Document of
The World Bank

Report No: ICR00003719

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IDA-42580 IDA-51510)

ON A

CREDIT

IN THE AMOUNT OF SDR 30.35 MILLION
(US$ 45.65 MILLION EQUIVALENT)

AND AN

ADDITIONAL FINANCING OF SDR 46.20 MILLION
(US$ 70.00 MILLION EQUIVALENT)

TO THE

ISLAMIC REPUBLIC OF PAKISTAN

FOR A

PUNJAB LAND RECORDS MANAGEMENT AND INFORMATION SYSTEMS PROJECT

June 21, 2017

Social, Urban, Rural and Resilience Global Practice
Pakistan Country Unit
South Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective 02/20/2017)

Currency Unit = Pakistan Rupees (PKR)
1.00 PKR = US$ [0.01]
US$ 1.00 = [104.80] PKR

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
ARC	Arazi Record Center *(Land Record Center)*
BOR	Board of Revenue
CAS	Country Assistance Strategy
CFO	Chief Financial Officer
CMDS	Central Management Database System
CPS	Country Partnership Strategy
DA	Designated Account
EIRR	Economic Internal Rate of Return
EMP	Environmental Management Plan
FY	Fiscal Year
GIS	Geographic Information System
GoP	Government of Pakistan
GoPb	Government of Punjab
ICR	Implementation Completion and Results Report
ICT	Information and Communications Technology
IT	Information Technology
LRMIS	Land Records Management and Information System
M&E	Monitoring and Evaluation
MTR	Mid-Term Review
NPV	Net Present Value
PAD	Project Appraisal Document
PDO	Project Development Objective
PKR	Pakistan Rupee
PLRA	Punjab Land Records Authority
PMU	Project Management Unit
PPP	Public Private Partnership
PITB	Punjab Information Technology Board
PRSP	Poverty Reduction Strategy Paper
RF	Results Framework
ROD	Registry of Deeds
SA	Social Assessment
SDG	Sustainable Development Goals

SDR Special Drawing Rights

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ISLAMIC REPUBLIC OF PAKISTAN
Punjab Land Records Management and Information Systems Project

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A. Basic Information			
Country:	Pakistan	Project Name:	Land Records Management and Information Systems Project (LRMIS-P) Province of Punjab
Project ID:	P090501	L/C/TF Number(s):	IDA-42580,IDA-51510
ICR Date:	06/21/2017	ICR Type:	Core ICR
Lending Instrument:	SIL	Borrower:	GOVERNMENT OF PAKISTAN
Original Total Commitment:	XDR 30.35M	Disbursed Amount:	XDR 75.03M
Revised Amount:	XDR 75.03M		
Environmental Category: B			
Implementing Agencies: Punjab Board of Revenue			
Co-financiers and Other External Partners: N/A			

B. Key Dates				
Process	**Date**	**Process**	**Original Date**	**Revised / Actual Date(s)**
Concept Review:	12/13/2004	Effectiveness:	03/28/2007	03/28/2007
Appraisal:	02/06/2006	Restructuring(s):		03/02/2012 09/11/2012 04/28/2014 09/11/2015 06/30/2016
Approval:	01/25/2007	Mid-term Review:	09/06/2013	09/09/2013
		Closing:	03/31/2012	12/31/2016

C. Ratings Summary	
C.1 Performance Rating by ICR	
Outcomes:	Satisfactory
Risk to Development Outcome:	Low or Negligible
Bank Performance:	Moderately Satisfactory
Borrower Performance:	Moderately Satisfactory

C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)			
Bank	**Ratings**	**Borrower**	**Ratings**
Quality at Entry:	Moderately Satisfactory	Government:	Satisfactory
Quality of Supervision:	Moderately Satisfactory	Implementing Agency/Agencies:	Moderately Satisfactory
Overall Bank Performance:	Moderately Satisfactory	**Overall Borrower Performance:**	Moderately Satisfactory

C.3 Quality at Entry and Implementation Performance Indicators			
Implementation Performance	**Indicators**	**QAG Assessments (if any)**	**Rating**
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA):	None
Problem Project at any time (Yes/No):	Yes	Quality of Supervision (QSA):	None
DO rating before Closing/Inactive status:	Satisfactory		

D. Sector and Theme Codes[1]		
	Original	**Actual**
Major Sector/Sector		
Public Administration		
Sub-National Government	100	100

Major Theme/Theme/Sub Theme		
Public Sector Management		
Public Administration	17	17
Administrative and Civil Service Reform	17	17
Rule of Law	22	22
Judicial and other Dispute Resolution Mechanisms	5	5
Legal Institutions for a Market Economy	5	5
Personal and Property Rights	22	22

[1] Sector designations and Theme coding were changed by the Bank in 2016 and are locked in Portals. The sub-division of Sectors and Themes cannot be changed and nor can data for Actual.

Social Development and Protection		
Fragility, Conflict and Violence	2	2
Forced Displacement	2	2
Social Inclusion	15	15
Other Excluded Groups	15	15
Urban and Rural Development		
Rural Development	33	33
Land Administration and Management	33	33

E. Bank Staff		
Positions	**At ICR**	**At Approval**
Vice President:	Annette Dixon	Praful C. Patel
Country Director:	Patchamuthu Illangovan	John W. Wall
Practice Manager/Manager:	Jorge A. Munoz	Adolfo Brizzi
Project Team Leader:	Mary Lisbeth Gonzalez	Edward C. Cook
ICR Team Leader:	Mary Lisbeth Gonzalez	
ICR Primary Author:	Linus Benedikt Pott	

F. Results Framework Analysis

Project Development Objectives

The Project Development Objective was to improve land record service delivery in Punjab.[2]

Revised Project Development Objectives (as approved by original approving authority)

N/A

(a) PDO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1:	**Issuance of records of rights (fards) of less than 10 pages within 30 minutes**			

[2] The ICR uses the PDO stated in the main text of the original Financing Agreement (2007). See discussion on inconsistencies of the PDO and the justification for using this PDO in section 1.2.

Value quantitative or Qualitative)	2 weeks	30 minutes	N/A	15 minutes
Date achieved	02/14/2007	12/31/2016		12/31/2016
Comments (incl. % achievement)	**Exceeded (200% of target achieved).** The average time spent at the counter of a Service Center to issue a fard[3] is 15 minutes. (Data based on the 'End of Project Survey' (2016) conducted with 2,304 Arazi Record Center (ARC)[4] clients).			
Indicator 2:	**Client satisfaction with land records services at Client Service Center [ARC] level of 95%**			
Value quantitative or Qualitative)	Service centers do not exist. Widespread dissatisfaction with services provided by patwaris	Client satisfaction with land record services provided at the local service centers at 95%		97.85%
Date achieved	02/14/2007	12/31/2016		12/31/2016
Comments (incl. % achievement)	**Exceeded (103% of target achieved).** More than the targeted 95% of clients are satisfied with the new system (Based on average feedback from 37,236 ARC clients from 2011-2016).			
Indicator 3:	**Increased level of tenure security of land-right holders**			
Value quantitative or Qualitative)	N/A	Tenure security increased compared to the pre-project situation based on final client survey.		60% expect the new system to have more impact on tenure security than the old system
Date achieved	02/14/2007	12/31/2016		12/31/2016
Comments (incl. % achievement)	**Achieved:** There was no adequate baseline or target. Some 60% of respondents expect the new system to improve tenure security; 59% think that the new system will reduce land disputes; 55% think that the new system will increase tenure security of vulnerable groups and 81% think that women's tenure security will improve ('End of Project Survey' 2016; 2,304 respondents).			

[3] A fard is an official land record copy reflecting the rights of ownership of land.
[4] The project documents use different names for these centers. For matters of consistency, the term 'Arazi Record Center' (ARC) will be used in this ICR as this term is officially used by the PMU. Arazi is Urdu and translates as land.

(b) Intermediate Outcome Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1:	**Improved and legally valid processes in place**			
Value (quantitative or Qualitative)	No	Yes		Yes
Date achieved	02/14/2007	12/31/2016		12/31/2016
Comments (incl. % achievement)	**Achieved:** Over 20 sections changed in the Punjab Land Revenue Act (1967) and the Punjab Land Revenue Rules (1968) to stop Patwaris issuing manual land records; simplify procedures of issuance and transaction of land records; and establish digital land record processes. The official Punjab Land Records Manual was changed accordingly.			
Indicator 2:	**Business Model in place at the district level**			
Value (quantitative or Qualitative)	No	Yes		Yes
Date achieved	02/14/2007	12/31/2016		12/31/2016
Comments (incl. % achievement)	**Achieved:** Business plans, including revenue streams, operating costs, and cost recovery models as well as operational procedure guidelines for ARCs in place in each Tehsil (below the district level).			
Indicator 3:	**LRMIS software functioning effectively**			
Value (quantitative or Qualitative)	No	Yes		Yes
Date achieved	02/14/2007	12/31/2016		12/31/2016
Comments (incl. % achievement)	**Achieved:** The current software is functioning effectively in 144 ARCs for fard issuance and transactions. Additionally, a new, improved centralized software version has been developed and was operational in two ARCs by February 2017 and is expected to function effectively in all ARCs by October 2017.			
Indicator 4:	**Number of Districts included in the project (data entry, service centers established)**			
Value (quantitative or Qualitative)	0	18	36	36
Date achieved	02/14/2007	11/30/2013	12/31/2016	12/31/2016
Comments (incl. % achievement)	**Achieved:** Each District has on average four ARCs (overall 144 operational ARCs), each covering on average some 350,000 landholders			

	and some 236,000 parcels. Data from all 25,258 mauzas[5] were scanned and 91.5% of all mauzas are operational at the time of project closure.			
Indicator 5:	**Automated service centers [ARCs] are operating effectively**			
Value (quantitative or Qualitative)	No	Yes		Yes
Date achieved	02/14/2007	12/31/2016		12/31/2016
Comments (incl. % achievement)	**Achieved:** 144 ARCs operating effectively. On average, 163,233 land records/month were issued and 51,341 transactions/month were conducted on average in 2016.			
Indicator 6:	**Minimum 80% of land owners are aware of new records system after service centers [ARCs] open, including women**			
Value (quantitative or Qualitative)	0% (ARCs do not exist)	80% (incl. 80% women)		57%
Date achieved	02/14/2007	12/31/2016		12/31/2016
Comments (incl. % achievement)	**Partially achieved (71% of target achieved).** Only 57% of respondents (45.6% women) claimed to have knowledge of the existence of the ARC prior to the need for acquiring current service. ('End of Project Survey' (2016) conducted with 2,304 ARC clients).			
Indicator 7:	**Key project issues arising during implementation are identified and addressed**			
Value (quantitative or Qualitative)	No	Yes		Yes
Date achieved	02/14/2007	12/31/2016		12/31/2016
Comments (incl. % achievement)	**Achieved:** Monitoring and Evaluation (M&E) system in place and key issues addressed through the Project Management's M&E Unit, client feedback mechanisms, Steering Committee, and Project Special Steering Committee.			
Indicator 8:	**Stakeholder feedback captured and incorporated into project implementation**			
Value (quantitative or Qualitative)	No	Yes		Yes
Date achieved	02/14/2007	12/31/2016		12/31/2016
Comments (incl. % achievement)	**Achieved:** ARC client feedback system in place (SMS, toll free line and feedback forms). Feedback from internal and other stakeholders obtained through workshops. Data influenced project implementation.			
Indicator 9:	**Average no. of days to complete recording of purchase/sale of property in land administration system**			
Value	51 days	14 days		1 day

[5] Revenue estates

(quantitative or Qualitative)				
Date achieved	02/14/2007	12/31/2016		12/31/2016
Comments (incl. % achievement)	**Exceeded (135% of target achieved).** The average time to complete a transaction at an ARC counter is one day (about 165 minutes). (Data based on the 'End of Project Survey' (2016) conducted with 2,304 ARC clients).			

G. Ratings of Project Performance in ISRs

No.	Date ISR Archived	DO	IP	Actual Disbursements (USD millions)
1	03/09/2007	Satisfactory	Satisfactory	0.00
2	09/07/2007	Satisfactory	Satisfactory	1.00
3	05/26/2008	Satisfactory	Satisfactory	1.03
4	12/21/2008	Satisfactory	Moderately Unsatisfactory	1.26
5	05/28/2009	Satisfactory	Moderately Satisfactory	1.26
6	11/25/2009	Satisfactory	Moderately Satisfactory	1.89
7	05/26/2010	Satisfactory	Moderately Satisfactory	2.97
8	12/05/2010	Satisfactory	Moderately Satisfactory	8.87
9	06/08/2011	Satisfactory	Moderately Satisfactory	8.87
10	12/24/2011	Satisfactory	Moderately Satisfactory	12.33
11	06/12/2012	Satisfactory	Moderately Satisfactory	13.45
12	12/16/2012	Satisfactory	Moderately Satisfactory	27.39
13	06/05/2013	Satisfactory	Moderately Satisfactory	37.17
14	11/16/2013	Satisfactory	Moderately Satisfactory	45.65
15	03/24/2014	Satisfactory	Moderately Satisfactory	56.46
16	05/24/2014	Satisfactory	Moderately Satisfactory	56.46
17	12/07/2014	Satisfactory	Moderately Satisfactory	69.72

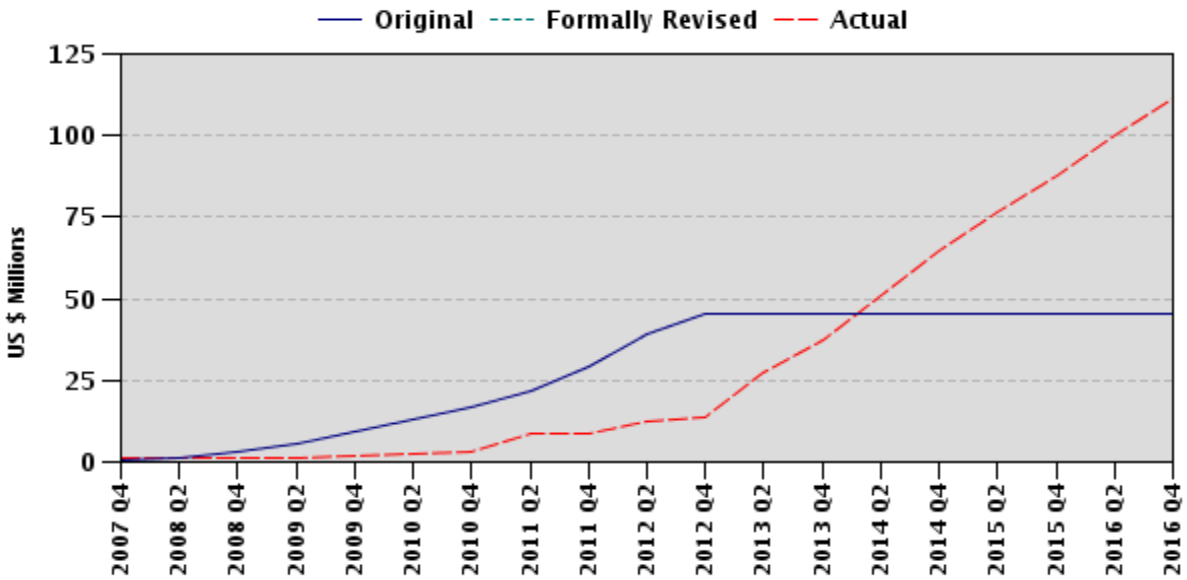
18	03/31/2015	Satisfactory	Moderately Satisfactory	83.56
19	12/15/2015	Satisfactory	Moderately Satisfactory	100.18
20	07/08/2016	Satisfactory	Satisfactory	111.27
21	11/11/2016	Satisfactory	Satisfactory	111.27

H. Restructuring (if any)

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		DO	IP		
03/02/2012	N	S	MS	12.54	A twenty-month extension of the closing date from 03/31/2012 to 11/30/2013 was approved to allow for completion of the roll out of the automated system.
09/11/2012	N	S	MS	15.97	An additional credit in the amount of SDR 46.2 million (US$ 70.00 million) (IDA-51510) was approved to expand the project coverage from 18 to 36 districts and to cover the overruns in the estimated cost of data entry per district. The respective Intermediate Outcome Indicator target was changed accordingly from 18 to 36 Districts. The engagement period was extended for seven-months from 11/30/2013 to 06/30/2014. The environmental category was changed from C to B, triggering safeguards policy OP 4.01.
04/28/2014		S	MS	56.46	An eighteen-month extension from 06/30/2014 to 12/31/2015 was approved to allow for completion of

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		DO	IP		
					data verification and implementation of the automated land records system throughout Punjab Province.
09/11/2015		S	MS	92.48	A six-month extension from 12/31/2015 to 06/30/2016 was approved to implement the expansion of the linkage between the land records system and the registry of deeds; the integration of Geographical Information Systems (GIS) into the land records system; and the shift to a centralized database architecture.
06/30/2016		S	MS	111.27	A six-month extension from 06/30/2016 to 12/31/2016 was approved to complete procurement activities, establish additional ARCs, renovate the new Punjab Land Record Authority building, and implement security measures.

I. Disbursement Profile



1. Project Context, Development Objectives and Design

1.1 Context at Appraisal

1.1.1 Agriculture is at the heart of the rural economy in Pakistan, particularly in Punjab Province, and thus land access, rights and administration of those rights are critically important. At the time of project appraisal, inequalities of land distribution, insecure tenure and difficulties associated with the land administration and registration system were closely interrelated, imposing significant constraints on both urban and rural populations, and especially the poor. Land transactions were relatively high cost, and disputes about the accuracy of land rights were caused, inter alia, by the inefficient and dispersed land records system. Information related to land was not publically available, resulting in a non-transparent land records system, which was prone to corruption. Low mobility of land was contributing to perpetuating high inequality of land distribution and hence, livelihoods.

1.1.2 The Province of Punjab, with a total area of 205,345 sq. km. and with some 80.5 million inhabitants at that time (55.6 percent of Pakistan's total), was and remains the most populous. Some 70 percent of the population lived in rural areas. Agriculture played a critical role in the provincial economy but the dispersed and duplicative nature (see below) of its land records made land rights uncertain, negatively impacted economic development and threatened the vulnerable and poor whose rights were virtually unprotected. High transaction costs and difficulties associated with land registration were imposing significant harm on existing and prospective landowners, most particularly the poor with small holdings and less access to information or resources, increasing their vulnerability to predatory middlemen and reducing the liquidity of family assets composed mostly or wholly of land. Well-defined land rights are crucial for productive development and functioning factor markets including credit. Clear land rights have far-reaching implications for social cohesion and governance, for empowerment and for reducing social exclusion.

1.1.3 Pakistan has a paper-based land administration system inherited from the British involving rules and regulations regarding the sale, purchase and use of land linked mainly to the collection of land tax. Court rulings had shown that entries in the land records were contestable, that revenue records were not documents of title, and that entries could be challenged to determine title. This was especially harmful to the poor who could not afford protracted land disputes. Further, the institutional framework of the land recording system in Punjab was very opaque, involving many agencies, the most important of which were the Board of Revenue (BOR), the Excise and Taxation Department (ETD) and the development authorities of which the most prominent was the Lahore Development Authority (LDA). However, at that time there was no single agency maintaining updated land records for Punjab, coordinated record-keeping by the involved agencies was limited, and land related information not accessible to the public.

1.1.4 The BOR's land records maintenance system was intricate with several levels of administration: district, Tehsil, Kanungoi Circle and Patwar Circle.[6] The lowest administrative level was the Patwar Circle, of which the Patwaris were responsible for many social, political and administrative functions including

[6] See *Ali, Z. & A. Nasir (2010): Land Administration System in Pakistan – Current Situation and Stakeholders' Perception* for a more detailed overview of the administrative hierarchy of the local government

maintaining land records, and acting as the custodians of records pertaining to public and private lands (nationwide). The Patwaris are the sole authority to issue copies of land records ('fards').[7] A key concern about the Patwari system was the high transaction costs for those requiring land-related services and opportunities for and prevalence of rent-seeking and corruption, a system which favored large land-holders over the small and poor. The project sought to replace this system with a modern, transparent and accessible digital land record management system. As a first step of the Government's strategy to establish a title-based land registration system in the long term, the project focused on reforming the century old manual land record management system in rural areas of Punjab Province. This includes not only a technological change but also a tremendous cultural change for the general population as well as the Patwaris.

1.1.5 **Rationale for Bank assistance:** At the time of project approval, the issue of opacity and insecurity of land records in Pakistan and its repercussions had been extensively analyzed and documented in numerous studies by the Bank and other donors. The Bank sought to mobilize financial resources and provide technical assistance based on its global experience and specialized skills in this sector. The project was expected to benefit from similar, ongoing pilot programs/projects in India, Thailand and other regions.

1.1.6 The project contributed to a set of higher level objectives as expressed in the Bank's Country Assistance Strategies (CAS) (FY03-06 and FY06-09) which were closely aligned to the Government's poverty reduction strategy, seeking to: (i) support high and broad-based economic growth focusing on the rural economy; (ii) improve governance and consolidate devolution; (iii) invest in human capital focused on the effective delivery of basic social services; and, (iv) bring the poor and vulnerable into the development mainstream by reducing inequalities. The CAS' accordingly prioritized rural growth, improving government effectiveness, institutional accountability and transparency, and reducing corruption. The new CAS (FY06-09) went further, seeking a comprehensive rural strategy for growth and poverty reduction, which aligns well with the rural focus of the project. The project, by supporting a new and more effective decentralized institutional set-up for land administration within this newly-decentralized scenario, was intended to foster this vision.

1.2 Original Project Development Objectives (PDO) and Key Indicators

1.2.1 The Project Development Objective (PDO) was to improve land record service delivery in Punjab.

1.2.2 Inconsistencies in the formulation of the PDO exist and are as follows: In the Results Framework (RF), attached to the Financing Agreement (2007), the PDO is: 'Improved land records service delivery contributing to long-lasting tenure security'. The PDO in the overview table of the Project Appraisal Document (PAD) and the PAD main text (where it is referred to as the "higher level" objective) is: 'To improve the land records service delivery of the Province of Punjab, contributing to long-lasting tenure security and more efficient operation of land markets'. The PDO mentioned in the RF of the PAD is: 'To significantly improve the effectiveness of the land records system with respect to transparency, cost effectiveness, and user satisfaction with service delivery, contributing to long-lasting tenure security'. The use of the PDO stated in the main text of the original Financing Agreement (2007) for the Implementation Completion and Results Report (ICR) was chosen over the PDO in the RF attached to the original

[7] Fards are copies of land records that are used to proof land rights but also function as a guarantee for furnishing bail in court cases; as a proof of residence, for obtaining agricultural credit; and are required for undertaking transactions of land.

Financing Agreement, as the PDO in the RF added another element ('more efficient operation of land markets'), which is not reflected in the RF or PAD's PDO. The new Financing Agreement (2012) from the Additional Financing (AF) does not mention a PDO and an RF was not attached. The PDO stated in the main text of the original Financing Agreement (2007) is however stated as the PDO in the Project Paper of the Additional Financing in 2012 and is therefore considered to be the valid PDO for the ICR.

1.2.3 The ICR uses the PAD indicators (both PDO and Intermediate Outcome) instead of those from the RF attached to the Financing Agreement (2007).[8] The indicators from the PAD capture the sense of the indicators in the Financing Agreement but are more nuanced and were tracked in the Implementation Supervision and Results Reports (ISR). The Project Development Objective (PDO) indicators in the RF of the PAD were:

i. *Issuance of records of rights (fards) of less than 10 pages within 30 minutes.*
ii. *Client satisfaction with land records services at Client Service Center [ARC] level of 95%.*
iii. *Increased level of tenure security of land-right holders.*

1.3 Revised PDO (as approved by original approving authority) and Key Indicators, and reasons/justification

1.3.1 The PDO remained unchanged throughout the project. However, a new, expected outcome was added by the AF in 2012. The PAD states two expected outcomes: (i) Increased access to land records at lower transaction cost for the beneficiary, through a client-responsive service; and, (ii) Increased level of tenure security of land-right holders. The AF added another expected outcome: (iii) Increased transparency in transactions in land. The additional expected outcome did not change the project scope or substance, nor did it change the PDO indicators.

1.3.2 The AF changed the target of Intermediate Results Indicator 4 (Number of Districts included in the project) from 18 to 36. One Intermediate Results indicator was added to the RF in 2015 (Indicator 9: Average number of days to complete recording of purchase/sale of property in land administration system).

1.4 Main Beneficiaries

1.4.1 Given the rural scope of the project in Punjab province and stakeholders identified by the Social Assessment undertaken during project preparation (see PAD, Annex 11), the following groups are considered to be the main beneficiaries: Direct/primary stakeholders (large, medium and small rural landowners; landless farmers; peasants lacking ownership of title; tenants and leaseholders; female landowners; and, minorities and collective owners); and indirect/secondary stakeholders (revenue and other government and administrative departments (including the Board of Revenue); real estate agents, banks and financial institutions; law professionals, NGOs, elected representatives and land developers). Direct/primary beneficiaries were expected to benefit through a more accessible, more transparent, cheaper and more secure digital land record system. Indirect/secondary beneficiaries were expected to benefit through increased access to information, more transparent revenue generation based on the digital land record system, and increased capacities at the central and decentralized levels.

[8] The PDO indicators in the Financing Agreements are (i) Improved land record services and (ii) Increased level of tenure security of land-rights holders. The new Financing Agreement (2012) did not have an updated Results Framework attached to it.

1.5 Original Components (*as approved)*

1.5.1 The project included the following four components which remained unchanged throughout the project:

1.5.2 Component 1: Business Process Improvement and Institutional Capacity Enhancement (estimated total cost US$ 1.9 million, of which Credit US$ 1.9 million). The objective was to introduce business process changes and to strengthen the capacity of the involved entities responsible for land records management and service delivery. The two sub-components were:

- *Sub-Component 1.1: Institutional Capacity Enhancement.* This was to finance training of staff with a focus on the project rationale and better land records service delivery; and, an assessment of the BOR.
- *Sub-Component 1.2: Business Process Improvement:* This was to finance work on changes in business processes, legislative amendments to establish digital land records legally, and the exploration of the use of Public Private Partnerships (PPPs) with regard to land record management and service delivery.

1.5.3 Component 2: Development and Deployment of the LRMIS (estimated total cost of US$ 92 million, of which Credit US$ 92 million). The roll-out of the automated LRMIS in 18 districts[9] was planned through seven sub-components:

- *Sub-Component 2.1: Software Development and Testing.* This was to finance test operation of the land record management software, data entry procedures and costs, and connectivity options.
- *Sub-Component 2.2: Software Deployment and Further Enhancement*: This was to finance the costs associated with the software. The linkage with the automated system of deeds registration in peri-urban areas and integration of digital spatial data was to be piloted.
- *Sub-Component 2.3: Data Entry and Validation*: This was to finance a comprehensive data cleansing and data entry process to digitize paper-based land records.
- *Sub-Component 2.4: Data Centers and Connectivity[10]*: This was to finance the establishment of Data Centers and the costs of linking the Arazi/Land Record Centers (ARCs) with the Data Centers.
- *Sub-Component 2.5: Establishment of Service Centers [ARCs] for the Delivery of Land Record Services*: This was to finance the establishment of the ARCs at the Kanungoi[11] level.
- *Sub-Component 2.6: Web Development*: This was to finance the web site and its content development to make land related data more transparent and accessible.
- *Sub-Component 2.7: Pilot for Spatial Data*: This was to finance the integration of the Patwari's existing maps with the LRMIS software on a pilot basis.

1.5.4 Component 3: Service Delivery and Information Campaigns (estimated total cost US$ 27.6 million of which Credit US$ 17 million). This component focused on the operation of LRMIS and on outreach to stakeholders and the general population. The two sub-components were:

[9] Extended to 36 districts through the AF

[10] The content of this Sub-Component ('Data Centers and Connectivity') follows the Project Description of the PAD and not Annex 2 of the PAD where 'Data Centers' and 'Network and Connectivity' are two separate Sub-Components.

[11] Administrative level between the lower Patwar circle and the higher Tehsil level. Changed during the AF to the Tehsil level.

- *Sub-Component 3.1: Service Delivery*: This was to finance the ARC operation costs for the first 18 months.
- *Sub-Component 3.2: Stakeholder Consultation, Public Awareness and Information:* This was to finance education and information campaigns designed to raise awareness of beneficiaries on LRMIS and make land record related processes more transparent.

1.5.5 Component 4: Project Management, Monitoring and Evaluation (estimated total cost US$ 5.4 million, of which Credit US$ 4.8 million). This component financed the Project Management Unit (PMU) and M&E activities. Four sub-components were supported:

- *Sub-Component 4.1: Project Management Unit*: This was to finance establishment of a Project Management Unit (PMU).
- *Sub-Component 4.2: Punjab Information Technology Board*: This was to finance staff and operational expenditures of the Punjab Information Technology Board (PITB), which was planned to manage the implementation, delivery and employment of the software.[12]
- *Sub-Component 4.3*: *District Project Monitoring Groups*: This was to finance a monitoring group of three people for each District.[13]
- *Sub-Component 4.4: Project Evaluation and Impact Assessment*: This was to finance user surveys.

1.6 Revised Components

1.6.1 The AF (09/11/2012) included a change of activities under Component 4 (Project Management, Monitoring and Evaluation). The responsibility for management of Component 2 was moved from the Punjab Information Technology Board (PITB) to the PMU and a quality assurance consulting firm was hired instead of establishing District Project Monitoring Groups. The scope of some components was affected by the increase of the geographical coverage from 18 to 36 Districts.

1.7 Other significant changes

1.7.1 A Board-approved AF in the amount of SDR 46.2 million (US$ 70.00 million equivalent - IDA-51510) was approved on 09/11/2012 to expand the project's coverage from 18 to 36 districts. Initially, the project planned to establish the ARCs at the Kanungoi level, a level below the Tehsil, even though the Task Team pointed out that all regional comparators were built on a Tehsil-level model and that the Kanungoi-level approach could introduce additional complexities. Given that the Government insisted on the Kanungoi-level, this approach was chosen, which involved high cost estimates and therefore limited coverage to only 18 districts. The AF changed this, as the Government agreed during the second year of implementation to establishing the ARCs at the higher Tehsil level, enabling the project to be implemented in all 36 districts and minimizing the risks related to implementing the project at the lower Kanungoi level. The AF was also needed to cover cost overruns based on an under-estimation of the number of landowners and moderately higher unit costs per data entry compared to the original estimate. The implementation period was extended for seven months from 11/30/2013 to 06/30/2014, allowing for a remaining total of

[12] This Sub-Component was removed during the AF and the responsibilities were shifted to the PMU.
[13] This Sub-Component was changed during the AF. Monitoring responsibilities were moved to the central PMU level.

22 months for implementation. The AF also changed the environmental category from C to B, triggering safeguards policy OP 4.01, Environmental Assessment (see Section 2.4).

1.7.2 The table below shows an overview of the timeline of all level two restructurings. All restructurings were approved by the Bank due to the good project performance. Please see section H of the data sheet for further details.

Restructuring Date	Original Closing Date	Revised Closing Date	Time extension
03/02/2012	03/31/2012	11/30/2013	20 months
04/28/2014	06/30/2014	12/31/2015	18 months
09/11/2015	12/31/2015	06/30/2016	6 months
06/30/2016	06/30/2016	12/31/2016	6 months
		TOTAL	***50 months***

1.7.3 In 2013 the PMU presented to the Bank its idea to move towards an advanced modern centralized software solution. The Task Team supported this transition and urged the PMU to carefully plan the transition. In 2015 a software company was hired to develop and maintain the new software, which was functional by March 2017 in two ARCs. The completion of the province wide roll-out by October 2017 will be financed by the PMU's successor organization, the Punjab Land Record Authority (PLRA).

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

2.1.1 **Soundness of the background analysis:** Two key reports were funded by the Bank during preparation. The reports prepared by International Land Systems (software company) and Land Equity (consultancy firm) in 2005 and 2006 shaped the design of the project: (i) Business Process Re-Engineering Study: Volume 1: Business Process Re-engineering; and (ii) Business Process Re-Engineering Study Volume 2: Information, Communications and Technology. These assessments identified the technologically most appropriate Information and Communications Technology (ICT) system for Punjab Province. In addition, a Social Assessment (SA) was conducted to determine the most appropriate cultural and social approach to computerizing the land administration system in Punjab. The studies and the SA resulted in a well-designed and continuous dissemination strategy, communicating how the new institutional and technological arrangements would reduce costs and increase transparency.

2.1.2 **Lessons from previous experiences:** Four pilots initiated by the BOR in Pakistan provided crucial lessons. A land records computerization pilot (1999-2003) conducted by BOR in Kasur District highlighted issues related to weaknesses of the developed software, data entry costs, time schedules and training needs. A similar pilot in Lahore District (2001) sought to computerize land records, validate data and develop GIS support systems. Lessons showed the importance of including the Patwaris in the overall change process, public education and management issues. Other pilots in Rahimyar Khan and Gujrat District (2005) continued to pilot the computerization of land records revealing lessons associated with the potential role of Public Private Partnerships (PPP), training, and the implications of transitioning from a manual to a digital system. In addition, relevant experiences of land projects were analyzed, focusing on examples from India and Thailand. Reports on the status of land records modernization efforts in Karnataka and other Indian states, commissioned by the World Bank were provided to the implementing agency. A number of project staff visited Karnataka State in India to learn about the computerization of

land records and land registration. The staff gained knowledge about structured procedures and responsibilities for data movement, data entry, verification, correction and validation. Lessons about land titling and registration service delivery were drawn from the World Bank's Land Titling Projects in Thailand.[14]

2.1.3 The rationale for the Bank's intervention is based on the Bank's Country Assistance Strategies (CAS) (FY03-06 and FY06-09), which were closely aligned to Government's poverty reduction strategy, prioritizing rural growth, improving government effectiveness, institutional accountability and transparency, and reducing corruption. The project, by supporting a decentralized land administration system would contribute to the poverty reduction strategy and the CASs.

2.1.4 **Assessment of project design**: Project objectives were realistic and achievable but in retrospect, the initial engagement period of 60 months was too short and the planned credit amount too small. The number of landowners was under-estimated, leading to aggregate extensions of the project totaling 50 months (see section 1.7) and an additional financing in the amount of US$ 70 million, with an additional extension of the project closing date by seven months. The PDO was formulated very broadly and expressed differently depending on the project document. However, the four components of the project were logically designed, and supported the PDO and the PDO Indicators. A stronger emphasis in the design on collaboration between the PMU and other stakeholders, such as banks and academia, could have benefitted the project. The original geographical focus on 18 districts at the Kanungoi level was too costly and complex. Instead, the establishment of the ARCs at the higher Tehsil level in 36 districts as reflected in the AF, was more rational and feasible. These two changes show the scalable nature of the project that allowed for adaptation of project design based on project experience. Stakeholder and beneficiary feedback was included in the original project design. Safeguard category C was assigned during the project design as the regional environment sector unit expected the project to have minimal or no adverse environmental impacts. The AF changed the safeguard category from C to B, based on the project activities related to renovations and constructions.

2.1.5 **Adequacy of government's commitment**: The GoPb (especially BOR and PITB) was committed during preparation and at the appraisal stage and worked closely and smoothly with the Bank team despite time constraints. The project became part of the permanent agenda of the Punjab District Coordination Officer Conference as well as of the BOR Full Board Meeting. The Chief Minister of the Province of Punjab supported the project throughout its lifetime and provided political support in the Province. The Government's commitment was for example evident in its request for the AF to extend the project's coverage to all 36 districts of Punjab Province. Also the continuous implementation over ten years shows the high commitment of the Government. Despite some initial delays in the project implementation, the Government ensured that the project delivered the expected results.

2.1.6 **Participatory processes**: Potential beneficiaries and stakeholders were adequately consulted. The SA undertaken during project preparation organized stakeholder consultations, focus group discussions and interviews in the project area (see PAD, Annex 11).[15] These consultations were necessary given socio-

[14] Thailand Land Titling Project 1-3 (P004733, P004780, and P004803)

[15] For the purposes of the SA, direct/primary stakeholders were: large, medium and small landowners; owners of urban property; landless farmers; peasants lacking ownership of title; tenants and leaseholders; female landowners; and, minorities and collective owners. Indirect/secondary stakeholders were: revenue and other government and administrative departments; real estate agents, banks and financial institutions; law professionals, NGOs, elected representatives and land developers.

cultural and political challenges in Punjab, including significant social and economic inequities, and the skewed power structure between larger landholders and smaller/vulnerable populations, including women. The role and power of the Patwari also represented an important challenge to the changes envisaged under a new system. Consultations informed public awareness campaigns and outreach to stakeholders during project implementation. Participatory processes were an integral part of the design. Feedback mechanisms, including SMS, questionnaires and phone calls were planned to ensure that beneficiaries could express their views about the project and have an influence on its implementation (see Sub-Component 3.2: Stakeholder Consultation, Public Awareness and Information). Patwaris were consulted between 2010 and 2012, but consultations during the project design phase were not well documented.

2.1.7 **Risks and mitigation**: Critical risks identified in the PAD were appropriate. Key risks, such as political commitment, resistance from stakeholders, excessive emphasis on computerization, and procurement planning were adequately described and generally realistically rated. Risks related to the digitization of land records (e.g. amount of records and time needed for data entry) were adequately assessed at the time of project design based on the available data and information at that time. In retrospect, the severity of the risks related to the digitization of land records changed over time due to an underestimation of the number of land records that were to be entered in the LRMIS. The risk mitigation measures were realistic and addressed in project components as specific activities. The overall risk rating ('substantial') was realistic.

2.2 Implementation

Factors affecting implementation:

2.2.1 **Continuous Government and Bank support enabled fast resolution of issues and guaranteed a successful project implementation.** The BOR and GoPb were an integral part of the project. Their representation in project steering committees and regular communication flows ensured political support to the project over the long implementation period. Political support enabled quick legal changes necessary for the establishment of ARCs as well as the adaptation of measures necessary to mitigate opposition faced by the Patwaris. The Bank's continuous support for ten years enabled key activities to be implemented and ensure the project's sustainability by supporting factors outside the original foreseen activities, such as the support to establishing the PLRA.

2.2.2 **The scalable nature of the project allowed for adaptation of project design and adequate responses to the change of scope**. Due to the project's design it was possible to change the project scope from the Kanungoi to the Tehsil level without any other major changes in the project design. The extension from 18 to 36 districts was also possible based on the flexible project design. The key activities remained the same despite these major changes, which were addressed through restructurings and an AF.

2.2.3 **Custom software development and management gaps led to delays.** Prior to 2011 implementation faced delays which caused a low disbursement rate. Delays were related to the complexity of developing a custom software locally and the change of the technical evaluation process by the Government of Punjab (GoPb). Further, the Borrower had, initially, limited internal capacity to supervise and evaluate the LRMIS software. Management gaps in the PMU contributed to implementation delays and led to a change of the Project Director in 2011. Once the software development delays were resolved

and the management changed, the construction of ARCs and the roll out of the LRMIS software started, resulting in increased disbursements in 2011 and 2012.

2.2.4 **The difficulty of estimating the total number of land records affected the project budget.** The costs for scanning and verifying land records were underestimated. The PMU used the number of landowners as the single denominator for the costs. Based on data from the district authorities, the estimated number of landowners was 25.37 million, resulting in a cost estimate of about PKR 1,74 billion (US$ 16.67 million). During the first phase of data entry the PMU realized that a significant difference exists between the number of landowners received from the district administration and the actual number of landowners entered by the project. The discrepancy was caused by the fact that the Patwaris counted a land owner only once, regardless the number of landholdings per landowner, while the software counts a landowner every time the name is related to a landholding. The PMU had to re-collect the data, which showed an 80 percent increase in the number of landowners compared to the initial estimate. Costs were furthermore increased due to (i) introduction of a 16 percent sales tax; (ii) a limited number of firms able to conduct the data entry as the paper-based land records were written in Urdu; (iii) inflation; and (iv) the increased scope of the project from 18 to 36 districts. The revised costs were about PKR 3.19 billion (US$ 30.46 million). The revised volume and cost of data entry were addressed by the AF in 2012.

2.2.5 **Patwaris resisted the system change but their inclusion in the project reduced their opposition.** The PMU faced constant resistance from Patwaris during the implementation phase, despite broad consultations in 2011 and 2012. To include the Patwaris in the change process, they were trained to conduct specific tasks such as provision of land records, quality assurance of the digital data, and the preparation of supporting documents for correction of errors. They were paid on average PKR 5,000 (US$ 48) per verified and corrected mauza. However, resistance from the Patwaris continued and manifested itself in strikes and refusal to work in 2014 and 2015 but negotiations with Punjab's Cabinet Committee reached an agreement to provide capacity building, construction of revenue field offices, and the provision of monthly transport allowances, means of transport and stationary allowances to the Patwaris to motivate their commitment to the new system.

2.2.6 **Challenges affected the achievement of milestones under the last restructuring.** The project faced some difficulties under the last project restructuring which extended the closing date from June 30, 2016 to December 31, 2016. It was planned to renovate eight additional ARCs, procure additional IT equipment and security systems, and renovate the new PLRA headquarters. However, the PMU was not able to identify adequate ARC locations due to delays of district authorities and faced collusions related to the procurement of IT equipment, obliging it to cancel the bidding processes resulting in only three additional ARCs and the PLRA building being renovated. The PDO and overall outcomes of the project were not affected by these shortcomings of the last extension as the planned activities did not affect the achievement of PDO or intermediate outcome indicators. The PLRA has worked on the described issues during the grace period and plans to finalize the outstanding activities in 2017.

2.2.7 **Mid-term Review:** The Mid-term Review (MTR) of September 2013 found good progress: 70 ARCs were operational with 17,165 mauzas[16] entered in the database. Feedback showed customer

[16] Mauzas are revenue estates. A mauza is considered operational when all data of a mauza is scanned, entered in the database, errors corrected and the information verified.

satisfaction at 99 percent[17] and land records being provided to customers in under 30 minutes. The key bottlenecks described during the MTR were delays in data verification and the subsequent movement of mauzas into operational status. Monitoring and reporting structures at different administrative levels were put in place to better control the data verification process. The main recommendations of the MTR were: operationalization of ARCs, data verification, operationalization of mauzas, and preparation of a bid document for software maintenance. With regard to Financial Management, the MTR recommended hiring an Assistant Accounts Officer, resolving outstanding audit observations, and submitting certain financial statements. Client follow-up of the MTR Action Plan was mostly timely and comprehensive.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

2.3.1 **M&E system design.** The PDO (to improve land record service delivery in Punjab) was formulated broadly and expressed differently depending on the project document. Besides the PDO, the PAD also defined expected outcomes for the project.[18] These were reflected in the RF, except for the elements of lower transaction costs and increased transparency. With regard to indicators, the ones presented in the RF of the PAD are considered in this ICR instead of those from the RF attached to the Financing Agreement.[19] The indicators from the PAD capture the sense of the indicators in the Financing Agreement but are more nuanced and were tracked in the Implementation Supervision and Results Reports (ISR). The PDO indicators reflected key elements of improved land record service delivery (time for issuing fards, client satisfaction). It can be argued that the indicator on tenure security went beyond the project's PDO and attributable impacts. The intermediate outcome indicators reflected the activities under each project component. The only sub-component, which was not covered by an indicator, was 1.1 (Capacity enhancement). While most indicators were formulated clearly, PDO indicator 3 (Increased level of tenure security of land-right holders) was not properly defined and its baseline, target and measurement remained unclear throughout project implementation.[20] Only one indicator was gender specific: indicator 6 'Minimum 80% of land owners are aware of new records system after service centers [ARCs] open, including 80% women'. To measure achievement of the PDO, the PAD mentions different tools that were to be used: user surveys, audits of the automated data base, baseline surveys, District Project Monitoring Groups, a mid-term review study, and end-of-project studies.

2.3.2 **M&E implementation.** The PMU's internal M&E system was initially based on District Project Monitoring Groups in each project district. At the time of the AF in 2012 this system had, however, already been proven as inefficient. Instead, an internal M&E department was established within the PMU and a consulting firm was hired in 2012 for monitoring and quality assurance. The firm implemented the M&E

[17] Client survey with 3,598 respondents

[18] (i) Increased access to land records at lower transaction cost for the beneficiary, through a client-responsive service; (ii) Increased level of tenure security of land-right holders; (iii) Increased transparency in transactions in land (added through the AF)

[19] The PDO indicators in the Results Framework of the PAD and the FA differ. The PDO indicators in the FA are (i) Improved land record services and (ii) Increased level of tenure security of land-rights holders. The PDO indicators in the PAD are (i) Issuance of records of rights (fards) of less than 10 pages within 30 minutes; (ii) Client satisfaction with land records services at Client Service Center [ARC] level of 95%; (iii) Increased level of tenure security of land-rights holders.

[20] The PAD mentions that this indicator would help to assess whether the program was contributing to reducing the number of land disputes; an increased access to land rights related information and land based credit; and positive incidence in the level of investments. The Social Assessment proposed to measure the indicator from two angles: a) the perception of tenure security in the minds of landholders and b) the same perception in the minds of external stakeholders such as financiers and investors. A clear decision on how to assess the indicator was not documented. It should be noted that the measurement of tenure security is generally difficult and often relies on proxies such as perception.

framework by developing an online monitoring portal and establishing a call center. The monitoring team included, inter alia, 57 Field Consultants who visited the ARCs up to twice a week as well as making random, surprise visits. The key inputs, outputs and outcomes monitored were related to the status of land records scanning and data entry, ARC efficiency, client satisfaction[21], alerts generated by the LRMIS software, human resources and inventories of equipment and office supplies of ARCs. The consulting firm provided a series of reports[22], ensuring the continuous monitoring of the project progress. However, due to outsourcing of these professionals, no internal M&E capacities were built in the PMU, resulting in difficulties in reporting on the agreed-upon RF. While the PAD called for a series of social assessments or surveys to be financed by the IDA Credit to permit baseline measurement, mid-term review and end-of-project data, it appears no separate study was done for the MTR, just a comprehensive Aide Memoire in 2013. A baseline survey on BOR services was carried out in 2009 but the collected data was not aligned to the indicators in the RF and women were not interviewed. A detailed 'End of Project Survey' was carried out in 2016[23] but comparability with the baseline was limited given the shortcomings of the baseline study. Data reports generated by the new software were available and provided important insights into the performance of the ARCs, such as the number of entered fards and transfers and time required to conduct fards and transfers. Client feedback mechanisms, including a call center, also provided important insights from 2012, but key data on tenure security and awareness of the new system were not captured and were only reported on in the 'End of Project Survey' (2016). All described data was reflected in the PMU's Completion Report (2017), which provided a clear and candid self-evaluation of the project.

2.3.3 **M&E Utilization.** Collected M&E data was used during project implementation to boost the rationale for and quantify adjustments. Call Center numbers show that 85 percent called for information, 14 percent for complaints and the remainder to provide suggestions. Based on the calls and other client surveys, procedures to change the name on a land record were reduced from four to two, separate counters and waiting areas for women and senior citizens were introduced in ARCs, and measures were taken against at least ten staff members who were accused of corruption. The project's monitoring of customer satisfaction also led to the development of a specialized training for ARC staff to enhance the customer experience. Collected data was also used for the end-of-project evaluation and the PMU's Completion Report, and provided important data for the preparation of the Bank's ICR. Data that was not properly collected (e.g. on tenure security and public awareness) could have helped the PMU to improve respective activities.

2.4 Safeguard and Fiduciary Compliance

2.4.1 **Safeguards**. The original project was classified for safeguards purposes as Category C. This classification was the result of an environmental screening based on consultations with the regional environment sector unit. In accordance with OP 4.01, the screening examined the type, location, sensitivity, and location of the proposed project as well as the nature and magnitude of its potential impacts. The project was expected to have minimal or no adverse environmental impacts. The AF however changed the safeguard category from C to B, triggering OP/BP 4.01 Environmental Assessment, due to the anticipated

[21] Via SMS, toll free call in line, outbound calls, feedback forms

[22] Progress reports (scanning, data entry, verification), ARC monitoring reports, call center reports, hardware/software issue reports, connectivity issue reports, civil works issue reports, data entry monitoring matrix, consolidated follow-up reports, and quality assurance status reports

[23] See Annex 5 for the used methodology and an executive summary

construction and renovation of ARC buildings. As a result, an Environmental Management Plan (EMP) was prepared in May 2012.

2.4.2 Planned environmental monitoring of 79 newly-built ARCs was not conducted by the PMU and monitoring records were initially not prepared. In 2013 the Bank conducted refresher workshops about the documentation requirements for EMP monitoring but safeguards supervision was insufficient afterwards and was not documented in mission documents. Under the project, 53 ARCs were renovated but without implementation of the mandatory EMP as there was no budget provision for its implementation and due to the assumption of the PMU that: (i) the rehabilitation/renovation works carried out by respective districts/local governments did not require EMP implementation; and (ii) the environmental impacts of the works were minor. The Task Team realized these shortcomings in 2016 and conducted a post-review of the 79 newly constructed ARCs, which revealed that most construction activities were constructed in line with local laws and therefore had not had any negative environmental impacts. In August 2016 an Environmental Coordinator was assigned to oversee EMP implementation for the planned renovation activities of the PLRA office building and the eight planned additional ARC buildings.

2.4.3 **Financial Management:** The Bank conducted 17 bi-annual Financial Management (FM) supervision missions. The main identified FM issues were delays in staffing the FM department and late replies to FM observations raised in project audits. Overall, the FM performance was rated Satisfactory, throughout the project period, except for 2011, when it was down-graded due to vacant key staff positions, leading to a temporary stop of the use of the Government's financial management information system (MIS). New staff was hired in early 2012 and the PMU continued to use the Government's MIS. The Bank provided advice on FM during supervision missions, supplemented with various trainings including an FM staff orientation in 2012, and a project closure training in 2015. Moreover, several refresher sessions were held by the Bank during supervision missions, contributing to the PMU's high capacity level. At closing, the newly established PLRA was in the process of developing financial management rules as per the revised structure.

2.4.4 **Project cost and financing:** The initial estimates of project costs differed significantly from the final costs and disbursements. This was mainly based on an under-estimation of the number of land records to be entered per district at the time of appraisal and moderately higher unit costs per data entry compared to the original estimate. The additional costs, exceeding the original funding amount, were covered by the AF in 2012. Total project cost was US$ 114.7 million.[24] The Bank's share of total costs was US$ 106.5 million and the Borrower contributed US$ 8.2 million. See Annex 1 for further details.

2.4.5 **Audit:** In total, nine annual audits were conducted by the Office of the Director General Audit Punjab Lahore and the Auditor General of Pakistan Islamabad. The Bank received annual audited financial statements within six months of the respective financial year and quarterly Interim Unaudited Financial Reports within 45 days after each quarter's end. At the time of project closure, some 25 audit observations were still outstanding but were all settled in April 2017. In general, the audits were acceptable to the Bank and unmodified audit opinions were received that provided reasonable assurance that the financial statements presented cash receipts and payments in a fair manner and that all expenditures had been made against the intended objectives as outlined in the Financing Agreements. Notwithstanding delays, the

[24] Historical disbursed

PMU's FM department worked cooperatively with the Bank FM Specialists and resolved outstanding issues.

2.4.6 **Procurement**. Procurement activities under the project were satisfactory overall. Procurement performance was rated satisfactory at closing and for most of the project period. Key issues identified through supervision missions were procurement delays associated with software, which caused a chain of delays in other planned procurement events. However, once these delays were resolved, procurement processes were conducted to the satisfaction of the Bank. A Procurement Committee was established to advertise calls for bids, and to open and evaluate tenders. During project launching and implementation, procurement capacity was adequate but in the project's last two years, the PMU's Procurement Specialist position was vacant and the responsibility was handled by the procurement officer in a satisfactory manner. The position of Procurement Specialist was advertised five times but a suitable candidate could not be identified.

2.4.7 The procurement of goods was split into IT equipment and other types (e.g., furniture, generator sets, A/Cs, vehicles). A healthy degree of competition was evident for bids, averaging four bidders on each occasion. Single bidding only occurred in highly complex projects such as the establishment of the Data Center. Contract management of the project was satisfactory. However, contract records were kept manually, resulting in concerns about the safety of records, while the IT department managed its procurement records electronically.

2.4.8 **Governance:** Several complaints were received regarding procurement, however they were satisfactorily resolved through the PMU's complaint redress committee. Complaints in 2015 about bid specifications for the establishment of the data center were satisfactorily responded to by the PMU and the Bank. Three further complaints were received by the Bank, mentioning allegations of corruption. The first letter (dated 08/17/2016) expressed concerns over manipulation of a tender for IT equipment. The second letter (dated 12/06/2016) complained about corruption within the ARCs but no evidence was presented by the complainant. The third letter (dated 01/09/2017) alleged that the construction of the PLRA building was steered towards a few contractors. The Bank team was copied on all the complaint-related correspondence with the complainants. All letters were forwarded to the Integrity Vice-Presidency (INT) but due to the lack of evidence and anonymity of the letters, the INT recommended that no further action be taken.

2.4.9 The last extension of six months (from July 2016 to December 2016) was requested by the PMU explicitly to renovate eight additional ARCs, procure additional IT equipment and security systems, and renovate the new PLRA headquarters. However, the Bank was advised by GoPb in late 2016 that due to the unexpected delay in the availability of appropriate buildings from the district administrations, five of these centers were unlikely to be completed by the closing date. In the meantime however, GoPb also decided not to award the contract and cancelled the bidding process citing allegations of collusion and GoPb's acute concern about the implications of impropriety. It should be noted however, that due to the Bank's discussion with government representatives during the Land Conference in Washington DC in March 2017, which inter alia, stressed the importance of renovating the ARCs buildings given their centrality in justifying the extension granted by the Bank to the project, GoPb undertook to complete the remaining renovations using own funds. By the closing date, three ARCs buildings had actually been completed using project resources, and GoPb continued to implement the remaining five buildings using their own funds. During finalization of the ICR, GoPb had procured the equipment, appointed needed

human resources and conducted networking activities for all eight centers. The contract for the renovation work was signed and works were physically underway on the remaining five sites, with full completion targeted for end-June 2017.[25]

2.5 Post-completion Operation/Next Phase

2.5.1 The GoPb has approved the Punjab Land Record Authority (PLRA) as the successor of the PMU, which is a solid foundation for the sustainability of the project's achievements and activities. The GoPb passed a law, legally establishing the new PLRA.[26] The PLRA's functions include formulation of strategy, policies and plans for the management of land records. Maintenance and sustainable use of the software are described in detail in a transformation study[27] and a three-year contract for maintaining the new, centralized software is already in place. An existing building for the PLRA was identified and renovated under the final extension (2016) to ensure that the PMU's activities could be continued in the new building after project closure. The PMU moved into the new building in January 2017 and transferred all assets, liabilities and contracts to the PLRA. Key staff from the PMU has been absorbed by the PLRA, which ensured a complete knowledge transfer. The GoPb also assigned an initial budget of PKR 1.4 billion (US$ 13.3 million) for FY 2016-17 to cover the operational costs of ARCs. A review of the fees to be paid for land related services might be necessary to ensure financial sustainability in the long term.

2.5.2 The PLRA maintains the PMU's M&E system and client surveys to monitor the satisfaction of clients. Through the new LRMIS software, the PLRA will continue to be able to monitor user statistics, such as the number of fards issued monthly or conducted transactions.

2.5.3 The BOR expressed its intention to request the World Bank's support to execute a second phase of the LRMIS project, which would update and improve systems in rural areas, provide GIS data for the whole Province and fully develop the land records system in urban areas. Key issues of urban land records are based on several key challenges: (i) the cadastral information is either not available or in very fragile state as no central registry for urban land exists; (ii) settlement surveys and maps are not geo-referenced; (iii) records are maintained by a number of agencies working in isolation; and (iv) processes for urban land record management are cumbersome. The created ICT infrastructure under the project (e.g. data center) were built in a way that they can serve the needs of such potential future projects. The Punjab Jobs and Competitiveness Program-for-Results Operation (P155963) complements these efforts as one of its planned key business environment reforms is to simplify property registration.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

3.1.1 **Relevance of objectives is rated substantial:** The original PDO continues to have high priority. Land governance, which includes land record management and related service delivery, contributes to at

[25] Email from the Punjab Land Records Authority dated June 8, 2017.
[26] Punjab Land Records Authority Ordinance 2016 (XVIII of 2016)
[27] Ernst & Young (2016): Transformation of PMU – LRMIS

least four out of eight pillars of Pakistan's Vision 2025[28], namely: empowering women, inclusive growth, modernization of the public sector, and food security. Vision 2025 specifically highlights land governance as a key factor for an enabling environment for the private sector, as well as for urban development. The PDO is also aligned with achievement of the Punjab Growth Strategy 2018[29], specifically with regard to economic growth and agricultural productivity. The strategy proposes a modern land records system, especially in urban areas, to improve land markets and increase investments in commercial and residential construction. The PDO is consistent with at least two pillars of the Bank's current Country Partnership Strategy (CPS) FY15-19: private sector development is facilitated through a strengthened business environment based on accessible land records, and the acceleration of improvements of public services. Further, the PDO is fully relevant to the third pillar, 'Reaching out to the under-served, neglected, and poor'. The importance of land governance and therefore of land record management and related service delivery remains of high priority, with a fairly pronounced shift of emphasis from rural to urban areas.

3.1.2 **Relevance of design is rated substantial:** The project's design was informed by local pilots in Pakistan and international good practices from India and Thailand. Project objectives were generally achievable and the RF included required steps and logical indicators to achieve the PDO. Fundamental steps such as legal reforms and the development of business models as well as social and technical activities required to achieve the PDO were included in the project design. However, the initial engagement period was too short and the original estimated costs too low, given that the required time and costs were more than twice as high as initially estimated. An under-estimation of the number of landowners and the costs of entering their land records resulted in several further restructurings and an aggregate extension of 50 months. These issues show that the estimation of the number of land records to be entered was more difficult than anticipated but also that the project's programmatic approach and scalable design were able to respond to these issues.

3.1.3 **Relevance of implementation is rated substantial:** Implementation was flexible depending on circumstances. Issues with regard to software procurement, management and under-estimation of costs led to initial implementation delays, which were addressed through the AF in 2012. Issues faced after the AF, such as resistance from the Patwaris, were addressed in creative, pragmatic ways. Four level two restructurings and one AF were implemented to address the increased geographic scope and to resolve a series of issues. Implementation was flexible and considered recommendations from beneficiaries based on ARC customer feedback mechanisms, showcasing a participatory implementation approach. The BOR's wish to develop a centralized software version was supported by the Bank from 2013 on and the required data center was established in a way that it can serve future purposes (such as storing GIS data or urban land record data). Procurement related issues were addressed transparently by the PMU.

3.1.4 **Overall relevance is rated substantial**. The relevance of project objectives and implementation is rated substantial and the relevance of design substantial. Agriculture is still at the heart of the rural economy in Punjab Province, and thus land access, rights and administration of those rights are still critically important. The PDO is therefore still relevant, which is also reflected in current Bank and Government strategies. The implementation was handled in a flexible way, outweighing some of the project design challenges, which were addressed and did not affect the achievement of the PDO.

[28] GoP (2014): Pakistan 2025. One Nation – One Vision.
[29] GoP (2015): Punjab Growth Strategy 2018. Accelerating Economic Growth and Improving Social Outcomes

3.2 Achievement of Project Development Objectives

3.2.1 **The rating for achievement of the PDO is substantial**. The PDO per the Financing Agreement was to improve land record service delivery in Punjab, which was achieved by improving client satisfaction with land record services, reducing time to obtain land related services, increasing tenure security, decreasing costs and time for acquiring land record services, increasing transparency of land record services, increasing accessibility of land record services, and facilitating land transactions. Out of the three PDO Indicators from the PAD, two were exceeded and one achieved. Given the broad scope of the PDO, the following elements (which encapsulate the three PDO Indicators) were considered to capture its meaning: (i) client satisfaction with ARCs; (ii) time required to obtain land related services; (iii) tenure security; (iv) costs for acquiring land related services (including time); (v) transparency of land record services; (vi) accessibility of land record services; and (vii) land transactions. In all of these elements the project made successful contributions to improving the status quo. Only Intermediate Outcome Indicator 6 (*Minimum 80% of land owners are aware of new records system after service centers [ARCs] open, including women*) was partially achieved. Some 57% of respondents (45.6% women) claimed to have knowledge of the existence of the ARC prior to the need for acquiring current service. However, this data was only collected among ARC clients but left out the general population, including those who had not yet visited an ARC. The PMU proposes for the future a more inclusive communication approach to reach more women (see Annex 7).

3.2.2 *Client satisfaction with ARCs has increased:* The 144 newly-established ARCs cover all Tehsils in Punjab Province. Up to December 2016, 2,074 ARC staff were trained in service delivery and contributed among other factors to this success. A telephonic survey[30] shows that the satisfaction of ARC clients with LRMIS between 2011 and 2016 was on average 97.85 percent compared to the 95 percent targeted by the PDO Indicator (Client satisfaction with land records services at Client Service Center [ARC] level of 95 percent).[31]

3.2.3 *Time required to obtain land-related services has decreased:* The PMU's End of Project Survey[32] shows that the numbers of required visits have decreased compared to the old Patwari system, resulting in an overall decrease of time required to obtain land related services. The average overall time spent to visit an ARC is 165 minutes (46 minutes travelling time each way, 41 minutes in the queue, 17 minutes at the counter, 15 minutes at a bank). The average time at the counter for the issuance of a fard is now about 15 minutes (compared to the PDO Indicator target "*Issuance of records of rights (fards) of less than 10 pages, within 30 minutes*") and for a transaction, 16.75 minutes (APEX 2016). This is a decrease of the required time to obtain a service as compared to the baseline study in which 78% of 1,400 respondents mentioned that it takes 1□7 days to obtain a fard.

3.2.4 *Tenure security is expected to be increased by the new system:* Some 60% of respondents expect the new system to improve tenure security; 59% think that the new system will reduce land disputes; 55% think that the new system will increase tenure security of vulnerable groups and 81% think that women's tenure security will improve. Land-related disputes are expected by 59% of respondents to be reduced

[30] Average value based on feedback from 37,236 ARC clients from 04/2011-08/2016. The respondents were randomly selected and contacted via telephone.
[31] The PMU also conducted an 'end of project study' which only shows a satisfaction rate of 92%. This study however used a smaller sample (2,304 respondents).
[32] APEX Consulting (2016): End of Project Survey. Land Records Management and Information Systems (LRMIS). Final Report.

significantly or somewhat (2,304 respondents, APEX 2016). The majority of respondents in 65 Focus Group Discussions mentioned that the new system can have a positive impact in securing the land rights of women and other vulnerable sections of society (APEX 2016). Around five million errors on manual land records made under the old system were corrected by LRMIS, strengthening tenure security. The digital land records are also now accepted in formal land dispute resolution processes, contributing to increased tenure security. Based on this data the PDO Indicator "*Increased level of tenure security of land-right holders*" is considered to be substantially achieved, despite the lack of a baseline or specific target.

3.2.5 *Costs for acquiring land-related services have decreased:* While the overall expenses of obtaining services from the Patwaris is estimated to be PKR 6,241 (US$ 59), the costs for obtaining services from the ARCs is around PKR 2,550 (US$ 24) (APEX 2016). In particular, the costs of paying bribes to and the transportation costs of Patwaris, have decreased. The majority of respondents in 65 Focus Group Discussions mentioned that dealing with the Patwari involved huge bribes, but that these costs no longer exist under the new system. Exceptions were mentioned for a few Districts on an anecdotal basis.

3.2.6 *Transparency of land record services has increased:* Clients of the ARCs can access the information now at any given time during the opening hours of the ARCs. Further, a website was created, enabling landowners to access data about their land records online, making them more transparent. Overall 3,487,922 page views (997,056 individual sessions) were launched by 406,733 users by February 2017. The parcel data of three districts is available at the website with 1,729,776 parcels with 90% matching LRMIS records. Also, the fees due for the provided services are now clearly-defined, making the payment process more transparent. Overall, 61.5% of respondents from 65 Focus Group Discussions (APEX 2016) think that the new system is more transparent than before.

3.2.7 *Accessibility of land record services has increased:* Each District is covered by at least two ARCs and on average by four ARCs. The ARCs use a queue system which does not allow the ARC Officer to prefer certain customers over others, making it accessible to everyone, including the poor and vulnerable. Counters for women clients were created in 144 ARCs, improving women's access to land record services compared to the situation under the Patwari system. The project reduced the time and the costs required to obtain land-related services in the ARCs, contributing to improved access to the system in rural areas.

3.2.8 *Land transactions are stable:* The numbers of land transactions are currently at a high level. It is unclear at this point if it is the new system which has increased the number of land transactions and/or led to more efficient land markets, so attribution in this case is not yet clear/proven. However, the new system allows for real time monitoring of land transactions. The number of transactions of land records in 2016 was on average, 51,341 per month. A clear trend, indicating increased land transactions as a direct result of the project, has not yet been observed as baseline data on the number of land transactions before the implementation of LRMIS is not clear but the data indicates that the 2016 average is similar to/within the range of, previous average transactions per month.[33]

[33] Historical data on land transactions from 2004 to 2009 exist but combine transactions of rural and urban land records, while the project only focused on rural land records. The PMU assumes that the historical data entails 60% urban land records. With this assumption the monthly average for rural land transactions from 2004-2009 ranges from 48,180 to 53,942. The monthly average of transactions in 2016 falls within this range wherefore no trend of a decrease or increase in land transactions as a result of the project can yet be observed.

3.2.9 **Other project achievements**. A GIS pilot helped to preserve Patwari maps in a digital format and link the spatial data with land records. Overall, more than 1.7 million parcels in three pilot Districts were digitized and geo-referenced.

3.2.10 The PMU successfully piloted the integration of the Registry of Deeds (ROD) system application in the LRMIS software. Clients in peri-urban areas who wanted to conduct a transaction needed to visit an ARC to obtain a fard and then apply for the transaction at a different deed Sub-Registrar Office. The PMU established a separate LRMIS-ROD workplace in each of the 45 district Sub-Registrar offices to resolve this issue, i.e. created a one-stop shop.

3.2.11 The decentralized LRMIS software posed challenges to upgrade the software simultaneously in all ARCs and provide adequate professional support due to frequent changes and fixes in the software. Therefore, the PMU took the decision to build a centralized software and migrate all distributed ARCs to it. The new software is being functional in two ARCs and is expected to be rolled out province wide by October 2017.

3.2.12 The GoPb has approved the Punjab Land Record Authority (PLRA) as the successor of the PMU, which is a solid foundation for the sustainability of the project's achievements and activities. The establishment of the PLRA was not foreseen under the original financing or the AF. This new authority has taken over all project related activities and responsibilities in January 2017 and ensures the maintenance of the established system.

3.2.13 **Beneficiaries**: Overall, approximately 20 million rural landholders in Punjab Province, whose land records are now digitized, benefitted from the project. Among this direct/primary beneficiary group are the rural small holders, which are considered as one of the most vulnerable groups in the Province. Women, especially, benefitted from the new system which enables them to access land records and inheritance transactions which was not possible under the Patwaris. Over 267,730 women have used the services of the ARCs. Among the indirect/secondary beneficiaries, local government at the Tehsil level in all 36 Districts benefitted from the establishment of 144 ARCs and capacity building of ARC staff. The Central Government, especially the BOR, has benefitted from increased access to information and more transparent revenue generation based on the digital land record system. The Government also benefits from the digitally available data for planning purposes and decision-making processes. Capacities at the central level were also developed by the project, especially within the PMU. Other government authorities, such as the Urban Sector Policy & Management Unit, have benefitted from the GIS pilot.

3.3 Efficiency (rated Substantial)

3.3.1 **Methodology**: Following the methodology used in the AF, a cost-benefit analysis was conducted after project closure for the full project to assess its economic viability over a long-term time horizon at the applicable social discount rate. To the extent possible, and within the limits of data availability, Net Present Value (NPV) and Economic Internal Rate of Return (EIRR) for the full project were calculated by quantifying the primary economic benefit over a long-term time horizon and comparing it with the capital and incremental operation and maintenance costs attributable to the project (at economic prices) to determine the net economic flows. The ICR analysis assumes total duration of 21 years, from 2007-08 to 2027. A sensitivity analysis was carried out to determine the impact of significant changes in project costs and benefits. Among the expected economic project benefits are an increase in land value, reduced

transaction costs, and revenue generation. Increased fees might be necessary to cover the operating costs of the system. See Annex 3 for detailed assumptions and discussion.

3.3.2 **Results**: Based on the assumptions outlined above, the project was estimated to yield large positive net benefits and economic rates of return, showing that it provides high value for money. The project is estimated to have a positive NPV of PKR 16.25 billion (US$ 155 million at current exchange rate), an EIRR of 66% and a benefit-to-cost ratio (in present value terms) of 2.1. While the economic appraisal done in the AF Project Paper was based on different assumptions and hence it is not a like-to-like comparison, the ICR appraisal compares favorably with the results in the AF appraisal, which were: NPV of PKR 13.8 billion (US$ 146 million at AF (2012) exchange rate) and an EIRR of 59%. The benefit-to-cost ratio (in present value terms) was estimated to be higher at the AF stage, at 3.79 due to the substantially lower estimated costs over the project's lifetime– especially recurrent operating costs– and a shorter time horizon. The results of the sensitivity analysis show that in the worst case scenario with 20% reduction in benefits and 20% increase in costs, the NPV would be PKR 6.93 billion (US$ 66 million), with an EIRR of 46% and a benefit-to-cost ratio of 46%.

3.3.3 **Administrative efficiency**. Procurement processes were overall effective and conducted to the satisfaction of the Bank, despite initial gaps in the management that led to implementation and procurement delays, which were resolved over time. Financial management was overall effective as well, facing only minor issues due to vacant key staff positions for a limited time period. Project management costs were about US$ 5.9 million, which are considered to be adequate given the long implementation period and considering that all M&E activities were covered by these costs. Overall project management is considered relatively efficient. Initial delays were caused by slow management procedures, which improved rapidly with a new management team during the project's lifetime.

3.4 Justification of Overall Outcome Rating

Rating: Satisfactory

3.4.1 Overall, the project's outcome rating is considered satisfactory as relevance, efficacy and efficiency are all assessed as substantial.

- Relevance: The development rationale for the project is Substantial as it remained highly relevant throughout implementation and continues to be relevant as proven by national and provincial strategies (PRSP, Vision 2025, and Vision 2018), as well as the Bank's CPS. The relevance of design was substantial, as pilots were taken into account and the project design showed a realistic RF with logical components and indicators. Relevance of implementation is substantial given the solution oriented approach towards challenges. The overall rating of relevance is Substantial.
- Efficacy**:** Efficacy is rated Substantial. The PDO was substantially achieved, based on impressive achievements of all PDO Indicators, the Intermediate Outcome Indicators and other supporting data. The land records system managed by the Patwari in a non-transparent manner, was abandoned and replaced by the new digital system, accessible to all stakeholders.
- Efficiency: Efficiency is rated Substantial. Assuming a project period from 2007-08 to 2027-28 and a discount rate of 10 percent, the NPV is estimated at PKR 16.25 billion (US$ 155 million at current exchange rate), an EIRR of 66% and a benefit-to-cost ratio (in present value terms) of 2.1. Despite these positive results, some delays and the overall extension of the project by 50 months shows that managerial efficiency had some gaps. The extensions were, however, necessary to

address unforeseen challenges and to achieve the PDO to high standards of quality and functionality.

3.5 Overarching Themes, Other Outcomes and Impacts
(a) Poverty Impacts, Gender Aspects, and Social Development

3.5.1 **Poverty Impacts.** The objective of higher tenure security as envisaged under this project is related to long-term poverty reduction impacts. Given that the ARCs have only been operational for a few years, it is too early at this point to evaluate poverty impacts. In the long term, studies could asses how land tenure security has had an impact on: (i) incomes based on increased agricultural productivity; (ii) incomes from land rental and sale; and (iii) increased access to credit. However, it should be noted that these expected economic impacts are not only based on improved tenure security but also on additional measures, such as improved access to agricultural inputs and financial capacity building.

3.5.2 **Gender Aspects.** As the baseline survey for the project did not include any interviews with female landowners, it is difficult to assess the positive effect of the new system on female landholders. However, the End of Project Survey indicates that the hindrance-free access to ARCs and increased reliability of land records has both facilitated women's access to land-related services and ensured that their legal rights are protected. Some 55 percent of respondents felt that the new system would help in protecting the rights of women and other vulnerable groups. Land can no longer be transferred without the presence of female record holders in the ARCs when their name is on the land record. Some 89 percent of total respondents, and 94 percent of female respondents, did not disapprove of the mandatory requirement for women to appear in person at the ARCs. Most importantly, 66 percent of 506 female respondents felt that the new system is more secure than the old Patwari system; 53 percent felt that the new system would have some impact on securing the tenure rights of women and other vulnerable groups; and, 86 percent felt that the new service ensures that the inheritance and tenure rights of women are protected.

3.5.3 The project adopted an approach of gender mainstreaming in all its activities by: (i) providing equal opportunities to women in project-related employment and the development of a gender sensitive human resources policy; (ii) including 144 separate counters at ARCs for female staff and customers, as well as dedicated waiting areas and restrooms for women; (iii) training of staff in gender sensitization, awareness-raising regarding the regulatory framework for protection of women in the ARCs workplace, and; (iv) developing a Code of Conduct to guide staff regarding harassment issues in the ARCs workplace.

3.5.4 **Social Development:** The results of the End of Project Survey highlight the positive effect of the new computerized system on users, including those belonging to low income quintiles (such as small landholders). In general, there is little difference in responses across income groups and the overall level of satisfaction with the services being provided by the ARCs and the preference for the new system over the Patwari system, remains high across all income quintiles. A socioeconomic profile of the 13 percent of service users who preferred the Patwari system over the computerized service highlights that a greater proportion of respondents with larger land holdings were not satisfied with the LRMIS program as compared to the old Patwari system. This preference could probably be attributed to the influence of large landowners over the Patwari which enabled them to have land record services delivered at their doorstep.

(b) Institutional Change/Strengthening

3.5.5 The major institutional change induced by the project was to shift the Patwaris' responsibility for land records to the newly-established ARCs. This implied a power shift that was supported by changes in the Punjab Land Revenue Act (1967) and the Punjab Land Revenue Rules (1968). Sections of the act and the rules were amended to simplify and define processes of issuing and transferring digital land records, including specific forms to apply for changing or transferring land records. A Punjab Land Records Manual was developed as well. Based on the new legal system in place, the land record responsibilities of approximately 8,000 Patwaris were removed.

3.5.6 Some 2,074 ARC staff were trained during standard nine-week training courses (seven-weeks of training courses and two weeks of on-the-job training) at the PMU. Two fully-equipped training halls were established to guarantee a professional learning environment. A refresher course (two days) was conducted as well at the District level and ARC Centers. The standard training focused mainly on legislation, the revenue system, communication, ARC business procedures, LRMIS software and soft skills. PMU staff were trained as well, mainly through a Soft Skills Training Program.

3.5.7 During the lifetime of the project, the GoPb decided to transfer the PMU and its project activities to the newly created PLRA, which was officially launched in December 2016. The Authority is legally established, technically equipped, staffed and provided with a budget.

(c) Other Unintended Outcomes and Impacts (positive or negative)

3.5.8 The following outcomes were not foreseen/planned at appraisal:

- The creation of the PLRA is contributing to the sustainability of the project's activities. The GoPb passed a law to establish the new PLRA legally. The GoPb has transferred the project and its activities to the PLRA, which is adequately-funded and staffed. The key staff from the PMU were transferred to the new PLRA, ensuring that institutional memory is preserved and the PMU's activities continue in a sustainable way.
- The provision of agriculture e-loan passbooks in ARCs was enabled. E-loan passbooks contain land-related information and are a prerequisite to obtain a loan from a bank, using land as collateral. Previously, e-loan passbooks were only issued by post offices. The addition of this service in the ARCs has the potential to increase loan disbursements to farmers.
- PITB is responsible for the e-facilitation centers, which function as one-stop-shops for services, such as obtaining driving licenses, passport issuance and other. In two of the e-facilitation centers a counter for the issuance of fards was established during the project implementation time frame. The current objective of the PLRA is to establish nine fard issuance counters by June 2017. This initiative was not foreseen in the original project design.
- LRMIS has become a role model in Pakistan. The Supreme Court of Pakistan has directed all Provinces of Pakistan to complete the digitization of land records by citing LRMIS as a positive example.
- LRMIS has also become an international role model.[34] Based on the interest of other provinces in Pakistan and other countries, the Bank organized a conference in June 2017 in Thailand to enable

[34] During the Annual World Bank Land and Poverty Conference 2017, Pakistan's performance in the Doing Business 2017 report was recognized as one in the list of ten economies making the biggest improvements in their business regulations. The LRMIS project was recognized as one of the main contributors to this success.

representatives from Pakistan (Punjab and Sindh province), Laos, Afghanistan, Sri Lanka, Ghana, Sierra Leone, and the Philippines to learn from the project's experiences.

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

3.6.1 The PMU's 'Review of Social Aspects' report (2016) shows that the PMU successfully implemented an information dissemination and motivational training campaign for internal stakeholders. Some 41 Awareness and Dissemination Workshops were conducted at the district level in which district administration and revenue functionaries from each tehsil participated. The cumulative figures of telephone feedback surveys show that LRMIS has decreased unofficial costs, which the landholders had to pay previously: 98.3 percent of all respondents paid only the legal fees in the ARCs. The results show that 96 percent of women did not face any difficulties in getting access to computerized land records. The PMU conducted an analysis of all complaints received in writing. The analysis shows that 5.3 percent of all complaints were about corruption, eight percent about behavior of ARC staff, 20 percent about discrepancies in the land records, and 35 percent about delayed services.

3.6.2 The PMU's 'End of Project Survey' (2016) of 2,304 respondents measured stakeholder satisfaction. Analysis of the collected data indicates a very high level of beneficiary satisfaction with the new system. About 92 percent of the ARC clients expressed their satisfaction with the new system. The survey results also indicate that 13 percent of clients still prefer the Patwari system over the ARCs. Survey results indicate that clients with larger landholdings tend to prefer the Patwaris rather than the ARC system. The survey results indicate that the introduction of the LRMIS is perceived to have a positive impact in ensuring tenure security and in protecting the rights of the vulnerable. See Annex 5 for methodology and an executive summary.

4. Assessment of Risk to Development Outcome

Rating: Low

4.1 The risk to development outcome is rated Low for the following reasons: (i) The GoPb has transferred the PMU's activities to the PLRA, which is adequately-funded and staffed; (ii) Provisions for digital land records as provided by the new ARCs are reflected in key laws; (iii) Resistance from the Patwaris can be considered as a low risk at this point due to incentives provided to them; (iv) The new system is preferred by the majority of its users over the old system; and (v) Adequate security measures are in place to back up data and to prevent fraud. However, the PLRA needs to address concerns from ARC staff about low salaries by providing more competitive salaries. This issue does not influence the risk rating as the PLRA has recognized this issue and is considering possible solutions (see Borrower's ICR, Annex 7).

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry
Rating: Moderately Satisfactory

5.1.1 The Bank team invested 86.6 staff weeks in project preparation. The Bank team ensured that lessons learned from four pilots in Pakistan and projects in India and Thailand were incorporated in the project design. The two Bank-financed business process re-engineering studies were conducted during preparation to a high standard and proved influential. Gender was reflected in project design and vulnerable groups were taken into account; stakeholder consultation processes were intensive and inclusive, but could have taken the Patwaris more into account. Project objectives and design responded to the real needs of Punjab Province but faced challenges related to schedule, scope and scale, which in retrospect were caused by an under-estimation of the total number of land records to be entered. The project content as reflected in the PAD did not change but the schedule (due to level two restructurings and AF) and the geographic scope (from 18 to 36 districts) were revised repeatedly. The under-estimation of the total number of land records caused an increase in the required financing. The AF estimated the costs more realistically as the additional funds covered the additional cost but even so, the time required to achieve the PDO remained under-estimated. The increase in the required budget was addressed by the AF in 2012. The RF was logical, even though the PDO indicator on tenure security was not well-defined. There were significant inconsistencies in the wording of the PDO and the indicators both within and between the PAD and Financing Agreement.

(b) Quality of Supervision
Rating: Moderately Satisfactory

5.1.2 The World Bank's project team invested 177.5 staff weeks in supervision and conducted 20 Implementation and Supervision Missions from 2007 to 2016. The team was diverse and included a Land Administration Specialist, ICT Consultants, Safeguards Specialists as well as Procurement and FM Specialists. Additional support was provided by the local World Bank Office in Islamabad, mainly on fiduciary, safeguards and social aspects. The Bank's preparation Task Team Leader led the project from 2006-2015, providing an unusual and valuable degree of continuity and the key ICT consultant was involved from the preparation phase until the project's closure. Initial delays and ongoing issues of project implementation were approached by the Bank team in a proactive and candid manner, increasing the efficiency of the PMU's management of the project from 2011 on. The extensions of the closing date enabled the Client to not only complete the project as originally planned but to successfully double the physical area covered to incorporate the entire Province. Procurement and FM processes were conducted in a satisfactory manner, despite some issues that were resolved by the PMU at the time of project completion. However, there are several caveats on the Bank's supervision performance. Environmental safeguards issues were not properly followed-up during supervision and are not reflected sufficiently in mission documents. Instead the project team opted to conduct post-reviews at the end of the project. Neither did the Bank team consistently monitor progress on the achievement of indicators and use of the RF. Despite several extensions and the AF, these issues were not satisfactorily addressed. However, the Bank provided crucial technical advice, especially with regard to the development of the decentralized and centralized software versions, which was valued/appreciated by the PMU. Further the Bank financed unforeseen initiatives, such as a study tour for the PMU to Lithuania in 2016.

(c) Justification of Rating for Overall Bank Performance
Rating: Moderately Satisfactory

5.1.3 Overall Bank Performance is rated Moderately Satisfactory. The Team designed a project of high relevance to Punjab, which remained relevant at closing. Lessons learned from pilots and international

experience were included in detailed business process re-engineering assessments which were applied to project design. Effective and frequent implementation support was provided by the Bank. The Bank's office in Islamabad provided all necessary support to resolve fiduciary and social issues to ensure project success. Weaknesses in regard to environmental safeguards monitoring and M&E during the implementation phases were not adequately resolved until 2016 when the Task Team conducted a post review of safeguards compliance. However, these shortcomings did not have negative environmental impacts nor did they negatively influence the outcome of this otherwise successful and evidently sustainable project (see section 3 for outcome ratings).

5.2 Borrower Performance

(a) Government Performance
Rating: Satisfactory

5.2.1 Support from the Provincial Government was crucial for the successful implementation of this project. The project became part of the permanent agenda of the Punjab District Coordination Officer Conference as well as of the BOR Full Board Meeting. The Chief Minister of the Province of Punjab supported the project throughout its lifetime and provided political support at the highest level in the Province. To recognize the new system and digital land records legally, the Provincial Government ensured that essential legal changes were made in the related land laws. Extension of the project from 18 to 36 Districts and the creation, staffing and funding of the new PLRA as a direct result of the project also testify to the high-level political support it was accorded. The Government also provided co-funding in the amount of US$ 8.2 million (73 percent of the estimated Government contribution).[35]

(b) Implementing Agency or Agencies Performance
Rating: Moderately Satisfactory

5.2.2 The BOR seconded high ranking officials to the PMU to ensure successful implementation, and made a separate PMU building available. The BOR was responsible for political engagements and facilitated, for example, negotiations with the Patwaris, ensuring successful project implementation. The PMU itself was adequately staffed with highly qualified professionals. The organizational set-up of the PMU was adequate with clear management lines and departments to cover the most important aspects of the project's daily operations (e.g., Human Resources, FM, Procurement, ICT, and Communications). Monitoring of safeguards was however not adequately reflected in the organizational design. Adequate consultations with stakeholders and beneficiaries were carried out throughout project execution. Capacity-building for ARC and PMU staff was taken very seriously and resulted in increased capacities at all levels. An M&E system was established and included the monitoring of beneficiary views, which were utilized during the implementation of the project. However, the RF was not closely-monitored, leading to data challenges. Safeguards issues were not closely monitored by the PMU but all relevant data was reviewed by the PMU at the end of the project and no safeguard-related issues were identified. Initial delays in project implementation were partly related to inefficient project management which was resolved by seconding new staff to the PMU. With regard to Procurement, no major bottlenecks were noted despite delayed contracting of data entry and civil works. Procurement processing was in line with World Bank

[35] The Government provided 37.5 percent of the estimated Government contribution of the original Project (US$ 5.6 million) and 109 percent of the estimated Government contribution of the AF (US$ 5.6 million).

policies and complaints were communicated to the Bank and addressed by INT. FM procedures were satisfactory. The PMU has cooperated fully with the Bank during project closure and has provided its own clear and candid ICR report. The transition from the PMU to the PLRA was managed professionally.

(c) Justification of Rating for Overall Borrower Performance
Rating: Moderately Satisfactory

5.2.3 The overall Borrower Performance is rated Moderately Satisfactory. Political support was given at all times. The enabling political environment facilitated the required legal changes, an expansion of the project and the creation of the PLRA. The BOR was highly-committed to creating an effective PMU by providing staff, space and political support. The PMU was set up adequately and conducted continuous beneficiary and stakeholder surveys and capacity building. Shortcomings regarding safeguards compliance, M&E performance and initial delays posed challenges but did not influence the outcomes of the project negatively.

6. Lessons Learned

6.1 **Successful participation and communication strategies are impediment to major cultural and behavioral transformation.** The Social Assessment predicted that the project would face multiple and diverse types of opposition to the development of a digital land records management system. The sources of opposition were the Patwaris, ARC clients, public servants and civil society in general. The Patwaris feared losing their jobs and the power they have held for many years, and for ARC clients and civil society the system was uncertain. As a mitigating measure, the project designed a detailed communication and participation strategy to convey and educate different audiences about the objectives of the project. The Patwaris were trained in reviewing and scanning processes of the land records. The virtues of the system were explained to the ARC users in terms of accuracy, reduction of costs and processing time. The change of a culture of more than 300 years was only possible through this communication and participation strategy.

6.2 **Technical innovation and candid analysis is fundamental to successfully develop a customized software adapted to local capacities and needs.** The change from the current decentralized LRMIS software to a centralized software is an example of the technical innovation implemented through the project. The original decentralized software approach resulted in several issues, such as time consuming manual data upload to the central server, fewer quality control options at the central level, unavailability of specialized staff in remote locations and difficulties in implementing standardized policies and security measures. The centralized software is intended to resolve these issues. This major change was mainly possible due to the candid analysis of the Government and the PMU and their willingness to implement this major change. The Bank's support was fundamental to the change process.

6.3 **The technical and social complexities inherent in land administration reform require a programmatic approach and design that is scalable**. The experience from this project shows that land administration reforms require a relatively long planning period including pilots, strong local capacities, a comparatively longer implementation period and significant funding. The project experience shows that the estimation and triangulation of the number of land records of a manually maintained system is difficult as reliable data in such situations is not available and is expected to be established for the first time by the activities of such projects. The project has also shown that when these factors are taken into account, the objectives for land administration reforms can be achieved in a sustainable manner.

6.4 **Political support to major transformational change depends on adequate strategies, the achievement of results and constant communication flows**. Several assessments were conducted by the PMU to develop its strategy, including the required social and technical processes for reforming the century old manual land records management system and establish a title based system in the long term. This enabled the PMU to provide evidence-based advice to the Government, resulting in political support. The support from the BOR and the GoPb over the long implementation period was also possible due to the strong results that the project achieved. Further, the inclusion of the BOR in different committees and other consultative processes ensured that the Government was constantly updated about the project activities, delays, and results. The establishment of the PLRA shows the result of a strong political will to sustain the project's achievements.

6.5 **Implementation in a limited geographical area provides important lessons and reduces transaction costs for country-wide replication**. The project's implementation in only one province can function as a role model for other projects. The lessons from this project on managerial, technological and social aspects build the basis for a successful replication of the system in other provinces of Pakistan. If the project had been implemented simultaneously in all provinces, the transaction/learning costs would have been significantly higher. The chosen approach allowed the Government to learn lessons in one province and replicate the system with fewer transaction costs in other provinces. The PMU staff has started consultations for other provinces.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners
(a) Borrower/implementing agencies

N/A

(b) Cofinanciers

N/A

(c) Other partners and stakeholders \

N/A

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in USD Million equivalent) – Original Project

Punjab Land Records Management and Information Systems Project – P090501			
Components	**Appraisal Estimate (USD millions)**	**Actual/Latest Estimate (USD millions)**	**Percentage of Appraisal**
1: Business Process Improvement and Institutional Capacity Enhancement	1.762	0.1	5.6
2: Development and Deployment of the LRMIS	32.568	38.8	119.1
3: Service Delivery and Information Campaigns	8.547	2.7	31.5
4. Project Management, Monitoring and Evaluation	5.271	2.5	47.4
Total Baseline Cost	48.094	44.1	91.6
Physical Contingencies	0.385	0.0	0.0
Price Contingencies	2.782	0.0	0.0
Total Project Costs	51.261	44.1	86.0
Front-end fee PPF	0.0	0.0	0.0
Front-end fee IDA	0.0	0.0	0.0
Total Financing Required	51.261	44.1[36]	86.0

(b) Financing – Original Project

Source of Funds	Type of Co-financing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower	N/A	6.415	2.1	32.7
International Development Association (IDA)	Credit	44.846	44.1	98.3

(c) Project Cost by Component (in USD Million equivalent) –Additional Financing

Punjab Land Records Management and Information Systems Project – P131266 (AF)			
Components	**Appraisal Estimate[37] (USD millions)**	**Actual/Latest Estimate (USD millions)**	**Percentage of Appraisal**
1: Business Process Improvement and Institutional Capacity Enhancement	--	0.5	--
2: Development and Deployment of the LRMIS	57.2	44.7	78.0
3: Service Delivery and Information Campaigns	12.8	13.8	108.0
4. Project Management, Monitoring and Evaluation	--	3.4	--
Total Baseline Cost	70.0	62.4	89.0

[36] Historical Disbursed
[37] Excluding Borrower's contribution

Physical Contingencies	0.0	0.0	0.0
Price Contingencies	0.0	0.0	0.0
Total Project Costs	70.0	62.4	89.0
Front-end fee PPF	0.0	0.0	0.0
Front-end fee IDA	0.0	0.0	0.0
Total Financing Required	70.0	62.4	89.0

(d) Financing – Additional Financing

Source of Funds	Type of Co-financing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower	N/A	5.6	6.1	109.0
International Development Association (IDA)	Credit	70.0	62.4	89.0

Annex 2. Outputs by Component

Component 1: Business Process Improvement and Institutional Capacity Enhancement

Sub-Component 1.1: Institutional Capacity Enhancement

2.1 **ARC staff Training**. Training events were planned and organized by the Human Resource Department of the PMU. Overall 2,074 ARC staff (Service Center In-Charge, Assistant Service Center In-Charge, and Service Center Officials) were trained between 2012 and 2016 in standardized 9-week training sessions (7 weeks of training courses and 2 weeks of on-the-job training). Two fully-equipped training rooms were established in the PMU building to provide a professional learning environment. The standard training sessions focused on three modules:

(i) Domain Knowledge Orientation: Land Revenue Act 1967; Land Revenue Rules 2011; Registration Act 1908; and Land Records Manual
(ii) Practical Orientation for preparation of manual records: Application Training; LRMIS application training; and database model orientation
(iii) Soft skills training: Communication Skills; Presentation Skills; Team Building; Stress Management; Professional Grooming; Personal Grooming; Time Management; Change Management; and General Administration

Refresher courses of two days were conducted and updated previously acquired knowledge. The refresher training content was based on a training needs assessment. A refresher course manual was developed and distributed to the trainees.

2.2 **PMU staff training**. A Soft Skills Training Program for PMU staff was developed and focused on positive attitude, leadership skills, professional grooming, time management, stress management, team building and motivation. All staff were equipped with an Employee Handbook, General Guidelines for Staff, and an Employee Policy Manual. Performance of ARC and PMU staff was evaluated based on standardized performance appraisals. The training curriculum was perceived by other stakeholders as very successful so that they requested copies of the training documents to adapt them to their contexts.

Sub-Component 1.2: Business Process Improvement

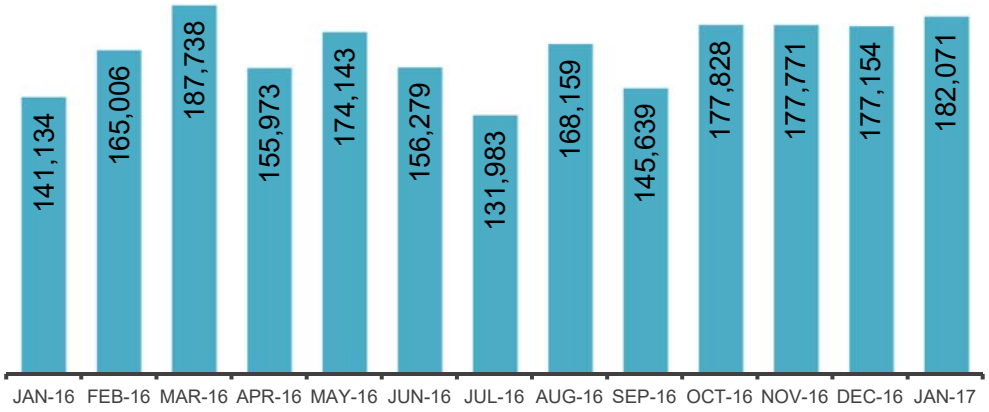
2.3 **Business analysis**. The basis for the business process improvements under the project was two studies focusing on Business Process Re-engineering and Information, Communications and Technology, which were conducted as planned by specialized and experienced consultancy firms[38]. The rigorous studies contain an institutional analysis of BOR and the legal framework as well as strategies for long term development and change management including a detailed description of the LRMIS software.

2.4 **Legislation**. Legal and policy amendments were made to allow the business improvements to be put into practice. The 1967 Punjab Land Revenue Act (sections 4, 41-A, 41-B, 42, 42-A, 43, 45, 46, 48, 55, 177) and the 1968 Punjab Land Revenue Rules (sections 2, 36-A, 37-B, 37-C, 39-3, 39-4, 72-XVIII-A, Form XXXV, Form XXXV-A) were amended in 2012. The Punjab Land Records Manual was updated accordingly. The changed laws stopped Patwaris from issuing manual land records; simplified procedures

[38] Land Equity & International Land Systems (2005 & 2006): Business Process Re-Engineering Studies (Volume 1 & 2)

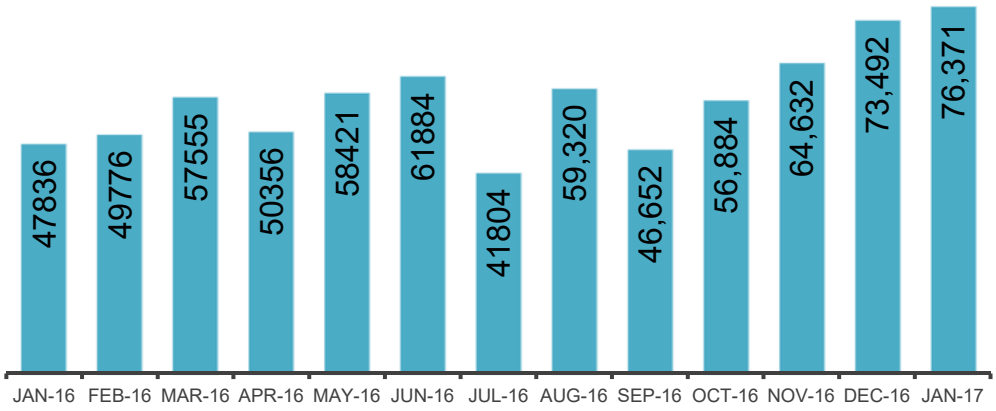
of issuance and transaction of land records; and established digital land record processes. The official Punjab Land Records Manual was changed accordingly

2.5 **Land records**. One of the key business process improvements was to abandon manual fard issuance and transfer the mandate to issue fards solely to the ARCs. Changes in the legislation confirm that only ARCs have the mandate to issue fards. The figure below shows the numbers of issued fards from January 2016 to January 2017.



(Source: LRMIS data)

2.6 **Transactions**. The approval of transactions is now solely the mandate of the ARCs. While the verification of transactions was previously done through the common assembly, transactions are now mandatory to be done at the ARCs in the presence of witnesses. Witnesses must bring their ID cards to the ARCs to verify that they live in the same village as the applicants. Finger prints of the witnesses are taken. The parties who apply for the transaction must both agree to the witnesses. The figure below shows the numbers of transactions from January 2016 to January 2017.



(Source: LRMIS data)

2.7 **Private Public Partnerships**. PPPs were considered during project design but were not implemented. A main concern of the GoPb was that an external service provider would increase the costs

of the ARC operation, resulting in unaffordable costs for the clients. Further, data security was also a concern which prevented the GoPb from involving the private sector.

2.8 **Change in culture of Revenue Department:** Through training of staff and inclusion of Patwaris, the project was able to induce and manage change, which ultimately transformed the culture of the Revenue Department for efficient delivery of land-related services. The cooperation of political leadership, senior government officials, District and Tehsil administration, revenue functionaries particularly Patwaris and project staff played a key role in setting values and achieving the goals of the project. Trust-building training courses were developed to provide skills directed toward facilitating performance management, improving communication skills, and enhancing capabilities in dealing with customers. Specific gender training was conducted and anti-harassment policies introduced and implemented. A new employee training module was developed to better educate new staff regarding the organizational culture, to improve teamwork and collaboration, and to emphasize values related to quality and integrity.

2.9 **Improvements**. Several processes were simplified, contributing to improved service delivery. The steps for obtaining a loan based on a land record were reduced from nine to three. A continuous review process also contributed to continued initiatives such as the opening of bank counters at some ARCs for fee collection, saving clients time and money. Some banks opened specific counters for fee payments for ARC services.

Component 2: Development and Deployment of the LRMIS

Sub-Component 2.1: Software Development and Testing

2.10 **LRMIS software development and testing.** During the project design phase the PMU decided to outsource the implementation, delivery and deployment of the LRMIS software to the PITB. PITB is the governmental agency responsible for all governmental ICT programs and the provision of network and hosting facilities as well as maintenance, support, development and management of subcontractors. PITB prepared a call for proposals for the LRMIS software through a single stage Quality and Cost Based Selection (QCBS) process. The procedure of this QCBS process included the selection of four (4) out of all shortlisted firms. Contracts with fixed costs were signed with each of the four selected firms. All four firms had to develop their versions of the LRMIS software and run pilots in different areas, including data entry of a defined size. The call for proposals was announced internationally but due to very specific requirements related to the use of Urdu and required knowledge of the local legislation, only four Pakistani firms were selected and contracted in 2007. The firms had 285 days to complete the development and delivery of their version of the software for the User Acceptance Testing (UAT) and the final technical evaluation. The development followed internationally recognized practices and the Rational Unified Process with the waterfall life cycle of analysis, design, implementation and testing was applied. Testing was conducted by each firm internally and at the respective pilot sites. PITB was responsible for quality assurance, provided a testing team to perform a thorough review, and conducted the UAT.

2.11 **Final selection for roll-out**. Based on the outcomes of the final UAT the LRMIS software from Accountancy Outsourcing Services (Pvt.) Ltd. (AOS) was selected in 2008. The GoPb followed the progress very closely and observed delays in mid-2008. As a consequence, the GoPb released PITB from their duties and assigned the full responsibility for the implementation of the LRMIS software to the PMU. Specialists from PITB who were involved in the process of selecting the LRMIS software were moved to the PMU to ensure a smooth transition. The new staff strengthened the PMU's capacity and ensured that the LRMIS software management process was streamlined throughout the project.

2.12 **Software operationalization**. The precondition for the operationalization of the LRMIS software was to enter all existing land records. Therefore, the LRMIS software had to be first operationalized for performing data entry of land records. It turned out to be a complex exercise with unforeseen delays caused by authorities of the pilot district, software issues related to handling the entered data and errors on the manual land records. These delays made a re-negotiation with the vendor necessary. The BoR and PMU acquired full ownership over the developed software but there was lack of internal capacity to sustain its further development and maintenance. It took another 1.5 years to mature the software and sort out all software issues. The pilot phase of data entry started in 2010 in three districts and Lahore City (excluding defined urban areas). The LRMIS software became operational at first in Kasur District in May 2011. The use of manual land records was abandoned and the system operated solely on an automated basis. ARCs Hafizabad, Lahore, Lodhran, and Pindi Bhattian became operational in 2011. The remaining ARCs became operational in the following years. The software has been continually updated based on the feedback provided by the end users and testing team of PMU since the first operationalization of the software. Procurement of required hardware in the ARCs proceeded in line with the ARC opening schedule.

Sub-Component 2.2: Software Deployment and Further Enhancement

2.13 **Software deployment**. The year 2012 was crucial for managing the transition to the big scale data entry as well as the deployment of the software to new ARCs. In 2012, 26 ARCs were operational, in 2013 more than 100 and by July 2016 143 ARCs. Three additional ARCs were constructed or renovated between July and December 2016, out of which one was fully functional as of December 31, 2016. The large scale of these operations required a well-coordinated communication process between all parties (PMU, software vendor, quality assurance consultant, data entry vendors, operational ARCs and districts revenue authorities). The intense software operationalization revealed numerous software issues and bugs. In 2012 more than 800 software issues were resolved and the LRMIS software reached a mature and reliable status. The PMU IT department and AOS were focused on the software and systems deployment, maintenance and support. The contracted QA consultant focused on the quality of services delivered at the ARCs, established a Help Desk with a hotline for end users, managed and assisted data entry vendors with massive scale production processes that involved coordination with local revenue authorities for verification, validation and cleansing of the records. The Province-wide operationalization of the LRMIS software required more capacities of the PMU IT department, which was extended in 2013 to 10 specialists. The PMU IT Specialists focused on infrastructure and software maintenance, management of the software vendor and development of various in-house software tools to monitor and manage staff and assets.

2.14 **Further enhancement.** More than 2,000 software issues and improvement requests were resolved over the course of the project and several software enhancements and extensions were introduced. Specific major software extensions were:

- Editing access control was changed to ensure that only the designated Service Center in-charge Official (SCO) can change a defined block of the data of a land record.
- The National Database & Registration Authority (NADRA) verification service was included in the LRMIS operations. Direct access to the NADRA verification service allowed ARC SCOs to confirm client identities by using their Computerized National Identity Card (CNIC) and biometric data.
- The PMU integrated in 2015 an online performance tracking dashboard application with the LRMIS software. The dashboard provides details on the tasks performed in the ARCs, specifically

highlighting overdue or deferred cases, time required for a service, staff attendance and productivity, and generated revenues.

- Online tracking of the status of a specific service application was introduced for clients.

2.15 **Central LRMIS Software**. The large-scale deployment of the software and its continuous maintenance exposed critical aspects of operating a distributed system at such a big scale. The PMU was unable to upgrade the software simultaneously in all ARCs and provide adequate professional support to all ARCs due to frequent changes and fixes in the software. Keeping the software in all ARCs in synch required tremendous efforts which consumed all available professional resources and hindered further enhancement of the software. The only possible solution to this challenge was to build a centralized software and migrate all distributed ARCs to it. The PMU carefully planned and prepared the detailed requirements for the centralized LRMIS software. In 2015 the winner of the centralized LRMIS call for proposals, Systems Ltd., was selected and contracted. A new, modern web development based on Microsoft technologies had been planned through 10 iterations and was successfully completed in November 2016. The centralized LRMIS software passed an independent Microsoft review of design, security risks, load and performance testing, migration testing followed with full coverage of the functional User Acceptance Tests. The software was also subjected to a third party consultant evaluation which cleared the software for becoming operational. The critical aspect of the new software roll-out plan is to ensure a smooth operational transition and retirement of the current distributed software. Final acceptance cycles of the new centralized LRMIS software included rigorous procedures of the operational data migration and quality control. A detailed roll-out plan has been defined and scheduled for each of the operational 144 ARCs from the end of 2016 to the end of 2017. The plan includes on-site training, backup and recovery procedures, and risk-aversion fallback policies. Two ARCs were fully operational with the new centralized LRMIS software at the end of January 2017. The PMU and the centralized LRMIS software vendor agreed to a three-year maintenance contract to ensure continuity of the software's operation and its further development. The contract between the vendor and the client also included transfer of technology to ensure sustainability.

2.16 **Registration of Deeds**. When the first ARCs became operational, clients in peri-urban areas faced several challenges due to different administrative setups in rural and urban areas. Clients who wanted to conduct a transaction in peri-urban areas needed to visit an ARC to obtain a fard and then apply for the transaction at a different deed Sub-Registrar Office. The transaction was then to be reported to the ARC to reflect the transaction in the LRMIS database. This process required multiple visits to different offices and led to missing records, delayed updates in the LRMIS database and the risk of fraudulent activities. Therefore, the PMU piloted the integration of the Registry of Deeds (ROD) system application in the LRMIS software. The PMU established a separate LRMIS-ROD workplace in each of the 45 district Sub-Registrar offices. They are equipped and operated by the ARC staff and enable to perform deeds registry operations which automatically feed and verify all required data to/from the LRMIS software. The Sub-Registrar offices now offer the following services:

- Capturing of bio-metric details of applying parties
- Printing of pictures with particulars at registry
- Online verification of fard from LRMIS database
- Blocking of duplicate fard issuance until the final processing
- Automatic calculation of all types of fees
- Automatic transfer of registries and scanned deeds to LRMIS software
- Instant update of record with automatic transaction
- Easy / instant tracking of registries including publishing those at Web portal

Sub-Component 2.3: Data Entry and Validation

2.17 The pilot phase of data entry started in 2010 with 4 lots including Lahore City and 3 districts, after the LRMIS software was commissioned. The remaining data entry activities for the whole Province were planned in phases, each requiring a separate call for proposals for several lots:

- Phase I: 2 lots (8 districts) – started in 2011;
- Phase II: 6 lots (13 districts) – started at the end of 2011;
- Phase III: 5 lots (12 districts) – started late in 2012.

2.18 Data entry was recognized from the beginning as the critical activity that defined the necessary conditions of the operationalization of the ARCs. It also served as a test for acceptance of the new system by the public. Errors and mistakes in the new digital records could have compromised the public trust in the new system. Ultimately, the data entry process resulted in the digitization of up to 55 million land records. The data entry followed a three-stage process to verify and update each record and resolve errors identified on the manual records. The three steps were:

1. Scanning of record books
2. Entry of landholding registers and
3. Entry of transactions (i.e. transactions)

See Figure 3 for details of the data entry process.

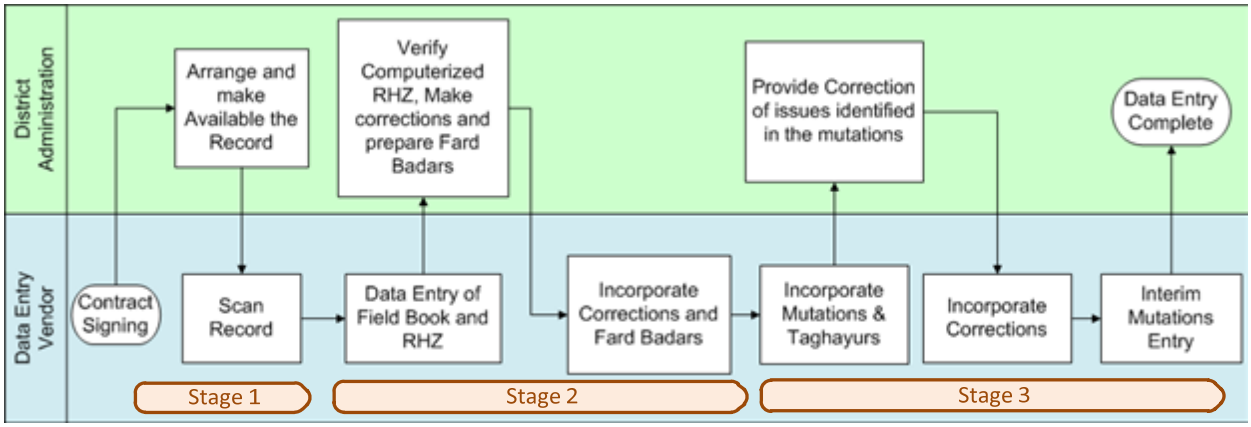


Figure 1. Digitization Workflow Process

2.19 While the first stage was rather mechanical, the other two stages exposed many challenges. Apart from standard manual records errors (poor writing, missing records) there were more specific types of issues to deal with:

- Complex nature of land records domain and unforeseen attributes
- Poor Condition of record (especially master record)
- Complexities associated with Urdu language
- Disregard of rules by Field Staff
- Missing names / Incorrect family tree
- Area of parcel (khewat) and sum of owned areas by shares not equal

- Area in joint holdings is not the same as the parcel area
- Missing or incorrect transactions
- Recording of multiple claims (one plot obtained double /triple area)

2.20 The data entry vendors were not able to complete the data entry stages on their own and it required specific measures to cooperate with revenue staff at the District, Tehsil and Mauza level. It turned out to be extremely difficult due to unavailable revenue staff as well opposition to the project from the Patwaris. After the Pilot and the first phase (2009-2012), the problems were clearly identified and forwarded to the senior revenue authority level. Specific political decisions were taken at the level of the Chief Minister, mandating divisional and district authorities to set targets and track the reported data entry issues resolutions weekly and take immediate actions in case of delays. The interventions included:

- The Chief Secretary chairing monthly Commissioners Conferences and reviewed the performance of each division.
- The resolution of data entry backlog became part of the agenda of the Provincial Board.
- The resolution progress became part of the permanent agenda for each division Commissioner Meeting.
- The PMU developed an online monitoring dashboard to track the performance progress, enabling all stakeholders to track and compare the activities of each Tehsil.

2.21 It was recognized that it was impossible to recover the records in some areas due to resettlement or urbanization, which require a different judicial approach. Therefore, the PMU decided that the achievable data entry targets should be within 90% of the total number of all mauzas. All landholders within the completed and operationalized mauzas were informed about the new ARC system and were provided with a free fard. The Province-wide concerted efforts of all parties resulted in an efficient process that resulted in a substantial completion with 91,5% of all mauzas being operational (see Figure 2).

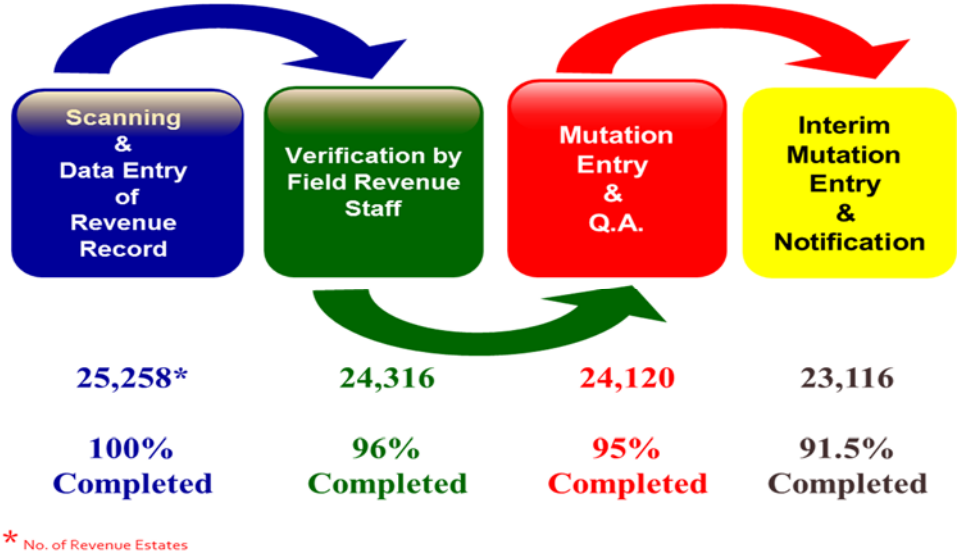


Figure 2. End of Project Digitization of Revenue Records

From 2012 until the end of 2016 more than 5.2 million errors of various types in the land records were resolved.

Sub-Component 2.4: Data Centers and Connectivity

2.22 **Data Centers**. The new, centralized version of the LRMIS software required new Data Centers. A fully equipped Tier 3 Data Center was built within less than 9 months. The data center was built in the Arfa Karim Software Technology Park in Lahore. The construction started with a capital reconstruction of the premises, followed by installation of computer systems including electric power, air conditioning, fire protection, cabling, cabinets, servers, storages, access control and facilities for a Network Operation Center (NOC). LRMIS production data can be regularly stored on virtual backup storage to ensure uninterruptable operations, around the clock availability, fault tolerance and timely recovery in case of a major failure. The vendor had to ensure continued operation of the main services of LRMIS at the existing Data Center premises in Islamabad while establishing the main Data Center. The Main Data Center has been successfully commissioned into operations per schedule by the end of February 2016 with all software systems maintained within the Data Center. The vendor equipped and commissioned a remote Disaster Recovery Site (DRS) by the end of February 2017. The DRS is maintained at the PTCL Data Center in Islamabad. It mirrors all major infrastructure components online, operating software and actual data of the main Data Center. With DRS fully up and running, LRMIS and related systems will be protected up to the highest standards sustaining even catastrophic events affecting a site. The Government established the data center with the long term plan to use them also for data from potential future projects, such as GIS data as well as land record data for urban areas, which were not covered by the project.

2.23 **Connectivity**. Each ARC has been connected by WAN (Wide Area Network) using a leased land line of 1Mbit/sec up to 4Mbit/sec bandwidth with the PMU mid-range central server. Most ARCs have an alternative redundant backup connection. The WAN connectivity is used to receive regular updates of the ARC databases, provide remote LRMIS maintenance and support, provide access to NADRA services, and to stream videos from security cameras installed in the ARCs.

Sub-Component 2.5: Establishment of Service Centers [ARCs] for the Delivery of Land Record Services

2.24 A total of 144 ARCs were established. In 2012, 26 ARCs were operational, in 2013 more than 100 and by July 2016 143 ARCs. Three additional ARCs were constructed or renovated between July and December 2016, out of which one is operational as of December 31, 2016. Each ARC is authorized to issue fards and conduct transactions. ARCs are located in new or renovated buildings with male and female seating areas for the clients. Clients seeking to obtain a service are required to get a token, issued by an automatic queuing system. Counters for handling requests and special offices to attend the oral transaction are available in each building. In several of the ARCs counters were specifically established for women. Each client is identified through their NCIC and fingerprint which is verified by the link to the NADRA database. The distributed LRMIS software uses a standard LAN (Local Area Network) infrastructure which is maintained in each ARC. The LAN infrastructure connects the ARC's low-range server with user workstations and peripheral equipment. The LRMIS software is installed independently in each of the ARCs on a server and consists of the database management system SQL Server and the LRMIS Application Server, based on .net technologies. Server racks with uninterruptable power supply (UPS) batteries, to sustain regular grid blackouts impact, and backup devices are maintained in a specific AC-cooled server room. The server room is only accessible by authorized staff.

Sub-Component 2.6: Web Development

2.25 The PMU developed an official LRMIS website in 2013, available at http://plra.punjab-zameen.gov.pk/. The website is available in English and Urdu. Many resources are available on the website as information from the PMU, LRMIS authority, BOR and varied documentation. All laws and regulations related to land administration are available. In addition, a link to download the smartphone application is also available. Landholders can obtain information about their land records online. The parcel data of three districts is also available at the website with 1,729,776 parcels with 90% matching LRMIS records. Overall 3,487,922 page views (997,056 individual sessions) were launched by 406,733 users by February 2017.

Sub-Component 2.7: Pilot for Spatial Data

2.26 The PMU in cooperation with the Urban Sector Planning and Management Services Unit conducted a pilot for GIS development and digitization of maps in Lahore, Hafizabad and Lodhran District. The pilot had the objective to develop and implement a spatial framework for the LRMIS software in Punjab. The activities of the pilot included spatial data capture and digitization components such as geo-referencing and digitization of scanned maps, demarcation of administrative boundaries and software development. Specifically, the production and development process consisted of the following sequence of steps:

- Acquisition of maps and satellite images
- Data Preparation
- Scanning of paper maps
- Geo-referencing and verification of mauza Maps
- Digitization and attribute integration
- Digitization and data entry of the land records
- Quality assurance
- Parcel fabrication
- Web development for GIS based LRMIS

2.27 The major challenge from the very beginning was the retrieval of missing maps. The missing data had to be traced and retrieved by the staff of the Urban Unit. Out of 1,238 total mauzas 58% were available, 31% retrieved and 12% missing. The maps were acquired in hard format (i.e. paper maps and on cloth). Overall more than 1.7 million parcels in the three pilot Districts were digitized and geo-referenced. Figure 3 shows a sample of digitized parcels.

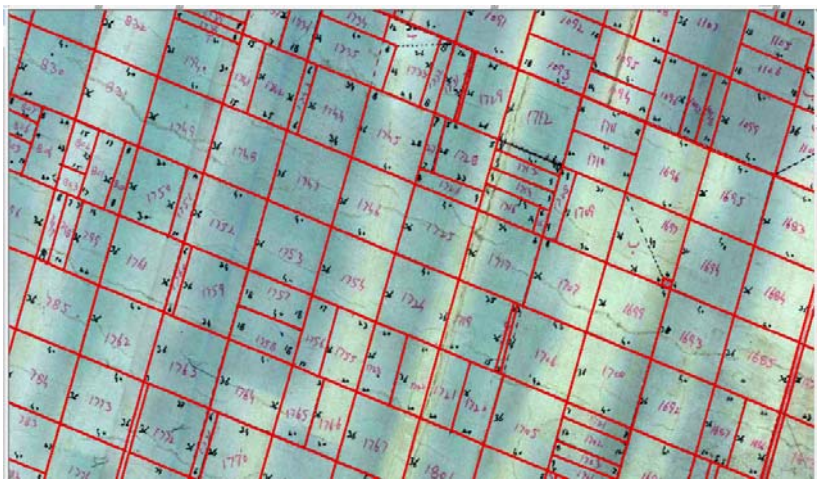


Figure 3. Sample of Digitized and Geo-Referenced Village Parcels

2.28 The pilot helped to preserve the maps in a digital format and link the spatial data with land records, resulting in up to 90% of matching records. Having spatial data associated with the land records for the pilot districts enables the PMU and GoPb to extend the range of future applications, e.g. computerized crop inspection, disaster management, damage assessment, etc.

2.29 The Pilot project was initiated to bring forward the GIS technologies integration with LRMIS and evaluate all issues and aspects of this direction. The Province BOR is now fully prepared to initiate the follow up projects to convert the initiatives into operational permanent activities.

Component 3: Service Delivery and Information Campaigns

Sub-Component 3.1: Service Delivery

2.30 The PMU has established 143 ARCs from 2011-2014 and an additional 3 in 2016 to accommodate high demands (out of which 1 is operational as of December 31, 2016). The ARCs have separated seating arrangements for women and men. Clean drinking water facilities are provided in all ARCs. To serve the needs of women, women's counters were established in each ARC, mostly run by women. The PMU hired 3,383 ARC staff, including 2,439 providing direct services to clients, out of which 2,074 were trained in legal and operational aspects as well as customer service, communication and gender aspects. In December 2016, 146 women were working at the ARCs, out of which 121 serve women directly at the women's counters. Overall 2,687,713 clients have used the ARC services so far. The customer satisfaction is measured through SMS, phone calls and questionnaires.

Sub-Component 3.2: Stakeholder Consultation, Public Awareness and Information

2.31 The content of the information campaigns was based on needs assessments, which were conducted with representatives from different districts.

2.32 **Internal stakeholders**. The PMU conducted 36 workshops with 5,663 internal key stakeholders, namely Officers of the District Administration (District Collectors, Additional District Collectors,

Assistant Commissioners) and Revenue functionaries (Tehsildars[39], Girdawars/Kanungos[40], Patwaris) between December 2011 and February 2014. The objectives of the workshops were to gain support for the project by decreasing the fears about job security and explaining the participants' new roles under the new system. The content was based on a prior training needs assessment conducted with 3% of all revenue functionaries in Punjab.[41] However, the project encountered severe opposition from the Patwaris. Initially, the revenue functionaries particularly Patwaris resisted the project strongly and launched an agitation campaign and announced that they would continue until withdrawal of the project. They locked their offices and stopped work at the Tehsil level offices due to which citizens faced many difficulties. The Patwaris resisted mainly due to lack of understanding of the new system, their new roles, fears of losing their jobs and social status. The project adopted an approach of paying Patwaris for verification of record and correction of errors in the computerized land record register at a rate fixed per mauza (PKR 5,000/mauza). Patwari strikes in Punjab Province from March to May 2014 were settled through negotiations with the Cabinet Committee, led by the Chief Minister of Punjab. Strikes in August 2014 and from November 2014 to March 2015 in 18 Districts were resolved through several measures such as capacity building, construction of revenue field offices with IT linkage, fixed monthly transport allowance, transport provision, stationary allowances, and an allocation of 2% of land revenues to Revenue Officers.

2.33 **Beneficiaries.** Over 640 awareness and dissemination community meetings were conducted at the Kanungoi level, covering 83% of all relevant Kanungois in Punjab, in all 36 Districts, with approximately 50,000 participants overall. The purpose of the meetings was to explain to the beneficiaries the objectives and benefits of the project. A documentary was produced and used among other means of communication. During these meetings more than 400 interested and vocal persons in community meetings were identified as agents of change. They are informed via SMS about project updates and are supposed to forward this information to their communities. Also 46 community meetings for women were conducted by female PMU staff. The meetings focused on women's rights to land ownership, their right to land shares as inheritance as well as the new ARC system. A website[42] and mobile application is accessible to the public and enables the beneficiaries to search for land related information, laws, processes, project information, digitized maps and ROD. Overall 3,487,922 page views (997,056 individual sessions) were launched by 406,733 users by February 2017. Further, beneficiaries can express their opinion and feedback through several channels, including SMS, questionnaires and phone calls. Each ARC customer receives an SMS after the visit and has the opportunity to express challenges and compliments. In each ARC a closed box for written feedback is available. Signs displaying a service number for complaints are displayed in all ARCs. The PMU analyzed the complaints/feedback, which was provided in writing by the beneficiaries. It shows that 40.7% complained about delay in services, 24.3% mentioned discrepancies in records, 9.8% provided suggestions, 6% complained about the behavior of ARCs staff, 4.8% appreciated the quality of services, 2.5% complained about revenue staff corruption, 2.3% complained about corruption of ARC staff.

2.34 **External stakeholders**. For external stakeholders, five seminars focusing on women's land rights and four dissemination workshops on women's land rights were organized, partly in cooperation with CSOs, where more than 1,500 people participated. In six Universities and higher learning institutions over

[39] Revenue Officer at the Tehsil level
[40] The Kanungo supervises the work of the Patwari
[41] HTSPE (2010): Land Records Management and Information Systems. TNA Report. Awareness and Dissemination (Internal Stakeholders).
[42] http://lrma.punjab-zameen.gov.pk

1,000 students were consulted about the project. In 15 conferences around 250 representatives of the Punjab Bar Association and Field Revenue Staff were consulted. Some 20 project briefing sessions were conducted with Civil Servants and as well as more than 39 media briefings with public representatives and local media in all Districts, with about 5,000 participants. The mentioned meetings sum up to 12,000 briefed and consulted external stakeholders.

2.35 **General public**. The general public was targeted through a sensitization campaign which was launched through mass media. It included 13 print advertisements, eight TV commercials (broadcast on 24 national and regional channels, in buses and cinemas) and two radio spot campaigns as well as press releases, press articles, interviews, brochures and newsletters. Alone the broadcasting of TV commercials in the buses of the two biggest bus companies of Pakistan resulted in approximately 700,000 viewers. The same advertisement in cinemas of Punjab reached about 300,000 viewers. Further, all 36 district headquarters were branded with outdoor marketing tools and Lahore intercity buses and vehicles were branded as well. Street theatres were launched for 40 days in public places, reaching approximately 30,000 people. Also, four ARC inauguration events were held with the Chief Minister of Punjab. The campaigns reached an estimated audience of at least 1,030,000 people.

Component 4: Project Management, Monitoring and Evaluation

Sub-Component 4.1: Project Management Unit

2.36 **Project supervision**. The Project Director and the Deputy Project Director were responsible for the overall supervision of the project. The Project Director oversaw the teams working on Human Resources, Social Development, Public Relations, information technology, monitoring & evaluation, project management, operations, fiduciary and procurement. The Social Development & Public Relations (SD & PR) Manager and her team were responsible for community meetings, stakeholder outreach and managing media relations. All gender related aspects of the ARCs and PMU during the project implementation were guided by the SD & PR Manager as well. Activities outlined under Component 3 were carried out by the SD & PR Manager. The Human Resource (HR) Manager and her team were responsible for hiring of new staff, establishing a digital knowledge management system and training events at the ARC and PMU level. Until December 2016, 105 PMU staff, 3,247 ARC staff and 14 consultants were hired by the HR Department. Among these were 15 disabled and 44 minorities. Initial management gaps in the PMU contributed to implementation delays and led to a change of the Project Director in 2011.

2.37 **Project Management**. A Project Manager ensured internal communication between the different departments and was a key contact person for the World Bank. He was responsible for the project implementation at the Tehsil level. All project timelines were outlined by the Project Manager and their compliance was ensured by him. He was the key person for the achievement of the milestones set during World Bank implementation support missions.

2.38 **Operations**. An Operations Manager was hired to oversee the day to day operations of all ARCs across Punjab. He was assisted by 9 divisional coordinators hired on a consultancy basis.

2.39 **Staff**. The PMU was staffed at the beginning with key personnel from the BOR. At the time of project closure four Directors, 45 Officers and 56 support staff were part of the PMU (in total 105 + 14 consultants). The staff turnover rate is low and stands between 2 - 5.1 percent per year.

2.40 **ICT**. During the project design phase the PMU decided to outsource the implementation, delivery and deployment of the LRMIS software to the PITB. PITB oversaw the initial software development,

testing and quality assurance. However, PITB did not have the relevant capacities to fulfill the broad range of duties for software deployment and maintenance. Therefore, this structure was changed during the AF. The PMU established its own ICT department, overseeing software development, deployment of provincial network system administration, database administration, quality assurance and web development. The ICT department has also developed interactive dashboards for monitoring purposes as well as a Human Resource Management System, Attendance Management System, and Asset Management System. The team is led by the Provincial ICT Manager. The development of the decentralized and the new, centralized LRMIS software was conducted by two different software development firms.

2.41 **Fiduciary**. The Chief Financial Officer was responsible for all financial matters, audits, clearance of payments to vendors and payroll. The Procurement Officer took responsibility for all procurement matters as a qualified Procurement Specialist could not be hired due to limited capacities on the market.

2.42 **Legal**. Legal advice was brought to project on a consultancy basis. A Legal Advisor and a Land Revenue Advisor were hired on a consultancy basis by the PMU.

2.43 **Committees**. The work of the PMU was overseen by three committees. The Project Steering Committee, chaired by the Chief Secretary of GoPb, provided policy directions, implementation strategies, monitoring of timelines and impact and had the mandate to take corrective actions. The Implementation Sub-Committee, chaired by a Senior Member of BOR, approved timelines, instruction manuals, reengineered business processes and job specifications. The Technical Sub-Committee, chaired by the Chairman of PITB, provided guidance in technical matters, approved the final software development contract, reviewed and established timelines for all software releases, approved ToR for all ICT related matters and all ICT related procurements. Tehsil Level Committees were established as well and are mainly comprised of the Assistant Director Land Records, Tehsildar and Service Center In-Charge.

Sub-Component 4.2: Punjab Information Technology Board

2.43 This Sub-Component was changed during the AF. The responsibility for all ICT aspects was moved from PITB to the PMU. See Sub-Component 4.1.

Sub-Component 4.3: *District Project Monitoring Groups*

2.44 This Sub-Component was changed during the AF. The responsibility for the monitoring of ARCs in the Districts was moved to the central PMU level. However, the District Coordinator and the Assistant Coordinator at the Tehsil level were nominated by the Government to oversee and monitor the operations of the ARCs. See Sub-Component 4.4.

Sub-Component 4.4: Project Evaluation and Impact Assessment

2.45 The monitoring approach has changed over the course of project implementation. The initially planned District Monitoring Groups were not created as explained in the AF. Instead an external consulting firm supported the PMU with the implementation of the M&E framework by developing an online monitoring portal and establishing a call center. The consulting firm's team included among others, 57 Field Consultants, visiting the ARCs twice per week as well as during random surprise visits. The key inputs, outputs and outcomes being monitored were:

- Status of scanning and data entry
- ARC staff efficiency (e.g. time and number of provided services, attendance etc.)
- ARC efficiency (e.g. queue time, quality of service, complaint resolution, number of customers etc.)
- Customer satisfaction (through random surveys, customer complaints, outbound calls, feedback forms etc.)
- LRMIS anomalies (e.g. in case of very high transaction fees but few transactions, provision of services without payments, many transactions by one person, approval of transactions without authorization etc.)
- Human Resources (vacant positions per ARC, attendance of ARC staff)
- Inventories of equipment and office supplies of ARCs and consumption of energy

2.46 The PMU established a number of mechanisms to monitor the ARCs' performance and quality control due to which the project was able to sustain the quality of service delivery: (i) display of complaint registration numbers at all ARCs visibly at reception areas (ii) placement of complaint registers at the reception desks of ARCs (iii) placement of complaint boxes and feedback forms at reception desks of ARCs (iv) beneficiaries' feedback through Telephonic Surveys (v) establishment of a link with the Citizens Feedback Monitoring Program (CFMP) implemented by the Government of Punjab, by taking customers feedback through SMS. CFMP is a proactive governance initiative of the Government of Punjab to curb corruption, improve service delivery, and facilitate citizen engagement by proactively seeking feedback of their experience while receiving services (vi) dashboard verification (vii) physical monitoring visits by PMU staff (ix) Mystery Customer Act: monitoring indicators include corruption, punctuality and professionalism (x) strict action against corruption: customers complained about bribery/corruption through a customers' feedback form, and the PMU conducted an enquiry of such cases. Further, all ARCs are equipped with security cameras, which are centrally accessed by the PMU. The Project Manager and the M&E team have access to the cameras via their laptops and monitor the ARC performance and security in real time.

2.47 Internal dashboards were used to monitor pending and deferred transactions as well as Khewat transaction issues in real time based on the LRMIS database. The efficiency of the system was assessed through the dashboards by analyzing information on fard issuance time, transaction attestation time, complaints and feedback through SMS. Discrepancies between applicants and the system's stored finger print and photo caused alerts and were monitored like this as well as through the dashboards.

2.48 The M&E data was used during the project implementation for adjustments. Call Center numbers show that 85% called for further information, 14% for complaints and the remaining for suggestions. Based on the calls and other forms of surveys, the maximum fee for brief land record extracts was limited, procedures to change the name on the land record were made easier, separate counters and waiting areas for women and senior citizens were implemented, and at least 10 staff members were convicted of corruption and their contracts were terminated. The monitoring of customer satisfaction also led to the development of a specialized training of ARC staff to enhance the customer experience.

2.49 Training events were evaluated through pre/post-assessments. Staff performance was monitored and evaluated through a standardized performance appraisal process at ARC and PMU level. All results are saved in the digital HR management system. ARC staff was also monitored through an electronic Attendance Management System.

2.50 Regular Implementation and Support Missions from the World Bank oversaw the project progress during which milestones were agreed upon with the PMU to ensure that project implementation was on track.

Annex 3. Economic and Financial Analysis

3.1 **Economic analysis.** Upgrading the land records system for Punjab Province, as was undertaken by this project, was expected to have strong economic benefits especially in the rural areas of the province – as the project intervention was focused primarily on improving the system of land records/ records of land rights in rural areas. Table 1 summarizes the key assumptions of the economic analysis, while the list below shows the most significant of the expected benefits as listed in the PAD (2006) and AF Project Paper (2012) as below:

- Reduced transactions costs for direct beneficiaries for issuance of fards and transactions
- Increased security of tenure for land rights holders, leading to increase in land values reflecting more secure rights
- Improved efficiency of land markets
- Improved access to information for land administration and other public sector functions
- Improved access to information for financial sector to facilitate improved access to credit for land rights holders
- Possibility of provision of additional public services through the Service Centers

3.2 Transactions costs for beneficiaries are expected to be reduced in terms of time and logistical costs of locating the Patwari and to initiate the transaction, reducing the unofficial payments to the Patwari, and reducing the time to complete the transaction once it is initiated. Increased tenure security and more efficient land markets are expected to result from the more transparent, accessible, and reliable land records/ record of land rights made possible by the project in rural areas of Punjab. This is expected to increase land values in the beneficiary area to reflect more secure land rights and improved transparency and reliability of land records. Further, enhanced incomes for landowners would result from increased access to credit and increased investment in land resulting from improved land tenure security.

3.3 **Difference in PAD and AF methodology for economic appraisal.** The PAD and AF project paper used a different approach to conduct an economic appraisal of the project and estimate its net economic benefits. The main difference in the two approaches was the selection of economic benefits to be included in the analysis. The PAD used reduced transaction costs for direct beneficiaries for issuance of fards and transactions as the main benefit in its analysis. The AF, on the other hand, used the expected increase in land values in rural areas due to the project as the main economic benefit. A small part of this increase in land value is attributed directly to the project. While both approaches are appropriate, the approach used in the AF is better aligned with recent economic appraisals of similar Bank-funded projects in other countries. Thus, the ICR also uses the same approach as the AF, i.e. increase in land values in rural areas is taken as the primary quantifiable economic benefit, with a small part of that increase directly attributable to the project.

3.4 **Methodology of economic appraisal in ICR.** Following the methodology used in the AF, a cost-benefit analysis was conducted at the ICR stage for the full project to assess its economic viability over a long-term time horizon at the applicable social discount rate. To the extent possible and within the limits of data availability, Net Present Value (NPV) and Economic Internal Rate of Return (EIRR) for the full project were calculated by quantifying the primary economic benefit over a long-term time horizon and comparing it with the capital and incremental operation and maintenance costs attributable to the project

(at economic prices) to determine the net economic flows. The social discount rate used was 10%[43]. A sensitivity analysis was carried out to determine the impact of significant changes in project costs and benefits. Economic prices were assumed to be 0.8 times financial prices. Other notable assumptions are outlined in Table 1.

3.5 **Assumptions and Differences with AF Methodology.** The project economic appraisal in the ICR updates, revises and modifies various assumptions and numbers to reflect actual costs and benefits and updated projections for the future. **Table 1** describes each of these changes between the AF and ICR in detail.

Table 1. Key Assumptions of ICR Economic Analysis and Differences with AF Analysis

No.	Component	ICR assumptions and rationale for difference with AF appraisal
1	Duration of analysis (Project lifetime)	Analysis in AF project assumed total duration (lifetime of project) of 13 years, from 2006-07 to 2018-19. The ICR analysis assumes total duration of 21 years, from 2007-08 to 2027-28. This has been done to reflect the Government's forecasted expenditure on operating and maintaining the new land records system over the medium-term through the newly established PLRA and improving service delivery at the newly-operational service centers. It also reflects a more realistic time horizon taking into account future costs needed to sustain the interventions.
2	Project costs	Total project costs have been revised upward substantially to reflect the Government's forecasted high expenditure on operations and maintenance to improve quality of services of the new system over the next five years, by hiring of additional staff, improved connectivity of service centers, and other improved services; as well as forecasted expenditure on capital cost to replace equipment, construct/ rehabilitate more service centers etc. O&M costs have been extended till the terminal year at a constant level. It is assumed that these future costs are required to maintain and improve the existing level of service to beneficiaries, and are necessary to realize and sustain the economic benefits. Lifetime project cost is expected to be PKR17.16 billion in the AF analysis and PKR66.71 billion in the ICR analysis (both undiscounted and in nominal prices).
3	Economic Prices conversion factor	Economic prices are assumed to be 0.8 times financial prices in the ICR analysis, compared to 0.9 in the AF analysis. This reflects current trends in Pakistan and the value used in other recent projects (Bank-financed and otherwise) in the country.
Project Benefits		
4	Current Land value (Average price per acre)	AF analysis used a single estimate for average land value across the province. The ICR analysis has used actual prevailing land values at the Tehsil level (144 separate values), obtained from each service center in-charge official based on recent reported transactions. In general, land values used in ICR are higher than those in the AF analysis. A 33% reduction has been applied to land values to account for sampling errors, which is more conservative than the 25% reduction used in the AF analysis.
5	Increase in land value attributable to project	AF analysis assumed that the project will contribute to a 1% increase in land value in rural areas (direct attribution). The ICR analysis has made a more conservative assumption by attributing a 0.5% increase in land value to the project. Both assumptions are within the range provided in economic appraisals of similar Bank-funded projects in other countries (e.g. Kyrgyz Republic,

[43] This is based on the World Bank technical note on "Discounting Costs and Benefits in Economic Analysis of World Bank Projects" which suggests the use of the Ramsey formula with certain assumptions to determine the discount rate. Pakistan's annual average GDP growth rate from 1960 till 2014 is 5% (GDP at market prices in constant 2005 USD and constant Rupees. Source: World Development Indicators). Plugging into the Ramsey formula using 2 (the upper bound) for the elasticity of marginal utility of consumption yields a discount rate of 10%. Incidentally, the same discount rate of 10% has been used in the AF analysis as well as appraisals of similar Bank-funded projects in other countries.

No.	Component	ICR assumptions and rationale for difference with AF appraisal
		FYR Macedonia, Azerbaijan). A more conservative assumption has been made in the ICR to counter-balance the higher baseline land value compared to AF (see no.4 above) and to account for other market forces impacting land values. This attributable increase has been applied to average reported land values at the Tehsil level (144 values) to determine per-unit land value increase for each Tehsil. This is then used to calculate total land value increase for the total project beneficiary area in each Tehsil (see no.6 below).
6	Land area benefitting from project	The AF analysis takes the value of total impacted area (cultivated area + culturable waste in 36 Districts of Punjab) at the provincial level. The total beneficiary area is estimated to be 36 million acres. The ICR analysis takes the total area reported in the LRMIS for the province (34 million acres), and uses District-level estimates of cultivated area and culturable waste to estimate the beneficiary area at Tehsil level. The total province-wide beneficiary area is thus estimated to be 27.5 million acres – which is three-quarters of the beneficiary area in the AF. Thus, the total area benefitting from the project is assumed to be smaller in the ICR compared to the AF by about a quarter.
7	Accrual of increments in land value by year	Similar to the AF analysis, the ICR analysis assumes that increments of land value will be realized/ accrued evenly over five years, beginning one year after the operationalization of service centers in a District. The AF assumes that 4 Districts will begin accruing benefits in 2013-14 and the remaining 32 in 2014-15. The ICR analysis begins accruing benefits in 2015-16 to reflect not only the actual year of operationalization of each service center at the Tehsil level but also when most of the villages were brought online into the system formally after verification of data and notification by LRMIS and BoR. The economic benefits of the projects only began to be materially accrued after this process. Land value increments are accrued for five years at the Tehsil level, beginning in 2015-16 and the actual year of operationalization of each service center at the Tehsil, whichever is later.

3.6 **NPV and EIRR estimation results.** Based on the assumptions outlined above, the project is estimated to yield large positive net benefits and economic rates of return, showing that it provides high value for money. The project is estimated to have a positive NPV of PKR16.25 billion (US$155 million at current exchange rate), an EIRR of 66% and a benefit-to-cost ratio (in present value terms) of 2.1. While the economic appraisal done in the AF Project Paper was based on different assumptions and hence it is not a like-to-like comparison, the ICR appraisal compares favorably with the results in the AF appraisal, which were: NPV of PKR13.8 billion (US$146 million at AF (2012) exchange rate) and an EIRR of 59%. The benefit-to-cost ratio (in present value terms) was estimated to be higher at the AF stage, at 3.79 due to the substantially lower estimated costs over the project's lifetime– especially recurrent operating costs– and a shorter time horizon.

3.7 To assess the impact of changes in expected costs and benefits on the NPV and EIRR, four scenarios are evaluated. Results of this sensitivity analysis show that the project yields high net economic benefits even with large reduction in expected benefits or increase in lifetime costs. The results of the sensitivity analyses are shown in Table 2.

Table 2. Results of Sensitivity Analysis for Economic NPV and EIRR

Scenarios	Economic NPV (PKR Mn)	EIRR	Ratio of PV of Benefits and Costs	Economic NPV (USD Mn)
Base Case	16,247	66%	2.1	155
1: 20% Reduction in benefits	9,964	55%	1.7	95
2: Benefits accrual delayed by 2 years	10,795	35%	1.7	103
3: 20% Increase in Costs	13,213	57%	1.7	126

Scenarios	Economic NPV (PKR Mn)	EIRR	Ratio of PV of Benefits and Costs	Economic NPV (USD Mn)
4: 20% Reduction in benefits and 20% Increase in Costs	6,930	46%	1.4	66

3.8 **Financial Analysis.** The PAD and AF Project Paper conducted a financial sustainability analysis at the ARC/ District level and showed that cost recovery for the project's interventions is dependent upon increases in the number of fards and transactions issued as well as fees charged by the Government for them. The PAD compared the incremental project costs at the level of a sample of three service centers with revenues being generated by issuance of fards and transactions at these three centers, to estimate the required fee and volume of issuances needed to break even. The AF analysis expanded this method and estimated the break-even level of fee and volume of issuance at the aggregate level for the whole province and analyzed different scenarios with varying levels of fees and volumes of fard and transactions. The AF analysis showed that increases in transaction fees and fees for copies of records of Rights (fards) will be needed for the Tehsil-level service centers to be self-financing. Scenario analysis done at the AF stage showed that an increase of PKR 700 in the fee for transactions and an increase of PKR 100 in the fee for fard issuance, combined with a modest 5% increase in the number of transactions and a doubling of fard issuance (i.e. 100% increase) would result in positive net revenues from the automated system. "Compared to estimated unofficial payments for transactions and copies of fards, these fee increases actually represent a substantial reduction in payments". Achieving these conditions should earn the Government sufficient revenue to cover the system-wide expenditures of interventions introduced by the project at the headquarters and field levels.

3.9 **Methodology of financial analysis in ICR and differences with AF.** The ICR has conducted a financial sustainability analysis by updating various data and assumptions used in the PAD and AF to reflect actual values realized to date as well as revised assumptions for expected future costs. In addition, while the PAD and AF conducted a snapshot analysis which did not incorporate discounting and time-value of money, the ICR analysis is based on the longer term time horizon of the project and calculates a financial NPV and Financial IRR for the whole project. It provides a revised scenario of the increases in fees and volumes required to make the LRMIS interventions financially sustainable. A full cost-revenue analysis has been conducted to assess the financial sustainability of the project over a long-term time horizon. The costs are identical to the ones in the economic analysis, with the difference being that in the financial analysis these costs are taken at market prices (not economic prices). The difference in the economic and financial NPV and IRR is that the former compares the economic and social benefits with project costs at economic prices; while the latter compares the actual revenues with project costs at market prices. The discount rate used is 10%.

3.10 **Existing Fee structure for Fard and Transactions.** The analysis in the AF assumed a simpler fee structure for issuance of fard and transactions than what prevails in Punjab. The pre-project fees were taken at PKR 50 per fard issuance and PKR 500 per transaction. In practice, the Government has notified varying fees for different types of fards and transactions. These can be categorized as follows. Fees for transactions are of two types, depending on the type of transaction: fixed fees at PKR 500 per issuance; or 2-3% of the value of land declared in the transaction (fee as % of land value). There are also a number of transactions issuances which are free of charge for citizens. Fees for fard issuance have a number of small variations (there are 34 different types of fard issuance) but are broadly capped by the Government at PKR 150-200 per issuance. Table 3 shows the number of fards and transactions issued in 2016 and average fees (actual) collected for the categories described above.

Table 3. Number of fards and transactions issued in 2016 and average fees collected by type

	Number	Average Fee per issuance (PKR)
FARDS	1,953,256	173
TRANSACTIONS		
Total Transactions (As per LRMIS database, rural areas only)	694,556	
Of which:		
Transactions without fee	169,228	n/a
Transactions with fee	525,328	14,007
Transactions with fee as % of total transactions	76%	
Breakdown of Transactions with fee		
Transactions with fixed fee (PKR 500)	229,093	500
Transactions with fee as percentage of land value	296,227	24,500
Transactions with fixed fee (PKR 500) % of total Transactions with fee	44%	
Imputed average land value for Transactions with fee as % of land value (assuming transaction fee = 3% of land/ transaction value) (PKR)	815,133	

3.11 **Assumptions.** In addition to the figures described above, the following assumptions have been used: numbers of fards and transactions issued (for rural areas) are expected to grow by 1% per year from 2009-10 to 2027-28 without the project, and are expected to grow by 7% and 3% per year, respectively, from 2017-18 to 2027-28 with the project; historical actual figures for fard and transaction issuance are used till 2016-17, with 40% of transactions and 100% of fards issued in the historical data pertaining to rural areas (i.e. the area under the scope of the project); fee per fard issuance is kept at the pre-project actual of PKR 50 in the without-project case and increased to PKR 300 in the with-project case; fees for transactions are as follows: for fixed fee transactions, PKR 500 in the without-project case and PKR1,500 in the with-project case; for transactions with 3% of land value as fee, PKR 20,000 in the without-project case and PKR 24,500 in the with-project case till 2016-17 which is increased to PKR 36,700 from then till 2027-28.

3.12 **Changes in Fee structure and volume required to achieve positive financial NPV and IRR.** Based on the assumptions outlined above, the project's interventions will not be financially self-sustainable unless the fee structure for fards and transactions is revised upwards and the number of fards and transactions issuances also increase. Specifically, the analysis shows that the following measures are required to make the project financially self-sustainable over the medium to long-term and generate a positive financial NPV and an IRR higher than the hurdle rate of 10%:

i) **Fees for issuance of Fards:** Increase fee for fard issuance to PKR300 from the current of average PKR 173;

ii) **Fees for issuance of Transactions – Fixed Fee transactions:** increase fixed fee for transactions issuance to PKR 1,500 from currently notified PKR500;

iii) **Fees for issuance of Transactions – Transactions fee as % of land value**: increase fee for these types of transactions to 4.5% of land / transaction value compared to the existing 3%. Assuming an imputed average land/ transaction value of PKR 815,133, this implies that the

average fee per transaction of these types will increase to PKR 36,700 compared to the current average of PKR24,500.

iv) **Number of Fard issuances:** Fard issuances should grow by at least 7% per year from now till 2027-28

v) **Number of Transaction issuances:** Transaction issuances should grow by at least 3% per year from now till 2027-28

3.13 If the above-mentioned five steps occur, then the project's interventions will have a financial NPV of PKR 255 million (US$2.43 million at current exchange rate), a financial IRR of 10.5% and a benefit-to-cost ratio (in present value terms) of 1.01. All the five dimensions mentioned above are inter-linked, so any increase in one implies that the other four have to increase by a lesser amount to achieve the same NPV and IRR. For example, if fard issuances grow by 10% per year from now till 2027-28, then the fee for fard issuance can be increased to PKR 250 as opposed to the proposed PKR 300 to achieve financial sustainability; or the fixed fee for transactions issuance can be increased to PKR 1,000 as opposed to the proposed PKR 1500. The proposed changes in the volume and fees for fard and transaction issuance in order to achieve financial sustainability are summarized in Table 4.

Table 4. Summary of changes required in volume and fees of fard and transaction issuance to achieve financial sustainability

		Current Status	Proposed change
Fard issuance fee		PKR 173 (Average fee per Fard in 2016)	PKR 300
Transaction issuance fee	Fixed Fee transactions	PKR 500	PKR 1,500
	Transactions fee as % of land value	3% of value (Equivalent to PKR 24,500 as Average fee per Transaction in 2016)	4.5% of value (Equivalent to PKR 36,700 in 2016 values)
Number of Fards issued		1.95 million	To grow by 7% per year to 4.11 million by 2027-28
Number of Transactions issued (with fee), Rural areas only		525,328 (of which 44% are Transactions with fixed fee of PKR 500)	To grow by 3% per year to 727,177 by 2027-28 (of which 44% are Transactions with fixed fee)

3.14 **Justification for fee increases.** The primary cause of the requirement for fee increases for fard and transaction issuances is the high expected capital and operation and maintenance costs forecast by the Punjab Land Records Authority (PLRA) to maintain, expand and improve the services offered to citizens. The detailed cost breakdown in Table 5 shows where these costs will be incurred. Thus, increases in fees are required if the Government aims to make the computerized land record system interventions financially self-sustainable and does not want to subsidize the system from its resources. The end-line evaluation survey of the project shows that beneficiaries are willing to pay higher fees for better service delivery at the Service Centers, and that the existing fees are still substantially lower than the actual and opportunity costs of obtaining fard and transaction issuances before the project. Given the high willingness to pay for these improved services, the Government will be able to fully recover the costs of these services by increasing fees and still pass on benefits to citizens in the shape of reduced transaction costs.

Table 5. Model of Economic Analysis (NPV and EIRR estimation)

All figures in PKR million unless noted	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
CAPITAL COSTS																					
Civil Works	0	0	0	32	195	720	219	58	33	288	550	300	330	0	0	0	0	0	0	0	0
Consultancy	0	0	6	20	44	64	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0
Data Entry	0	0	0	46	209	609	1,176	957	762	409	0	0	0	0	0	0	0	0	0	0	0
Equipment and Furniture	2	1	3	2	14	57	119	67	53	141	145	0	0	0	0	0	0	0	0	0	0
Hardware	1	0	2	14	95	63	321	65	784	506	300	200	220	220	220	0	0	0	0	0	0
Software	0	0	0	2	2	11	17	51	117	15	50	0	0	0	0	0	0	0	0	0	0
Software Development Pilot	29	8	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicles including Vans for mobile services	0	0	1	11	0	0	25	0	9	50	165	200	0	0	0	0	0	0	0	0	0
New Initiatives	0	0	0	0	0	0	0	0	0	400	300	330	363	399	439	0	0	0	0	0	0
Security Measures at ARCs	0	0	0	0	0	0	0	0	0	0	150	0	0	0	0	0	0	0	0	0	0
Total Capital Costs (PKR Mn)	**32**	**9**	**30**	**127**	**558**	**1,525**	**1,900**	**1,223**	**1,759**	**1,808**	**1,660**	**1,030**	**913**	**619**	**659**	**0**	**0**	**0**	**0**	**0**	**0**
OPERATING COSTS																					
Consultancy	0	4	8	5	7	10	13	14	41	9	0	0	0	0	0						
Connectivity	0	0	0	0	3	23	39	26	38	46	171	171	171	171	171						
Dissemination	0	0	0	0	0	4	23	15	18	20	0	0	0	0	0	Dissemination included in "Provincial Operational Expenditure" from 2017-18					
Provincial Operational Expenditures	5	5	10	14	19	21	41	67	144	89	203	206	208	211	214						
Quality Assurance & Monitoring	0	0	0	0	9	28	49	49	15	1	0	0	0	0	0						
District Operational Expenditures	0	0	0	0	2	7	51	118	202	279	866	867	868	870	871						
Salary of ARCs Staff	0	0	0	1	14	64	276	487	733	1,457	2,945	2,945	2,945	2,945	2,945						
Salary of Head Office Staff	11	10	15	18	19	23	57	97	129	135	135	135	135	135	135						
Training	0	0	0	1	0	0	1	1	0	1	5	5	5	5	5						
Total Operating Costs (PKR Mn)	**16**	**19**	**33**	**40**	**74**	**181**	**553**	**875**	**1,320**	**2,037**	**4,325**	**4,329**	**4,332**	**4,337**	**4,341**	**4,341**	**4,341**	**4,341**	**4,341**	**4,341**	**4,341**
Total Costs (PKR Mn)	49	29	63	167	632	1,706	2,453	2,098	3,079	3,845	5,985	5,359	5,245	4,956	5,000	4,341	4,341	4,341	4,341	4,341	4,341

All figures in PKR million unless noted	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Total Costs at economic prices (PKR Mn)	39	23	50	133	506	1,365	1,963	1,678	2,463	3,076	4,788	4,287	4,196	3,965	4,000	3,473	3,473	3,473	3,473	3,473	3,473
PV of Costs (PKR Mn)	15,171																				
BENEFITS																					
Total Increments of Land Value (PKR Mn)	0	0	0	0	0	0	0	0	9,664	13,758	17,691	19,184	19,196	9,531	5,438	1,505	12	0	0	0	0
PV of Benefits (PKR Mn)	31,418																				
Net stream of economic flows (PKR Mn)	**-39**	**-23**	**-50**	**-133**	**-506**	**-1,365**	**-1,963**	**-1,678**	**7,201**	**10,682**	**12,902**	**14,897**	**15,000**	**5,567**	**1,437**	**-1,968**	**-3,461**	**-3,473**	**-3,473**	**-3,473**	**-3,473**
NPV (PKR Mn) (Economic)	**16,247**																				
Economic IRR	**66%**																				
Ratio of PV of benefits to costs	2.1																				
Assumptions:																					
Economic prices factor	0.8																				
Discount rate	10%																				
Total increase in land value attributable to project (PKR Mn)	95,979				This comes from detailed Tehsil-level estimates of land value increments, aggregated for the province.																
Accrual period of land value increase, years	5																				
Increase in land value due to project, beginning in (PKR mn)							48,322	20,469	19,662	7,468	59										
Annual accrual (5 Years) (PKR mn)							9,664	4,094	3,932	1,494	12										
Total accrual for year (PKR mn)									9,664	13,758	17,691	19,184	19,196	9,531	5,438	1,505	12				

Table 6. Model of Economic Analysis (NPV and EIRR estimation)

All figures in PKR million unless noted	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
CAPITAL COSTS																					
Civil Works	0	0	0	32	195	720	219	58	33	288	550	300	330	0	0	0	0	0	0	0	0
Consultancy	0	0	6	20	44	64	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0
Data Entry	0	0	0	46	209	609	1,176	957	762	409	0	0	0	0	0	0	0	0	0	0	0
Equipment and Furniture	2	1	3	2	14	57	119	67	53	141	145	0	0	0	0	0	0	0	0	0	0
Hardware	1	0	2	14	95	63	321	65	784	506	300	200	220	220	220	0	0	0	0	0	0
Software	0	0	0	2	2	11	17	51	117	15	50	0	0	0	0	0	0	0	0	0	0
Software Development Pilot	29	8	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicles including Vans for mobile services	0	0	1	11	0	0	25	0	9	50	165	200	0	0	0	0	0	0	0	0	0
New Initiatives	0	0	0	0	0	0	0	0	0	400	300	330	363	399	439	0	0	0	0	0	0
Security Measures at ARCs	0	0	0	0	0	0	0	0	0	0	150	0	0	0	0	0	0	0	0	0	0
Total Capital Costs (PKR Mn)	**32**	**9**	**30**	**127**	**558**	**1,525**	**1,900**	**1,223**	**1,759**	**1,808**	**1,660**	**1,030**	**913**	**619**	**659**	**0**	**0**	**0**	**0**	**0**	**0**
OPERATING COSTS																					
Consultancy	0	4	8	5	7	10	13	14	41	9	0	0	0	0	0						
Connectivity	0	0	0	0	3	23	39	26	38	46	171	171	171	171	171						
Dissemination	0	0	0	0	0	4	23	15	18	20	0	0	0	0	0	Dissemination included in "Provincial Operational Expenditure" from 2017-18					
Provincial Operational Expenditures	5	5	10	14	19	21	41	67	144	89	203	206	208	211	214						
Quality Assurance & Monitoring	0	0	0	0	9	28	49	49	15	1	0	0	0	0	0						
District Operational Expenditures	0	0	0	0	2	7	51	118	202	279	866	867	868	870	871						
Salary of ARCs Staff	0	0	0	1	14	64	276	487	733	1,457	2,945	2,945	2,945	2,945	2,945						
Salary of Head Office Staff	11	10	15	18	19	23	57	97	129	135	135	135	135	135	135						
Training	0	0	0	1	0	0	1	1	0	1	5	5	5	5	5						
Total Operating Costs (PKR Mn)	**16**	**19**	**33**	**40**	**74**	**181**	**553**	**875**	**1,320**	**2,037**	**4,325**	**4,329**	**4,332**	**4,337**	**4,341**	**4,341**	**4,341**	**4,341**	**4,341**	**4,341**	**4,341**
Total Costs (PKR Mn)	49	29	63	167	632	1,706	2,453	2,098	3,079	3,845	5,985	5,359	5,245	4,956	5,000	4,341	4,341	4,341	4,341	4,341	4,341

All figures in PKR million unless noted	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Total Costs at economic prices (PKR Mn)	39	23	50	133	506	1,365	1,963	1,678	2,463	3,076	4,788	4,287	4,196	3,965	4,000	3,473	3,473	3,473	3,473	3,473	3,473
PV of Costs (PKR Mn)	15,171																				
BENEFITS																					
Total Increments of Land Value (PKR Mn)	0	0	0	0	0	0	0	0	9,664	13,758	17,691	19,184	19,196	9,531	5,438	1,505	12	0	0	0	0
PV of Benefits (PKR Mn)	31,418																				
Net stream of economic flows (PKR Mn)	**-39**	**-23**	**-50**	**-133**	**-506**	**-1,365**	**-1,963**	**-1,678**	**7,201**	**10,682**	**12,902**	**14,897**	**15,000**	**5,567**	**1,437**	**-1,968**	**-3,461**	**-3,473**	**-3,473**	**-3,473**	**-3,473**
NPV (PKR Mn) (Economic)	**16,247**																				
Economic IRR	**66%**																				
Ratio of PV of benefits to costs	2.1																				
Assumptions:																					
Economic prices factor	0.8																				
Discount rate	10%																				
Total increase in land value attributable to project (PKR Mn)	95,979				This comes from detailed Tehsil-level estimates of land value increments, aggregated for the province.																
Accrual period of land value increase, years	5																				
Increase in land value due to project, beginning in (PKR mn)							48,322	20,469	19,662	7,468	59										
Annual accrual (5 Years) (PKR mn)							9,664	4,094	3,932	1,494	12										
Total accrual for year (PKR mn)									9,664	13,758	17,691	19,184	19,196	9,531	5,438	1,505	12				

Table 7. Model of Financial Analysis (Financial NPV and IRR estimation)

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
CAPITAL COSTS																					
Total Capital Costs (PKR Mn)	**32**	**9**	**30**	**127**	**558**	**1,525**	**1,900**	**1,223**	**1,759**	**1,808**	**1,660**	**1,030**	**913**	**619**	**659**						
OPERATING COSTS																					
Total Operating Costs (PKR Mn)	**16**	**19**	**33**	**40**	**74**	**181**	**553**	**875**	**1,320**	**2,037**	**4,325**	**4,329**	**4,332**	**4,337**	**4,341**	**4,341**	**4,341**	**4,341**	**4,341**	**4,341**	**4,341**

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Total Costs (PKR Mn)	49	29	63	167	632	1,706	2,453	2,098	3,079	3,845	5,985	5,359	5,245	4,956	5,000	4,341	4,341	4,341	4,341	4,341	4,341
PV of Costs (PKR Mn)	18,963																				
Costs are identical to the ones in the economic analysis, but at market prices.																					

REVENUES

WITHOUT PROJECT																					
Fards																					
Number of Fards	1,161,897	1,175,795	1,187,553	1,199,428	1,211,423	1,223,537	1,235,772	1,248,130	1,260,611	1,273,218	1,285,950	1,298,809	1,311,797	1,324,915	1,338,164	1,351,546	1,365,061	1,378,712	1,392,499	1,406,424	1,420,488
Fee per Fard (PKR)	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Revenue (PKR Mn.)	58	59	59	60	61	61	62	62	63	64	64	65	66	66	67	68	68	69	70	70	71
Transactions																					
Number, Rural only, Fee generating only	456,439	489,592	494,488	499,432	504,427	509,471	514,566	519,711	524,908	530,158	535,459	540,814	546,222	551,684	557,201	562,773	568,401	574,085	579,826	585,624	591,480
Number, with fixed amount fee	200,833	215,420	217,575	219,750	221,948	224,167	226,409	228,673	230,960	233,269	235,602	237,958	240,338	242,741	245,168	247,620	250,096	252,597	255,123	257,674	260,251
Number, with % of value as fee	255,606	274,171	276,913	279,682	282,479	285,304	288,157	291,038	293,949	296,888	299,857	302,856	305,884	308,943	312,033	315,153	318,304	321,487	324,702	327,949	331,229
Revenue (PKR Mn.), from fixed amount fee	100	108	109	110	111	112	113	114	115	117	118	119	120	121	123	124	125	126	128	129	130
Revenue (PKR Mn.), from % of value as fee	5,112	5,483	5,538	5,594	5,650	5,706	5,763	5,821	5,879	5,938	5,997	6,057	6,118	6,179	6,241	6,303	6,366	6,430	6,494	6,559	6,625
Total Revenue from Transactions (PKR Mn.)	5,213	5,591	5,647	5,704	5,761	5,818	5,876	5,935	5,994	6,054	6,115	6,176	6,238	6,300	6,363	6,427	6,491	6,556	6,622	6,688	6,755
Total Revenue from Fards + Transactions (PKR Mn.)	5,271	5,650	5,706	5,763	5,821	5,879	5,938	5,998	6,057	6,118	6,179	6,241	6,303	6,366	6,430	6,494	6,559	6,625	6,691	6,758	6,826
WITH PROJECT																					
FARDS																					
Computerized																					
Number of Fards							9,254	325,159	1,180,597	1,953,256	2,089,984	2,236,283	2,392,823	2,560,320	2,739,543	2,931,311	3,136,502	3,356,057	3,590,981	3,842,350	4,111,315
Revenue (PKR Mn.)							3	59	201	338	627	671	718	768	822	879	941	1007	1077	1153	1233
Fee per Fard (PKR)							355	180	170	173	300	300	300	300	300	300	300	300	300	300	300

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Manual																					
Number	1,161,897	1,175,795	1,187,553	1,199,428	1,211,423	1,223,537	1,226,518	922,971	80,014												
Revenue (PKR Mn.)	58	59	59	60	61	61	61	46	4												
Total Revenue from Fards, (PKR Mn.), with project	58	59	59	60	61	61	65	105	205	338	627	671	718	768	822	879	941	1,007	1,077	1,153	1,233
TRANSACTIONS																					
Computerized																					
Number, Rural only, Fee generating only						600	14,135	108,759	318,065	525,328	541,088	557,320	574,040	591,261	608,999	627,269	646,087	665,470	685,434	705,997	727,177
Number, with fixed amount fee						93	883	31,317	129,778	229,093	238,079	245,221	252,578	260,155	267,960	275,998	284,278	292,807	301,591	310,639	319,958
Number, with % of value as fee						507	13,252	77,442	188,286	296,227	303,009	312,099	321,462	331,106	341,040	351,271	361,809	372,663	383,843	395,358	407,219
Revenue (PKR Mn.), from fixed amount fee						0.05	0.4	16	65	115	357	368	379	390	402	414	426	439	452	466	480
Revenue (PKR Mn.), from % of value as fee						12	325	1,897	4,613	7,258	11,115	11,448	11,792	12,145	12,510	12,885	13,272	13,670	14,080	14,502	14,937
Total Revenue from computerized Transactions (PKR Mn.)						12	325	1,913	4,678	7,372	11,472	11,816	12,170	12,536	12,912	13,299	13,698	14,109	14,532	14,968	15,417
Manual																					
Revenue (PKR Mn.)	5,213	5,591	5,647	5,704	5,761	5,806	5,551	4,022	1,317												
Total Revenue from Transactions (PKR Mn.), with project	5,213	5,591	5,647	5,704	5,761	5,818	5,876	5,935	5,994	7,372	11,472	11,816	12,170	12,536	12,912	13,299	13,698	14,109	14,532	14,968	15,417
Total Revenue from Fards + Transactions (PKR Mn.)	5,271	5,650	5,706	5,763	5,821	5,879	5,941	6,040	6,200	7,710	12,099	12,487	12,888	13,304	13,733	14,178	14,639	15,116	15,609	16,121	16,651
Incremental Revenue with project (PKR Mn.)	0	0	0	0	0	0	3	42	142	1,592	5,920	6,246	6,585	6,937	7,303	7,684	8,079	8,491	8,918	9,363	9,825
PV of Incremental Revenue with project (PKR Mn.)	19,218																				
Net gain / (shortfall)	-49	-29	-63	-167	-632	-1,706	-2,450	-2,056	-2,937	-2,253	-66	887	1,339	1,981	2,303	3,343	3,738	4,149	4,577	5,021	5,484
Financial NPV (PKR Mn.)	**255**																				

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Financial IRR	**10.5%**																				
Ratio of PV of incremental revenue to costs	1.01																				

Assumptions:			
Growth rate of Fards + Transactions, without project	1%		
Transactions with fixed fee as share of total Transactions	44%		
Fixed fee per Transaction, existing (without project) (PKR)	500		
Average Fee per Transaction, for Transactions having fee of 3% of land value (existing, without project) (PKR)	20,000		
Annual growth rate of Fards, with project, after 2017-18	7%		
Annual growth rate of Transactions, with project, after 2017-18	3%		
Fee per Fard, with project, after 2017-18 (PKR)	300		
Fixed fee per Transaction, proposed (with project) (PKR)	1,500		
Average Fee per Transaction, for Transactions having fee of 3% of land value (existing 2016) (PKR)	24,500	3%	816,667
Average Fee per Transaction, for Transactions having fee of X% of land value (proposed, with project) (PKR)	36,681	4.5%	815,133
Discount rate	10%		

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Edward C. Cook	--	GFA12	Task Team Leader
Uzma Sadaf	Senior Procurement Specialist	GGO06	
Furqan Ahmad Saleem	Senior Financial Management Specialist	GGO26	
Ismaila B. Ceesay	Lead Financial Management Specialist	GGO25	
Madhavan Balachandran	Senior Financial Management Specialist	GGO20	
Paul Welton	Lead Financial Management Specialist	GGO24	
Riaz Mahmood	Financial Management Analyst		
Ambreen Malik	Operations Officer		
Brenda Lee Scott	Program Assistant	GFA12	
Zia Al Jalaly	Senior Social Development Specialist	OPSPF	
Naveed Saeed	Consultant		
Tekola Dejene	Consultant		
Tony Burns	Consultant		
Igor Popiv	Consultant		
Supervision/ICR			
Zia Al Jalaly	Senior Social Development Specialist	OPSPF	
Anwar Ali Bhatti	Financial Analyst	SACPK	
Ambreen Adnan Gilani	Consultant	GED06	
Riaz Mahmood	Financial Management Analyst	GGODR	
Sheila Braka Musiime	Chief Counsel	LEGES	
Uzma Sadaf	Senior Procurement Specialist	GGO06	
Furqan Ahmad Saleem	Sr Financial Management Specialist	GGO13	
Brenda Lee Scott	Program Assistant	GFA12	
Tahira Syed	Senior Rural Development Specialist	GFA12	
Mary Lisbeth Gonzalez	Senior Social Development Specialist	GSULN	
Khalid Bin Anjum	Senior Procurement Specialist	GGO06	
Qurat ul Ain Hadi	Financial Management Specialist	GGO24	
Linus Benedikt Pott	Jr Professional Officer	GSULN	
Mariam Sara Altaf	Communications Officer	SACPK	
Rahat Jabeen	Environmental Specialist	GEN06	

Samina Mussarat Islam	Consultant	CESI3	
Caleb Travis Johnson	Consultant	GSULN	
Shahnaz Meraj	Program Assistant	SACPK	
Sheila Braka Musiime	Chief Counsel	LEGES	
Sohaib Athar	Urban Development Specialist	GSU12	
Takeaki Sato	Senior Environmental Specialist	OPSPF	
Teresa M. Roncal	Consultant	GENDR	
Anna Roumani	Consultant	GAG04	
Igor Popiv	Consultant	GSULN	
Juan Jose Valencia Mineros	Consultant	GSULN	

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	USD Thousands (including travel and consultant costs)
Lending		
FY05	39.45	185.48
FY06	33.01	207.39
FY07	14.14	57.49
Total:	86.6	450.36
Supervision/ICR		
FY07	7.06	40.40
FY08	23.08	110.43
FY09	24.58	132.48
FY10	18.97	124.03
FY11	15.2	76.61
FY12	24.9	139.91
FY13	16.17	87.33
FY14	13.87	98.70
FY15	12.08	73.36
FY16	8.61	68.38
FY17	20.04	146.79
Total:	177.5	1058.02

Annex 5. Beneficiary Survey Results

The following paragraphs[44] represent the Executive Summary taken from the 'End of Project Survey' conducted by APEX Consulting in 2016.[45] The survey used a mix of qualitative and quantitative methods. Primary data was collected through exit and household interviews of 2,304 applicants and 104 stakeholders in all 36 districts in Punjab. The survey findings were triangulated through a series of focus group discussions and key informant interviews which were conducted in 12 project districts.

"The Land Records Management and Information Systems (LRMIS) is being executed by the PMU, Board of Revenue, Government of Punjab, with a major portion of funding provided by the World Bank. The project involves computerization of rural land records with the objective to improve and modernize the system of maintenance of land revenue records and provide land record related services to the public in a more efficient way than these were previously provided. The outcomes, expected from the project, are:

a. *Increased access to land records at lower transaction cost for the beneficiary, through client-responsive services.*
b. *Increased level of tenure security of land-right holders.*

Arazi Record Centers (ARCs) have been established in all 143 Tehsils of 36 districts in several phases of the project duration through which computerized land record services including issuance of Fards[46] and transactions[47] are being provided to the public.

The scope of this assignment was to assess project success by measuring stakeholder satisfaction through an end-line survey of the various project stakeholders, particularly the direct beneficiaries. During the course of the assignment, a mix of qualitative and quantitative methods was used for data collection. Primary data was collected through exit and household interviews of 2304 applicants in all 36 districts in Punjab and the survey findings were supplemented/cross checked through a series of stakeholder interviews, FGDs and KIIs.

The Consultants' analysis indicates that, at the very minimum, the project has eliminated the need for the general public to physically interact with the Patwari in most land related matters resulting in:

a. *much higher level of client satisfaction.*
b. *significant reduction in the time required for issuance of fards and completing transactions;*
c. *thus reducing costs associated with these activities well as unofficial).*

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[44] The language has not been edited.
[45] APEX is a consultancy firm, founded in 2002, specialized, among others, in Project Design, Implementation and Evaluation, with a broad range of national and international clients and experiences with endline studies.
[46] More than 180,000 per month.
[47] More than 60,000 per month

d. *significant improvement in perceptions about land tenure security and in protection of land owner/holder rights, and in*
e. *ensuring women's share of inheritance through mandatory attendance of all beneficiaries at the time of transaction.*

The captured data provided information about the ARC applicants, and about their requirements from the system. It provided detailed insight into the applicants' perception about ARC facilities and services' delivery. This data set also enabled the Consultants to compare the ARC system with the Patwari system and benchmark its performance. Lastly, the applicants' and stakeholders' perceptions about the system security and its impact on tenure rights were recorded and analyzed.

Our analysis of the data indicates that the typical visitor to the ARC is a middle aged, semi-literate male from a rural, agrarian background. He has some level of knowledge about the land records system and, in half the cases, has dealt with the Patwari as well. He typically interacts with the land revenue system for acquiring Fards and for transaction purposes.

Analysis of the collected data indicated a very high level of beneficiary satisfaction with the new system - 92%[48] of the ARC visitors expressed their satisfaction with the new system (versus 29% at the time of the baseline) by rating is as OK, good or very good and 87%[49] of the ARC visitors with prior experience of the Patwari indicated their preference for the ARC system. Similarly 80%[50] of the visitors reported that their requirements for visiting the ARC were fulfilled in on the first visit.

On the other hand, the survey results also indicated that a small fraction of applicants (13% of the total sample) still prefer the Patwari system over the ARCs. Their preference is directly linked to the time needed to a process a certain requirement at the ARC vis-à-vis the time taken to process the same requirement by the Patwari. Survey results also indicated that applicants with larger landholdings tend to prefer the Patwari rather than the ARC system.

The collected data indicated that the percentage of women visiting the ARC was only 22% which is very small in comparison to their ratio in the overall population[51]. However, their representation in cases of transaction due to inheritance was 35% which is a significant percentage. The consultants feel that this issue is cultural and not due to any aspect of the LRMIS and that this percentage will gradually rise with the passage of time.

The survey data has also been analyzed separately for each gender[52] (tables annexed). Responses of both genders are generally similar. Differences, if any, in their

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[48] Based on the 95% confidence interval, the margin of error is 2.6%
[49] Ibid
[50] Ibid
[51] This was zero at the time of the baseline survey; so, comparatively, there is significant improvement in this regard.
[52] There was no representation of the 3rd gender in our sample.

representation/responses, have been highlighted in the respective sections of the report. The survey data has also been analyzed on the basis of income quintiles (tables annexed). The Consultants have found little evidence to suggest that the ARC based system is skewed towards any specific socioeconomic group.

Results from both the qualitative and quantitative interviews indicate that the introduction of the LRMIS is perceived to have a positive impact in ensuring tenure security and in protecting the rights of the vulnerable. On the other hand the Consultants did not find any conclusive evidence that would suggest that the LRMIS has had any impact on the land/property market at the provincial level even though there was some qualitative evidence to support the ARCs' positive as well as negative impact at the local level.

Lastly, the collected data indicates that the issue of "Khewat Blocked" is not as widespread as the Consultants were initially led to believe."

Annex 6. Stakeholder Workshop Report and Results

The following stakeholder workshop reports are extracted from the PMU's 2016 report "Stakeholders Consultations, Dissemination Workshops/Conferences".[53]

6.1 **Female Dissemination Workshops. "***Female Dissemination Workshops were conducted to create awareness among female stakeholders. These workshops were conducted independently and in collaboration of various NGOs working for the right of Women to Land and Inheritance like Action Aid, Wise, Simorge and more. The representative of female farmers across Punjab participated in the workshops. The Women Right to land ownership in Legal and Religious perspectives was explained. They also explained the shares of women given by the Islam and Law. All the resource persons also highlighted the significance of computerization of land records and praised the Govt. of Punjab for this initiative. The participants were made aware that there are many ways in which the LRMIS has provided relief to Females. Transparent and efficient procedures has enhanced the female's access to land records and mitigate the female's own fears/apprehensions and hesitations for getting the inherited land transferred in their name. Moreover, LRMIS has reduced the chances of fraudulent transactions. This will result in financial strengthening of females leading towards gender empowerment and their mainstreaming into development. Various queries raised by the participants were addressed by concerned resource person during the workshops/ seminars."*

6.2 **Lectures at educational institutes**. "*Youth is the 49% of the total population of Pakistan. Youth is a critical partner for building & sustenance of prosperous and harmonious society. Youth is directly involved in the development of every society. The objective of these training workshops/awareness sessions was to sensitize & educate the youth of educational institutes of Punjab for greater impact of the project. It is expected that they will help to further disseminate the information in their families and peer groups regarding likely benefits of computerization of land records in Punjab. Total six training workshops were conducted in Lahore College, Punjab University, Punjab College, FC College, Kinerd College and Agriculture University Burewala Sub-Campus. Approximately 1600 students and faculty members participated in these training workshops. All the Participants praised the efforts of Punjab governments and LRMIS team to bring positive change in the lives of the messes and also assured their cooperation to further disseminate this awareness.*"

6.3 **Punjab Bar Council**. "*In order to apprise the lawyer community/stakeholders regarding computerization of land records and Registration of Deeds project, LRMIS Stakeholders Conferences titled "Connecting Partners for Greater Impact" was conducted to create effective communication, close coordination and guidance for various stakeholders. Followings were major objectives of Conference:*

- *To Introduce the project/system/processes*
- *To create sense of ownership among the stakeholders*

[53] The language has not been edited.

The Senior Member Board of Revenue during the opening remarks welcomed the participants and commended the progress of LRMIS. He sought the cooperation by all the stakeholders/participant for successful implementation of project. Project Director during the briefing highlighted the design of the project, the achievement, current stage, key issues and the future road map. Mrs. Farah Ejaz, Vice President Punjab Bar Council and Guest of Honor during her speech realized the importance of computerization of land records and the benefits expected from this project. She ensured full cooperation from the legal fraternity and extended support for required for implementation. Deputy Project Director answered all the quires of the participants. Mr. Rana Sana Ullah, the Chief Guest during his speech acknowledged the hard work and commitment of project staff. Realizing the prevalence of some issues, he reiterated to complete the project by June 2015. The conference was concluded by presentation of souvenirs to the Chief Guest, Guest of Honor, Additional Chief Secretary and Senior Member BOR."

6.4 **Technology Conference**. "*This conference was a part of cumulative process adopted by Board of Revenue Punjab to discuss the new visualized initiatives for the improvement of land record system in Punjab Province. This conference introduced with the new and important initiatives conceived under LRMIS which will facilitate the general public, land owners, government agencies and enhance Board of Revenue effectiveness through:*

a) Urban Land Records Computerization in Punjab
b) Digitization and Mosaicing of Mussavees (GIS)
c) Khasra Girdawari (Land Parcel Inspection) Digitization

Objectives of the Conference:

- *To introduce with the new initiatives*
- *To seek input from stakeholders on the concept*
- *To seek guidance for implementation of initiatives*
- *To create sense of ownership among the stakeholders*

Technology Conference was conducted on 13 August 2016 at Avari Hotel, Lahore. The Conference started with the recitation from holy Quran. The Participants introduced themselves in the start of the conference. Vice President LCCI, PD LRMIS, Parliamentarians, Additional DG LDA, CEO Urban Unit, Formers VP NESPAK, MD PITB, DPD LRMIS and experts from Educational Institutes give their presentation about GIS of Agricultural land and Computerization of Urban Land Records. Member Board of Revenue chaired the conference. Conference was divided into two sessions. During the first session the experts give the detail presentations regarding Computerization of Urban Land and second session was related to GIS. The Participants raised different quires and also give the valuable suggestions regarding the topic. Participants also give their detailed responses through email and filling of questionnaires at the end of sessions. Deputy Project Director give a detailed presentation about the history of land revenue record and existing services being provided at 143 ARCs in Punjab established by the Punjab Government.

Senior Member Board of Revenue concluded the conference and said that PMU LRMIS is already working on GIS and govt. is also putting its all efforts to start the computerization of urban land record during the current fiscal year. He said that all the participants has given the valuable suggestions during the conference. He further said that all the relevant suggestions will be keenly reviewed and kept in view while preparing PC-I. The PC-1 will also be shared with the participants again for their feedback. This conference was a source of information and awareness the participants. Manager Social Development & Public Relations paid the vote of thanks at the end of the conference. Giveaways and promotional material was also disbursed among the participants as token of their participation LRMIS recall. The conference highlighted the concept, importance and initial design of new initiatives and seeks the inputs from stakeholders to device policy and design of project implementation. At the end of the training workshops/ Conferences the guests appreciated the LRMIS Project. They said that LRMIS is a paradigm shift in the history of land records and it will help to secure the inheritance rights of female and also ensure their land entitlement. They further said that transparent and efficient access to land records is a step forward towards women empowerment. They desired such kind of interaction should be continued with them at different forums."

Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

The PMU prepared and submitted to the World Bank the 'PMU Implementation, Completion and Results (ICR) Report'. The executive summary of the PMU ICR is presented in this section.[54]

"Pakistan had a land administration system inherited from the British era, involving rules and regulations regarding sale, purchase and use of land resources mainly linked to the collection of land tax. The present land legislation – which is constituted mainly of the Land Revenue Act (1967) and the Registration Act (1908) – did not profess to provide for a State certificate of title to land under the aegis of a public authority. The records of rights and other documents based on the land records, by virtue of provisions in land laws, were presumed to be accurate. However, these entries only provided presumptive status of rights under land laws. Many court rulings had also maintained that entries in the land records are contestable, that the revenue records are not documents of title, and that it was permissible to challenge the entries for determining the title to land.

Keeping these views in mind, the Government of Punjab in conjunction with the World Bank launched a project to computerize the land records of all 36 districts of Punjab in 2011. The following milestones have been reached by the end of this historic project:

- *All land records have been computerized (as compared to the target of 90%).*
- *Service Centres are operational in 90% of the mauzas.*
- *Client satisfaction is 99% in South and Central Punjab (as compared to the expected 95%) it is lower in Northern Punjab because many clients still mistakenly thought they had to use the Patwar office.*
- *95% of data consistency errors have been addressed and concerted efforts are on-going to resolve the remaining 5%.*
- *Landowners are being issued a formal land title from the Service Centres.*
- *There is general and widespread acceptance of the new computerized records by government agencies and financial institutions.*
- *Evidence shows that citizens have greater peace of mind and trust in the new system.*
- *Courts are accepting computerized land records as formal land titles which is helping past conflict inheritance cases be resolved quickly and efficiently.*
- *The software at the Service Centres is running effectively and the data server is being housed at a secure location.*
- *The process of inheritance and transactions has been integrated into the new system.*
- *Citizens of all genders and income brackets are happy with the prevailing service fees.*

[54] The language has not been edited.

- *Even Fards of MORE than 10 minutes are being issued in 30 minutes or less (as compared to the original goal of Fards of less than 10 pages being issued in 30 minutes or less).*
- *Gender inclusion has been kept in mind during all project phases and in designing the Service Centres (all female counters and other facilities have been provided).*
- *The Service Centres have made the land record system more accessible to poor households.*
- *Specific outreach programmes have been conducted in the previous year including workshops and street theatre to create more awareness about the new system.*
- *The Monitoring Dashboard (housed at LRMIS) has made the system more transparent and accountable through easily observable monitoring and performance metrics.*
- *There is increased employment through the setting up of the new system which will lead to an increase in incomes.*

The following key trends have been identified from the new system:

- *Overall the majority of clients were impressed and satisfied by the new system. Client satisfaction seems to be at an all-time high in Punjab. Mostly clients of all genders and income brackets were very happy with the new system. All clients felt the system was affordable and that the staff was very helpful.*
- *The system has helped to bridge the gender gap that the Patwari system had created. Women, in particular, were very happy with the new system. They felt that they could now gain access to land registration related public services in a safe and non-corrupt environment. They liked the fact that there was female staff to look after them and that there was a female only counter. These were definitely things that were lacking in the legacy system.*
- *Data from all 36 districts in Punjab has been entered and verified. The basis of the land record system are the manual registers maintained by the Patwari office in each tehsil. Data was entered into the LRMIS and verified by a two-stage process. First, two copies of the data were entered by different operators and then both versions were compared by a specially designed software to check for data entry errors. All flagged entries were then checked by a data operator to determine which was the correct land record and then updated in the system. In the second stage, the data entry process also flagged some calculation issues (i.e. people had more land on record than was physically present). In these cases, those records were returned to the Patwari Office and they were requested to use their manual records to try and determine the source of the error. The system was then updated accordingly.*
- *Service Centers are up and running in all districts of Punjab. The Service Centers were found to offer all modern amenities and employees were generally perceived to be helpful and well-trained. Toilets and water coolers have been made available for the citizens at all centers. In particular, all centers also had access to female only counters and female only toilets which is making it easier for women to avail the services provided by the new system.*
- *The software is performing routine tasks in 10-15 minutes but needs some help with customized cases. Fards and inheritance cases which follow the regular format are*

being processed with no delays. If there is a unique situation which the software is not programmed to handle, it can cause a delay. One easy solution for this is to create a software patch to accommodate such cases.

- *The Monitoring Dashboard offers higher levels of transparency and accountability which has not been seen before. The Dashboard is quite advanced and a revolutionary step for any land record system. It allows transparency and accountability across all districts by providing monitoring at a level which has not been made available before. It allows the Head Office to monitor what is happening at each Service Centre and to see how many cases are handled daily, weekly etc. This can also help the Head Office to monitor effectiveness of the employees as well as the system.*
- *The new system has created scope for social inclusion. Overall, computerizing land records of Punjab has taken a leap forward in providing land tenure security to the people of Punjab. Especially for women and people belonging to low income brackets this is a revolutionary step since the fee is affordable and they are not treated any differently at the Service Centers based on their social standing. Hence, a critical first step has been taken in empowering previously marginalized groups of society.*
- *The new system reduces scope for Corruption and Graft. The system seems to have created a high level of accountability and transparency. Monitoring is being done at a very high level and with the centralization of the system, monitoring will be made even easier. This has led to a perception of lower levels of corruption. Clients are happy to pay for the service as long as they know the amount beforehand and do not need to bribe officials in order to get their work done.*
- *There is a high level of Acceptance of the System and its Outputs. There is a general level of acceptability of the documents generated; both at a government and private level. This holds the potential to ultimately strengthen land market by creating a structure of property rights and their enforcement which is easily accessible to all at an economical price.*
- *There is a high perception amongst citizens that their land tenure security has improved due to the new system. In Pakistan, land is a huge investment which is not taken lightly by its citizens. By holding a formal title of land, it has become much easier and less stressful for landowners to transfer land to their future generations as well as to sell land if they may so desire. Women and small landowners are also finding it easier to defend their property rights since they have the correct documentation in hand which they can even present in court if need be.*
- *The smartphone app and website are making it easier for people to access land records from the comfort of their own homes. Smartphone use has been found to be more pervasive than computer use amongst the land owners. Fortunately, LRMIS already has a smart phone app in place. This app needs to be advertised more and should also be made available for download on the Android and IPhone App Stores. This will make it easier for the client to get required services and relevant information in one handy place. The LRMIS Land Search and One Click Mobile Application is a step in the right direction but needs more functionality and promotion in order to enhance user adoption.*

Some areas need a bit more adjustment so that the new system can function effectively:

- *Employees at the Service Centre are demotivated; this could have implications for long-term sustainability of the system. All around the world, even if government jobs pay less there is a high level of prestige awarded to them. But the Service Centers are changing the way the land system works in Punjab; hence, there is greater resistance to this new system. In cases such as this it is important that the employee's morale be kept high. Their salary and perks should be made competitive according to the local market; otherwise LRMIS could lose trained employees to the private sector. There also needs to be some promotion system within the LRMIS such as other with other government departments.*
- *Public awareness of the computerized system and Service Centers is restricted to a select group of the population. Hence, public awareness campaigns need to be scaled up so that more citizens can benefit from the new system. More landowners need to be made aware of the new system. Women, in particular, are enjoying great benefits from the new system so greater awareness needs to be created among females of the new system. Most women that were interviewed had heard about LRMIS through male relatives. One way to do this would be to advertise it in the papers or to make it compulsory for all land transactions to include a copy of the computerized record.*
- *Website and Smart Phone App need to be promoted with Landowners. Information regarding land records is easily available on the LRMIS website and via the LRMIS Smart Phone App. Greater public awareness needs to be created about these valuable tools. Some activities have been carried out by LRMIS in this regard already; workshops have been conducted with both male and female college students. But clearly more events such as these need to be conducted and across multiple districts in order to have a greater impact. Another way to make the website more functional is to target the female population. In Pakistan, women are mainly secluded to private spheres due to strict social and cultural norms prevailing in society. This, at times, makes it difficult for them to fight for their rights or gain access to proper documentation. By using the website, women are now able to access land information from the comfort of their own homes. This is one avenue of dissemination that has been explored by LRMIS previously also by conducting their own workshops but again this activity should be scaled up and across districts in order to have a greater impact.*

Overall, the Land Record Management Information System (LRMIS) has revolutionized the process of keeping and maintain land records in Punjab. The computerized system of land recordkeeping is offering numerous advantages over the older manual system. There are fewer delays in the processing of transaction cases, more inclusion for women, less scope for corruption, no risk of battered or missing records and the ability to assess Meta trends using data analytics to help address future policy. The new process for transaction is considerably simpler for citizens than the older process. There are fewer steps and far fewer delays involved. The system holds great potential for sustainability in the future. There is wide acceptance in society of such a system and the financial sustainability also seems sound."

Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders

N/A

Annex 9. List of Supporting Documents

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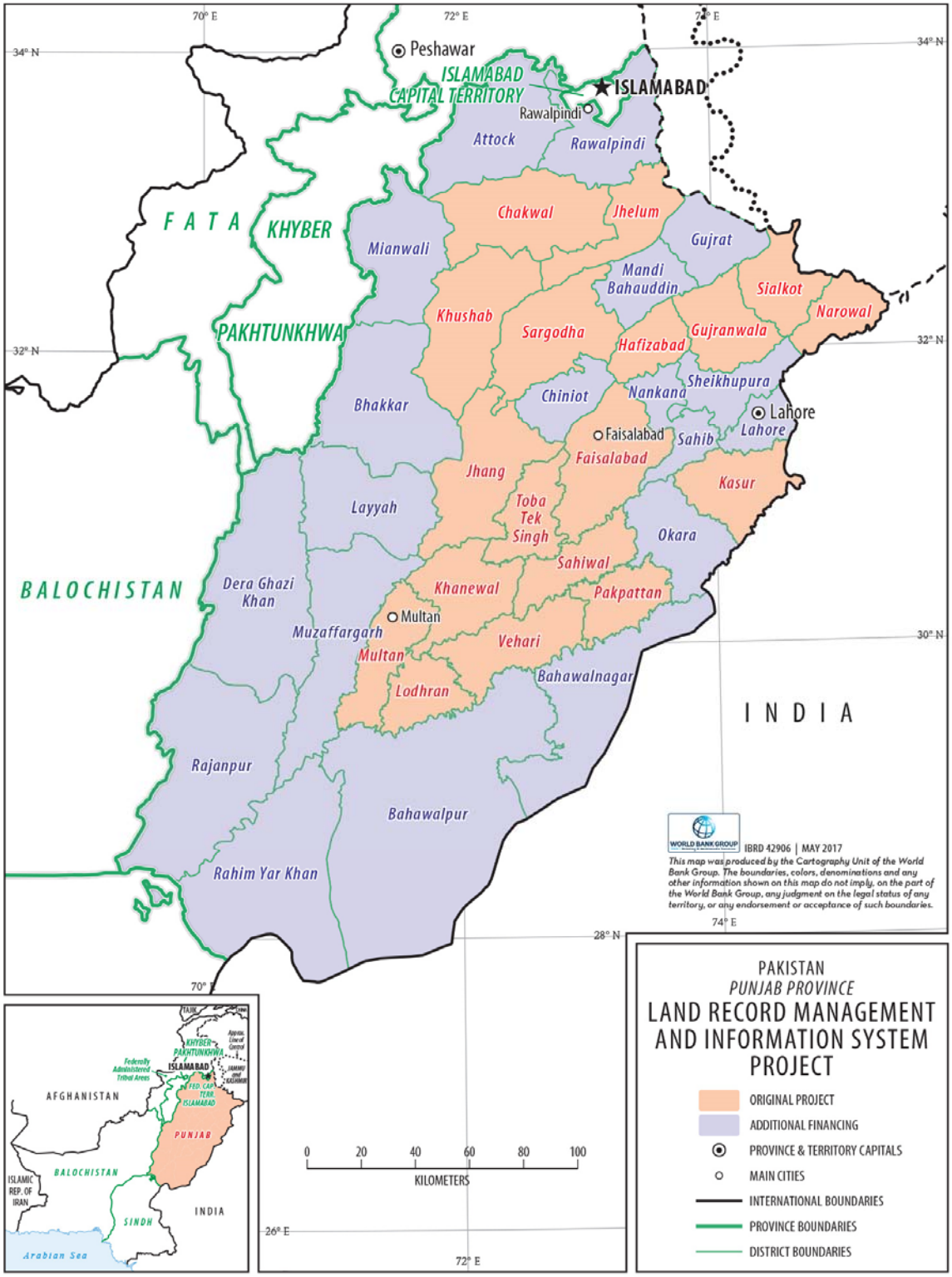
MAP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Mandi Bahauddin
Sialkot
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Khushab
Sargodha
Hafizabad
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Sheikhupura
Bhakkar
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ORIGINAL PROJECT
ADDITIONAL FINANCING
PROVINCE & TERRITORY CAPITALS
MAIN CITIES
INTERNATIONAL BOUNDARIES
PROVINCE BOUNDARIES
DISTRICT BOUNDARIES