials' understanding about how access to land differs from female to male and the development of policies and programs to ensure gender equality in property rights.

## CHALLENGES

### LIMITATIONS OF INTERPRETATIONS OF THE RESULTS

There are several limitations of this study that will inform the interpretation of results.

First, the study design of a pre-post comparison without a control group cannot account for other outside factors that may influence the evaluation outcomes to isolate the effect of the project. For example, the baseline back-office time tracking survey took place during the ramp up to migration to the ePRS system when offices were busy with internal preparation activities. For this reason, it is reasonable to conclude that the transaction processing times calculated then do not provide a the most accurate snapshot of transaction processing times prior to ePRS, since office processing may have been delayed during that time due to the focus on other activities. For this reason, the follow-up evaluation team proposes to use a different source of pre-ePRS transaction data than the back-office time tracking baseline survey. However, it is difficult to identify and mitigate all other factors that may be influencing observed values or changes.

The second limitation of the evaluation is also illustrated by the example described above, and that is the fact that several 'baseline' data sources were collected after PRP activities had begun, including the baseline back-office time tracking survey and the baseline banking customer survey, due to delays and issues encountered during the initial design and data collection phases of the evaluation. This limitation is the reason why the core quantitative strategy of the evaluation seeks to understand the effect of the ePRS system on key outcomes, rather than the effect of the PRP activities as a whole.

Third, because the banking customer survey sample is not based on a population distribution and there is no underlying sampling design, it does require accepting some assumptions to use a statistical model to test for significant changes on these indicators. In particular, the banking customer survey sample cannot be assumed to be representative of the study population because of bias in where the survey takes place and who is referred to the survey, neither of which was selected randomly from a list of eligible entities (locations, participants).

Fourth, as mentioned earlier in this report, the government change in the legislation on rights to land ownership allowing individuals to get a free parcel and the subsequent extension of that law likely drove up demand for land services regardless of the system improvement. Additionally, in terms of understanding whether ePRS is increasing demand, the evaluation is more likely to capture the sample of people for whom it did increase demand by going to banking customers and miss groups of people who did not go to the banks. However, it is important to note that the banking customer survey was not designed to capture increases in demand. Rather, the survey was meant to capture total transaction time for someone accessing mortgage or using land as collateral.

Fifth, the evaluation team may encounter challenges in terms of baseline (pre-ePRS historical transaction) data that is sex-disaggregated. Gender disaggregated data was not available at year three of the compact because the registration system and files did not have a gender box, so MCA made a concerted effort at that time to laboriously analyze all data in the



system and manually sex-disaggregate. It may be necessary for the evaluation team to undergo similar processing of the pre-ePRS historical transaction data to allow for subgroup analysis by gender, for example by manually assigning a binary gender variable based on the last two digits of the individual's national ID number. For post-ePRS data, the gender box was introduced with the project, so it should be possible to disaggregate land ownership data without additional data processing.

Finally, the evaluation team expects to experience a particular challenge in verifying the validity of property values. The scoping trip team was told in at least two interviews that loan applicants inflate the value of their property in sales contracts in order to access larger tranches of credit. For this reason, it will be important to collect property value information from several sources, such as the banking customer survey, banks themselves, and the relevant ePRS field, to better understand this dynamic and account for it during analysis, as reported estimates on the number of affected properties diverged quite substantially. Importantly, the values of properties subject to the formal transactions studied by this evaluation are not a key outcome measured by the evaluation, but rather they are an important characteristic to control for in the quantitative models.

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## RISKS TO THE STUDY DESIGN

The key risks to the data collection as-designed lie in the availability and structure of pre- and post-ePRS registry transaction data. The evaluation team will engage a local data collection partner to support GAIPSR to produce the exported data needed for the evaluation, but the team will necessarily rely on the cooperation of GAIPSR to provide the core data for analysis within the evaluation timeline.

Furthermore, the evaluation team will work around any gaps in the available registry data or discrepancies in how data is recorded over time to produce the most comprehensive analysis possible, but the evaluation team will ultimately lack control over some aspects of data quality since the study does not call for the collection of primary data measuring registry transaction time and cost. In particular, the migration to the electronic system appears to have necessarily resulted in changes to internal and external workflow. For example, obtaining a reference letter (baseline transaction type 8) is now accomplished at a self-service kiosk rather than at GAIPSR, so instead of measuring this through ePRS this change in transaction time will need to be discussed in the context of time taken to complete loan application steps, as reported in the banking customer survey. The electronic system also appears to record transaction information differently than the paper system for some types of transactions. As such, what were originally transaction numbers 6 and 7 at baseline (registering a mortgage and registering of assets as collateral) were recorded in the ePRS system as a single transaction type, so it may not be possible to disaggregate these related transactions for separate analysis.

## ADMINISTRATIVE

### SUMMARY OF IRB REQUIREMENTS & CLEARANCES

The evaluation team will ensure appropriate ethical clearance review of evaluation materials and research protocols used in the follow-up evaluation, including adapting MCC's Informed Consent Statement Template for use in the follow-up evaluation, developing protocols to document informed consent of research participants, and obtaining IRB clearance for all data collection instruments and research protocols. IRB approval for the data collection will be obtained through the Clark University IRB prior to any data collection efforts. The evaluation team, with assistance from a local data collection partner and MCC, will also secure any additional permissions needed from government representatives or banks prior to the start of any data collection exercise.

### DATA PROTECTION

With proper data management systems implemented, electronic data collection is vastly more secure than paper data. Quantitative data will be collected on password-protected mobile phones or tablets. Surveys will be uploaded to a secure, encrypted survey hosted by SurveyCTO. A username and password are required to access the server and will only be shared with members of Cloudburst. The survey firm will not have access to the server login information.

The full dataset with PII will be stored in two places—an external hard drive encrypted using VeraCrypt and stored with the Field Manager, and on Dropbox, a cloud-based file-sharing service that is encrypted using 256-bit Advanced Encryption Standard. To add an additional level of protection the data files are also encrypted using VeraCrypt before being added to Dropbox or the hard drive and only members of the core evaluation team will have access to the full dataset.

Full transcripts of interviews and FGDs will also be encrypted and stored on the external hard drive and on Dropbox. Individuals will be identified by ID numbers. The survey firm will destroy any paper documentation containing PII, such as individual surveys or respondent rosters, after data collection.

Finally, PII will only be collected when absolutely necessary. For example, to protect confidentiality, qualitative researchers are trained to refer to participants by the number assigned to them at the beginning of the exercise and to ask participants not to refer to each other by name during the exercise. Where data with PII is collected by design or by accident, all quantitative and qualitative data will be de-identified, and all PII will be removed, in accordance with MCC's data anonymization requirements. The evaluation team will share the data de-identification strategy with MCC prior to data collection to discuss implications for future verification of analysis and public versus restricted access of microdata.

## PREPARING DATA FILES FOR ACCESS, PRIVACY, & DOCUMENTATION

The evaluation team will conduct data cleaning in STATA. Data cleaning involves identifying any missing responses, coding skip patterns, recoding text questions to numeric responses, and applying logical variable names and labels. Cleaning will utilize many automated programs and templates developed by the evaluation team to ensure efficiency, quality, and timely availability of the dataset for external review and publication.

The evaluation team will prepare and submit to MCC a public use dataset from this clean dataset that includes the full dataset as collected, codebook, and any constructed analysis variables. If found necessary, the evaluation team will submit two data files in STATA for each survey instrument: a public use dataset with PII removed and restricted access dataset for MCC use and analysis verification. The evaluation team will also create and submit to MCC all analysis programs and command files used to conduct analysis, as well as the code used to construct variables for analysis from the public-use dataset.

At the end of all data cleaning and analysis activities, the evaluation team will submit the following deliverables to the DRB review process, as outlined by MCC: (1) Public use data file (STATA)—for each quantitative survey; (2) If applicable, restricted access data file (STATA)—for each quantitative survey; (3) Public use codebook; (4) If applicable, restricted access codebook; (5) Analysis programs and command files (STATA and R) to produce the variables for analysis and the analysis reported in the evaluation report; and (6) a Transparency Statement stating the extent to which the data (public use and/or restricted access) can enable verification of results presented in the evaluation report.

## DISSEMINATION PLAN

The evaluation team will be attuned to the interests and expectations of a wide range of audiences for this work, including policymakers, local government representatives, technical practitioners and beneficiary stakeholders. The evaluation team will seek MCC and local stakeholder feedback for all major deliverables for this evaluation, including this Evaluation Design Report.

The Evaluation Design Report has been shared with local stakeholders<sup>13</sup> and with MCC. A shorter document summarizing the evaluation design was also prepared, translated into Mongolian, and shared along with the Evaluation Design Report with local stakeholders. The evaluation team has collected, and where necessary, translated feedback on the proposed design. The evaluation team then prepared a document of responses to stakeholder comments (Annex 1).

Then, in the Option Period, the draft evaluation materials will also be shared with local stakeholders for review. This sequential review process with Mongolian stakeholders and MCC will facilitate feedback on drafts of each of the major deliverables, promote evaluation buy-in and ensure the utility of results for diverse stakeholders.

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<sup>13</sup> These stakeholders include the former MCA, GAIPSR, and the Government Cabinet Ministry.

After endline analysis is complete, the final Evaluation Report will be translated and shared with a wider group of stakeholders<sup>14</sup>. The evaluation findings will also be presented at MCC headquarters and to implementing entities and Mongolian stakeholders at the GoM point of contact or accountable entity headquarters in-country. The evaluation team will develop a set of materials in consultation with MCC to communicate evaluation findings. This will include PowerPoint presentations and briefers for dissemination and presentation at MCC and in-country events. Chief among the in-country events presenting evaluation findings will be a workshop with local stakeholders to communicate results and gather feedback.

The evaluation team will participate in other dissemination and training events at MCC's request, including presentations at MCC's M&E college, its annual IE workshop, and at local workshops in country facilitated by MCC. Cloudburst will also seek to present results at the annual World Bank Land and Poverty Conference.

## EVALUATION TEAM ROLES & RESPONSIBILITIES

### KEY PERSONNEL

**Heather Huntington, Cloudburst, Evaluation Expert and Activity Manager**, Ph.D., Public Policy and Political Science, University of Michigan, will serve as the Evaluation Expert on this project. Her responsibilities will include management of and technical contributions to evaluation design and implementation, including instrument design and analysis planning, and travel and interaction with MCC counterparts and other government stakeholders during findings reporting. She will also provide backstopping on quality control for data collection and management. She will provide primary contributions to the reporting of findings.

**Karol Boudreaux, Cloudburst, Land Administration Specialist**, JD, University of Virginia School of Law, will serve as the Land Administration Specialist on this project. She will contribute land administration subject matter expertise during the instrument development, data collection, and reporting phases of this evaluation.

**Malcolm Childress, Land Alliance, Land Economist**, Ph.D., Development Studies, University of Wisconsin-Madison, will contribute economic subject matter expertise during the instrument development, data collection, and reporting phases of this evaluation. He will also be responsible for building and reporting on the CBA model and ERR.

**TBD, Local Field Data Coordinator** Once selected, the Local Field Data Coordinator will complete all data collection and provide local support to the stakeholder engagement activities in Mongolia.

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<sup>14</sup> This review includes all stakeholders who reviewed the Evaluation Design Report and ALAMGaC, project implementation contractors (COWI-Orgut and IT provider), and IPA.

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## NON-KEY PERSONNEL

**Anne Girardin, Land Clarity, Land Information Systems Specialist, MSc, Land Survey and Geomatics Engineering (Surveying and Topography), Ecole Supérieure des Géomètres et Topographes (ESGT), France,** will provide subject matter expertise to the evaluation team in land information systems and geospatial analysis during the evaluation design, instrument development, data collection, and reporting phases of the evaluation.

**Kate Marple-Cantrell, Cloudburst, Project Coordinator and Urban Planning Specialist, MA MCP, City and Regional Planning and International Area Studies, University of California, Berkeley,** will serve as Project Coordinator and Urban Planning Specialist on the evaluation team. Ms. Marple-Cantrell will be responsible for overseeing quality control for quantitative and qualitative data analytics, data security, data quality processing and anonymization for public dissemination, and IRB clearances. She will also be responsible for supporting the Field Coordinator and in-country data collection partner with enumerator and qualitative team training, which includes travel to Mongolia to oversee the launch of data collection.

**Nicole Walter, Cloudburst, Geospatial Specialist, Master of Urban and Regional Planning, University of California, Los Angeles,** will support the evaluation team in designing and undertaking strategies for geospatial data analysis as part of this evaluation.

The evaluation personnel will also be assisted by two analysts, Ms. Aidan Schneider and Mr. Ben Ewing. Ms. Schneider and Ms. Ewing are research analysts focused on analysis tasks associated with land tenure activities. The home office analysts will support: desk review; survey programming, survey firm management, database access and organization, data cleaning and analysis; field work travel and logistics; deliverable formatting and branding, and evaluation communications and meetings.

This Gantt chart summarizes the expected follow-up evaluation timeline by week.



THE **CLOUDBURST** GROUP





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## ANNEX 1: STAKEHOLDER COMMENTS AND EVALUATOR RESPONSES

REVIEWER: MCC (DPE/EE-ME/PSC-PRP/COP)

### ABBREVIATIONS

COMMENT	RESPONSE
<p>Page ii</p> <p>Suggest mentioning also the Property Registry ahead of incorporation into GASR. Used to be under Ministry of Construction and Urban Development—Leonard could confirm</p>	<p>Material added; see p. 6.</p>

### INTRODUCTION & BACKGROUND

COMMENT	RESPONSE
<p>Page 1</p> <p>“are” or “have been”?</p>	<p>Revised.</p>
<p>Page 1</p> <p>Not sure this is the right word. Poor planning and urbanization leads to migrants living in unplanned areas/settlements but not “forced”</p>	<p>Revised.</p>
<p>Perhaps state “led poor migrants to settle in unplanned...”</p>	
<p>Page 1</p> <p>The original project proposed was indeed urban planning and GER upgrading. The issue was there was not yet an understanding of property rights which was needed prior to planning and infrastructure—something the 2nd Compact is looking at. The Ger areas are formed as the city does not pre plan areas. There were discussions early on to have the government pre plan and map “empty” land areas that could be given to those settling in UB instead of in an unplanned area. This unfortunately did not happen. Although urban/land use planning could come under “accessible pathway to land ownership”, may want to specify that not just ownership but creating proper land policies and planning to allow for affordable housing development with related municipal service supply.</p>	<p>Thank you for raising this important point. Revised.</p>
<p>Page 1</p> <p>Is this correct wording “Allocated to acquire”?</p>	<p>Revised.</p>
<p>Page 1</p> <p>Either here or below, it is important to tell the story of privatization that was implemented by ADB. Mongolia had massive mapping and privatization completed prior to the MCC Compact, but these privatization certificates were not fully processed into legal title and quickly sank back into the informal market. Many parcels couldn’t be formalized by the project as considered “in conflict” as subdivided/transferred/etc. after privatization but land owners had not paid fees in formal system so government would not allow project to register them. Leonard could clarify more.</p>	<p>We have added material on the ADB project however, project documents do not raise the concerns noted here. We spoke with Leonard to clarify these issues.</p>

Page 1 What about the governor's approval/privatization certificate? The issue is many Mongolians have the privatization certificate and do not move forward with full registration as think governor's approval/privatization is akin to title. See SHPS report from IPA for more details or follow up with Leonard.	Thank you for making this observation. Revised.
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## OVERVIEW OF THE COMPACT AND THE INTERVENTIONS EVALUATED

COMMENT	RESPONSE
Page 2 In report, seems to have privatization/registration and then registration/registry system activities. Suggest registration of ger areas and registry system strengthening.	Revised.
Page 2 Not only construction and geospatial but also computers/IT	I thank you for making this addition in the text.
Page 2 Mentioned below, but maybe highlight decentralization of UB property registry into district offices? This was likely one of the reasons behind waiting/travelling time saving on the UB side.	Revised.
Page 2 Seem to be missing the COWI-Orgut work here to streamline land administration operations and create improvements and sustainability in HR and financial sustainability. See COWI-Orgut report for full list.	I thank you; materials have been added to reflect the work of the COWI-Orgut consultancy.
Page 3 Land offices or registration offices?	I thank you for pointing this out. Revised.
Page 3 Important to clarify that property registry office and merged with GASR midway through compact. They had to find new space as the property registry old office was literally condemned with second floor potentially going to collapse on those below.  May also be key to note that a key Condition Precedent for the Compact Activities was provision of environmentally and structurally sound building spaces for the UB and 8 regional center offices, which is also why some delays at beginning. We had infrastructure and ESA specialist assessing each building space.	Revised.
Page 3 See above comment that this does not really fall under geospatial or physical upgrading, but the capacity building. Also missing operational streamlining side which came partially under the LRC side. See LRC recommendations. Some aspects I believe were passed of the LRC like removing requirement in some cases to get double forms/signatures. Khulan could detail these aspects as was supposed to be the first big transaction time savings. Unclear to me if these were part of the amendments mentioned below.	Revised.

Page 3 GSI/Jozefina: The report mentions some gender specific interventions. It is important to contextualize these and note that this did not start till the 3rd /4th year of the compact and was relatively limited in nature. Apart from outreach to officials, the MCA also carried out education campaigns focused on educating women on the benefits of registering land in their own names	Revised.
Page 3 Should we just say ADB?	Revised.
Page 3 Would it be important to also mention the rise in mining money and property/apt boom?	Revised.
Page 4 This “project participants” section mentions various beneficiary streams that perhaps better belong in the implementation to date section or expected benefits in the project logic section. As this is a design report and data still being collected, suggest rephrasing to what project aimed to do and outputs completed=like upgraded facilities, trained people and digitized records but expected/aimed for safer buildings, increase awareness and reduced time. See suggested text, below.	Thank you. We accept these changes.
Page 4 Think you mean 8 regional offices instead of districts?	Correct, thank you.
Page 4 Tried to clarify the 2 groups of “citizens” working with but one could also simply state land holders in UB and 8 regions.	Revised.
Page 4 May want to clarify property registry as GASR/GAIPSR had great buildings already before project.	Revised.
Page 4 Did this have any time savings implications?	The evaluation team is not certain that these improvements will translate into time savings. With the current information that we have, this would be speculative.
Page 5 ALAMGaC?? Maybe say project supported ALAMGaC to map/privatize land?? I understood though that contractors mapped and collected docs to then go to both ALAMGaC for governor’s certificate/privatization and then to GASR for registration.	Revised.
Page 5 The parcels formalized figure includes the districts and regional areas-see correction in text.	Thank you for making this clarification in the text.
Page 5 Transfer is key—not just first-time registration.	Thank you for making this addition in the text.
Page 5 It is not expected that all citizens with property would access to credit-rather the thought was those who were more bankable (existing income stream, demanded formal credit, more valued property area, etc.) would access loans.	Thank you for adding this qualification into the text.

Page 5 Important to put this investment in context. Namely, project was helping the property registry which was eventually merged with GASR. I say this as GASR had much more capacity and technical capability and IT systems in place than the property registry which was much less efficient.	Revised.
Page 5 Might want to clarify that this is “titling” as “land registration support” is hard to distinguish from land registry strengthening/institutional strengthening support. In this case, it actually was titling.	Revised.
Page 6 Add in gender?	Revised.
Anything happen on legislative/institutional side 2010-mid 2013?	
Page 6 This is one part that seemed to be missing from earlier description	Material added into the narrative.
Page 6 I believe these 11 buildings include those mentioned above. I can check the ITT but the total was 13- 4 districts, UB plus 1 in each of 8 regional centers.	Revised.
Page 8 sometimes spelled “immoveable” in the report. Pick one and go with it throughout. I’d go with “immovable”	Revised.
Page 8 Suggest adding transactions—not just registration. For example, copies of the bank letters	Thank you for noting this in the text.
Page 8 the collateral based lending/borrowing was supposed to come from 1) those given a title with activity 1 but also increase lending by banks once process sped up and didn’t have to deal with corrupt docs.  Bank loans were not so much about increasing land owners’ security of tenure (perceptions of tenure were not low in Mongolia as the privatization certificate gave people perceived security) but rather increased efficiency and ability to access the title or bank letter without having the prior cumbersome process.	Revised.
Page 9 Could you clarify the two channels? I get the first but then there is “second pathway” and “Second component”	The first channel is higher propensity to own investment (i.e., “sweat equity”), and the second channel is propensity of financial institutions to provide investment capital. These are explained in the following two paragraphs.



<p>Page 9</p> <p>Yes, secure but also the efficiencies in transaction time. The ERR had 2 benefit streams—for those who got title from project, they would increase investments (by 28%) due to tenure security and for some the increase of financial institution willing to lend. From institutional strengthening/more efficient services, benefits were captured as increases in mortgages based on decrease transaction time/cost for key land transactions (incl loan--\$12.50 savings per loan) (as well as dependable records/security for the banks that records not corrupt/and no longer have to verify with bank officers in the field, etc.). The thought was that the efficiencies would eventually lead to more loans, increased formal land transactions and related land market.</p>	<p>Thank you for this note. Revised to add additional text to expand on this point.</p>
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## EVALUATION DESIGN

COMMENT	RESPONSE
<p>Page 12</p> <p>GSI/Jozefina: The report discusses using historic pre-ePRS data for baseline values. In terms of baseline data that is sex-disaggregated, it is important to point out that we did not have any such data at year 3 of the compact, and that the MCA made a concerted effort to laboriously analyze all data in the system and manually sex-disaggregate. The registration system/files did not have a gender box so it was not possible to do so otherwise. However, with the project the gender box was introduced, so it should be possible to disaggregate land ownership data going forward.</p>	<p>Thank you for pointing out this consideration for data collection and preparation of the historical pre-ePRS transaction data. The 'challenges' section of the evaluation design has been revised to add a discussion of the information contained in this note.</p>
<p>Page 13</p> <p>Do you mean unit of analysis here/sample population/respondents? Data source is the EPRS/FG/KIIs.</p>	<p>Correct, thank you. This heading has been revised.</p>
<p>Page 13</p> <p>For MCC, this is called data source.</p>	<p>No response necessary.</p>
<p>Page 13</p> <p>What is meant by targeted areas? Evaluation should be targeting everyone in UB and the 8 regional centers and not just where titling took place. Both registration and mortgages were envisioned to increase from efficiencies in land governance/registration system—not just those in informal settlements who received title. Usually it is those with more capital and in the developed areas who are more likely to access the formal land markets and banking system—namely those that are “bankable” and where the lands system inefficiencies (and not other contextual factors) were constraining access to loan.</p> <p>Also, we are not just talking about households but individuals (especially with new land policy allowing individual free land) and businesses /commercial side as well.</p>	<p>Thank you for pointing out that 'individuals' is a more appropriate term in this instance - this has been updated. The unit of analysis of 'individuals in targeted areas' refers to the focus group discussion participants who will be selected in areas of interest and provide qualitative information about engagement in formal land transactions over time. Per the requests made in these comments, the 'targeted areas' will be defined to be the areas that received decentralization support in the form of new property registration offices.</p>

Page 13 This is an area where one could use the SHPS data to understand who/why people registered on their own in ger areas (formalized areas would still need other data source). Data includes who in control areas said they applied for title.	Revised to add a note stating that the evaluation will use the SHPS baseline data for context and background understanding about registration.
Page 13 Perhaps need to clarify the research question here. MCC is not interested in the households targeted for registration/titles by the project. The research question focuses on those who demanded/sporadic first-time registration and secondary land transactions. Namely, what were the traits that led to people being more likely to register once the cadastral/registration systems were improved. Was it people closer/further from the city? Were they individuals/households who were first time land owners? Women or men? Gers or formal areas? Larger/Smaller parcels? Residential or commercial? People who already had governor's decision/ALACGAC? Those registering first time or those conducting sale/gift/inheritance/building permit/mortgage?	As stated above, the unit of analysis of 'individuals in targeted areas' refers to the focus group discussion participants who will be selected in areas of interest and provide qualitative information about those who demanded land/property registration and secondary land transactions.
Page 13 Has Cloudburst confirmed the list of traits tracked/captured by ePRS/pre-ePRS paper records? If so, suggest footnoting or specifying later in report.	Revised to add a mention here of potential analyses that can be conducted to elucidate characteristics of people conducting land transactions and a footnote on page 16 concerning anticipated characteristics available for analysis.
Page 13 Wouldn't this be land transactions?? And not eprs/pre-eprs?	Correct, thank you. This has been revised.
Page 13 This should add in the banking customer surveys.	Revised.
Page 13 Again, this doesn't look right as data source vs data type. Who will the focus groups target?	Correct, thank you. This has been revised. The focus groups will target women, ger area residents, loan officers, and real estate agents.

<p>Page 14</p> <p>Somewhere in this paper, need to be clear the start/stop date of each of the transaction times tracking. If same as IPA's last design (focusing on when applied at registry and approved at registry) this should be noted. If another point in time will be tracked, for example starting at earlier process of someone registering right due to operational streamlining across offices—not just at the level of ePRS/ registry transaction time, this should be clarified. This was a key issue in failure of earlier IPA designs to capture transaction time so want to ensure that the time definition is clear for this design for each of the 8 transactions.</p>	<p>The quantitative analysis of ePRS data will capture time savings within the registry process (focusing on time of application to registry and time of approval at registry). In addition to the quantitative analysis of changes in transaction times due to registry strengthening support, the evaluation will also track indications in the qualitative data of time savings for the customer at other points in the registration process, such as efficiency improvements at ALAMGaC and the Land Administration department. An expanded discussion about this and other time considerations has been added to the 'timeframe of exposure' section.</p>
<p>Page 14</p> <p>Per Research question 2 suggest including not only elapsed time but analysis of characteristics of parcels/households who conducting those transactions before/after project.</p>	<p>Thank you for adding this detail to the text.</p>
<p>Page 14</p> <p>See above. I'm not convinced that those targeted by the titling initiative are the best group. Or do registration activities mean registry strengthening/institutional strengthening? In that case, individuals were not targeted but rather the areas with key population sizes-UB and the 8 regional centers.</p> <p>Another key group would be those areas where decentralized offices were set up in UB. . This is key as it not only likely saved people travelling cost but saved people the time spent waiting on endless lines and confusion at the UB central property office.</p>	<p>As stated above, the 'targeted areas' will be defined to be the areas that received decentralization support in the form of new property registration offices.</p>
<p>Page 14</p> <p>I don't remember the details, but no RSPS baseline data was collected by IPA at all until the project was almost over? You might confirm that with Jenny.</p>	<p>Correct. Per the below comment, the final IPA design and baselines were completed in 2013.</p>

<p>Page 14</p> <p>Cloudburst's data collection details under "timeframe of exposure" section are correct. There was an earlier data collection earlier in the compact before rollout of much of the LRC, infra, operational strengthening and ePRS; however, that dataset had to be thrown out. The final IPA design and baselines were conducted in 2013 at the end of the compact but prior to ePRS for back office and after for banking customer surveys.</p> <p>That said, banking customer surveys being late is fine as the predicted change for mortgages was really around the letters and access directly by the banks to the letters and property data. For the other land transactions, there are application and approval dates in the paper records that were then scanned in during digitization for the registry portion of the transaction time. The evaluation should have access to the history at the registry of land transaction volumes, transaction times and any characteristics that were captured of the type of parcels/individuals conducting those transactions. If there were streamlining procedures that affected duplicative procedures with the land office, registry and notary, these would not be captured by those records but registry savings would be captured from this historic data.</p>	<p>Thank you for raising this point. We have revised to add additional discussion of the implications of baseline timing for the follow-up analysis.</p>
<p>Page 15</p> <p>Unclear if pre-project should consider all the way through mid-2013. Did any changes occur prior to fall 2013? It would be helpful to understand a bit further what and when changes occurred from LRC recommendations and COWI-Orgut capacity building. There seems to be a gap between 2009 and 2013. Also, are there any changes in time evaluation considering outside of registration through Land office/ALACGAC or only time savings were through registry?</p>	<p>The e-Signature law and the Gender Equality law were both passed in 2011. The COWI-Orgut consultancy carried out a preliminary assessment effort early in 2012 and then began building capacity/trainings/study trips, institutional streamlining later in 2012 into 2013. The evaluation team thanks the reviewer for making this important point that the selection of an end date for the baseline data will be an important consideration when the final source of baseline data is selected.</p> <p>As stated above, in addition to the quantitative analysis of changes in transaction times due to registry strengthening support, the evaluation will also track indications in the qualitative data of time savings for the customer at other points in the registration process, such as efficiency improvements at ALAMGaC and the Land Administration department.</p>

Page 15 For both historical and current, wouldn't the evaluation be focused on transaction volumes, times and characteristics of those requesting those transactions?	Correct, thank you. The table has been revised to clarify this point.
Page 15 Registrars? Although both could be used, usually we use registrar to avoid confusion with other types of registers.	Revised.
Page 15 Should this be loan officers instead of GAIPSR?	Correct, thank you. This has been revised.
Page 16 Can you define this a bit further? Does this reference the digitized paper records?	This references the predecessor electronic databases to ePRS prior to the PRP. Revised the text to clarify this point.
Page 16 Does analysis require data to be captured or just scanned?	The evaluation team proposes to make the final determination about what, if any, additional information would need to be captured from the digitized documents for analysis, but based on the information gathered during scoping it appears that it would be necessary to capture additional information from the digitized records if this is deemed the most viable source of baseline data.
Page 16 Comparable to what?	Comparable to the ePRS transaction time records. Revised the text to include this information.
Page 16 Do you have a snapshot/photo or description of what variables captured? If not, I may have some from a 2013 mission.	Based on the paper forms available to the evaluation team, possible characteristics for inclusion in this analysis are: property size, price, type (land or immovable property), purpose, number of owners, gender(s) of owner(s). Revised to add a footnote on page 16 concerning anticipated characteristics available for analysis.
Page 16 Please confirm agree with suggested track changes.	They are correct, thank you.
Page 16 More than just digitization effects but all of the Activity effects	Revised.

<p>Page 18</p> <p>I suggest you talk to Ms. Khulan about firms that might be good. There were a couple of firms who worked on the privatization side that was especially good at this sort of thing.</p>	<p>Thank you for this suggestion. We have consulted with Ms. Khulan about potential firms for share the RFP for this work during the competitive RFP process.</p>
<p>Page 21</p> <p>Assuming “individuals” includes “parcels”: for example, commercial/residential, large/small, formal/informal...?</p>	<p>Yes, variables will be added to control for property characteristics, though please note that the quantitative analysis will have extremely limited ability to speak to informal land transactions, since this will not be captured by ePRS and is likely disqualifying for collateralized lending. Revised the text to clarify this point.</p>
<p>Page 22</p> <p>FGDs would be good in districts where time savings due to new district land offices but as stated earlier, I don't think it should be framed as SHPS areas as that involves titling. The key is anyone (not just gers) who would access services in those districts.</p>	<p>As stated above, the 'targeted areas' will be defined to be the areas that received decentralization support in the form of new property registration offices.</p>
<p>Page 22</p> <p>Gers targeted by privatization and registration-the SHPS evaluation—there is a different beneficiary stream for this evaluation.</p>	<p>As stated above, the 'targeted areas' will be defined to be the areas that received decentralization support in the form of new property registration offices.</p>
<p>Page 24</p> <p>Per earlier comments, why is the focus on SHPS sample/titling group in gers?</p>	<p>As stated above, the 'targeted areas' will be defined to be the areas that received decentralization support in the form of new property registration offices.</p>
<p>Page 25</p> <p>GSI/Jozefina: The Analysis Plan section (p25) discusses plans for FGDs and interviews with males and females in ger areas. I suggest they schedule some female only FGDs as otherwise the respondents may not feel free to speak as freely</p>	<p>Per the qualitative data collection plan, five focus groups will be conducted with women only.</p>
<p>Page 26</p> <p>Different source meaning the digitized paper records of the registry?</p>	<p>The evaluation team proposes to use a different source of baseline data than the back-office time tracking survey, which could be digitized records to could be predecessor electronic records. Revised the text to clarify this point.</p>
<p>Page 26</p> <p>The banking customer survey was not meant to capture increase demand, which would be from total volume from banks/registry processed. Rather the survey was meant to capture total transaction time for someone accessing mortgage or using land as collateral.</p>	<p>This discussion has been revised to include this clarification.</p>



<p>Page 26</p> <p>Although property values are expected to increase in the long-run, this evaluation is not requesting an analysis of land values. It is asking about loans/mortgages and land transaction volumes but not property values. For the titling intervention, the SHPS evaluation did ask about property values and were trying to measure this as well through rental values and looking at real estate data; however, the expectation was for people who received title to invest without necessarily accessing formal credit.</p>	<p>The values of properties subject to the formal transactions studied by this evaluation are not a key outcome measured by the evaluation, but rather they are an important characteristic to control for in the quantitative models. Revised this discussion to include this qualification.</p>
<p>Page 26</p> <p>May want to also note that as mentioned earlier in this report, the government change in the legislation on land right ownership allowing individuals to get free parcel and the related extension, which likely drove up demand for land services regardless of the system improvement.</p>	<p>Revised to add this information.</p>
<p>Page 27</p> <p>This time could also be analyzed as before it took xx time to access bank letter based on old paper land records and now it is immediate at kiosk.</p>	<p>Thank you for pointing this out. The evaluation team will explore the best way to represent this change in the transaction time experience due to the kiosk.</p>
<p>Page 27</p> <p>That is ok. Thank you for flagging. Perhaps footnote in the 8 types of transaction list that these 2 are now single in system.</p>	<p>Revised to add footnote to clarify this point.</p>

## REVIEWER: GAIPSR

### OVERALL

COMMENT	RESPONSE
<p>We have suggestions on the four research questions of the follow-up evaluation.</p> <ol style="list-style-type: none"> <li>1. Did the land registration system activities of the PRP lead to increases in demand and volume of formal land transactions, including land registration and related transfers at GAIPSR and mortgages at the banks? Question: <i>Did revenue and economic benefit from registered land increase?</i></li> <li>2. What were the characteristics of those who conducted formal land transactions before and after the introduction of ePRS? Question: <i>How did number of registered owners and co-owners change in formal land transactions before and after PRP?</i></li> <li>3. Did the land registration system activities of the PRP result in changes in land transaction costs/time <i>and steps</i> for land transactions?</li> <li>4. Were there any differences in results for parcels held by women/men? Question: <i>Were there changes in gender ratio of land owners?</i></li> <li>5. Question: <i>After implementing PRP was there increase/improvement in quality and access of property right's registration services? What was the significance of PRP?</i></li> </ol>	<p>Thank you for these suggested revisions to the primary research questions.</p> <ol style="list-style-type: none"> <li>1) The economic benefit from the registry strengthening component of the PRP will be tracked through the Economic Rate of Return calculation. Increased government revenue from property registration or transfer is also included in the evaluation as a secondary outcome (Annex 3).</li> <li>2) Changes in the number of registered owners and co-owners in formal land transactions before and after PRP will be tracked as part of research question 4 as a secondary outcome (Annex 3).</li> <li>3) The number of steps involved in land transactions will be considered when tracking changes in transaction time. For more information about transaction time considerations, please see the 'Timeframe of exposure' subsection in the quantitative data collection strategy.</li> <li>4) We have added this question to research question 4.</li> <li>5) We have added this 5<sup>th</sup> research question.</li> </ol>

## ANNEX 2: FULL LIST OF EVALUATION INDICATORS

Please refer to the Microsoft Excel file titled “Indicator\_table”.