

Document of
The World Bank

Report No: ICR00003561

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IBRD-48080 TF-55731)

ON A

LOAN

IN THE AMOUNT OF US\$30.0 MILLION

AND A

GLOBAL ENVIRONMENT FACILITY GRANT
IN THE AMOUNT OF US\$5.0 MILLION

TO THE

REPUBLIC OF KAZAKHSTAN

FOR A

FOREST PROTECTION AND REFORESTATION PROJECT

December 21, 2015

Global Practice for Environment and Natural Resources
Central Asia Country Unit
Europe and Central Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective November 4, 2015)

Currency Unit = Tenge (KZT)

KZT 1.00 = US\$ 0.00348

US\$ 1.00 = 287.05 KZT

FISCAL YEAR

[January 1 – December 31]

ABBREVIATIONS AND ACRONYMS

ARPF	Access Restriction Process Framework
ADB	Asia Development Bank
BP	Bank Procedure
C	Carbon
CAS	Country Assistance Strategy
CBD	Convention on Biological Diversity
CGP	Competitive Grant Program
CIS	Commonwealth of Independent States (former Soviet Union)
CPS	Country Partnership Strategy
COP	Conference of Parties
CQ	Selection Based on Consultant's Qualifications
DAS	Dry Aral Seabed
EA	Environmental Assessment
ECA	Europe and Central Asia
EMP	Environmental Management Plan
EU-TACIS	European Union Technical Assistance Cooperation
FAO	Food and Agriculture Organization
FEF	Front end fee
FFCIS	Forest Fire Control Information System
FHC	Forest and Hunting Committee
FM	Financial Management
FMIS	Forest Management Information System
FMR	Financial Monitoring Report
FS	Feasibility Study
FWC	Forest and Wildlife Committee
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIS	Geographic Information Systems
GP	Good Practice
GP	General Policies
GTZ	German Technical Cooperation
Ha	Hectare
IBRD	International Bank for Reconstruction and Development

ICB	International Competitive Bidding
ICR	Implementation Completion Report
ISA	International Standards on Accounting
ISDS	Integrated Safeguard Data Sheet
ISR	Implementation Status and Results Report
M	Million
MTR	Mid-term Review
NCB	National Competitive Bidding
NAP	National Action Plan
NEAP	National Environmental Action Plan
NGO	Non-Governmental Organization
NRM	Natural Resource Management
NTFP	Non-Timber Forest Products
OMS	Operational Manual Statement
OP	Operational Policy
Ormany	Kazakh for “forest”; a state-administered forest area
Ormandar	Plural of Ormany
PAC	Project Advisory Committee
PAD	Project Appraisal Document
PCD	Project Concept Document
PCU	Project Coordination Unit
PFM	Participatory Forest Management
PHRD	Policy and Human Resources Development (Japanese)
PIC	Project Information Center
PID	Project Information Document
PIP	Project Implementation Plan
QCBS	Quality- and Cost-Based Selection
ROK	Republic of Kazakhstan
RPO	Regional Project Office
SA	Special Account
SBD	Standard Bidding Documents
SFE	State Forest Entity
SOE	Statement of Expenditure
TBD	To be determined
TOR	Terms of Reference
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USAID	United States Agency for International Development

Senior Global Practice Director: Paula Caballero

Practice Manager: Kulsum Ahmed

Project Team Leader: Angela G. Armstrong

ICR Team Leader: Nina Rinnerberger

REPUBLIC OF KAZAKHSTAN
Forest Protection and Reforestation Project

CONTENTS

Data Sheet

- A. Basic Information
- B. Key Dates
- C. Ratings Summary
- D. Sector and Theme Codes
- E. Bank Staff
- F. Results Framework Analysis
- G. Ratings of Project Performance in ISRs
- H. Restructuring
- I. Disbursement Graph

1. Project Context, Development and Global Environment Objectives Design.....	1
2. Key Factors Affecting Implementation and Outcomes	6
3. Assessment of Outcomes	13
4. Assessment of Risk to Development Outcome and Global Environment Outcome ..	20
5. Assessment of Bank and Borrower Performance	21
6. Lessons Learned	23
7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners	24
Annex 1. Project Costs and Financing.....	25
Annex 2. Outputs by Component	27
Annex 3. Economic and Financial Analysis.....	30
Annex 4. Bank Lending and Implementation Support/Supervision Processes	36
Annex 5. Beneficiary Survey Results	38
Annex 6. Stakeholder Workshop Report and Results.....	49
Annex 7. Summary of Borrower's ICR and Comments on Draft ICR	50
Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders.....	56
Annex 9. List of Supporting Documents	57

MAP

A. Basic Information			
Country:	Kazakhstan	Project Name:	Forest Protection & Reforestation Project
Project ID:	P078301,P087485	L/C/TF Number(s):	IBRD-48080,TF-55731
ICR Date:	12/21/2015	ICR Type:	Core ICR
Lending Instrument:	SIL,SIL	Borrower:	REPUBLIC OF KAZAKHSTAN
Original Total Commitment:	USD 30.00M,USD 5.00M	Disbursed Amount:	USD 29.17M,USD 4.96M
Environmental Category: B,B		Focal Area: L	
Implementing Agencies: Ministry of Agriculture's Forest and Hunting Committee (renamed to Forest and Wildlife Committee)			
Cofinanciers and Other External Partners:			

B. Key Dates				
Forest Protection & Reforestation Project - P078301				
Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	06/26/2003	Effectiveness:	07/12/2007	07/12/2007
Appraisal:	09/15/2005	Restructuring(s):		05/26/2010 08/01/2013 11/28/2013 10/28/2014
Approval:	11/29/2005	Mid-term Review:	06/30/2009	06/08/2009
		Closing:	11/30/2012	06/30/2015

FOREST PROTECTION & REFORESTATION - P087485				
Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	11/03/2003	Effectiveness:	03/06/2007	07/12/2007
Appraisal:	09/15/2005	Restructuring(s):		05/26/2010 11/28/2013
Approval:	11/29/2005	Mid-term Review:	06/30/2009	06/08/2009
		Closing:	11/30/2012	05/31/2014

C. Ratings Summary	
C.1 Performance Rating by ICR	
Outcomes	Moderately Satisfactory
GEO Outcomes	Moderately Satisfactory
Risk to Development Outcome	Moderate
Risk to GEO Outcome	Moderate
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:	Moderately 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			
Forest Protection & Reforestation Project - P078301			
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	Moderately Satisfactory		

FOREST PROTECTION & REFORESTATION - P087485			
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
GEO rating before Closing/Inactive Status	Moderately Satisfactory		

D. Sector and Theme Codes		
Forest Protection & Reforestation Project - P078301		
	Original	Actual
Sector Code (as % of total Bank financing)		
Animal production	5	5
Central government administration	10	10
Forestry	85	85

Theme Code (as % of total Bank financing)		
Biodiversity	14	14
Environmental policies and institutions	29	29
Other environment and natural resources management	29	29
Other rural development	14	14
Participation and civic engagement	14	14

FOREST PROTECTION & REFORESTATION - P087485		
	Original	Actual
Sector Code (as % of total Bank financing)		
Animal production	5	5
Central government administration	10	10
Forestry	85	85

Theme Code (as % of total Bank financing)		
Biodiversity	14	14
Environmental policies and institutions	29	29
Other environment and natural resources management	29	29
Other rural development	14	14
Participation and civic engagement	14	14

E. Bank Staff		
Forest Protection & Reforestation Project - P078301		
Positions	At ICR	At Approval
Vice President:	Cyril E Muller	Shigeo Katsu
Country Director:	Saroj Kumar Jha	Dennis N. de Tray
Practice Manager/Manager:	Kulsum Ahmed	Juergen Voegele
Project Team Leader:	Angela G. Armstrong	Jessica Mott
ICR Team Leader:	Nina Rinnerberger	
ICR Primary Author:	Nandita Jain	

FOREST PROTECTION & REFORESTATION - P087485		
Positions	At ICR	At Approval
Vice President:	Cyril E Muller	Shigeo Katsu
Country Director:	Saroj Kumar Jha	Dennis N. de Tray
Practice Manager/Manager:	Kulsum Ahmed	Juergen Voegele
Project Team Leader:	Angela G. Armstrong	Jessica Mott
ICR Team Leader:	Nina Rinnerberger	
ICR Primary Author:	Nandita Jain	

F. Results Framework Analysis

Project Development Objectives (from Project Appraisal Document)

The project objective is to develop cost effective and sustainable environmental rehabilitation and management of forest lands and associated rangelands, with a focus on the Irtysh pine forest, the dry Aral Seabed, and saxaul rangelands.

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

The PDO was not revised.

Global Environment Objectives (from Project Appraisal Document)

The development objective is both local and global in nature; therefore the GEO is the same as the PDO.

Revised Global Environment Objectives (as approved by original approving authority)

The GEO was not revised.

(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 :	Land degradation (specifically, deterioration or lack of tree cover or other vegetative cover) prevented, reduced or ameliorated			
Value (quantitative or Qualitative)	Total degraded area covers 180,000 ha of Irtysh pine forest and 2.2 million ha of dry Aral Seabed. Improved management needed in Saxaul rangelands	<ul style="list-style-type: none"> ▪ Irtysh pine forest including 48,000 ha of rehabilitated forest and reversal of fire and other degradation trends on the entire 650,000 ha area ▪ Dry Aral Seabed: more than 100,000 ha of current total 2.2 million ha dry seabed area within Kazakhstan covered by vegetation (from pre-project coverage, project planting, and natural spread) ▪ 156 ha saxaul and adjoining rangelands with sustainable resource-led grazing management 	<ul style="list-style-type: none"> ▪ Irtysh pine forest, including 41,000 ha of rehabilitated forest and reversal of fire and other degradation trends on the entire 650,000 ha area ▪ Dry Aral Seabed: more than 61,000 ha of current total 2.2 million ha dry seabed area within Kazakhstan covered by vegetation (from pre-project coverage, project planting, and natural spread) ▪ 168,000 ha saxaul and adjoining rangelands with sustainable resource-led grazing management” 	About 46,000 ha of Irtysh Pine rehabilitated; reversal of degradation trends started on about 650,000 ha area; about 61,000 ha in Dry Aral Seabed covered by vegetation; and good management of 168,000 ha of saxaul rangelands
Date achieved	09/19/2005	11/30/2005	11/28/2013	05/22/2015

<i>Comments (incl. % achievement)</i>	<i>Revised Target surpassed. Target was revised during the 11/28/2013 restructuring. Original target value for saxaul and adjoining rangelands reflects a typo in the project documentation as it should read 156,000 ha.</i>			
Indicator 2 :	Capacity and decision to upscale investment programs for forest lands based on improved knowledge of performance, costs, and impacts, as demonstrated by <ul style="list-style-type: none"> • Decisions to scale up Irtysh pine reforestation programs • Decisions to scale up vegetative planting of dry Aral Seabed, and • Replication of saxaul rangeland restoration program with own funds • Application of lessons learned from competitive grant subprojects and reflected in replication plan 			
Value (quantitative or Qualitative)	Insufficient knowledge of performance, costs, and impacts to justify large scale program	Post project replication plans to restore Irtysh forest and Dry Aral Seabed along lines of indicative 2025 vision, replicate saxaul rangeland program, and apply lessons from grant sub-projects.	N/A	Government plans to scale-up project achievements in rehabilitation of the Dry Aral Seabed and Irtysh Pine Forest, forest fire protection, and participatory forest management.
Date achieved	09/19/2005	11/30/2005		05/22/2015
<i>Comments (incl. % achievement)</i>	<i>Target achieved. Decision to scale-up Irtysh pine and dry Aral Seabed planting communicated by FWC management. Planned coordination with Ministry of Agriculture to replicate saxaul program. Lessons from some grant subprojects incorporated into FWC forest management.</i>			
Indicator 3 :	Number of people employed under the project, or otherwise benefited as a result of the project			
Value (quantitative or Qualitative)	0 (zero)	Irtysh pine: 6,000 employed; Dry Aral Seabed: 4500 employed; Saxaul rangelands: TBD	Irtysh pine: 3,000 employed Dry Aral Seabed: 2,000 employed Saxaul rangelands: 1,500 employed”	3,422 seasonally employed in Irtysh pine forest, 2,650 in Dry Aral Seabed, and 1,480 in saxaul rangelands.
Date achieved	09/19/2005	11/30/2005	11/28/2013	05/22/2015
<i>Comments (incl. % achievement)</i>	<i>Revised Target achieved. Target was revised during the 11/28/2013 restructuring. Overall 7,552 people employed or otherwise benefited as a result of the project.</i>			

Indicator 4 :	Improved knowledge of modern planting and fire management technologies and of natural resource dynamics and management, as well as capacity of cost effective and results oriented public expenditure on forest lands			
Value (quantitative or Qualitative)	Little information and analysis of dynamics, policy development, or results oriented public expenditure	Studies, policies and expenditures reflect improved knowledge of natural resource and forest fire management, policy development, and capacity for cost effective and results oriented public expenditure	N/A	Through various planting techniques trialed, and studies conducted during implementation, the most sustainable and cost effective planting methods are now being employed; a state-of-the-art Forest Fire Control Information System (FFCIS) has been developed and is under implementation. State forestry policy concept prepared up to 2020.
Date achieved	09/19/2005	11/30/2005		05/22/2015
Comments (incl. % achievement)	<i>Target achieved. More than 30 trials and studies conducted on nursery technologies, planting regimes, disease and fire management reflected in improved capacity for cost-effective public expenditures as seen in reduced unit planting costs, increased survival rates, and reduced fire incidents and response times. Additionally, 14 publications of scientific, legislative and reference materials and books for practitioners disseminated. Policy and legislative results include: State Forest Policy 2020 developed, Forest Code amendments for inclusion of community institutions; and draft policy framework for saxaul use rights.</i>			
Indicator 5 :	Project reputation for integrity and public support for improved forest and associated rangeland management, as reflected in public opinion surveys			
Value (quantitative or Qualitative)	Original reputation not assessed	Improving trend in reputation for	N/A	Public opinion survey was completed in

		integrity and public support		September 2014. According to the survey results, respondents gave a high assessment to the efficiency of Project activities.
Date achieved	09/19/2005	11/30/2005		05/22/2015
Comments (incl. % achievement)	<i>Target achieved. The majority of 300 surveyed villagers in the project sites evaluated Project activities as very efficient and somewhat efficient (98 percent in the Irtysch Pine region and 74 percent in Kyzylorda). A majority of respondents (an average of 70 percent) also considered the quality and level of forestry management to have improved over the past ten years.</i>			
Indicator 6 :	Area restored or re/afforested (Hectare(Ha), Core)			
Value (quantitative or Qualitative)	0	102,000	N/A	107,000
Date achieved	11/30/2005	11/30/2005		05/22/2015
Comments (incl. % achievement)	<i>Target surpassed. Core Sector Indicator added in ISR #15 (December 2012) as per Bank policy.</i>			
Sub-Indicator:	Area re/afforested (Hectare(Ha), Core Breakdown)			
Value (quantitative or Qualitative)	0	41,000	N/A	46,000
Date achieved	12/30/2005	12/30/2005		05/22/2015
Comments (incl. % achievement)	<i>Target surpassed. Core Sector Sub-Indicator added in ISR #15 (December 2012) as per Bank policy.</i>			
Sub-indicator:	Area restored (Hectare(Ha), Core Breakdown)			
Value (quantitative or Qualitative)	0	61,000		61,000
Date achieved	11/30/2005	11/30/2005		05/22/2015
Comments (incl. % achievement)	<i>Target achieved. Core Sector Sub-Indicator added in ISR #15 (December 2012) as per Bank policy.</i>			

(b) GEO Indicator(s)

DO indicators also apply to GEO.

(c) 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 :	Component IA: Cumulative area of Irtysh pine replanted during project period (#000 ha); Unit costs of replanting reduced (Cost/ha in US\$); Survival rate increased			
Value (quantitative or Qualitative)	0 ha replanted; 30 percent survival rate; \$240/ha cost of reforestation; 0 ha direct seeded	20,000 ha replanted and 21,000 ha direct seeded during project period, and by year 6 unit costs of replanting reduced from US\$240 per ha to less than US\$190 per ha with survival rate increased from 60 percent to 85 percent; knowledge of productivity parameters acquired; and revised arrangements for flexible, performance based budgeting and contracting	41,000 ha replanted during project period, and by year 6 unit costs of replanting reduced from US\$240 per ha to less than US\$190 per ha with survival rate increased from 30 percent to 55 percent	46,000 ha replanted; 60 percent survival rate; \$163/ha cost of reforestation; 2 ha direct seeded
Date achieved	09/19/2005	11/30/2005	11/28/2013	05/22/2015
<i>Comments (incl. % achievement)</i>	<i>Revised Target surpassed.</i>			
Indicator 2 :	Component IB: Area (in ha) under improved fire management			
Value (quantitative or Qualitative)	0	650,000 ha under improved fire management	N/A	650,000 ha under improved fire management.
Date achieved	09/19/2005	11/30/2005		05/22/2015
<i>Comments (incl. % achievement)</i>	<i>Target achieved. Activities that contributed to this intermediate results indicator included effective fire breaks and fuel reduced buffer zones accompanied by public education campaigns; more effective fire detection</i>			

	<i>information system with obsolete towers replaced and new towers where needed; improved fire suppression capability through better equipment, fast-attack vehicles, replacement of obsolete fire trucks and improvement of key forest roads; and annual program of thinning and cleaning where necessary, integrated pest management support provided.</i>			
Indicator 3 :	Component 1C: PFM framework designed and reflected in operational manual and then under implementation			
Value (quantitative or Qualitative)	No program	PFM framework designed and reflected in operational manual, and then under implementation, initially in 4 villages and then in 12 additional ones	N/A	PFM program operational in 16 villages.
Date achieved	09/19/2005	11/30/2005		05/22/2015
<i>Comments (incl. % achievement)</i>	<i>Target achieved. Program has been assessed via Poverty and Social Impact Assessment (PSIA) Grant, with findings to support PFM program's scale-up.</i>			
Indicator 4 :	Component IIA: Cumulative area of dry Aral Seabed planted and direct seeded during project period (#000 ha); Unit costs reduced (Cost/ha in US\$); Survival rate (no less than 25%); and using revised arrangements for flexible, performance based budgeting and contracting			
Value (quantitative or Qualitative)	0 ha area seabed planted; 25% survival rate; \$207/ha cost of replanting; 0 ha direct seeded	44,000 ha planted and 35,000 ha direct seeded during project period, with year 6 unit costs reduced from US\$207 to less than US\$175 per ha with survival rate no less than 55 percent and a natural spread consistent with doubling in ten years, using revised arrangements for flexible, performance based	Revised as "52,000 ha planted and 9,000 ha direct seeded during project period, with year 6 unit costs reduced from US\$207 to less than US\$175 per ha with survival rate no less than 25 percent and using revised arrangements for flexible, performance	About 52,000 ha planted, including local akimats supporting rehabilitation and planting with equipment procured using project funds; 27.6 percent survival rate; \$67/ha cost of planting; 9,400 ha direct seeded; flexible, performance based contracting process that included use of private contractors for rehabilitation.

		budgeting and contracting	based budgeting and contracting”	
Date achieved	09/19/2005	11/30/2005	11/28/2013	05/22/2015
Comments (incl. % achievement)	<i>Revised Target achieved.</i>			
Indicator 5 :	Component IIB: Number of demonstrations covering a total of approximately 4,000 ha covered by planting with seedlings and seeds with survival rates no less than 25%; Area (in ha) of rangelands provided with increased access to water for grazing animals			
Value (quantitative or Qualitative)	0 ha with participatory rangeland restoration demonstrations; 0 ha with improved access to water for livestock	30 demonstrations covering a total approximately 6000 ha covered by planting with seedlings and seeds with survival rates no less than 55 percent and at least 150,000 ha rangelands provided with increased access to water for grazing animals.	Revised as “20 demonstrations covering a total approximately 4,000 ha covered by planting with seedlings and seeds with survival rates no less than 25 percent and at least 168,000 ha rangelands provided with increased access to water for grazing animals.”	6,000 ha where rangeland demonstrations initiated; 168,000 ha with improved access to water for livestock.
Date achieved	09/19/2005	11/30/2005	11/28/2013	05/22/2015
Comments (incl. % achievement)	<i>Revised Target surpassed in terms of area covered by planting. Improved access to water may be slightly less than 168,000 ha (by 20,000 ha) as four of the wells on demonstration plots do not have water.</i>			
Indicator 6 :	Component IIIA: Improvements in policy information, and human resource capacity			
Value (quantitative or Qualitative)	N/A	(i) analytical studies on policy and public expenditure, (ii) expansion of information	N/A	Training program and study tours have been implemented according to annual procurement plan

		facilities and development of information system (iii) HRD plan and in-service training program		and schedule. In addition, procurement improvements have been implemented in accordance with recent procurement assessment.
Date achieved	09/19/2005	11/30/2005		05/22/2015
Comments (incl. % achievement)	<i>Target achieved. No specific targets were identified. The team interprets this intermediate results indicator to be “improvements in policy information, and human resource capacity”.</i>			
Indicator 7 :	Component IIIB: Operational manual approved and # of grants approved and then implemented with well monitored results			
Value (quantitative or Qualitative)	0	Operational manual approved, and # of grants approved and then implemented with well monitored results	Revised as “Operational manual approved, and 35 grants approved and then implemented with well monitored results”	35 grants approved and implemented with well monitored results
Date achieved	09/19/2005	11/30/2005	11/28/2013	05/22/2015
Comments (incl. % achievement)	<i>Revised Target achieved. Target was revised during the 11/28/2013 restructuring. Grants include 20 sustainable forestry projects, 5 research activities, 3 conservation-linked enterprises, 3 local capacity building projects and 4 infrastructure creations.</i>			
Indicator 8 :	Component IIIC: Bank supervision ratings			
Value (quantitative or Qualitative)	N/A	Bank supervision ratings	N/A	Project management is satisfactory and project has been implemented in accordance with updated procurement plan and implementation schedule.
Date achieved	09/15/2005	11/30/2005		05/22/2015
Comments (incl. % achievement)	<i>Target achieved.</i>			

G. Ratings of Project Performance in ISRs

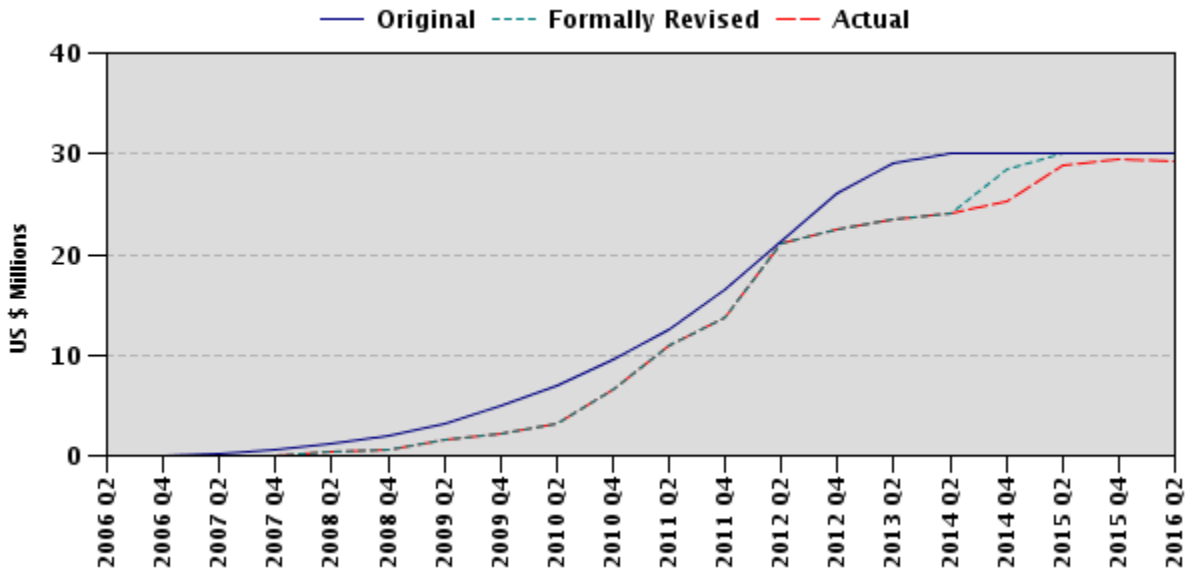
No.	Date ISR Archived	DO	GEO	IP	Actual Disbursements (USD millions)	
					Project 1	Project 2
1	03/17/2006	S	S	S	0.00	0.00
2	05/12/2006	S	S	S	0.00	0.00
3	04/02/2007	MU	MU	MU	0.00	0.00
4	10/04/2007	MS	MS	MS	0.00	0.05
5	03/05/2008	MS	MS	MS	0.32	0.05
6	06/13/2008	MS	MS	MS	0.64	0.09
7	10/16/2008	MS	MS	MS	0.81	0.13
8	06/18/2009	MU	MU	MU	2.08	0.55
9	03/11/2010	MU	MU	MU	3.76	0.71
10	06/11/2010	MS	MS	MS	5.50	0.80
11	11/15/2010	MS	MS	MS	8.23	1.01
12	06/26/2011	MS	MS	MS	13.70	1.70
13	02/20/2012	MU	MU	MU	21.05	2.75
14	07/11/2012	MU	MU	MU	22.46	3.45
15	12/26/2012	MS	MU	MU	23.38	4.18
16	06/24/2013	MS	MS	MS	23.38	4.58
17	11/06/2013	MS	MS	MS	23.98	4.65
18	04/30/2014	MS	MS	S	25.24	4.89
19	06/02/2014	S	S	S	25.24	4.97
20	12/11/2014	S	S	S	28.87	4.96
21	06/23/2015	MS	MS	MS	29.34	4.96

H. Restructuring (if any)

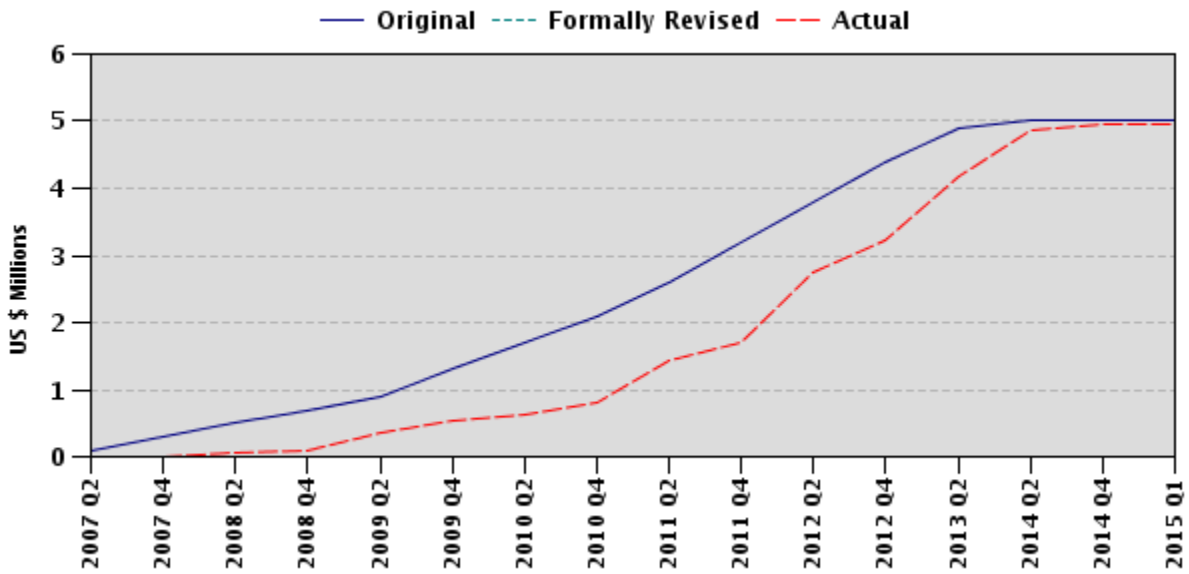
Restructuring Date(s)	Board Approved		ISR Ratings at Restructuring			Amount Disbursed at Restructuring in USD millions		Reason for Restructuring & Key Changes Made
	PDO Change	GEO Change	DO	GEO	IP	Project 1	Project 2	
05/26/2010			MU		MU	5.00	0.80	Amendments to Loan No. 4808- KZ and Grant No. TF055731 to (a) reallocate Loan proceeds and (b) extend Closing Dates of Loan and Grant Agreements to May 31, 2014.
08/01/2013	N		MS		MS	23.38		Amendments to extend Loan Agreement closing date from May 31, 2014 to November 28, 2014.
11/28/2013	N		MS		MS	23.98	4.81	Amendment to reallocate proceeds among disbursement categories from Loan and Grant Agreements and to modify a few of the project's outcome indicator targets.
10/28/2014			S		S	27.96		Amendment to extend the closing date of the Loan Agreement from November 28, 2014 to June 30, 2015.

I. Disbursement Profile

P078301



P087485



1. Project Context, Development and Global Environment Objectives Design

1.1 Context at Appraisal

1. **Country sector background.** Kazakhstan possesses a significant forest resource, which plays an important role in providing key environmental (e.g., soil and sand retention, protection of watersheds, reduction of siltation of waterways and reservoirs) and economic services (e.g., as a source of fodder, food, fuel, medicinal plants, recreation, employment, livelihood provision). The Bank recognized that Kazakhstan inherited some of the greatest environmental problems of the post-Soviet republics and that the generally dry climate makes the existing forest and rangeland ecosystems particularly susceptible to various threats (including fires, pest infestations, overgrazing, over-harvesting, habitat degradation, desertification). The political and economic transformation of the 1990s increased these problems.

2. Since its inclusion in the Soviet Union, forestlands in Kazakhstan have been, and continue to be, owned by the state. The sector suffered from a major human resource drain (about 7,000 personnel in 2005, down from 25,000 staff in 1990), and there was a lack of new required skills (extension, marketing, public participation). Inadequate information facilities and flow, and rigid top-down administrative management styles also limited organizational effectiveness.

3. Based on joint studies by the Bank and the Government of Kazakhstan (2002) on forests and rangelands, a number of recommendations for investments were suggested, including:

- Substantial upgrades in the national and local capacity for fire and pest protection
- Rapid inventory of forest resource base, using landscape-ecological approach, preparing broad functional zoning of forest areas with adequate public participation
- Substantial upgrades in the local capacity for reforestation and afforestation
- Training for central and local forestry staff, especially in economic analysis, marketing policies, extension, and public and community participation.

4. **Rationale for Bank involvement.** The Bank has been working in forest management in transition countries since 1992. Based on work in these countries and elsewhere, the Bank had gained considerable experience in forest governance and forest management reform issues, and was using this experience in the dialogue with Government and in helping them to develop the concept for this intervention. Within Kazakhstan, the Bank had collaborated on technical studies of forest policies and investment programs and also helped the Government to review the forest code. The project took into account and built upon the experience of other Bank-financed projects including the Syr Darya Control and the Northern Aral Sea Phase I, as well as several Global Environment Facility (GEF) projects for which the Bank was responsible. During project implementation, the Bank anticipated to further transfer up-to-date practical experience.

5. **Higher level objectives to which the project contributes.** The project supported the 2004 Country Partnership Strategy (CPS), specifically the fourth CPS pillar on ensuring that future growth would not harm the environment and that past liabilities would be mitigated. The project also supported the GEF focal area of land degradation (with a focus on addressing key land degradation issues in forest lands under the jurisdiction of the Forest and Wildlife Committee

(FWC¹) and its subsidiary organizations), with some relevance to other GEF focal areas. The Government explicitly requested GEF support in writing.

1.2 Original Project Development Objectives and Key Indicators (as approved)

6. The Project Development Objective (PDO) of the project was “to develop cost effective and sustainable environmental rehabilitation and management of forest lands and associated rangelands with a focus on the Irtysh pine forest, the dry Aral Seabed and saxaul rangelands.”²

7. The Results Framework (RF) included an indicative 2025 Vision and 2025 Outcome indicators. The key 2012 Outcome Indicators³ for achievement of the PDO included:

- Land degradation (specifically, deterioration or lack of tree cover or other vegetative cover) prevented, reduced or ameliorated in
 - Irtysh pine forest, including 48,000ha of rehabilitated forest and reversal of fire degradation trends on 650,000ha
 - Dry Aral Seabed: more than 100,000ha of current total 2.2 million ha dry seabed area covered by vegetation (from pre-project coverage, project planting, and natural spread)
 - 156,000ha of saxaul and adjoining rangelands with sustainable resource-led grazing management.
- Capacity and decisions to upscale investment programs for forest lands based on improved knowledge of performance, costs, and impacts as demonstrated by
 - Decisions to scale up Irtysh pine reforestation program
 - Decisions to scale up vegetative planting of dry Aral Seabed, and
 - Replication of saxaul rangeland restoration program with project funds
 - Application of lessons learned from competitive grant sub-projects and reflected in replication plan
- Number of people employed under the project, or otherwise benefited as a result of the project
 - Irtysh pine: 6,000 employed
 - Dry Aral Seabed: 4,500 employed
 - Saxaul rangelands: to be decided (TBD).
- Improved knowledge of modern planting and fire management technologies and of natural resource dynamics and management, as well as capacity of cost effective and results oriented public expenditure on forest lands.
- Project reputation for integrity, and public support for improved forest and associated rangeland management, as reflected in public opinion surveys.

1.3 Original Global Environment Objectives (GEO) and Key Indicators (as approved)

8. The GEO was the same as the PDO.

¹ Previously known as the Forest and Hunting Committee (FHC).

² As per the Loan Agreement (dated November 6, 2006). The wording of the PDO is slightly different in other project documents (e.g. PAD, ISR, Supplemental Letter), namely: “Development *and initiation* of cost effective and sustainable *ways* of environmental rehabilitation and management of forest lands and associated rangelands, with a focus on the Irtysh pine forest, dry Aral Seabed, and saxaul rangelands”.

³ As set out in the Attachment to the Supplemental Letter No. 2 (dated November 6, 2006) to the Loan Agreement.

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

9. The PDO was not revised. However, two of the project's five outcome indicator targets and three of the project's eight intermediate indicator targets were revised as part of a Level 2 restructuring in November 2013. Table 1 describes changes to the indicators.

Table 1: Results Framework Indicator Changes

	Original⁴	Revised during Level 2 Restructuring (Nov. 28, 2013)⁵	Explanation/Justification
PDO Level Indicators			
1	<p>Land degradation (specifically, deterioration or lack of trees or other vegetative cover) prevented, reduced or ameliorated in</p> <ul style="list-style-type: none"> ▪ Irtysh pine forest including 48,000 ha of rehabilitated forest and reversal of fire and other degradation trends on the entire 650,000 ha area ▪ Dry Aral Seabed: more than 100,000 ha of current total 2.2 million ha dry seabed area within Kazakhstan covered by vegetation (from pre-project coverage, project planting, and natural spread) ▪ 156 ha saxaul and adjoining rangelands with sustainable resource-led grazing management 	<p>Revised as “Land degradation (specifically, deterioration or lack of trees or other vegetative cover) prevented, reduced or ameliorated in</p> <ul style="list-style-type: none"> ▪ Irtysh pine forest, including 41,000 ha of rehabilitated forest and reversal of fire and other degradation trends on the entire 650,000 ha area ▪ Dry Aral Seabed: more than 61,000 ha of current total 2.2 million ha dry seabed area within Kazakhstan covered by vegetation (from pre-project coverage, project planting, and natural spread) ▪ 168,000 ha saxaul and adjoining rangelands with sustainable resource-led grazing management” 	<p>The reforestation targets were to be partially achieved with direct seeding, an experimental technology that proved unsuitable for the country's harsh climatic conditions. 21,000 ha and 35,000 ha were to be achieved through direct seeding in the Irtysh pine forest and the Dry Aral Seabed, respectively.</p> <p>Based on direct seeding's lack of success by 2013, the team felt that modifications to the end targets would better reflect experience with direct seeding, an experimental technology that was being tested as part of the project. At the same time, the total area of improved pastures was larger than originally planned due to a wider area of lands adjoining demonstration plots. (156ha represented a typing mistake.)</p>
2	<p>Number of people employed under the project, or otherwise benefited as a result of the project</p> <p>Irtysh pine: 6,000 employed Dry Aral Seabed: 4500 employed Saxaul rangelands: TBD</p>	<p>Revised as “Number of people employed under the project, or otherwise benefited as a result of the project</p> <p>Irtysh pine: 3,000 employed Dry Aral Seabed: 2,000 employed Saxaul rangelands: 1,500 employed”</p>	<p>The infeasibility of direct seeding also had an impact on the number of people employed under the project. As a result, the end target values were reduced to reflect the lower anticipated number of people employed.</p>
Intermediate Level Indicators			
A	<p>Component IA: 20,000 ha replanted and 21,000 ha direct seeded during project period, and by year 6 unit costs of replanting reduced from US\$240 per ha to less than US\$190 per ha with survival rate</p>	<p>Component IA : 41,000 ha replanted during project period, and by year 6 unit costs of replanting reduced from US\$240 per ha to less than US\$190 per ha with survival rate increased from 30 percent to 55 percent</p>	<p>The expected survival rate targets were revised to better reflect local conditions and to account for the fact that the survival rate of plantings in the Irtysh Pine Forest was not 60 percent at the baseline</p>

⁴ As listed in the Attachment to Supplemental Letter No. 2 (dated November 6, 2006) to the Loan Agreement.

⁵ As listed in the Attachment to Supplemental Letter No. 2 (dated May 5, 2014) to the Loan Agreement.

	increased from 60 percent to 85 percent; knowledge of productivity parameters acquired; and revised arrangements for flexible, performance based budgeting and contracting		but rather closer to 30 percent. ⁶ As such, the modification adjusted the survival rate from a baseline of 30 percent to an end of project target of 55 percent.
B	Component IIA 44,000 ha planted and 35,000 ha direct seeded during project period, with year 6 unit costs reduced from US\$207 to less than US\$175 per ha with survival rate no less than 55 percent and a natural spread consistent with doubling in ten years, using revised arrangements for flexible, performance based budgeting and contracting	Revised as “Component IIA 52,000 ha planted and 9,000 ha direct seeded during project period, with year 6 unit costs reduced from US\$207 to less than US\$175 per ha with survival rate no less than 25 percent and using revised arrangements for flexible, performance based budgeting and contracting”	Similarly, the end of project target for component IIA was adjusted to a survival rate of no less than 25 percent to reflect conditions on the ground.
C	Component IIB 30 demonstrations covering a total approximately 6000 ha covered by planting with seedlings and seeds with survival rates no less than 55 percent and at least 150,000 ha rangelands provided with increased access to water for grazing animals.	Revised as “Component IIB 20 demonstrations covering a total approximately 4,000 ha covered by planting with seedlings and seeds with survival rates no less than 25 percent and at least 168,000 ha rangelands provided with increased access to water for grazing animals.”	Given the lack of appropriate sites on forest fund lands in the project area, the number of demonstration plots was reduced to 20. Accordingly, the cumulative area of participatory saxaul rangeland restoration demonstrations sites was reduced from 6,000 ha to 4,000 ha.

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

10. The GEO was not revised.

1.6 Main Beneficiaries

11. The PAD does not include a section on main beneficiaries, but the project targeted a number of groups and stakeholders including rural people living in and around forests, herder families, forest users, forestry staff, as well as environmental NGOs. Key forest beneficiaries included the Semey and Irtysh protected forest reserves (Ormandar), which are direct subsidiaries of the FWC, and the State Forest Entities (SFEs, or in other words, the former leskhozy), which are under the local government authority (akimat). Local populations in the project territories of East Kazakhstan and Pavlodar oblasts were to benefit from investments in Irtysh pine rehabilitation works, better fire management, and increased participation in forest management, in addition to NTFPs, as well as cultural and recreational benefits provided by the forests. Much of the employment was expected to be seasonal with some work in nurseries, but most in reforestation activities. The Participatory Forest Management (PFM) pilot was planned to cover 16 villages along the Irtysh River. Local people in the DAS area were expected to benefit from seasonal employment in nursery works and planting. Rural populations in Kyzylorda oblast, particularly herders were to benefit from investments in participatory management of rangelands with

⁶ Based on the Aide Memoire of the Implementation Support Mission of May 27 – June 5, 2013.

improved access to water points for their cattle, and other sustainable land management activities. Forestry employees and officials were to benefit from modern equipment and machinery to enhance efficiency of their operations, participation in new management approaches such as PFM, and training and study tours.

1.7 Original Components (as approved)

12. The project consisted of the following components and activities (as per the PAD):

Component I: Rehabilitation of Irtysh Pine Forest (US\$41.2 million including contingencies, with a GEF increment of US\$0.4 million)

- *Component IA: Reforestation (US\$ 24.2 million).* Improved reforestation of 41,000 ha⁷ (20,000 ha with seedlings and if feasible, 21,000 ha directly seeded) through re-establishment of seed production areas to ensure quality, and applied research on cost-effective nursery, planting and direct seeding technologies (e.g., greenhouses, containers, seed pelleting). Flexible, performance based budgeting and contracting would be used. The combination of new technologies and other practices aimed to reduce the current \$240/ha marginal costs of replanting by at least 20 percent, increase the survival rate from 60 percent to 85 percent, and establish national capacity in using modern planting technologies.
- *Component IB Improved Fire Management and Other Forestry Support (US\$15.6 million).* Development and implementation of improved forest fire management of the 642,000 ha through: (i) information, consultation, and training support to further strengthen the fire management strategy, (ii) improved facilities for fire prevention and detection, including lookout towers, communications equipment and rejuvenation of the firebreak network, and (iii) improved facilities for fire suppression including road rehabilitation, fire station equipment, and fast-attack vehicles. This subcomponent was also expected to provide other forestry support including a program of thinning and cleaning that will overcome a 15-year backlog, vehicles for more effective patrolling to reduce illegal activities, and capacity building in integrated pest management
- *Component IC Forest Partnership Development (US\$1.4 million):* This small subcomponent would explore the feasibility of forest partnerships benefiting local people by analyzing the potential for environmentally sustainable forest-based enterprises utilizing thinnings, and also by preliminary testing of participatory forest management (PFM) in up to 16 villages. Through PFM local people could obtain rights to a share of forest products in exchange for undertaking specific protection and/or management responsibilities, and receive support for the development of forest-related or alternative livelihoods.

Component II: Environmental Amelioration in Kyzylorda Oblast (US\$10.7 million including contingencies, with a GEF increment of US\$3.2 million)

- *Component IIA Planting on the Dry Aral Seabed (US\$8.1 million).* Accelerating the expansion of vegetative cover by planting 79,000 ha (44,000 with seedlings and if feasible, 35,000 directly seeded) using cost-effective nursery and planting technologies and developing cost-effective direct seeding techniques. Like the Irtysh plantations, flexible, performance based

⁷ The target of 41,000ha reflects an inconsistency in the project documentation (the end target as per the Loan Agreement was 48,000ha).

budgeting and contracting would be used, and the combination of new technologies and other practices aimed to reduce the costs of planting by at least 20 percent.

- *Component IIB Improvement of Management of Saxaul Rangelands (US\$2.6 million).* Thirty pilot demonstrations of a participatory saxaul rangelands program with each demonstration rehabilitating approximately 200 ha, and increasing access to water for grazing animals on an additional area of about 7500 ha. This would include herder agreements to enable restoration and development of degraded saxaul rangelands, community management of grazing pressure, and provision of water resources for associated rangelands.

Component III: Capacity Building of National Institutions (US\$11.9 million including contingencies, with a GEF increment of US\$ 1.4 million)

- *Component IIIA Improvements in Policy, Information, and Human Resource Capacity (US\$6.5 million).* Improvements in policy and public expenditure analysis, information facilities, human resource development, and organizational management leading to improved policy and budget decisions, public consultation, inventory, planning, monitoring, staff knowledge and skills, and organizational effectiveness. This subcomponent also included preparation support for follow-on projects.
- *Component IIIB Competitive Grant Program (US\$ 2.6 million).* Competitive grant fund for innovative forest development subprojects (e.g., timber usufruct sharing or other measures to address illegal logging incentives, ecotourism, value addition processing of birch, involvement of local people in reforestation or environmental education, private plantations, tungai floodplain protection, etc.)
- *Component IIIC. Project Coordination and Management (US\$2.8 million).* Project administration and management.

13. GEF financing of US\$5 million would enable the project to increase the scope of international cooperation, capacity development, and monitoring across all of the above components. Further, it would permit the project to adapt participatory natural resource management approaches to steppe forest areas in Kazakhstan, significantly accelerate vegetation of the DAS, expand the scope of sustainable management demonstrations on the saxaul rangelands and undertake additional subprojects for innovative forest management activities through the competitive grants program.

1.8 Revised Components

The project components were not revised.

1.9 Other significant changes

14. The project went through four Level 2 restructurings, which reflect the adjustment in costs following two currency devaluations, extensions of the closing date, reallocation of Loan proceeds, and changes in the RF to adjust some of the indicator targets as outlined in Table 1 above.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

15. **Soundness of background analysis.** The project design was based on sound background analysis and extensive preparation activities on forest planting, fire management, saxaul

rehabilitation and rangeland development, and community involvement.⁸ Although a project concept was approved in 2003, the finalization and dissemination of sector work, and project preparation resulted in Board approval in 2005. A grant of US\$410,600 from the Japan Policy and Human Resources Development (PHRD) Fund to the Republic of Kazakhstan supported project preparation. The European Union and FAO provided in-kind technical assistance for preparation.

16. **Assessment of project design.** This was the first nation-wide project addressing the forestry sector in Kazakhstan. Its main design elements remain relevant. The project was fully aligned with the 2004 CPS pillar four. Overall, the number of project components and their geographic dispersion were sound and adequately incorporated lessons from earlier operations. However, the Monitoring and Evaluation (M&E) system could have been strengthened (see section 2.3.). Alternative project designs had been considered during preparation, including a project focused primarily on replication of existing methodologies, with little attention to finding improved ways to address the scope of the overall land degradation situation, or to institutional reforms. However, this was rejected because it was considered to be expensive and slow, and thus not readily replicable on a large scale to make a significant contribution to an efficient and sustainable resolution of Kazakhstan's land degradation problems. With hindsight, the design could have better integrated the risks associated with the innovative approaches to be trialed and developed.

17. **Adequacy of Government commitment.** Throughout project preparation (beginning in June 2004) key Government and forestry officials expressed their interest and commitment to the project. However, several institutional and personnel changes within the Kazakhstan Government affected the project timeline at various times, contributing also to the initial delays in project effectiveness. Government commitment was evident through counterpart funding in the amount of US\$28.80 million, and by the implementing agency's strong ownership of the project.

18. **Assessment of risks.** Overall project risk was assessed as moderate. The PAD identified six risks that were rated as 'substantial' or 'modest'. Two of these risks, related to modern technologies of planting and procurement capacity adversely impacted implementation and progress toward key indicator targets. It was recognized at the time of preparation that some of the proposed activities were experimental and ambitious. At the same time, it was known that some forestry professionals at the local level were reluctant to adopt new approaches on a wider scale. With the benefit of hindsight, it is evident that the high reliance on direct seeding for the achievement of the original planting targets was overly optimistic and that a more moderated approach to application of this technology would have been better suited for the Kazakhstan context. While the risk mitigation measures in the PAD adequately outlined that field trials would test suitability and guide further adoption of new technologies, the targets set for direct seeding were inconsistent with this approach. The failure of direct seeding was compounded by limited procurement capacity, which significantly delayed construction of the Semey nursery, thereby limiting the availability of seedlings to make up for the shortfall in planting. Incompatibility of Bank and Government procurement procedures were flagged at appraisal but not foreseen to be a problem during implementation.

⁸ Including World Bank Sector Work on forests and rangelands, *Forest Sector in Transition: The Resource, the Users and Sustainable Use* (2004) and *Rangelands in Transition: The Resource, the Users and Sustainable Use* (2005).

2.2 Implementation

(a) *Systemic and outside factors affecting project implementation:*

19. **Delayed effectiveness of the Loan Agreement.** This was systemic at the time⁹ and affected initial implementation. Even before the project became effective in July 2007 (almost 21 months after project approval in November 2005), it had reached “problem project” status given delays of a number of critical actions, including some applicable covenants.

20. **Feasibility study and project budget.** The rigidity of the Government’s internal rules made implementation of the project overly complex and slow. The project’s FS was a Government-approved equivalent of the PAD, and any changes to the project or financial plan and total project cost, including individual project activity costs, had to be reflected in the FS and approved by the Ministry of Finance. For example, the initial FS for the project was prepared in October 2005, but by the time the project became effective, the detailed budget of the FS was out of date as some costs had increased by 50-100 percent (some by inflation and some by the change in models available). Kazakhstan’s budget legislation (to this date) imposes a restrictive budgetary process according to which any increased costs cannot be budgeted unless the FS is revised and resubmitted for all proposed changes. This caused considerable delays and did not provide the necessary flexibility for such an innovative project in an evolving sector.¹⁰

21. **Global Financial Crisis.** Project implementation was impacted by the global financial crisis of 2008-2009, which limited Government resources and led to budget cuts for the project (by some 50 percent) during 2009. Disbursement lagged significantly behind schedule (by October 2008, only 2.7 percent of the Loan funds and 2.6 percent of the Grant funds had been disbursed) and disbursement levels would not reach original projections until 2010.

(b) *Project-specific factors affecting implementation:*

22. **Start-up challenges.** Projected project expenditures in the 2006 Government budget were kept low in light of the delay in effectiveness, affecting essential expenditures that needed to be made prior to effectiveness (such as hiring of the Project Coordination Unit (PCU), developing the feasibility studies for 2007, preparing tender documentation, etc.). By the time of the first full supervision mission (September 2007) the project was still considered “at risk” due to continued start-up problems. Some critical budget line items were excluded from the 2007 Government budget (e.g., equipment for upgrading the bare root nursery, seed production areas) requiring revisions and slowing down initiation of “critical path activities.” The payment of the front-end fee was delayed causing a delay in the first IBRD advance payment to the special account.

23. Other challenges noted during early implementation included incompatibility of the FM software with the project requirements, which hindered timely submission of the Financial Monitoring Reports (FMRs) in accordance with the loan and grant legal agreements.

⁹ Broader discussions took place at the time between the Government of Kazakhstan and the Bank on overcoming delays in processing a number of projects.

¹⁰ Over the lifetime of the project, there were four revisions of the FS (in January 2010, June 2011, October 2013, and November 2014) to reflect the adjustments in activities costs as well as three extensions of the closing date. Total project cost increased from around KZT 8.2 million to KZT 1.6 billion as a result of currency devaluations (but remained the same in US\$).

24. **Procurement issues.** Procurement-related challenges significantly affected project implementation, but procurement was rated satisfactory during the later stages of the project. Initially, procurement capacity was limited and the PCU was not fully staffed with a qualified procurement specialist until mid-2008. An independent procurement review in April 2010¹¹ found that there had been a high turnover of procurement staff limiting procurement progress and that the quality of bidding documents (including translations) for civil works was very poor, especially for turnkey contracts. The Finance Ministry (Treasury Committee and State Borrowing Department) and the concerned local Treasury Department also required review and clearance of all procurement documents and contracts, regardless of the size of the contract, causing lengthy delays. This issue had been a topic of a wider dialogue between the Bank and the Government on generic project portfolio concerns and was addressed in 2009 when the Ministry of Finance dropped the requirement to approve project procurement.

25. A major bottle-neck in implementation was construction of the Semey container nursery and seed complex, initially planned to be completed in August 2009. Due to the global financial crisis and Government budget constraints, as well as delayed procurement, the final turnkey contract (US\$8.3 million) for the design, construction and equipment of the container nursery was not signed between FWC and the contractor until April 28, 2010. Additional challenges arose (e.g., delays in obtaining State Expertise approval after the contractor's detailed design came in significantly above projected costs; lack of representation of the contractor in Kazakhstan leading to difficulty in obtaining required permits and construction licenses; price increases associated with the delays; conflicting requirements of FWC, the Government of Kazakhstan, and the contractor; and liquidity issues faced by the contractor due to the global economic downturn), so that by June 2012, the contract was well over one and a half years behind the original schedule. Although FWC and the contractor subsequently agreed to a contract amendment in June 2012, FWC terminated the contract on November 12, 2012 due to default of some contract terms.

26. On an exceptional basis the Bank issued a no-objection in January 2013 to re-tender the nursery construction under national competitive bidding. This decision was motivated by the critical importance of the nursery for the project's future sustainability and the ability to continue reforestation efforts. The alternative of canceling the corresponding part of the IBRD loan funds would likely have resulted in failure to achieve the project's objectives, which was rightfully viewed as the most unfortunate case scenario. To ensure sufficient time for completion of the nursery complex, the project's closing date was extended until November 30, 2014 and, following additional delays due to a currency devaluation, then again until June 30, 2015. The pro-active resolution of these challenges by the implementing agency and the Bank team alike are commendable. As of the date of the ICR, the contractor has completed all works and the nursery commissioning is pending.

27. **Nursery and Research Station in Kazalinsk (Kyzylorda Oblast).** By September 2007, agreement had been reached to construct one nursery and research station¹² in Kazalinsk to support activities in the DAS. Management of the nursery was to be placed in the hands of the Kazalinsk SFE, but there were concerns about the capacity and interest of the SFE to operate the nursery and

¹¹ Aide Memoire (Annex 6) of October 26, 2010.

¹² The Nursery and Research Station was commissioned in June 2011, although the nursery was initially planned to be operational by the end of 2007.

FWC eventually decided to transfer ownership to the Republican Forest Breeding Center (RFBC) in 2011. Given that the Kazalinsk nursery did not have seedlings available until early 2011, the project purchased saxaul seedlings and contracted out most of the planting works to private contractors. While these developments reduced the SFE involvement with the DAS planting (when the intent of the project was to increase it), the transfer was beneficial given the center's expertise and specialization in the growing of planting stock. At the time of project closing, the RFBC had the necessary funds to operate the nursery beyond 2016. However, given insufficient local government resources, the nursery currently operates significantly below capacity.

28. **Site Assessment Issues.** Initial challenges were faced with identifying suitable locations for DAS planting, largely because soil plans did not provide sufficient information and lacked ground truthing. As a result, some unsuitable sites for planting were selected with disappointing survival rates (as low as 5 percent) due to high soil salinity and shifting soils. This was resolved by introducing greater flexibility in site selection and taking into account the judgment of local experts in choosing planting sites. The selection of drilling sites for wells in saxaul rangelands also encountered difficulties, as demonstrated by the fact that four of the 20 wells constructed are without water. Some participants were also critical of aspects of the initial site selection for the creation of the rangeland demonstration sites.¹³

29. **Policy and Public Expenditure Analysis.** The PAD identified a number studies and consultation exercises on issues such as allocation of roles between staff, contracts, and other private undertakings, options in funding arrangements, norms for flows of information both within the forestry agencies and with external stakeholders, and results based performance budgeting. Additional analyses of harvesting policies and economic valuation of forest resources were also identified. However, given the challenges faced during project implementation and a lack of specificity with regards to results targets, this area of policy and public expenditure analysis was only partially pursued (e.g., analytical studies on forestry agency staffing and funding).

30. **Mid-term Review (MTR).** By November 2008, the project team felt that the project would not be completed within the original timeframe and would require significant restructuring especially in terms of scope, scheduling, targets, and financing to take into account the major delays. During the detailed MTR (June 8-19 and Nov 30 – Dec 8, 2009)¹⁴, changes were proposed in the scope of the project (e.g., additional expenditures for the Forest Fire Control and Information System (FFCIS), reduction in number of nurseries supported, etc.), including a decrease in the reforestation target from 41,000 ha (of which 20,000 ha seedlings and 21,000 ha direct seeding) to 26,000 ha (of which 15,000 ha seedlings and 11,000 ha direct seeding). However, given constraints in Kazakhstan (which exist to this day) that in effect prevent amendments to Loan Agreements, the subsequent 2010 restructuring focused on the extension of the closing date and reallocation of the loan proceeds only. The project team would eventually (in 2013) find a way to restructure the indicator targets using an amendment to the Supplemental Letter. It should be noted that the viability of direct seeding was not yet established at the time of the MTR (as the initial Irtysh pine trial started in 2010 and the initial results from the DAS were available only in 2012) and there was still optimism that the technique could offer the prospect of accelerating reforestation. At the

¹³ BISAM, (2014), Forest Rehabilitation and Reforestation in Kazakhstan: Assessment of the Project Impact on the Project Territories, BISAM, Almaty.

¹⁴ The MTR was planned for November 2009, as per the legal covenants. The MTR report was completed in March 2010.

same time, the project team remained hopeful that the planting targets would still be achievable due to the Borrower's own budgetary financing and commitment to the project objectives.

31. **Restructuring.** The project was restructured four times between 2010 and 2014. During the first restructuring (May 2010), the closing date for the Loan and the GEF Grant was extended from November 30, 2012 to May 31, 2014 to allow the Borrower to implement activities that were delayed due to the project's slow start-up. In addition, the restructuring reflected adjustments in costs of activities to account for price increases of some critical items, such as containerized nursery construction, equipment and machinery purchase, and establishment of a modern fire prevention system. At the time, satisfactory progress was recorded in all project components and indicators, and for the first time total disbursement levels for 2010 were expected to be in line with original projections. The second restructuring (August 2013) extended the closing date until November 28, 2014 to allow for the completion of the nursery, which had been retendered at this point, and to help compensate for delays related to a Government reorganization in 2013.

32. The most significant restructuring was the one approved in November 2013, which revised the project's performance monitoring indicator targets. This required significant efforts on both the Bank and Government's side. Two PDO indicators were not expected to be fully achieved due their reliance on direct seeding, which had shown to be unsuitable for the area's harsh climatic conditions. In the end, the project was able to surpass its rehabilitation target through planting of seedlings carried out with Ormandar resources, using equipment and methodologies, such as site preparation, provided and tested under the project. In addition, the restructuring reallocated Loan and GEF Grant proceeds among categories to reflect the state budget's provision of significant financial resources to Semey and Irtysh Ormandar to carry out their planting programs.

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

33. *Design:* The M&E design included an indicative 2025 Vision and 2025 Outcome indicators, which was common practice at the time. The PDO was monitored through five 2012 Outcome Indicators, while intermediate results were tracked through a total of eight results indicators for three project components. The PDO could have been more outcome focused and concise. Parts of the PDO are difficult to measure (e.g., "sustainable") and certain aspects are repetitive (e.g., the reference to "forest lands and associated rangelands" when specific areas are also mentioned). The PDO level indicators were not always robustly linked to the objective and some indicators were more like objectives in themselves. No PDO indicators were provided to assess "cost-effectiveness" and "sustainable". There were also some inconsistencies in indicator wording and end targets between the various project documents. No comprehensive project baseline study was conducted to establish indicator values at the project outset, but baseline information was drawn from different sources (preparation reports, sector work). For some indicators, the baseline values proved to be inaccurate (e.g., survival rate of plantings in the Irtysh Pine Forest was around 30 percent, not 60 percent). Overall the project's M&E system could have been strengthened. However, stringent requirements for results monitoring were not in place at the Bank at the time.

34. *Implementation and Utilization:* The *Performance Monitoring Indicators* matrix in Attachment to Supplemental Letter No. 2 (dated November 6, 2006 and amended on May 5, 2014) was used to monitor progress and inform project decisions. Data on outputs at the intermediate results level were utilized to inform implementation of the project and assess performance ratings (e.g., upgrading/downgrading of implementation progress). Based on monitoring of data, the PCU and Bank team found that areas planted by the Ormandar with project support were not captured.

Their inclusion enabled the project to meet its planting targets in the absence of direct seeding. While attention to the M&E system could have been stronger during the early stages of the project, there was limited progress to report given the initial delays and the Aide Memoires did capture progress in detail. During the MTR period, the Bank team and implementing agency reviewed the RF and indicator targets in detail, and clarified the purpose of the M&E system. As part of the third restructuring, the RF and end targets were revised and close attention was paid to the M&E system, which ultimately allowed the project to achieve its revised targets. A key additional M&E activity was forest fire monitoring, which is now institutionalized in Semey Ormany.

2.4 Safeguard and Fiduciary Compliance

35. *Environmental and Social Safeguards*: The project was assigned environmental category B and triggered the following safeguard policies: environmental assessment (EA); forests; pest management; and involuntary resettlement. Overall safeguard compliance was rated satisfactory throughout the project. All civic works were carried out in accordance with the Environmental Management Plan (EMP) requirements and approved by Kazakhstan's State Ecological Expertise. An Access Restriction Process Framework (ARPF) guided the participatory resource management schemes to mitigate potential limited access restrictions of local people to natural resources. The issue of radiation as a result of the radioactive fall-out of 1949-62 nuclear tests on the nearby Semipalatinsk testing grounds was considered in detail during project preparation and no at-risk sites were chosen for project implementation. A 2012 environmental management review concluded that project activities were being undertaken in a manner consistent with the project EMP. The final environmental compliance review in April 2014 confirmed these findings. In addition, a social safeguards review conducted in April 2013 concluded that project activities are consistent with the project ARPF.

36. *Procurement*: The project closed with a moderately satisfactory rating on procurement implementation. From early 2012, improvements in procurement quality were seen and several large procurement packages were completed. Procurement ratings were upgraded to satisfactory following the November 2013 post review, which found no major issues in terms of the PCU's adherence to Bank procurement procedures and requirements. In general the PCU was compliant with the agreed procurement procedures and the staff capacity was adequate to handle procurement under the project. This stands in stark contrast to the initial challenges, and can be noted as a significant achievement in building local procurement capacity.

37. *Financial Management (FM)*: Financial management of the project suffered from start-up difficulties but was rated satisfactory at project closing. Initial shortfalls included the delay in operationalization of the accounting software and submission of FMRs, which were largely resolved by the time of the 2009 mid-term review. Close supervision and support from the Bank throughout project implementation contributed to the improved FM ratings. Throughout the remainder of project implementation, the PCU arrangements including accounting, budgeting and planning, reporting, internal controls, external audits, funds flow, organization and staffing were acceptable to the Bank. The project was in full compliance with the financial covenants of the Loan and Grant Agreements. The last independent auditors' report (2014) noted one deficiency, i.e. the lack of clear, formally developed and approved processes for the preparation of financial statements in accordance with International Public Sector Accounting Standards. Overall, FM capacity improved significantly and can be noted as an achievement of the project as well.

2.5 Post-completion Operation/Next Phase

38. *Sustainability*: While the project contributed to institutional sustainability through its training and capacity building activities, further work is needed on the broader policy and public expenditure analysis. Financial sustainability remains a challenge given current resource and budget constraints that hinder the full utilization of certain project investments, e.g., Kazalinsk Nursery. However, the PFM pilot and models from the Competitive Grants Program (CGP) have shown a potential way to improve the efficiency of natural resource management with long-term social and economic benefits. Contributions have been made towards environmental sustainability, including improved seed treatments, upgraded nursery operations, site preparation and new planting regimes leading to increased survival rates. Contributions also include global benefits (e.g., carbon sequestration and biodiversity) as a result of project investments in the DAS, the sustainability of which would be further strengthened if there was a global effort to leverage additional resources for DAS rehabilitation.

39. *Next phase/ follow-up operation*: The FWC requested a follow-on project and a Forestry Development Project (FDP) is currently under preparation with delivery planned for March 2017. The proposed FDP is included in the 2014-2016 Partnership Framework Arrangement (PFA) investment program between the Government of Kazakhstan and the World Bank. The new project will build on and scale-up the positive results achieved under this FPRP and is planned to have four main components, including: (i) improving sustainable forest management (SFM) through better fire management and further development of the Forest Fires Control Information System; support for afforestation mainly in the Kyzylorda region; additional SFM interventions such as thinning and cleaning; institutional development to help create the enabling environment to support the establishment of a new protected area as well as private sector participation; (ii) developing participatory forest management and further engagement of communities in forestry management; (iii) supporting the establishment of fast growing plantations and shelterbelts; and (iv) project management and coordination.

3. Assessment of Outcomes

3.1. Relevance of Objectives, Design and Implementation

Rating: Substantial

40. The PDO was and continues to be highly relevant. Project objectives were consistent with national plans to address land degradation in key areas of ecological stress and the lack of forest areas as natural habitats. Long-term environmental management remains relevant to the Government of Kazakhstan's on-going commitment to strengthen forest management in areas such as fire prevention and response, enforcement against illegal and poorly executed clearing and further establishment of protected areas. The PDO was consistent with the Bank's CPS pillar (2004) and remains relevant to the Bank's current CPS (2012-2017) in which ensuring that development is environmentally sustainable is an important area of engagement. The core design elements of rehabilitation and fire management of the Irtysh Pine forests, environmental amelioration in Kyzylorda Oblast and capacity building of national institutions are still valid. The project has laid a foundation for scaling up efforts in these areas with post project Government support, and through the proposed follow-on project. However, the RF could have been more robust and provide additional clarity on certain indicators in order to fully capture the PDO and project achievements. Despite being a challenging project to implement given factors such as its

experimental approach, the constraints of Government procedures and global economic crises, the project retained Government support and the implementation approach continues to be relevant. The project introduced several innovative practices, not all successful, but approaches and targets were adjusted accordingly, and useful experience was gained to guide future operations. The ability to learn and adjust is viewed as a positive. Although there were shortcomings in design and challenges in implementation, relevance (taking into account the modest restructuring in indicator end targets) is rated as substantial.

3.2. Achievement of Project Development Objectives¹⁵

Rating: Substantial

41. The PDO was substantially achieved. The project has been successful in the “rehabilitation of forest lands and associated rangelands” through its reforestation and planting of the “Irtys Pine forest and DAS” and improved resource management in “saxaul rangelands”. Through the introduction of improved forest technologies and approaches, and reduction in planting costs, the project has contributed to “developing cost effective environmental management”. Achievements of the project’s development objective are discussed in more detail below.

(a) Develop cost-effective environmental rehabilitation, rating: substantially achieved

42. Important measures of cost-efficiency in the project were planting costs and survival rates. With investments in nursery management and technologies, and planting methods, the cost of planting in the Irtys Pine forest is now US\$163/ha in real terms compared to US\$240/ha at project start-up.¹⁶ Similarly in the DAS, the cost of planting is now US\$67/ha in real terms compared to US\$207/ha.¹⁷ Improvements in nursery production have led to more viable seedlings and together with improved site preparation have contributed to an increase in the average survival rate in the Irtys Pine forest from 30 percent to 60 percent, exceeding the target of 55 percent. A smaller increase has been seen in the DAS from 25 percent to 27.6 percent (meeting the target of greater than 25 percent), but still remarkable given the area’s extremely harsh and dry climatic conditions, lack of soil and varying salinity. Rehabilitation of the DAS in particular, will benefit from natural regeneration in between planted rows, which can increase the area planted by up to 50 percent.

43. Forest nursery capacities and efficiency, particularly of the Ormandar, have increased under the project and supported reforestation efforts. At start-up, capacity was less than 8 million seedlings annually in the project sites.¹⁸ At present, the potential annual production capacity from three bare-root nurseries stands at 27.6 million seedlings, and starting in 2016, includes 3.4 million containerized seedlings. As new facilities were established (e.g., Semey container nursery), the Ormandar closed smaller operations to increase cost-effectiveness. Seedling production has benefited from seed production areas and technologies to improve viability, e.g., seed testing and treatment, and containerized plants. The container nursery is expected to contribute to accelerated

¹⁵ Also refer to Annex 2 for more details on project outputs by components.

¹⁶ Even when not adjusted for inflation, current planting costs of US\$315/ha are reasonable given that the Ormandar is planting bare-root stock at 6000 stems/ha which is just over 5 cents per plant.

¹⁷ Comparisons for planting costs are difficult to find, particularly for the DAS given the extremely harsh conditions and remoteness of areas in Kazakhstan. For the Irtys Pine, costs can vary significantly between sites given prior fire damage and site preparation needs. China, Uzbekistan and Russia offer potential comparable sites, but again circumstances are very different to allow for a true comparison.

¹⁸ Karlsson, S., (2005), Working Paper on Forest Planting: Kazakhstan Forest Rehabilitation and Protection Project, JE-Jacob Gibbs, Helsinki.

reforestation through a combination of factors: a shorter growing period (one year for containerized seedlings compared to two years for bare-root), lower planting densities (2500/ha versus 6000/ha), higher demonstrated survival rates in project trials (up to 90 percent compared to 50 percent), and a longer planting season (5-7 months versus 2-4 weeks/per year).

44. Cost efficiency is also evidenced by the global benefits generated, particularly its climate mitigation impact. An ex-post appraisal conducted by FAO calculated the net present value of the project's GHG emission mitigation at around US\$306 million over 20 years (see Annex 3).

(b) Sustainable environmental rehabilitation and management, rating: substantially achieved

45. As a result of the project, almost a million hectares are now under improved environmental management. About 107,000 ha of degraded lands have been rehabilitated exceeding the target of 102,000 ha. The failure of direct seeding in the Irtysh Pine forest, was mitigated by planting about 46,000 ha (target of 41,000 ha) with seedlings, primarily with Ormandar resources. This area represents about 25 percent of the 180,000 ha damaged by fire in the 1990s. Ormandar reforestation benefited substantially from equipment and site preparation provided under the project. Of the area planted, 737 ha were experimental planting trials that generated valuable data for project implementation. The project met the target of 61,000 ha rehabilitated in the DAS, including 47,100 ha from planting and 9,400 ha from direct seeding with project resources. SFEs planted about 4,500 ha with their own funds, but using project-provided equipment. Ultimately, about 90 percent of the total target area was planted with seedlings, the remainder through direct seeding. While the area planted is a fraction of the DAS, the project has demonstrated techniques that can support future re-vegetation efforts. In the saxaul and adjoining rangelands, about 168,000 ha now have improved management including access to water for livestock. The project worked with local herder households to demonstrate technologies, e.g., wells in more remote areas, grass seeding, tree planting and leasing arrangements with a view to long-term resource-led grazing management.

46. The project has contributed to sustainable environmental rehabilitation and management as seen in decisions to scale up post project investments with Government financing. Key commitments include: a) allocation for the operation and maintenance of the Semey container nursery complex in the current budget cycle; b) annual planting of between 6,000 ha to 8,600 ha of fire affected areas in the Irtysh Pine forest, enabling current fire affected areas to be reforested by 2030; and c) rehabilitation of 5,000 ha annually in the DAS from improved SFE capacity.¹⁹ Based on project experience, FWC plans to roll out the containerized seedling technology in other regions, and replication of saxaul rehabilitation is already underway in three raions. The proposed follow-on project will continue FPRP's achievements in reforestation, protected areas management, forest fire management and PFM (incorporating the CGP experience).

47. A stronger evidence-based approach for environmental management has been developed. More than 35 studies, including five as part of the CGP, on modern planting, fire management, nursery technologies, biodiversity, legal frameworks, forest history, etc., were supported engaging a wide range of researchers and institutions from within the country and globally. Reports have been disseminated among FWC and other practitioners through print and digital media. Findings have informed forestry operations, as well as training courses for professionals and the public. A

¹⁹ Potentially up to another 10,000 ha could be planted with seeds and seedlings from the Kazalinsk nursery if local and/or Republican budget became available.

pilot forest management information system (FMIS) integrated with GIS was developed to help improve both the quality and timeliness of data for management. Collectively, these, and other activities such as training and international exchange (see also Annex 2) have strengthened analytical and technical capacities of the FWC and the forest sector at large. Contributions to the broader policy and legal framework include amendments in the Forest Code (2012) that now provide a legal foundation for engaging resource users in forest management, a proposed policy framework for use rights in saxaul rangelands, and a State Forest Policy Concept (2020). FWC is also proposing revisions of regulations to provide herders long-term access to remote pastures, and on which other Government agencies can scale up investments demonstrated in the project.

48. Forest fire management has been strengthened with investments in computerized fire detection, infrastructure (e.g., fire stations, fire breaks), and equipment, along with staff training and public awareness campaigns. This has improved the effectiveness of fire management in about 650,000 ha of Irtysh pine forest, and started a reversal of fire degradation trends. During 2008-13, the number of fires compared to the five years before the project, decreased by 20 percent, and the share of human caused fires dropped from 60 percent to 35 percent.²⁰ A forest fire detection and information system based on automated smoke detection through optic sensors and surveillance has been tested (for about 250,000 ha in Semey Ormany). Detection times are now quicker (2-25 minutes faster) leading to shorter response times, and a decrease in the average area of a fire incident (from 23.7 ha during 2003-11 to 1.67 ha in 2012-13 after installation). Moreover, larger areas can be monitored than is possible through human observation.

49. Furthermore, the project generated employment opportunities and other benefits. Although most opportunities were seasonal, about 7,552 persons were employed in project activities. Reforestation and fire management, and associated activities in the Irtysh Pine forest engaged about 3,400 persons. New jobs have been created in fire management for system operators and firewatchers, and station staff now has safer working conditions with better equipment and housing. Project activities in the DAS and saxaul rangeland sites provided employment for 3,500 persons. While the number of opportunities will decrease with project closing, on-going activities in planting and fire management in the Irtysh Pine forest, will continue to provide seasonal employment. Although not quantified, the PFM pilot and the Competitive Grant Program (CGP) have also generated short and long-term employment in private forestry operations, conservation-linked enterprises, and research.

(c) Other achievements

50. The project has supported participatory approaches that can generate social and economic incentives for local communities to engage in sustainable management of natural resources. This has increased the options available to generate long-term benefits for local communities and forest authorities. Evidence of their acceptance is seen among forest employees who now consider that more liberal access by communities to nearby forests through mechanisms, such as PFM and its further development, can provide social and economic incentives for more responsible use (e.g., avoidance of fires) and resource monitoring.²¹ At present, the PFM model offers limited but important entry points for community engagement through unions (registered as NGOs) that can

²⁰ Arhipov V.A., Arhipov, E.V., (2015) The Study of Forest Fires in Ribbon-Pine Forests of Priityshie, in Forest and Wildlife Committee (2015).

²¹ Undeland, A., (2014) Poverty and Social Assessment of Kazakhstan's Joint Forest Management Pilot. World Bank.

tender for forestry operations and social contracts,²² lobby for the interests of forest communities, and develop local solutions to forest degradation, albeit outside state forests. Lease agreements in rangelands provided households with access to investments, e.g., wells, enriched grazing, in return for maintaining the condition of grazing resources. Initiatives with more active participation in design and decision-making include arboreta, plantations, forestry clubs, and alternative livelihoods (e.g., conservation-based enterprises such as ecotourism) supported mainly through the CGP, and to some degree as part of the PFM and rangeland management.

51. Improving public opinion was seen as important in a sector where at project start-up public awareness was limited to negative press on illegal logging, and awareness and transparency were considered poor. While there was some criticism of the initial site assessments in the rangelands, the 2014 survey also showed that overall more than 70 percent of respondents in the project sites felt more informed about forest management, and had a favorable view of project activities.²³ More than 90 percent of respondents in the Irtysh Pine region (98 percent) were satisfied with forest management, and considered project activities to be very efficient or somewhat efficient. Local populations also considered that the quality and level of forest and rangeland management improved over the past ten years (88 percent in the Irtysh Pine forest, and 50 percent in DAS and rangelands), with decreased illegal logging.

52. Additional global benefits were generated through increased capacity and international exchange in the Irtysh Pine forest, which has led to: (a) collaboration with Russia on fire detection and control in transboundary areas; and (b) a successful pilot of PFM for the CIS context. Similarly, in the DAS there have been collaborations with Uzbek experts on methods to accelerate vegetation and to increase species diversity in rehabilitated areas. Through the CGP, the project has also supported innovative forestry development subprojects providing models of community initiatives in forestry and conservation-linked enterprises for replication in the country and region.

3.3. Efficiency

Rating: Modest

53. The principal economic benefits of the project at appraisal were considered to be environmental and institutional and this remains unchanged at completion. An ex-post greenhouse gas appraisal of project interventions shows high mitigation intensity, coupled with benefits for climate resilience, indicating an efficient use of project resources. An ex-post economic analysis based on potential extractive values generates returns that are consistent with those in other forestry projects where public good functions are excluded. A summary of both analyses is provided in

54.

55. Table 2 (with details in Annex 3). An economic analysis of saxaul rangeland management was not possible due to insufficient data.

²² Social Contracting in Kazakhstan is procurement of services for implementation of activities addressing various social problems funded by the state budget.

²³ BISAM, (2014), Forest Rehabilitation and Reforestation in Kazakhstan: Assessment of the Project Impact on the Project Territories, BISAM, Almaty.

Table 2: GHG and ex-post economic analyses

Ex-Post Green House Gas Appraisal (over 20 years) using FAO's EX-ACT - Returns from project interventions in reforestation, fire protection and rangeland management.	
A. Mitigation	<ul style="list-style-type: none"> • Gross economic benefit: US\$277 million (using a social value of carbon at US\$30/tonne) • Net present value: US\$ 306 million (using a social value of carbon at US\$21/tonne) • Moves from net emissions of 3.7 million tonnes CO₂-equivalents (e) without-project (linked with forest fires) to net negative balance of 31 million t CO₂-e with the project. • High mitigation intensity resulting from project investments of 34.8 million tonnes of CO₂-e (i.e., 35 t CO₂-e per hectare or 1.8 t CO₂-e per hectare per year)
B. Resilience (from incremental biomass and soil organic carbon)	<ul style="list-style-type: none"> • Total economic value of incremental natural capital – US\$338 million (no scaling up) to US\$ 546 million (with scaling up) – includes direct and indirect public and private values mostly due to carbon balance (58 percent) and incremental wood stock (32 percent).
Ex-post Economic Analysis (over 90-120 years to reflect species growing cycle)	
A. Irtysh Pine reforestation and fire protection	<ul style="list-style-type: none"> • Economic rate of return (ERR) to reforestation based solely on quantifiable benefits is about 5 percent which appears low but is common for forestry projects as it excludes all the public good functions • Total return to reforestation and forest cleaning combined is about 6.3 percent • ERR to fire management is estimated at 21 percent. • Overall quantified economic return to the rehabilitation of the Irtysh pine forests is about 13 and was 10 percent at appraisal.
B. Planting in Dry Aral Seabed	<ul style="list-style-type: none"> • Economic return to planting on the DAS is estimated at about 3 percent reflecting that the most significant benefits of this intervention are non-quantifiable intrinsic environmental benefits.

3.4. Justification of the Overall Outcome Rating

56. Overall ratings: a) Relevance – Substantial; b) Efficacy – Substantial; and c) Efficiency – Modest. This gives an overall rating of moderately satisfactory for the project.

57. The project is significant for Kazakhstan, and the results have been notable given the context in which it was implemented. Despite implementation challenges, this complex project achieved its objective. After a level 2 restructuring in 2013, the project's PDO and implementation progress ratings were upgraded to satisfactory until completion. The overall outcome rating of moderately satisfactory takes into account levels of disbursement before restructuring in 2013, and until project completion, as well as overall implementation ratings for the same periods (see

58. Table 3 below).

Table 3: Overall outcome rating based on pre- and post-project restructuring

	Pre-project restructuring	Post-project restructuring	Overall
Rating	MS	S	
Rating value	4	5	
percent disbursed	79.69	20.31	100.00
Weighted value	3.19	1.02	4.20

Final rating			MS
--------------	--	--	----

3.5. Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender and Social Development

59. Comparisons of end of project poverty impacts with those estimated at appraisal are not possible due to insufficient data. Furthermore, monitoring data were not gender disaggregated. In addition to employment outcomes (see section 3.2.), surveys in villages near the Semey/Irtysh Ormandar, indicated that about one third of respondents participated in pine cone collection and burnt wood removal and about 20 percent in forest tree planting. Only 4 percent participated in nursery construction. Local people in the DAS region were particularly appreciative of employment opportunities from the project. With a lack of options in this remote area, villagers valued not only the monetary benefits, even of seasonal employment, but also opportunities to acquire specialized skills in seed collection and planting.

(b) Institutional Change/ Strengthening

60. **Participatory natural resource management.** Community members, forestry employees and officials now consider participatory approaches important for raising and resolving issues around forest management, and a powerful tool to improve governance of the forest sector. These are significant shifts in attitude, particularly among forestry employees. All respondents in a 2004 assessment²⁴ considered the Soviet top-down model of forest management as the only appropriate approach to protect forests and improve forest community livelihoods, and generally had negative attitudes towards involving communities in forest management. The lack of initial support for community engagement was such that the first draft of the project FS omitted the PFM sub-component, only to have the Bank insist on its inclusion. Further expansion and development of the PFM model are key activities in the proposed follow-on project.

61. **Capacity building in the forest sector.** A human resources development plan was prepared and implemented, primarily through study tours and short courses for forestry professionals. Three major areas of in-country training were identified: a) forest protection; b) forest regeneration; and c) information technology in forestry. In total 58 short courses were delivered with 782 practitioners attending. International study tours covered similar topics with 155 professionals participating. Equally as important, on-the-job experience with new technologies and approaches has contributed to increased technical capacities of forest employees at the project sites. An electronic database of forestry sector staff in the country was also established. Numerous publications were produced, including 14 scientific, legislative, and reference books on forestry consolidating for the first time extensive archived and current data into more accessible formats, many of which are available on the expanded FWC website also supported by the project.

(c) Other Unintended Outcomes and Impacts

62. **Potential protected area status for DAS.** The success of rehabilitation efforts with expansion of vegetative cover in the DAS has led to a plan to create a protected area (reserve) “Aral.” There has been a general improvement in soil stabilization where vegetation has been

²⁴ ERM/BISAM, (2005) Kazakhstan Protection and Reforestation Project: Final Synthesis Report on Institutional Assessment, ERM, London.

established in spite of the area's harsh climatic conditions. Assessments and observations indicate increased species diversity, including sightings of rare fauna that are unique to the region.

63. **Working with the private sector.** Private contractors were hired to meet targets for DAS rehabilitation. While there were challenges, e.g., procurement procedures, insufficient equipment, there was one particularly successful partnership with a nursery and planting enterprise. Employing about 20 local persons as permanent staff and 200 more for planting in Aralsk raion, this enterprise is highly regarded by forestry officials and villagers alike. For the project, the enterprise provided and planted seedlings, with higher than average survival rates.

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

64. **Public opinion survey (see also section 3.2.).** A high proportion of respondents in the Irtysh region (81 percent) had a favorable opinion of project activities, while interviews and focus groups in Kyzylorda showed respondents have favorable opinions of project activities, especially rehabilitation of the DAS, and awarding of small grants. Respondents in the Irtysh Pine region showed high awareness level of the project's forest fire management activities, with more than 70 percent being aware of the range of interventions. Overall, the majority of respondents in the project sites felt that environmental awareness had been raised, and appreciated the employment opportunities generated. Additional details can be found in Annex 5.

65. **Poverty and social impact assessment of PFM.** The PFM pilot showed that local communities are keen to participate in forest management and take respective responsibilities, but only if they receive benefits from such partnerships reflected in clear and secure use rights to forest resources. People consider that PFM can serve as a vehicle for communities to become engaged in various state-funded forest activities that improve livelihoods. More than half of all respondents thought that PFM is needed for the rehabilitation and preservation of forests. An overwhelming number of respondents thought that community engagement would improve forest condition and protection, and lead to fewer fire outbreaks and less illegal logging. The lessons and recommendations of this assessment are also relevant to managing rangeland and other resources. More details are provided in Annex 5.

66. **Project review workshop, June 25, 2015.** Almost 100 persons participated including forestry officials from both central and regional offices, researchers and academics, beneficiary organizations both Government and non-Government, international consultants who worked on the project, and many other stakeholders. Seminar participants were impressed by project achievements in terms of area afforested and rehabilitated as well as increased firefighting capacity of participating institutions. Additional information is provided in Annex 6.

4. Assessment of Risk to Development Outcomes

Rating: Moderate

67. **Environmental management in the future.** Although there is always a risk of degradation and loss of vegetative cover due to extreme climatic conditions or natural disasters, improvements in planting stock and regimes, and fire management increase the likelihood that reforested areas will continue to mature. However, conservative thinning policies are a potential risk in the Irtysh Pine forest, with overcrowded trees acting as a fire hazard. Also, at current funding levels, the SFEs are planning to plant 5,000 ha annually in the DAS, but 80 percent will be direct seeded with

lower survival rates.²⁵ The absence of water at contracted depths in four wells²⁶ constructed in the rangeland demonstration sites also decreases the area by about 20,000 ha.

68. **Funding for scaling-up.** Post project financing has been committed for the Semey nursery, reforestation in the Irtysh pine forest and SFE planting in the DAS for the 2016-2018 budget. Potential reductions in Government budgets due to falling oil prices in 2015, do raise uncertainty about commitments even within current budget cycles. Not only is there the risk to sustaining scaling up of reforestation, but also maintaining investments, such as the FFCIS, which may not be a priority for Ormandar management. While the FFCIS installed by the project has shown improvements in prediction and response capacity to forest fires, it has increased system complexity and maintenance requirements.

69. **Resistance to improved forestry management.** FWC management has taken an active leadership role in ensuring a constructive dialogue about and support for project interventions. Without continued strong leadership in the FWC, there is a risk that improved technologies and approaches will not receive adequate attention and support from staff, especially in the field. End of project surveys and interviews indicated resistance and skepticism about practices such as, increasing species diversity in planting, adoption of water conservation technologies, and containerized planting on a large scale.

5. Assessment of Bank and Borrower Performance

5.1. Bank Performance

(a) Performance in Ensuring Quality at Entry, rating: moderately satisfactory

70. **Soundness of design.** The project was aligned with Government and Bank strategic priorities. Project design was based on sector analyses and extensive preparation that covered technical, institutional, fiduciary and economic issues, and included stakeholder consultations. Given national priorities, there was a justifiable focus on two key ecosystems, where innovative approaches to address ecological and organizational issues had the potential to generate lessons and models applicable to other areas. All safeguard issues were addressed as needed.

71. As the first nation-wide project addressing the forestry sector in Kazakhstan, a number of innovative interventions were proposed. While the risks associated with the experimental and ambitious nature of the project were identified in the PAD, these were not fully addressed in design. In particular, untested direct seeding was expected to achieve about 50 percent of planting area targets in the PDO. Failure of direct seeding, especially in the Irtysh Pine forest, required a revision of outcome targets. Overall, there was a lack of clarity in the M&E system that should have been corrected during project appraisal. Design also overestimated the extent, given the lack of capacity and the country's rigid bureaucracy, to which complex yet flexible procurement arrangements to support an experimental approach would proceed in a timely manner.

(b) Supervision, rating: moderately satisfactory

72. There were four Task Team Leaders over the lifetime of the project. Bank staff conducted regular and frequent supervision missions, providing technical and fiduciary oversight on a range

²⁵ Personal communication, October 9, 2015.

²⁶ As of November 2015, all four cases were in litigation with FWC having lost three, but pursuing these in a higher court.

of issues, which was greatly appreciated by the PCU. However, there was little forestry management expertise on supervision in 2011 and 2012 at a critical time for the direct seeding trials. While supervision focused on ways to address design and implementation constraints and delays, at times certain issues dominated supervision (e.g., the Semey Nursery). Environmental and social safeguard compliance was reviewed as needed. The PCU was appreciative of the available technical and fiduciary support from the Bank's country office, and the pro-active approach to problem solving. Aide memoires were informative and supportive to PCU decision-making. Good communication was maintained with FWC management and the PCU contributing to collegial relations. During the final three years, at a time where there were continued problems with the Semey nursery and direct seeding, the Bank team is to be commended for supporting the project so that it became possible to move from "problem status" in 2012 to a Satisfactory rating in 2014. Overall, Bank teams were client oriented, accommodating the Borrower's perspectives while still ensuring adherence to guidelines and a focus on achieving project outcomes.

(c) Justification for Overall Bank Performance, rating: moderately satisfactory

73. Bank performance is rated as moderately satisfactory due to shortcomings noted in project design and M&E, as well as supervision.

5.2. Borrower Performance

(a) Government, rating: moderately satisfactory

74. **Government interest and support.** The project came about as a result of strong interest from the Government of Kazakhstan for cooperation with the WB in the areas of environment, forest rehabilitation, and soil protection in protected areas. Counterpart financing was provided on an annual basis throughout the project, even during the financial crisis of 2008-2010. At project completion the Government had met its planned overall commitment of US\$28.80 million.

75. Ratification and effectiveness of the Loan and Grant Agreements took 21 months due to systemic issues. In light of these problems, the Government worked with the Bank to develop a long-term solution. However, these delays had a negative effect on project start-up, including establishment of the PCU. The rigidity of the Government's internal rules regarding procurement and feasibility studies also contributed to delays and did not provide the necessary flexibility for such an innovative project. In 2013, the transfer of FWC from Ministry of Agriculture to the Ministry of Environmental Protection resulted in the project budget being frozen for a few months affecting the pace of project implementation. As of the project closing date, following standard Government procedures, state budget for the project ceased, creating difficulties in using the grace-period to complete account reconciliation, reporting, asset transfer and other necessary close-out activities. However, the Government was open to discussing some of the above difficulties, and streamlined procurement review and accepted project amendments, among other actions. The Government's performance is rated as moderately satisfactory for effectiveness delays and procedural complexity.

(b) Implementing Agency, rating: moderately satisfactory

76. **Ownership and commitment.** Of the three projects processed around the same period, this project is the only one completed with funds fully disbursed and targets attained. This significant achievement reflects FWC's considerable commitment to project objectives and a solution-oriented approach to management, especially given little prior experience with Bank

implementation. FWC showed ownership, justifying counterpart financing requests and project amendments to the Government. They were also able to use their autonomous status, even though housed in a ministry, to facilitate project implementation (e.g., FWC bridged gaps in financing when Government budget was delayed).

77. Delays with effectiveness, resulting in low levels of Government budget affected PCU establishment and initial project planning. Early FM problems were largely addressed by the time of the MTR (2009), and performance was generally satisfactory until completion. Procurement remained problematic until 2012, but by completion, the PCU was rated as one of the best in terms of improved quality of performance. The re-tendering of the Semey nursery contract and subsequent careful management reflected a strong commitment to project objectives and future reforestation efforts. The project benefited from FWC and PCU's ability to retain senior staff from start-up to completion. One shortcoming, however, has been the poor engagement of SFEs in expanding DAS rehabilitation activities. Unlike the Ormandar, SFEs showed less interest in having increased capacity for nursery operations and planting, in part due to limited budget support from the local government. Clearly a complex project to navigate, FWC was nonetheless very responsive to Bank requests and recommendations. Performance is rated as moderately satisfactory primarily due to periods when the project was in "problem status".

(c) Justification for Overall Borrower Performance, rating: moderately satisfactory

78. The overall rating for Borrower performance is moderately satisfactory given moderate shortcomings.

6. Lessons Learned

Lessons for design

79. **Innovations need careful consideration.** The project has shown that innovations ranging from technologies to approaches in forest management generated mixed results. Direct seeding, especially in the Irtysh Pine forest, proved unsuitable for prevailing conditions, yet this generally untested practice in Kazakhstan was expected to account for almost half the area to be planted. Expectations were more measured for PFM, again untested and risky, which proved to be more successful. In future projects, the expected impact of innovations needs to be commensurate with the associated risk. Equally important is a "learning-by-doing" approach, which includes systematic piloting prior to mainstreaming.

80. **Strengthening assessment of cost-effectiveness.** While the project has demonstrated cost-effectiveness in key areas, the approach to assessment was not robust. A key lesson from this experience is the need to formulate a strong, yet practical, analytical approach at project start-up to assess technical, operational and organizational alternatives and options in relation to management goals and constraints (e.g., proprietary versus open-sourced software, private versus state operations).

Lessons for Implementation

81. **Experimental technologies require significant technical support and supervision.** Close supervision was necessary to help ensure that adjustments were made when needed, and technical and fiduciary assistance was provided at appropriate junctures. The PCU benefited greatly from the range of technical and fiduciary expertise, and availability of support from the Bank's country office. Projects of a similar nature need to allocate adequate resources for supervision, and would benefit particularly from implementation support available in country offices.

82. **Complex procurement requires careful management.** The Semey nursery complex was one of the most challenging procurement packages to manage as an international turn-key operation. Key lessons from this experience are: a) preparation and approval of bidding documents requires considerable expertise and time; and b) local partners/representation should be reflected in bidding and contractor selection procedures and criteria.

83. **Ensure adequate provisions and time for working within the Kazakhstan context.** Specifically: a) given the limitations of the FS requirement, project implementation and budgeting arrangements need to incorporate both the resources and time needed to operate in this context; and b) given that Government budget financing ceases as of loan/grant and project closure date, future loan agreements should stipulate that Government budget financing is continued during the grace-period following loan closure to allow for finalization of project close-out activities.

84. **Client commitment is key to success.** The project confirmed that implementing agency commitment is critical to the overall success of project activities, particularly when there are innovative elements (e.g., containerized seedlings, PFM, FFCIS), which depend on technical and political level support in order to succeed.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

The Borrower submitted its Borrower Completion Report and provided comments on the draft ICR (enclosed as Annex 7).

Annex 1. Project Costs and Financing

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

Forest Protection & Reforestation Project - P078301 and P087485			
Components	Appraisal Estimate²⁷ (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
I. Rehabilitation of Irtysh Pine Forests			
A. Reforestation	19.10	14.88	37
B. Fire Management and Other Forestry Support	13.82	22.29	26
C. Forest Partnership Development	1.14	0.48	2
II. Environmental Amelioration in Kyzylorda Oblast			
A. Planting on the Dry Aral Sea Bed	6.18	8.00	12
B. Improvement of Management of Saxaul Rangelands	2.07	2.1	4
III. Capacity Building of National Institutions			
A. Improvements in Policy, Legal, Organisational and Information Capacity	5.19	4.85	10
Competitive Grant Fund for Forestry Innovations	2.52	2.49	5
Project Management	2.17	6.48	4
Total Baseline Cost	52.21	61.57	100
Physical Contingencies	3.77	0.19	7
Price Contingencies	7.83	0.08	15
Total Project Costs	63.80	61.84	122
PPF	0.00		
Front-end fee IBRD	0.00	0.076	
Total Financing Required			

²⁷ According to PAD from 2005.

(b) Financing**P078301 - Forest Protection & Reforestation Project**

Source of Funds	Type of Financing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower		28.80	28.80	.00
International Bank for Reconstruction and Development		30.00	30.00	.00

P087485 - FOREST PROTECTION & REFORESTATION

Source of Funds	Type of Financing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower		0.00		.00
Global Environment Facility (GEF)		5.00		.00

Annex 2. Outputs by Components

This section supports the discussion in *Section 3: Assessment of Outcomes* of this ICR and provides a summary of what has been achieved by the Project under each of the main components. The qualitative and quantitative information on all outputs that have been realized is linked with the project specific monitoring indicators as shown in Table 4.

Table 4: *Outputs by Components of the FPRP*

Components	Outputs	Monitoring Indicators
Component I. Rehabilitation of Irtysh Pine Forests	<ul style="list-style-type: none"> ▪ Technical assistance provided in areas of pest and forest disease control, reforestation methods and alternatives, FFCIS and system support, nursery business development and firefighting capacity building, including study tours and training programs ▪ Equipment supply for nursery, planting and fire management ▪ Satellite imagery for the area of Semey Ormany and Irtysh was delivered ▪ Research on seed production, planting regimes, fire management and forest disease ▪ Field radiological studies in project sites 	<p>Government makes decisions to scale up programs and reflect this in future investment plans</p> <p>Improved knowledge of modern planting and fire management technologies and natural resource dynamics and management, as well as capacity for cost effective and results oriented public expenditure on forest lands</p>
Component I.A Reforestation of Irtysh Pine Forest	<ul style="list-style-type: none"> ▪ Contemporary Seed Complex and Containerized Nursery constructed in Semey with total capacity of 8.4 million seedlings a year (of which 3.4 million seedlings in containers) ▪ Bare root nursery constructed in Irtysh Ormany (15 million seedlings) ▪ About 46,000 ha of Irtysh Pine rehabilitated in Semey and Irtysh Ormandar ▪ 4 seed production plantations, covering 40.2 ha established and works carried out to establish permanent seed production areas on 306 ha and temporary seed production areas on 658 ha ▪ 3,422 seasonally employed in Irtysh Pine forest ▪ Various planting techniques trialed ▪ Survival rate increased from 30 percent (baseline) to 60 percent ▪ Reforestation efforts in the project area are now more cost effective in real terms, with planting costs reduced (Cost of reforestation decreased from \$240/ha to <\$163/ha in real terms) ▪ About 18,000 ha prepared for planting ▪ Experimental plantings of containerized seedlings on an area of 737 ha and direct seeding on 2 ha ▪ 75 tonnes of pine cones harvested and processed 	<p>Area in ha of land where degradation is prevented, reduced or ameliorated</p> <p>Number of people employed as a result of the project</p>

Components	Outputs	Monitoring Indicators
Component I.B Improved Fire Management and Other Forestry Support	<ul style="list-style-type: none"> ▪ Training in growing and planting of pine for local population ▪ State-of-the-art forest fire control information system (FFCIS) developed (the first of its kind in Eastern Europe and Central Asia) and under implementation includes optic sensor system for smoke detection (FIREWATCH) ▪ Lightning discharge detection system installed ▪ 650,000 ha under improved fire management ▪ Improved firefighting capacity through construction of 11 lookout towers, 8 fire stations, and the rehabilitation of 27.5 km of key forest road that allows fast access to remote areas in case of fire, on-site training, 30 fire trucks, 26 small firefighting vehicles, and 34 patrol vehicles ▪ Public awareness campaign on forest fires ▪ Training and forest fire management guidelines 	Improved knowledge of modern planting and fire management technologies and natural resource dynamics and management, as well as capacity for cost effective and results oriented public expenditure on forest lands
Component I.C Forest Partnership Development	<ul style="list-style-type: none"> ▪ Participatory Forest Management (PFM) program operational in 16 villages and 5 PFM Unions and Councils created for engagement with forest authorities, protection and promotion of local community rights to resources, and development of activities that reduce indirect negative impacts on forest resources ▪ 14 grant programs implemented including school forestry clubs, forest-linked enterprise, environmental education, ▪ Execution of tenders for reforestation activities ▪ PFM program assessment via PSIA Grant with findings to support scale-up of PFM program ▪ Amendments to Forest Code (2012) for institutional basis for community engagement in forest management 	<i>* Forest Partnership Development program designed and piloted</i>
Component II. Environmental Amelioration in Kyzylorda Oblast	<ul style="list-style-type: none"> ▪ Establishment of nursery and research capacity ▪ Pilots for sustainable saxaul rangeland management ▪ Expansion of area planted with improved methods and efficiency 	Government makes decisions to scale up programs and reflect this in future investment plans
Component II.A Planting on Dry Aral Sea Bed	<ul style="list-style-type: none"> ▪ Construction of Kazalinsk nursery with a research center that helps resolve issues with seedling availability (4.4 million seedlings) ▪ About 61,400 ha in Dry Aral Seabed covered by vegetation (52,000 ha planted, 9,400 ha direct seeded) ▪ Soil preparation carried out in more than 21,000 ha ▪ 2,650 seasonally employed in Dry Aral Seabed ▪ Survival rate increased from 25 percent (baseline) to 27.6 percent ▪ Cost of reforestation decreased from \$207/ha to \$67/ha in real terms ▪ Local akimats (municipal district) supporting rehabilitation and planting with equipment purchased using project funds ▪ Equipment supply including 6 tractors, 8 specialized vehicles, 15 tree planting machines and a number of small equipment and goods 	<p>Area in ha of land where degradation is prevented, reduced or ameliorated</p> <p>Number of people employed as a result of the project</p>

Components	Outputs	Monitoring Indicators
Component II.B Improvement of Management of Saxaul Rangelands	<ul style="list-style-type: none"> ▪ Good management of 168,000 ha of saxaul rangelands with improved access to water for livestock ▪ 1,480 seasonally employed in saxaul rangelands ▪ 6,000 ha where rangeland demonstrations have been initiated ▪ 20 demonstration plots established including the construction of 12 tube wells and 8 watering points 	<p>Area in ha of land where degradation is prevented, reduced or ameliorated</p> <p>Number of people employed as a result of the project</p>
Component III. Capacity Building of National Institutions	<ul style="list-style-type: none"> ▪ Upgraded information and facilities ▪ Institutional training plan and implementation ▪ Policy frameworks for forestry 	<p>Improved knowledge of modern planting and fire management technologies and natural resource dynamics and management, as well as capacity for cost effective and results oriented public expenditure on forest lands</p>
Component III.A Improvement of Policy, Legal, Organisational and Information Capacity	<ul style="list-style-type: none"> ▪ FMIS and GIS developed and piloted for FWC ▪ Computer equipment provided for FWC offices ▪ Training program and study tours have been implemented (e.g. 58 lectures with 782 attendees were delivered; 155 people participated in study tours abroad; ▪ Numerous publications of scientific, legislative and reference materials and books ▪ FWC staff database ▪ Expanded and populated FWC website ▪ State Forestry Policy 2020, Draft saxaul use rights policy framework, Pilot Natural Resources Management Council (Kyzylorda oblast), Forest Code amendments (2012) for community institution for forest management. 	<p><i>*Improvements in policy, information and human resource development</i></p>
Component III.B Competitive Grant Fund for Forestry Innovations	<ul style="list-style-type: none"> ▪ 35 grants approved and under implementation surpassing end target of 30 grants including: <ul style="list-style-type: none"> ○ 20 sustainable forestry projects including 13 private plantations, 3 gardens and a plantation of fast growing species, ○ 5 research activities including forest biotechnology lab, wood species propagation, seed treatments ○ 3 conservation-linked enterprises, including ecotourism that brought more than 10,000 tourists, wool processing, ○ 3 local capacity building projects including environmental education and awareness ○ 4 infrastructure creation 	<p><i>* Number of grants approved and under implementation</i></p>
Component III.C Project management	<ul style="list-style-type: none"> ▪ Project has been implemented in accordance with updated procurement plan and implementation schedule 	<p><i>* Project management ensures project implementation timeliness in accordance with annual workplan agreed with Bank</i></p>

Annex 3. Economic and Financial Analysis

1. **Introduction:** The analyses comprise an ex-post greenhouse gas (GHG) appraisal of the project's reforestation, fire management and saxaul rangeland activities, and an ex-post economic analysis of quantifiable benefits based on actual or potential extractive uses of the resources concerned. The GHG analysis was conducted by FAO in 2014 using the EX-ACT tool and provides an estimation of sequestration and resilience benefits. For the ex-post economic analysis, the appraisal analysis is not fully repeated due to insufficient data on saxaul rangeland management.
2. **Summary of non-quantifiable benefits:** The principal benefits of the proposed project are environmental and institutional and not readily quantifiable. The national Government attaches significant priority to retaining and restoring the country's limited areas of dense forest, such as the Irtysh Pine forests. It also wants to accelerate the process of transforming the wasteland areas of the DAS into areas covered with vegetation with growing biodiversity. The Irtysh pine forests are considered to have considerable amenity values for recreation and collection of minor non-timber products. The existence value of the forest resources covered by the project is evident in that as a matter of State concern the areas under forest in the north east of Kazakhstan should not continue to deteriorate. The amenity value of the DAS is much less than that of the Irtysh pine, but may change in the future. The existence value of vegetation in the DAS is not insignificant. Extension of the saxaul habitat under the project is expected to help accelerate further vegetation, and in doing so provide a safeguard in the event of worsening habitat conditions in the southwest of the country. Among institutional benefits are the lessons of local participation, private sector development, and socio-economic services for local communities. Government commitment to these values and benefits is seen in support of continuation of project interventions and the proposed follow-on project. In achieving these commitments and other outcomes, the project can be considered to have made efficient use of resources.

Part A: Ex-post Green House Gas Appraisal

3. **Carbon Balance Accounting:** An ex-post appraisal was conducted in 2014 using the EX-ACT tool developed by FAO to estimate the carbon balance of the project.²⁸ A summary of the key findings of the analysis is presented here. The carbon-balance is the estimated mitigation impact, which will be generated in 20 years (2007-2027) as a result of the project. This appraisal also provides performance indicators on climate resilience through increased natural capital, such as the incremental biomass generated and the incremental soil organic carbon, which directly affect the climate resilience of landscapes and watersheds. Although the appraisal was conducted prior to completion and includes certain assumptions due to incomplete data, it nonetheless, provides additional insight into the benefits of the project.
4. **Carbon Balance Appraisal – Optimistic scenario:** The optimistic scenario, which includes scaling up of project activities, impacts over 998 588ha, mostly related to forest and pasture. The table below provides the main results of this more favorable scenario: over the full duration of analysis of 20 years, the project will generate marginal benefits of 34.8 million tonnes of CO₂-equivalents, the carbon-balance. This is equal to an impact of 35 t CO₂-e per hectare or

²⁸ Bockel, L., Grever, U., (2014), Ex-post GHG Appraisal of the Forest Protection and Reforestation Project in Kazakhstan (2007-2015), Food and Agriculture Organisation, Rome. http://www.fao.org/fileadmin/templates/ex_act/pdf/case_studies/FPRP-KAZAK-carbonbalance-Appraisal-2May2014__3_.pdf

1.8 t CO₂-e per hectare per year. The analysis also shows how the project has moved from a net greenhouse gases (GHG) emission situation (the without-project scenario, linked with forest fires (3.7 million t CO₂-e)) to a net negative balance (-31 million t CO₂-e) with the project. Reflecting the wide focus of the project on degraded forest and pasture, which has high level of carbon rehabilitation, the project demonstrates a relevant climate mitigation impact, with a connected high mitigation intensity on a per hectare basis.

Table 5: Carbon balance under an optimistic adoption scenario

Name of the project	FPRP Kazakhstan		Climate	Cool Temperate (Dry)			Duration (yr)	20			
Continent	Asia (Continental)		Soil	Sandy Soils			Total area (ha)	990588			
Component of the project	Gross fluxes			Share per GHG of the Balance					Results per year		
	Without	With	Balance	Result per GHG			without	with	Balance		
	All GHG in tCO ₂ e/yr			CO ₂	N ₂ O	CH ₄					
	Positive = source / negative = sink			Biomass	Soil	Other					
Land Use Changes											
Deforestation	0	0	0	0	0	0	0	0	0		
Afforestation	0	-18,029,087	-18,029,087	-18,029,087	0	0	0	0	-901,454		
Other	0	0	0	0	0	0	0	0	0		
Agriculture											
Annual	0	0	0	0	0	0	0	0	0		
Perennial	0	0	0	0	0	0	0	0	0		
Rice	0	0	0	0	0	0	0	0	0		
Grassland & Livestocks											
Grassland	0	-2,349,524	-2,349,524	0	-2,349,524	0	0	0	-117,476		
Livestock	0	0	0	0	0	0	0	0	0		
Degradation	3,731,133	-10,820,541	-14,551,674	-9,419,911	-1,400,630		-1,677,241	-2,053,892	186,557		
Inputs & Investments	0	72,315	72,315			72,315	0		3,616		
Total	3,731,133	-31,126,837	-34,857,970	-27,448,998	-3,750,154	72,315	-1,677,241	-2,053,892	-1,742,898		
Per hectare	4	-31	-35	-27.6	-3.8	-1.7	-2.1	0.0			
Per hectare per year	0.2	-1.6	-1.8	-1.4	-0.2	-0.1	-0.1	0.0	-1.8		

5. A more detailed examination of the sub-components, shows that the largest single impacts stem from improved afforestation (18 million t CO₂-e) and forest degradation management (14.5 million t CO₂-e). Pasture rehabilitation impact is the third largest mitigation source (2.35 million t CO₂-e). When looking at the carbon pools, the project mostly enriches carbon levels in biomass (27.4 million t CO₂-e) and in soil (3.7 million t CO₂-e).

6. While the above values provide the expected technical mitigation impact, it is also possible to associate also a rough monetary value to the benefits generated. Based on a Social Cost of Carbon of 21 US\$ per ton (US Interagency working 12 Group²⁹) and discounted at 10 percent over the 20 years of the carbon balance appraisal, the net present value of the GHGs mitigation is estimated around US\$ 306 million.

7. **Incremental Natural Capital:** As a project that rehabilitates degraded forest and grassland areas and engages in afforestation of degraded areas, it contributes to landscape and watershed climate resilience capacity in semi desert areas affected by water stress and contributes to biodiversity. It thus produces a set of benefits that are clearly distinct from their climate change mitigation achievements and are closely related to the incremental existence of additional biomass and reactivation of the ecosystem. While most of the benefits are of public nature, environmental resources and non-degraded natural capital may also provide an important source for income and food security. The carbon balance appraisal is based to a large extent on foreseen increases in

²⁹ Interagency Working Group on Social Cost of Carbon. (2010). Social Cost of Carbon for Regulatory Impact Analysis. Interagency Working Group on Social Cost of Carbon. New York: United States Government.

biomass values and thus also allows us to provide an estimated impact of changes in selected stocks of natural capital (see Table 4).

Table 6: Incremental Natural Capital Generated through Project Implementation

INCREMENTAL CAPITAL GENERATED BY THE PROJECT			
Project:	FPRP Kazakhstan	1 United States Dollar = 101 Leke (April)	
	Optimistic scenario	Units	Quantity
Area	1027869		(units)
Duration:	20		
Natural Capital			
<i>Direct private value</i>			
A01	Incremental accumulated SOC on cultivated land (soil fertility)	t C	-
A02	Incremental stocks of non-timber biomass	t dm	8,776,275
	Fuelwood and -material	t dm	797,843
	Fodder	t dm	1,595,686
	Anti-erosive watershed coverage	t dm	6,382,746
	Compost	t dm	-
A03	Incremental stocks of NTFP in forestry and agro-forestry		
<i>Indirect private value</i>			
A04	Incremental area with erosion protection	ha	176,263
A05	Incremental area with increased drought resilience	ha	-
<i>Public value</i>			
A09	Incremental timber stocks in forestry and agro-forestry	t dm	2,111,938
A10	GHG balance (reduced emissions and C sequestration)	t CO2-e	34,857,970

8. When using instruments of environmental valuation, as e.g. willingness to pay, selected indicators can also be translated into monetary values: valuing timber at a conservative \$87.72/cubic meter³⁰, over 20 years created incremental timber stocks have a commercial value of \$185m. The total economic value (TEV that takes into account direct and indirect private values, and public values as shown in Table 2 above) of incremental natural capital generated during 20 years by the project, ranges between US\$338m and US\$546m for pessimistic (no scaling up) and optimistic scenarios (with scaling up) respectively, mostly due to carbon balance (58 percent) and incremental wood stock (32 percent). Within a revised minimal appraisal, using the current Voluntary Carbon Standard (VCS) carbon market price (US\$ 1.5), this TEV of incremental natural capital will be about range of \$156m to \$262m.

Part B: Ex-Post Economic Analysis

9. **Ex-post Economic Analysis:** Tracking certain data flows proved difficult to conduct an ex-post evaluation of all benefits. Based on available data, an ex-post analysis is conducted again. For certain project activities it is possible to derive benefits based on actual or potential extractive uses of the resources concerned. For the Irtysh pine forests, potential timber production from replanted areas, timber from thinned areas and the avoidance of the loss of forest resources through improved fire management are considered to have definable economic values. Although the extraction of saxaul wood from the DAS may never occur, the potential sustainable harvests of wood from the areas assisted under the Project can be estimated. As noted above these are not in the least the only benefits that should be ascribed to the proposed investments, or even the most

³⁰ This price is conservative when compared to export prices currently applied in the region: Russian timber exported to China and Japan ranging between US\$ 131 and US\$ 176 /m³ (source: <http://whatwood.ru>).

significant. At appraisal no attempt was made to assess possible returns to the sub-components for forest partnership development or competitive grants. Due to insufficient data, the sub-component on saxaul rangeland management is omitted from this analysis.

10. **General Parameters:**

- Period of analysis: 90 – 120 years to realize impacts of the project and longer-term targeted activities due to the growing period of the primary species concerned.
- Basis of accounting: border prices
 - Taxes are excluded
 - Domestic value content of costs and benefits (excluding foreign exchange content) are converted to their equivalent border values using a Standard Conversion Factor of 0.85.
- The economic cost of capital is considered in general to be 10 percent

11. The overall analysis with underlying assumptions is given in Table 1. A summary of the outcomes is given below.

Rehabilitation of the Irtysh Pine Forests

12. Sub-components 1a – Reforestation of fire-damaged pine forest, 1b – Improve forest fire management and provide other forestry support: The economic rate of return (ERR) to reforestation based solely on quantifiable harvest benefits remains at about 5 percent. The total rate of return to reforestation and forest cleaning is about 6.3 percent and was 5.5 percent at appraisal. The ERRs from forest fire management are estimated at 21 percent (timber price of US\$90/cubic meter) and 29 percent (US\$138/cubic meter), compared to 37 percent at appraisal. The overall quantified ERR to rehabilitation of the Irtysh Pine forest is about 13 percent (lower timber price) and 19 percent (higher timber price), compared to 10 percent at appraisal. Key changes since appraisal, include lower unit costs of planting, longer duration of planting and higher investment costs for fire management. Given the high intrinsic and recreational value the Kazakhstan government places on these forests, the prospect of future harvesting is uncertain, and the economic analysis provides information on the opportunity costs of a sustained logging ban. The low return on reforestation highlights the intrinsic value that the Government attaches to restoring this relic forest.

Environmental Amelioration in Kyzylorda Oblast

13. *Subcomponent 2a – Planting on the Dry Aral Seabed:* The quantifiable ERR is at about 3 percent based on a hypothetical sustainable harvest of saxaul wood and was 4 percent at appraisal. Changes since appraisal include higher investment costs and lower area re-vegetated by project completion. The ERR, although not negative, is considerably lower than that for the Irtysh Pine forest. This finding highlights recognition that the most significant benefits of this intervention are non-quantifiable intrinsic environment.

Table 7: Economic Analysis: Rehabilitation of Irtysh Pine forests and Dry Aral Seabed

	Rehabilitation of Irtysh Pine Forests	Planting on the Dry Aral Seabed
Costs	<p>Planting costs: ≈ US\$ 163 per hectare. Included in the analysis are</p> <ul style="list-style-type: none"> • Investment and recurrent costs for seed collection areas • Seed station facilities in Semey Ormany • Improved nurseries in both Ormandar. <p>Thinning costs of about US\$ 40, 80 and 200 per hectare for the first, second and final harvest of plantings (in years 25, 60 and 90 of planting; the year of planting reckoned as year 1). Average costs for cleaning forest over-growth of about US\$ 133 per hectare.</p> <p>Forest fire management costs include the costs of implementation in Semey and Irtysh Ormandar and the institutional strengthening costs of forest management; total recurrent costs of about US\$ 400,000 for the Ormandar following project completion</p> <p>Costs of the forest partnership development sub-component are excluded.</p>	<p>Costs include investments and operations of the Kazalinsk nursery, the outfitting/contracting of planting teams, road improvements and planting costs.</p> <p>At full development, establishment costs are proximately US\$ 47 per hectare, including the planting of seedlings and direct sowing.</p> <p>Total economic costs for the sub-component amount to about US\$ 6.8 million over the period of implementation; recurrent economic costs amount annually to approximately US\$ 0.8 million.</p>
Benefits	<p>Reforestation benefits derive from products obtained in two thinnings and final harvest (as long as the current regulations for Ormandar continue this final harvest is hypothetical). The scheduled thinnings and harvest produce fuel wood, small wood and timber.</p> <p>The first thinning in year 25 of planting produces about 25 cubic metres of fuel wood (assuming the recommended stocking of the replanted areas and realisation of desired survival rates).</p> <p>The second thinning in year 60 of planting producing about 18 cubic metres of fuel wood and 42 cubic metres of small wood.</p> <p>The final harvest produces about 24 cubic metres of fuel wood, 46 cubic metres of small wood and 160 cubic metres of timber.</p> <p>Forest cleaning produces about 30 cubic metres of fuel wood and 20 cubic metres of small wood per hectare.</p> <p>The economic values used for fuel wood, small wood and timber are approximately US\$ 10, 15 and 90-138 per cubic metre; the first timber value that used in the carbon sequestration analysis, the second is the value used at appraisal.</p> <p>The benefits of fire management derive from avoiding the loss of about 25 percent of the area that is expected to be lost to fires in the</p>	<p>Quantified benefits consist of the hypothetical regular sustainable harvest of saxaul wood from the vegetated areas; the yield of the harvest is approximately 3.5 cubic metres per hectare every thirty years.</p> <p>To account for accelerated natural regeneration in open areas interspaced within the areas vegetated through Project activities, in the analysis the areas under vegetation expand by 50 percent within thirty years of initial interventions; natural regeneration is expected to proceed far more slowly in the absence of the vegetation activities.</p> <p>The value of the saxaul wood harvested is estimated at US\$ 28 per cubic metre; this is an average stumpage value based on rural and urban markets in Kazakhstan.</p>

	<p>future without the project; this amounts to about 260 hectares each year of avoided area lost to fire.</p> <p>The value of the area lost to fire is approximated at 75 percent of the value of a reforested area at the time of final harvest.</p>	
Scale and Phasing	<p>Reforestation costs and benefits are based on the planting and sowing of 46,000 hectares in the course of project implementation and a continued annual reforestation programme of 6,000 hectares until the year 2017, and 8,000ha until 2030 following project completion. Annual reforestation grew from about 4000ha in 2007 to about 6,000ha in 2015. Annual area reforested from 2017 to 2030 is 8,000ha. Each year the Ormandar clean (thin) 2,000 hectares of overgrown forest area.</p>	<p>Vegetation of the DAS began in the year 2007 with 500ha planted and reached a cumulative total of 61,000 by June 2015. Planting after project completion is 15,000ha (5,000ha by SFEs and 10,000ha by the Kazalinsk nursery). For the analysis planting continues until 2030</p>
Outcomes	<p>The economic rate of return to reforestation is about 5 percent.</p> <p>The total return to reforestation and forest cleaning combined is about 6.3 percent</p> <p>The ERR to fire management is estimated at 21 percent (lower timber price) or 29 percent.</p> <p>The overall quantified economic return to the rehabilitation of the Irtysh pine forests is about 13 percent (lower timber price) or 19 percent.</p>	<p>The return to planting on the DAS is estimated at about 3 percent.</p>

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Jessica Mott	Sr. Natural Resource Economist	ECSSD	TTL
Talimjan Urazov	Sr. Operations Officer	ECSSD	
Janna Ryssakova	Social Development Specialist	ECSSD	
Frank McKinnell	Forestry Specialist	Consultant	
David Colbert	Environmental Specialist	FAO	
Anara Akmetova	Team Assistant	ECSKZ	
Rahnavetee Chiniah	Executive Assistant	ECSSD	
Irina Nizamov	Team Assistant	ECCU8	
Andre Kushlin	Sr. Forestry Specialist	ECSSD	
William Sutton	Agricultural Economist	ECSSD	
Bulat Utkelov	Operations Officer	ECSSD	
Nurbek Kurmanaliev	Procurement Specialist	ECCKG/ GGODR	Procurement
Naushad A. Khan	Lead Procurement Specialist	ECSPS/ GGODR	Procurement
John Ogallo	Sr. Financial Management Specialist	ECSPS	FM
Allen Wazny	Sr. Financial Management Specialist	ECSPS	FM
Anarkan Akerova	Legal Counsel	LEGEC	
Hannah Koilpillai	Finance Officer	LOAG1	
Andrina Ambrose-Gardiner	Finance Officer		
Koshie Michel	Program Assistant	ECSSD	
Supervision/ICR			
Angela Armstrong	Sr. Natural Resources Mgmt. Spec.	GENDR	TTL
Andrew Michael Mitchell	Sr. Forestry Spec.	GENDR	
Aliya Kim	Financial Management Specialist	GGODR	
Anara Akhmetova	Procurement Assistant	ECCKZ	Procurement
Bakyt Arystanov	Water Resources Spec.	GWADR	
Janna Ryssakova	Social Development Specialist	ECSSO - HIS	
Michael G. Carroll	Consultant	GCCFL	
Mustafa Ugur Alver	Operations Officer	ECCU6	
Norpulat Daniyarov	Sr. Financial Management Specialist	GGODR	

Robert Kirmse	Sr. Forestry Specialist	ECSSD - HIS	
Talimjan Urazov	Sr. Operations Officer	GFADR	
Yuling Zhou	Lead Procurement Specialist	GGODR	Procurement
Nandita Jain	Consultant	GENDR	
Nina Rinnerberger	Natural Resources Management Specialist	GENDR	

(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		
FY03	20.45	118.48
FY04	19.09	124.10
FY05	24.73	104.24
FY06	14.05	38.87
Total:	78.32	385.69
Supervision/ICR		
FY06	11.83	47.50
FY07	15.60	69.72
FY08	34.07	111.78
FY09	47.48	181.17
FY10	38.47	119.80
FY11	42.75	149.81
FY12	24.41	121.27
FY13	32.19	128.67
FY14	28.34	139.94
FY15	17.28	77.43
FY16	5.45	26.20
Total:	297.57	1,173.30

Annex 5. Beneficiary Survey Results

A. Poverty and Social Impact Assessment of Kazakhstan's Joint Forest Management Pilot

Introduction and Scope

1. A World Bank report on *Poverty and Social Impact Assessment of Kazakhstan's Joint Forest Management Pilot*³¹ was carried out and completed in August 2014. This report is the result of a study that was managed by Angela Armstrong (Senior Natural Resources Management Specialist, Task Team Leader). The study was conducted by Asyl Undeland (consultant) and the Sange Research Center (a Kazakhstan-based NGO), which conducted field work. The Sange project team was led by Natalia Baitugelova and the field team was led by Akbota Jappar.

2. The report is based on two field studies, which were carried out in a sample of 14 local jurisdictions in the Vostochno-Kazakhstanskaia and Pavlodarskaia regions and focused on data collected in the 14 villages that participated in the JFM Pilot around Semey Ormany and Irtysh Ormany *Reservats'* areas. The survey's sample was limited due to shortage of time and small scale of JFM Pilot and covered 300 people (2 percent of total population of 14 target villages). The total population of these target villages is 15,066 people and the survey sampled 303 people, i.e. about 2 percent of the target villages' population.

Table 1. Survey Sample

	Villages	Number of interviewed households
Borodulikhin District, Vostochno Kazakhstanskaia Oblast		
1	Borodulikha	18
2	Dmitrievka	24
3	Jernovka	29
4	Izatulla	15
Beskaragay District, Vostochno Kazakhstanskaia Oblast		
5	Kanonerka	21
6	Karamurza	27
7	Karabash	10
8	Jylandy	22
9	Glukhovka	23
10	Begen	28
11	Semenovka	21
12	Ondurus	21
Lebiajskii District, Pavlodar Oblast		
13	Shaka	22
14	Jabagly	22

³¹ The term *Joint Forest Management* is meant to be synonymous with *Participatory Forest Management* (PFM).

Key Results

3. Communities living in and around wooded areas along the Irtysh River are highly or fully dependent on forest resources, especially on fuel wood for heating and cooking. Forests are also important for communities for livestock grazing. In addition, the forests are appreciated by local communities for recreation, collection of berries and mushrooms, and beekeeping. Forest resources are especially important for vulnerable households (women-led, poor households), because these households tend to engage more in subsistence agriculture, including gathering of forest products for domestic consumption.

4. The forest is a traditionally important source of livelihoods for local communities, with about a third of households being employed by the forestry sector on a permanent basis and more on a temporary or seasonal basis. Salaries and pensions are the most important sources of income in the target area, while agriculture plays a role mostly for subsistence and additional income.

5. Forests in the Irtysh river pine area have been fast deteriorating since the early 1990s, with massive illegal logging and fire outbreaks. Anecdotal evidence suggests that the forest area decreased nearly 20 percent within this decade. That worrisome trend has been arrested with the introduction of a 10-year moratorium on logging timber in coniferous and saxaul forests in 2004 in Kazakhstan, the establishment of the Semey Ormany and Irtysh Ormany protected reserves in 2003, and a stricter-use regime supported by greater state funding in the forestry sector in the area.

6. The restrictions have had an impact at least insofar as informal use of forest resources by the community is concerned. While survey results suggest continued often informal use of the forest for a variety of purposes by the local community, clearly access and utilization is much less than was the case before. However, it remains unclear the extent to which the danger and burden on forest resources for many kinds of use merited the imposition of such strict limitations on use by not very numerous nearby communities.

7. At the same time, the strict use regime has fueled dissatisfaction in local communities, where the regime is seen as unfair and cumbersome, with a non-transparent allocation and distribution of forest resources. This has led to growing conflict between community members and forest sector employees. The conflict is constantly fueled by the following factors:

- i. Licensing for harvesting timber and fuel wood effectively benefits enterprises based outside of communities, with corresponding worsening of employment opportunities. Only licensed individuals can harvest timber and fuel wood in the state-owned forest. In order to obtain a license, one is required to have adequate machinery for forest-related work, and specialized labor. At the same time all private timber processing enterprises were closed and prohibited in the area of the *Reservat* in order to halt illegal logging. It was reported by respondents that logging contracts have been awarded mostly to companies outside the region, mostly from the capital city of Astana. While the companies still hire labor and machinery in the target areas, they sell the fuel wood locally for significantly higher prices. The *Reservat* also sells fuel wood but access to this fuel wood is inhibited by what the communities view as non-transparent allocation procedures.
- ii. State-funded forest activities are outsourced through tenders and forest social contracting, but it is difficult for villagers to participate in such tenders and contracts. Those interviewed noted that the awarding of the contracts is not transparent, and they suspect that many contracts are awarded to forestry sector employees or their connections.

- iii. The entrance to the forest is fee-based and requires obtaining a special permit from the *Reservat*, which entails a cumbersome procedure. For remote communities, this requirement is especially burdensome since they have to travel to the district center, sometimes as far as 60 kilometers, to pay for the forest entrance and use ticket. Since the forest-use permit is valid only one day, that procedure becomes especially irritating for poor and vulnerable households, who don't have their own transportation.
 - iv. Entrance into the forest during the fire-prone period is prohibited and since that period lasts for six to seven months, it is considered as unreasonable especially by households that rely on forest resources for additional income. Villagers interviewed highlighted that despite the prohibition, they sometimes observe illegal forest-related activities by outside of community entrepreneurs.
 - v. Livestock grazing in the forest is prohibited. Since better off households have the financial ability to buy hay and other livestock feed supplies, vulnerable households feel deprived of their rights to use forest areas for grazing. With about a third of the forest areas being without trees in Kazakhstan and thus possible to be used for grazing, that requirement shows signs of ineffective management.
8. Community dissatisfaction is expressed in the low willingness of villagers to participate in forest-related voluntary work, such as firefighting, forest sanitary cleaning and forest protection.
9. The JFM Pilot, limited in time and funding scope, was not able to reach all members of the target communities. According to the survey, it was able to engage actively with no more than 5 percent of the respondents. Moreover, there appear to have been issues with regard to the effectiveness of the pilot in reflecting community concerns, particularly in the membership of the local PUs, where *Reservat* officials dominated in such cases.
10. The JFM Pilot nonetheless was an important start in building a more constructive set of relationships between communities and the forestry enterprise officials as well as contributing to overall better and more sustainable management of forest resources. The main achievements of the pilot were the following:
- i. The Pilot raised awareness among policy makers and forestry sector authorities on the need to engage communities in forestry management;
 - ii. The Pilot started the process of creating an enabling political and legal environment for JFM development through regional and national level workshops and changes to the Forestry Code, which allow communities to participate in forest-related economic and environmental protection activities;
 - iii. The Pilot started testing institutional arrangements for the engagement of communities in forest management and provides a road map for further development;
 - iv. The Pilot was able to identify major entry points for the JFM, such as engaging communities in the tenders and forestry social contracts, lobbying interests of forest communities with local authorities and forestry sector management, and developing locally appropriate solutions to forest degradation. The two successful cases on advocating the rights of local communities showed the ability of collective action to promote the interests of the communities.
11. The JFM Pilot showed that local communities are keen to participate in forest management and take respective responsibilities, but only if they receive benefits from such partnerships

reflected in clear and secure use rights to forest resources. Surveyed community members and interviewed forestry enterprise staff assessed that JFM would improve the livelihoods of local communities while contributing to the preservation of forest resources.

12. Community members, forestry employees and officials think that the JFM creates an important platform for raising and resolving issues around forest resources management and use, and a powerful tool to improve governance in the management of the forestry sector. All interviewed stated that the JFM Pilot was a first effort to build a dialogue among local communities, the *Reservat* and local Governments.

13. People think that JFM can serve as a vehicle for communities to become engaged in various state-funded forest activities that improve livelihoods, such as cleaning the forest, harvesting fuel wood, collecting and cleaning pine cones, and establishing school forestry clubs. JFM also can engage people in the participatory management of grazing lands within forestry, for example in identifying grazing areas, assessing its condition, and managing and monitoring use.

14. For JFM to be effective, a clear set of functions and responsibilities for JFM entities and their relationship to forestry enterprises needs to be established and communicated to all stakeholders. Assignment of functions should not lead to a finite list since the goal of JFM is in part to mobilize communities to take better care of their forests. However, clarity of responsibilities of the parties concerned leads to better accountability which in turn should prompt better performance. At a minimum, clear expectations will insert transparency into how JFM entities should operate and interact with forestry enterprises.

15. These are gains that may be realized through building more constructive relationships with the local communities that would allow for more rational utilization of forest resources to benefit communities while at the same time ensuring effective, sustainable management. It is beyond the scope of this report to ascertain the levels of burden and risk posed by various types of use of the forests by community members. However, the general assessment, including the more cautious views of forestry employees, is that more liberal allowance of access by the small communities nearby the forests would have social and economic benefits that outweigh the risks. Moreover, the risks may over time be minimized through the JFM mechanism itself, as it will encourage more responsible use (such as avoidance of fires). Constructive relationships will be built only if JFM entities are separate from the *Reservat*. It is only in this manner that these entities will be able to represent fully and fairly the interests of communities. It should be built on an equal partnership of communities, local governments and forestry bodies. The role of the local government body (*Akimat*) is very important in the JFM to help mobilize and represent interests of the communities. The engagement of all three parties is a key for JFM to be able to achieve its objectives in a fair and effective manner.

16. JFM should engage large segments of the communities, and for that it is necessary to allocate sufficient time and resources to mobilize people, empower them with knowledge and information, and provide skills to participate in forest management. The involvement of a strong and capable external party, such as an NGO, is crucial to facilitate the social mobilization and empowerment process.

17. The grant program is a good mechanism to motivate the community, but should be designed with a clear purpose to have spread benefits widely in the community and be technically sound. This in turn requires much stronger measures for transparency in decisions about use of grants, allocation of funds, execution of contracts, and use of build assets. This local ownership could be

further augmented by a mandatory requirement for community contribution at least in terms labor. At the same time, technical soundness requires economic feasibility as well as an understanding of social context and relevance must be ensured for all projects to be funded by grants.

18. JFM can also be a strong tool for improving the livelihoods of community members, especially of poor and vulnerable households. That can be achieved through mobilizing such households into users' groups, empowering them with skills and engaging in various forest-related work through tenders and forestry social contracting. The *Reservat* lacks strong links with the local population and has no experience and incentives to address social issues even in villages close to forests. But the *Reservat* has the mandate and resources to promote projects related to the social needs of people and environmental protection. Such activities could be outsourced to the JFM entities.

19. Finally, a well-designed JFM can improve forest management by strengthening governance regimes. JFM provides a platform for ensuring greater transparency in the utilization of forests and, thanks to higher levels of engagement and understanding, additional accountability mechanisms whereby the community group itself has more of stake in monitoring its own members as well as the forestry enterprise itself. JFM provides an effective feedback loop of information and mediation if interests and grievances between the local population and forestry enterprises.

B. Forest Rehabilitation and Reforestation in Kazakhstan: Assessment of the Project Impact on the Project Territories³²

20. **Objective** – assessment of the impact of the Project on the Project territories (East Kazakhstan, Pavlodar, Kyzylorda oblasts), assessment of the benefits of the Project implementation and comparison of the obtained results with the results of the baseline study that was carried out in the course of the Project setup.

Method:

1. Survey Sample:

21. As part of the survey, 300 respondents were interviewed in total. 2-3 raions per each oblast - Pavlodar, East Kazakhstan, and Kyzylorda – were included in the sample with 2-3 villages per each raion. The following factors were taken into consideration at the selection of the raions and villages in Pavlodar and East Kazakhstan oblasts:

- Availability of pine forest;
- The usage of the forest natural resources by locals;
- Availability of branches of reserves and/or forestry;
- Implementation of the Project activity in the area

22. At the selection of the raions in Kyzylorda oblast the following factors were taken into consideration:

- Proximity to Aral Sea
- Usage of pastures by various social groups and dependence on pasture lands;

³² An assessment was commissioned by the PCU and carried out by BISAM (Kazakhstan) in 2014.

- Availability of saxaul woods near villages;
- Implementation of the Project activity in the area.

23. Pursuant to the above criteria the sample comprised the following raions and villages:

Pavlodar oblast:

- Scherbaktinsky raion
 - village Shaldai
 - village Zhanaul
- Lebyazhensky raion
 - village Shaka
 - village Dzhabagly

East Kazakhstan oblast:

- Borodulikha raion
 - village Borodulikha
 - village Izatulla
 - village Zhernovka
- Beskaragaisky raion
 - village Begen - forestry enterprise
 - village Karamurza
 - village Zhylandy

Kyzylorda oblast:

- Aralsky raion
 - village Kambash
- Kazalinsky raion
 - village Basykara
- Shielsky raion
 - village Kyzylkaiyn
 - village Maiyltogai

2. In-depth interviews

24. In-depth interviews were carried out with the following categories of respondents:

Pavlodar and East Kazakhstan oblasts:

- Heads of departments of «Yertys Ormany» and «Semey Ormany», as well as branches
- Forestry officers
- Forest rangers
- Game wardens
- Raion/village Akims
- Heads/Managers of raion services of the Ministry of Emergency
- Heads/Managers of departments of environment protection and water resources.

Kyzylorda oblast

- Raion/village Akims
- Heads of forestry enterprises
- Forestry officers
- Forest rangers

- Game wardens
- Users of demonstration sites (peasant farms)
- Executors of works on saxaul planting at the Aral Sea drained bed
- Heads/Managers of Kyzylorda oblast territory inspection of the forestry and hunting of the Ministry of Environment and Water Resources of the Republic of Kazakhstan.
- Heads/managers of the Department of nature resources and nature management of Kyzylorda oblast.

Total number of conducted in-depths interviews was 30.

3. Focus groups:

25. To focus group discussion method was used to ensure the methodological continuity with the study of 2004, as well as for the in-depth study of factors stipulating attitude of local population to the Project and opportunities of their involvement in its implementation, to reveal common stereotypes related with the objectives and domain of the Project implementation. Focus groups were made in the following areas: Shaldai village of Sherbaktinsky raion of Pavlodar oblast, Karamurza village of Beskaragai raion of East Kazakhstan oblast and Komekbaev village of Karmakshinsky raion of Kyzylorda oblast. Focus groups with men and women were done separately and were balanced in terms of the participant age with focus on the 25-50-year-olds. Six focus groups were conducted.

Key Conclusions

Irtys River pine forest

26. Population of the Project territories of East Kazakhstan and Pavlodar oblasts revealed high awareness level about the «Forest preservation and reforestation in Kazakhstan» - 71 percent of respondents know about it «in detail or in general» and 8 percent of respondents know nothing at all. In addition to that, respondents in East Kazakhstan oblast demonstrate higher awareness about the Project than respondents of Pavlodar oblast (83 percent vs. 59 percent).

27. Overwhelming majority of respondents know about the implemented Project activities targeted at the Irtys River pine woods rehabilitation – forest tree planting activities (100 percent), pinecone stocking (99 percent), removal of burnt wood (98 percent), the purchasing of machinery and equipment (90 percent), construction of the forest tree nursery (84 percent), construction of the forest seed growing complex (46 percent). In addition to that, in the course of focus groups respondents mentioned about the March of Parks arranged within the frameworks of the Project, organization of high school forestry, arrangement of various thematic contests with participation of children.

28. Residents of the surveyed villages revealed relatively high awareness level with regards to a number of the Project activities – nearly every third respondents participated in pinecone stocking (31 percent), in burnt wood removal (28 percent); every fifth respondents participated forest tree planting. While no more than 4 percent of respondents participated in the construction of the forest tree nursery and forest seed growing complex. The higher awareness is typical of residents of Izatulla, Karamurza, Zhylandy, Shaldai, and Shaka villages. In the course of focus group discussions respondents mentioned that the wage of seasonal workers within the frameworks of the Project was considerably higher than during the remaining time. Respondents of Shaldai

village were underlining the high level of the sanitary and comfort conditions of labor in the new forest tree nursery.

29. Respondents revealed high awareness level with regards to the activities targeted at the enhanced efficiency of the forest firefighting. All the surveyed respondents tuned out to be aware of the firefighting propaganda activities (99.5 percent), construction of fire chemical stations (97 percent), purchasing of firefighting machinery and equipment (90 percent), and introduction of the information system on the early forest fire detection system (70 percent).

30. Respondents gave high assessment to the efficiency of the Project activities – nearly the absolute majority of the surveyed villagers evaluated the Project events as very efficient and somewhat efficient. In the opinion of respondents the quality and level of the forestry management have improved for the past ten years. Among the advantages of the currently forestry management system, respondents mentioned the increased forestry enterprise personnel number, toughening of the forest security guard and patrolling, renewal of the machinery and equipment, reduced forest fire rate, decreased illegal felling rate. According to respondents all this improvement results from the increased funding of the forestry industry where the «Forest preservation and reforestation in Kazakhstan» Project plays a significant role.

31. The nature reserve specialists also confirmed the Project success that promoted the improvement of the material and technical basis of the public forestry enterprises of East Kazakhstan and Pavlodar oblasts. According to the surveyed specialists the purchased machinery and equipment promoted the enhanced efficiency of the operation of their enterprises. Thus, in the territory of the East Kazakhstan and Pavlodar oblasts the fire and chemical stations were built, watchtowers erected, and water tanks installed. In addition to that, the forest planting machinery, tractors, fire trucks, forest patrol fire complexes were acquired. The usage of the advanced machinery has facilitated the reduction of the manual labor at the planting works and, respectively, enhanced the plantation area.

32. The «Forest preservation and reforestation in Kazakhstan» Project has promoted the development and introduction of new technologies, among which are the construction of the forest seed growing complex with the usage of the containerized planting stock technology which is new for Kazakhstan. Among the mentioned advantages of the new system were the usage of the selected seed, irrigation comprising complex fertilizers, and the keeping seedling roots intact. However, the specialists expressed concern over the usage of the containerized planting stock – the possible low survival ability of seedlings in arid and sandy soils (lower rate than in the Republic of Tatarstan and the other territories of the Russian Federation), the usage of mostly the manual labor makes the planting more time consuming. In addition to that, specialists noted that the usage of the containerized planting stock is effective only at small areas, while the main purpose of the nurseries is to plant at vast areas.

33. Among the other technologies introduced within the frameworks of the Project were construction of the new forest nursery and the usage of the trickle irrigation. By today the nursery piloted the planting of seedlings covering the area of 4 hectares. The first year has demonstrated high germinating activity of the planted seedlings. Among the advantages mentioned by specialists were the opportunity of the water saving during irrigation, opportunities of reducing the production cost thanks to the usage of the six-line sowing scheme. However, specialists underlined some problems of the new technology – lack of durability of the irrigation belts that break quickly, get

blown away with the wind in the outdoor nursery, and shading net becomes worn out very soon. In addition to that, the usage of the nets complicates the thinning-out process.

34. Specialists of the Semey region mentioned that the Project piloted the introduction of the early forest fire detection system based on GPS technology. Specialists highly evaluated the results of the system work that allows detecting the fire at an early stage with precise location data. Nevertheless, the same specialists mentioned that the equipment is rather sensitive to fog and mist and incapable of identifying the nature of the smoke.

35. Overwhelming majority of (80 percent) population favorably evaluate the Project activities the Irtysh river pine wood rehabilitation. Half (48 percent) of respondents are aware that the Programmed financing was sufficient, but nearly every sixth (17 percent) believes that it wasn't. At that, population of East Kazakhstan oblast who evaluated the Project financing as sufficient almost twice as much increased the number of such respondents in Pavlodar oblast– 63 percent vs. 34 percent.

36. Overwhelming majority of respondents expressed readiness to participate in the future activities on the Irtysh River pine woods rehabilitation. It is significant that among the population of East Kazakhstan oblast the share of those prepared to participate in the Programme activities is considerably higher than the share of the residents of Pavlodar oblast (81 percent vs. 69 percent). Absolute majority of respondents mentioned the necessity of keeping the Project going.

37. In the opinion of the surveyed villagers/forestry specialists and public bodies population has become more forest conscious thanks to the information campaign implemented within the frameworks of the Project. Population and specialists unanimously confirmed that the Project implementation favorably influenced on various spheres of life – the forest protection enhanced, the environment and the quality of the forest improved, the area of the forest plantations increased. The illegal felling rate has dropped significantly, as well as the number of forest fires. Now that the forest plantations increased, the new nursery launched added with the future opening of the forest seed growing complex, the number of permanent and seasonal jobs will be growing, thus improving the wellbeing of families.

2.2. The planting activity in the Dry Aral Sea bed

38. The survey of Kyzylorda oblast respondents revealed insignificant awareness about the «Forest preservation and reforestation in Kazakhstan» as such. Only every fourth (23 percent) respondent knows about the Project. The highest awareness about the saxaul planting at the Aral Sea bed and saxaul pasture rehabilitation was revealed among the residents of Kyzylkaiyn and Mailytogai villages of Shieliysky raion.

39. Population of the Project territories in Kyzylorda oblast demonstrates poor awareness about the activities implemented within the frameworks of the Project. Thus, 19 percent of respondents are aware of the rehabilitation of the pasture lands (grass seed sowing, 17 percent - about construction of water ponds, and 17 percent – about creation of the pasture protection forest plantations; 15 percent of respondents know about creation of the forest reclamation plantations of saxaul, another 15 percent - about the purchasing of machinery and equipment for the planting works. Every sixth respondent is aware of the construction of the forest nursery with the research facility in Kazalinsk town (13 percent). At the same time, villagers are well informed about a number of such activities as small grants, seminars on the saxaul forest preservation and thoughtful treatment of pasture lands, about the planting of saxaul seedlings at the dried bed of the Aral Sea

(though, simultaneously, that don't know that all this activity was done within the frameworks of this Project).

40. The study revealed insignificant involvement of the population of Kyzylorda oblast in the Project activities. Only 5 percent of the surveyed villagers participated in some works within the frameworks of the Project.

41. At the same time, the in-depth interviews and focus group discussions in Kyzylorda almost exclusively revealed favorable assessment of the «Forest preservation and reforestation in Kazakhstan» Project. Respondents expressed favorable attitude to the Project in whole, to its concept and the outcome. The highest appreciation was given to 1) the large-scale planting of saxaul trees at the dried bed of Aral Sea, 2) improvement of the technical supply to the state forestry enterprises, and 3) construction of the forest nursery in Kazalinsk raion.

42. A set of activities targeted at the saxaul plantations and pastures preservation in Kyzylorda oblast was implemented within the frameworks of the Project. The study revealed a positive dynamics of the saxaul pastures condition. Implementation of the Project helped to improve the environment in the region. The area of the planted and sown territory during the Project amounted about 60 thousand hectares. Forestry specialists evaluated this result as a great achievement. The plantations of the first years of the Project have now developed into well-established saxaul forests that become a habitat for fauna previously not existing in those areas.

43. According to the specialists, without the machinery such a large-scale reforestation result would've been impossible taking into consideration the remote location of the dried bed of the Aral Sea.

44. The saxaul planting along a vast area requires the corresponding amount of the planting stock. The construction of the new nursery ensured this demand was met. The equipped nursery has managed to produce high quality seeds that favorably influenced on the survival ability of the seedlings. Apart from saxaul, the nursery grows seedlings of the other trees. This work is very important and valuable for the arid area of Kyzylorda oblast. The surveyed respondents realize the necessity of planting saxaul trees to help resist the sand and salt.

45. At the same time, critical comments were made with regards to certain aspects of the Project. In particular, it is related with the tender system of the subcontracted work financing and the creation of the demonstration sites. The latter did not meet expectations. Some examples require detailed studying and revision of the idea and the method of implementation of the components of the Project.

46. In the course of the study respondents numerously highlighted the necessity to change the tender system of the subcontracted work financing. Yet, it should be mentioned that a number of ineffective and wrong decisions identified in the course of Project has been eliminated.

47. The Project initiatives and events on the staff potential development and improvement of professional skills with forestry personnel were evaluated by respondents exceptionally well. A positive moment here is the fact that the skills raising activities not only touched the managerial personnel and middle level specialists, but also the minor staff.

48. In-depth interviews and focus group discussions revealed that the saxaul felling issue is not that acute anymore as it used to be prior to the Project. Respondents believe the illegal felling has almost stopped and evaluate the felling prevention measures as effective, in whole.

49. Respondents expressed absolutely favorable attitude to the Project because any activities targeted at the compensation of the harmful effect of the Aral Sea desiccation, including desertification, have always been welcome in this area. Majority of those aware of the Project activities mentioned favorable effect of the Project on the households and on the region in general. Overwhelming majority of villagers (74 percent) positively evaluated the results of the implemented activities, especially residents of Kyzylkaiyn and Mailytogai villages of Shieliysky raion.

50. Population of the Project territories is poorly informed about the details of the Project funding. Only every fourth respondents said the Project funding was done on time, while majority (71 percent) found it difficult to answer this question. More than half (55 percent) of respondents believe that the money allocated for the «Phyto-forest reclamation in Kyzylorda oblast» Project were spent effectively. However, nearly every fifth (18 percent) respondent believes the money was used inefficiently.

51. In the opinion of half of respondents of the surveyed villages, as a result of the Project implementation in Kyzylorda oblast, people have become environmentally conscious and developed thoughtful attitude to saxaul trees. Respondents stated the reduced number of illegal felling, which, first of all, is related with the legal ban on any type of felling, including the sanitary felling, as well as with the grown awareness about the importance and the role of saxaul plantations in the region. Considerably smaller part of population mentioned that the number of jobs increased as a result of the Project implementation. It can be explained by the limited area of the Project implementation.

52. Population of the surveyed villages expressed readiness to participate in the further activities of the Project on the phyto-forest reclamation in Kyzylorda oblast. Participants of focus group discussions were also willing to participate.

Annex 6. Stakeholder Workshop Report and Results

Project review workshop, June 25, 2015: Almost 100 persons participated including forestry officials from both central and regional offices, researchers and academics, beneficiary organizations both Government and non-Government, international consultants who worked on the project, and many other stakeholders. Seminar participants were impressed by project achievements in terms of area afforested and rehabilitated as well as increased firefighting capacity of participating institutions. Other project achievements reported included improved research capacity, raised public awareness, piloting of PFM, collaborations with international experts, increased civil society engagement in environmental issues through competitive grants, and numerous publications of forestry literature, among others.

Recommendations from participants included: a) using species other than saxaul in a mixed system of planting in the DAS; b) devolving management and ownership in forests to help reduce fire incidents; c) greater attention to be given to assessing local conditions for planting in DAS; d) continuous capacity building for field staff is critical; and e) working with neighboring countries, e.g., Russia for fire management and Uzbekistan for unified system of rehabilitation of DAS.

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

Summary of Borrower's ICR

General Conclusions on the Project

1. During the 8-year project implementation period good results were obtained in the support of the forestry and rangelands development within project areas, prevention of land degradation rates, afforestation, improvement of the environmental situation in the country, employment.
2. Key Project accomplishments are the following activities:
 - Forest regeneration within project areas at area of 102 000 ha, including planting of forest crops in the Irtysh band pine forests – 41 000 ha; planting of forest reclamation stands on the dry Aral Seabed – 61 000 ha;
 - Construction of 3 forest nurseries at total area of 83 ha and capacity 27,6 million seedlings annually, including construction of the seed production area complex to grow planting-stock with closed root system (containerized nursery) with capacity of 3 million seedlings annually;
 - The Forest fire information system was implemented in the pilot area of the Irtysh Region, including: optic-sensor forest fire detection system “Fire Watch” at 8 fire look-out towers and thunderstorm activity detection system (lightning direction finding);
 - 8 forest fire stations and 11 fire look-out towers were built and completely equipped;
 - The participatory forest management system was implemented – 5 NGOs “Facilitation to PFM Development” were established with involvement of local people in 16 settlements;
 - 20 rangeland demonstration sites were established in saxaul forests, provided water points for livestock at total area 168 000 ha of associated rangelands;
 - The Competitive Grant Program was implemented, as part of which financial and technical support was provided to subprojects, aimed at forest conservation and sustainable use through the involvement of local people in the creation of alternative sources of income;
 - 14 titles of regulatory, scientific-technical and reference literature were developed and published:

The Forestry Dictionary (Russian-Kazakh, Kazakh-Russian), edition 3000 copies; Forestry Handbook, edition 1000 copies (Kazakh – 500 copies, Russian – 500 copies); The Red Data Book of Kazakhstan. Volume 2 part1 (Plants), 2nd edition, revised and amended (in 3 languages), edition 500 copies; Regulatory acts related to forestry, fauna and protected areas (in 2 languages), edition 500 copies; Regulatory acts related to forestry, fauna and protected areas, volume III (in 2 languages), edition 500 copies; Recommendations developed as part of the Forest Protection and reforestation Project in 2 volumes (in 2 languages), edition 100 copies; Brochures: “The Forest Code of the RK” (2000 copies), “Law on The Fauna Protection, Reproduction and Use”(2000 copies), “Law on Protected Areas” (2000 copies) in Kazakh and Russian languages; Collection of annotated reports on the Forest Protection and Reforestation Project 2007-2014 in 3 languages, edition 100 copies; The implementation results of the Competitive Grant Program, aimed at the creation of the private forest fund and innovations in the forestry sector (in 2 languages), edition 300 copies.
 - Moreover, academician Sabit Baizakov has published 3 books during implementation of contract “Analysis, state and perspectives of forestry development in Kazakhstan”: “History of forestry development in Kazakhstan, monography, edition 500 copies; “Collection of rare

editions on forests and forestry of Kazakhstan”, edition 250 copies; Catalogue of published works on forests and forestry of Kazakhstan 1735-2014, edition 200 copies.

3. Overall, during the project implementation period 343 various activities were performed, 852 contracts were concluded, more than 7,872 people were attracted and employed, that significantly raised the employment level of local people.

4. In general, many activities were implemented within the framework of the Project, needed for the conservation and rehabilitation of forested areas of project territories, where country’s base pine and saxaul reserves were focused. Large-scale reforestation works were performed, new technologies in the forestry field were introduced, modernization of equipment and machinery, control of forest fires and illegal logging was accomplished, and institutional development of forestry sector was conducted in the field of scientific works, capacity building, and program researches in the economic and legal spheres.

5. Successful implementation of the Project allowed to increase the forest cover of the country to 0,034 percent, improve the ecological situation related to the reduction of land degradation and desertification, conservation of biological diversity, carbon sequestration.

6. Total rates of the biomass (under- and above-ground level) for pine and saxaul forests will be about 29 052 grams/square meters. Total carbon absorbed by the pine biomass is 50 percent and for saxaul is about 45 percent (by analogy with similar plant species). Total absorbed carbon thanks to the entire biomass, available above the ground and under the ground will about 14 175 grams/square meters. If convert this to tons per hectare (divided by 100), we will have total absorbed carbon 141.75. For the entire project territory, including the area of 61 000 ha for planted saxaul and 41 000 ha for pine, total biomass will be 6.5 million tons and total absorbed carbon will be 3.1 million tons. Total carbon dioxide is evaluated by the multiplication of the absorbed carbon by the conversion coefficient 3.667, equaling to about 11 million tons of the absorbed carbon for the entire project area (pine and saxaul), totaling 102 000 ha.

7. Indirect beneficiaries as a result of the improvement of environment and consequently improved health, reduction of soil erosion, as estimated will be three times as much as direct beneficiaries. The experience of the Project will be applied for forest sector throughout the territory of the Republic of Kazakhstan. It should also be noted that the Project, except direct results has achieved certain socio-economic effects, to which the following may be related:

- employment of local people;
- increase of income of local people;
- remission of taxes and other compulsory payments to the budget;
- reduction in the burden of disease in Pavlodar, East-Kazakhstan and Kyzylorda oblasts;
- capacity building of forestry sector staff.

8. Therefore, it may be concluded that the goals set before the Project prior to the beginning of its implementation were achieved and Project evidences on its good pre-design and implementation, as well as positive economic efficiency overall of the Project.

Borrower’s self-evaluation during the project preparation and implementation

9. Benefits from the Project implementation: increase the value of renewable and conserved cover of limited forest resources of Kazakhstan as a green belt, increase of forest recreation value,

conservation of pastoral and arable lands, biodiversity conservation, improvement of protection from wind erosion, improvement of air environment, as well as forest and fodder products.

10. Principal project beneficiaries are first of all people, living within the project implementation area, total number is 263 974 people, including:

- Pavlodar and East-Kazakhstan oblasts - 125 882 people;
- Kyzylorda oblast - 138 092 people.

Taking into consideration that the Project was focused on the reforestation of the territory of the Republic of Kazakhstan and improvement of the environmental situation, overall project beneficiaries are entire population of the Republic of Kazakhstan.

11. It was expected that project would complete on May 31, 2012. However due to the objective reasons the project implementation period was extended until June 30, 2015.

12. All project works were agreed with the concerned Government body. The Treasury Committee under the Ministry of Finance of the RK provided assistance in the Project implementation and kept constant control related to procurements, approval of requests for withdrawal of co-financing funds, acceptance and check of reports on loan and co-financing from the republican budget funds, replenishment of the special account and expenditures from the second-tier bank (audit).

13. The FS was revised 4 times following the results of the assessment of interim stages in full compliance with the budgetary and other legislation of the Republic of Kazakhstan during the project implementation period. In its turn, the FWC within the framework of the Project coordination, provided efficient interaction with concerned Government authorities at central and local levels, including defense of budgetary request as part of formation of republican budget projects and introduction of amendments in the project. The FWC, as a principal beneficiary has ensured discussion of the project design progress, its results and outputs with the IBRD as part of monitoring.

The work of the Ministry of Finance (MF)

14. During the project implementation period FS was revised 4 times based on the results of the assessment of interim stages in full compliance with the budgetary and other legislation of the Republic of Kazakhstan. The FWC as part of the project coordination ensured efficient interaction with concerned Government authorities at central and local levels, including protection of budget applications during the formation of draft republican budget and introduction of amendments in the draft. The FWC as primary beneficiary/implementing agency within the frames of the monitoring ensured negotiations with the IBRD related to the design of the project, progress, its implementation and outcomes.

Bank work evaluation

15. During the project preparation and implementation the IBRD provided technical support at high level related to sharing experience, knowledge and best practices in the development of forest areas of the RK, based on the use of innovations. Application of the IBRD procurement procedures allowed to involve international contractors in the development of the infrastructure and material and technical facilities of the forest fund. Thanks to it, as well as based on the scientific approaches, the Project has succeeded in the improvement of quality indicators of activities (e.g. survival rate

of seedlings, productivity of forest nurseries). Careful consideration of Project revisions, including by the IBRD consultants allowed eventually to ensure successful implementation of the Project.

Description of proposed measures for future Project implementation

16. The project results may provide the basis for the state forest policy, particularly related to the forest fire management and involvement of local people in the development of the forest fund. Probably some changes and amendments will be needed in the national legislation. Extension of the practices of the reserves and works on the DAS is necessary for all forestry institutions due to high efficiency with an aim of the improvement of the reforestation results. The established seed production area complexes may be developed in the future in order to provide planting-stock for the entire forest fund. Further development of the Forest Fire Control Information System (FFCIS) in new project areas. The experience in planting saxaul trees on the DAS may be applied in the combat with desertification and rangeland development. GIS-based information system should be developed (development of additional functional components) as a facility to support making management decisions in the PAs system (e.g. fires are also a problem for steppe ecosystems).

17. Taking into consideration the achieved positive results of the Project implementation, the activities should be replicated within the framework of next projects. The implementation of the Forest Protection and Reforestation Project, Phase 2 (hereinafter referred to as Project 2) is foreseen under the Cooperation Program on the development of Kazakhstan as part of the implementation of framework cooperation agreements between the Government of Republic of Kazakhstan and international financial organizations, approved by the minutes of the Coordination Council on the implementation of framework cooperation agreements between the Government of Republic of Kazakhstan and international financial organizations dated September 26, 2014, № II-669, area 6. “Sustainable ecological development, green economy development and energy efficiency upgrading”.

Lessons learnt

18. Due to objective reasons the Project implementation progress at its very beginning remained slow and some activities were performed with extensive delay. Major reasons, adversely impacted the Project implementation progress, timely execution of activities and utilization of funds were the following:

- 1.5 year delay in the start of the project implementation, since late issue of the Law on the ratification of the Loan and Grant Agreements (June 7, 2007);
- Long period of project staff formation, due to lack of skilled personnel;
- Problems related to the planning – project FS was developed in 2004-2005, during 4-5 years it got old, cost of procured goods, works and services increased, significantly affecting the planning of activities and approval of the budget proposal in the Ministry of National Economy;
- Long procurement process, that was carried out in accordance with the IBRD Procurement Guidelines and it could take from 2 to 8 months from the beginning of the elaboration and approval procedures for bidding documents until contract signing;
- Translation of bidding documents into English as well took a good deal of time. Initially bidding documents were to be approved by the Ministry of Finance of the RK that also affected the duration of the implementation of particular activities.

- Funds for the design estimate documentation (DED) development were not foreseen in the initial Project FS to construct forestry and fire-fighting facilities that affected the Project implementation progress.
- Cost of civil works increased based on the results of the developed DED. Therefore, need arose to revise the Project FS in order to bring into compliance its quantitative and cost indicators for further approval of payments as per signed contracts by the Ministry of Finance of the RK.
- In 2015 with the deadline until June 30, 2015 construction of fire station was not completed in “Semey Ormany” SFNR. In July, 2015 construction of the facility was completed. Since the facility was not accepted before the deadline until June 30, 2015, after completion of construction and receipt of the state acceptance commission act Contractor will send documents to the court to make decision on payment for works performed and start-up of the facility.

19. During tenders on planting and sowing of forest crops one should consider agrotechnical deadlines of work performance. Extensive delays in procurement procedures then has impact on the germination capacity of seeds and survival rate of seedlings.

20. Longer deadlines for closing the republican budget funds, than the loan closing date, at least six months should be stipulated in Agreements on implementation of similar projects, since time is needed for complete Project closing (transfer of fixed assets, submission of reporting in accordance with the Tax and Budgetary Laws of the RK).

21. Finally, to avoid multiple revisions of the Project FS, activities should be specified not according to the exhaustive list. It means that all possible activities should be included, but with the proviso that activities (with quantitative parameters) will be concretized in the course of the project implementation based on the results of mutual consultations, either with concerned Government authorities or financing organizations.

Comments on Draft ICR

ҚАЗАҚСТАН РЕСПУБЛИКАСЫ
АУЫЛ ШАРУАШЫЛЫҒЫ
МИНИСТРЛІГІ



ОРМАН ШАРУАШЫЛЫҒЫ ЖӘНЕ
ЖАНУАРЛАР ДҮНИЕСІ
КОМИТЕТІ

МИНИСТЕРСТВО
СЕЛЬСКОГО ХОЗЯЙСТВА
РЕСПУБЛИКИ КАЗАХСТАН

КОМИТЕТ
ЛЕСНОГО ХОЗЯЙСТВА И
ЖИВОТНОГО МИРА

010000, Астана қаласы, Орынбор көшесі, 8.
«Министрліктер үйі» тел: (7172) 74-91-70, 74-99-38
kloh@msh.gov.kz

010000, город Астана, ул. Орынбор, 8 «Дом Министерств»
тел: (7172) 74-91-70, 74-99-38
kloh@msh.gov.kz

19.12.2015. № 18-02-31/6837-14/ХЖМ

Ms. Angela Armstrong
Project Task Team Leader
World Bank

Dear Ms. Armstrong,

The Forestry and Wildlife Committee has received the World Bank's report on the completion of the implementation and results of the Forest Protection and Reforestation Project (Project) in 99 pages.

While reviewing the report we have noted satisfactory assessment for all indicators set for Project goals.

In general, the report was taken into consideration.

Acting Chairman

K. Ustemirov

Y.A. Tairbergenov
8 (7172) 74 98 67

Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders

Not applicable.

Annex 9. List of Selected Supporting Documents

World Bank documents:

- Project Appraisal Document – October 24, 2005 (Report No: 33029-KZ)
- Loan Agreement – November 6, 2006 (Loan number: 4808 KZ)
- Supplemental Letter No. 2 – November 6, 2006
- Amended and Restated Supplemental Letter No. 2 – May 5, 2014
- Restructuring Paper – 06/08/2010 (Report No: 55209 v1)
- Restructuring Paper – 11/28/2013 (Report No: RES12546)
- Implementation Status Reports, Sequence No 1-21
- Aide Memoires and Management Letters, February 2003 – June 2015
- Environmental Assessment and Management Plan – 1 August, 2005
- Japanese Grant for Preparation of the Kazakhstan Forestry Rehabilitation and Sustainable Development Project – Grant Number TF051351
- Financial statements with independent auditors' report, for the year ended 31 December 2014
- BISAM, (2014), Forest Rehabilitation and Reforestation in Kazakhstan: Assessment of the Project Impact on the Project Territories, BISAM, Almaty.
- Undeland, A., (2014) Poverty and Social Assessment of Kazakhstan's Joint Forest Management Pilot. World Bank.
- ERM/BISAM, (2005) Kazakhstan Protection and Reforestation Project: Final Synthesis Report on Institutional Assessment, ERM, London
- Other relevant project documents (accessed through WB [Operations Portal](#))

Other:

- Borrower Implementation Completion and Results Report – September 2015
- Ministry of Agriculture, Forest and Hunting Committee, Republic of Kazakhstan Forest Protection and Reforestation Project: *Institutional Assessment*, February, 2005
- Bockel, L., Grewer, U., (2014), Ex-post GHG Appraisal of the Forest Protection and Reforestation Project in Kazakhstan (2007-2015), Food and Agriculture Organisation, Rome. http://www.fao.org/fileadmin/templates/ex_act/pdf/case_studies/FPRP-KAZAK-carbonbalance-Appraisal-2May2014__3_.pdf
- Forest and Wildlife Committee, Republic of Kazakhstan (2015), Collection of Annotated Reports (Papers) on the Forest Protection and Reforestation Project (2017-2014), FWC, Astana
- BISAM, (2014), Forest Rehabilitation and Reforestation in Kazakhstan: Assessment of the Project Impact on the Project Territories, BISAM, Almaty
- Karlsson, S., (2005) Working Paper – Forest Planting: Kazakhstan Forest Rehabilitation and Protection Project, JE-Jacob Gibbs, Helsinki

