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IMPLEMENTATION COMPLETION AND RESULTS REPORT

(PPCR Trust Fund No. TF014523; GEF Trust Fund No. TF014521;
IDA D0850, PPCR Trust Fund No. TFA0431)

ON A GRANT
IN THE AMOUNT OF US\$11.45 MILLION
FROM THE PILOT PROGRAM FOR CLIMATE RESILIENCE OF THE STRATEGIC CLIMATE FUND

ON A GRANT
IN THE AMOUNT OF US\$5.4 MILLION
FROM THE GLOBAL ENVIRONMENT FACILITY TRUST FUND (GEF)

AND ON AN ADDITIONAL FINANCING GRANT
IN THE AMOUNT OF US\$1.8 MILLION
FROM THE INTERNATIONAL DEVELOPMENT ASSOCIATION (IDA)

TO THE
REPUBLIC OF TAJIKISTAN

FOR AN
ENVIRONMENTAL LAND MANAGEMENT AND RURAL LIVELIHOODS PROJECT (P122694)

November 21, 2018

Environment & Natural Resources Global Practice
Europe And Central Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective: February 8, 2013 / May 31, 2018)

Currency Unit=	Tajikistan Somoni
4.76 Tajikistan Somoni=	US\$1 (at Appraisal)
9.00 Tajikistan Somoni=	US\$1 (at Completion)

FISCAL YEAR
July 1 - June 30

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ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
CAP	Community Action Plan
CAWMP	Community Agriculture and Watershed Management Project
CBO	Community Based Organization
CDD	Community-driven development
CEP	Committee for Environmental Protection
CIG	Common Interest Group
CPS	Country Partnership Strategy
CY	Calendar Year
DFID	UK Department for International Development
DM	Decision Meeting
EBRD	European Bank for Reconstruction and Development
ECA	Europe and Central Asia
ELMARL	Environmental Land Management and Rural Livelihoods Project
EMF	Environmental Management Framework
FM	Financial Management
FO	Facilitating Organization
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GEO	Global Environment Objective
GHG	Greenhouse gas
GIS	Geographic Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ICR	Implementation Completion and Results Report
IFAD	International Fund for Agricultural Development
IG	Implementation Group
IMP	Integrated Pest Management
JRC	Jamot Resource Center
LRCSP	Land Registration and Cadastral System for Sustainable Agriculture Project
MDB	Multilateral Development Bank
M&E	Monitoring and Evaluation
MET	Monitoring Effectiveness Tool
NDC	Nationally Determined Contribution
NGO	Non-governmental Organization
NRM	Natural Resource Management
PAD	Project Appraisal Document
PAMP 2	Second Public Employment Project
PDO	Project Development Objective
PMP	Pasture Management Plan
PPCR	Pilot Program for Climate Resilience
PRA	Participatory Rural Appraisal
PUG	Pasture User Group

PUU	Pasture User Unions
QA/QC	Quality Assurance/Quality Control
RA	Resource Assessment
RF	Results Framework
SIC	State Investment Committee
SLM	Sustainable Land Management
SPCR	Strategic Program for Climate Resilience
SUDVIO	Social Union for Development of Village Organization
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
USAID	US Agency for International Development
WB	World Bank
WMP	Water Management Plan
WUA	Water User Association

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DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P122694	Environmental Land Management and Rural Livelihoods Project
Country	Financing Instrument
Tajikistan	Investment Project Financing
Original EA Category	Revised EA Category
Partial Assessment (B)	Partial Assessment (B)

Organizations

Borrower	Implementing Agency
Ministry of Finance	Committee on Environmental Protection

Project Development Objective (PDO)

Original PDO

The overall Project Development Objective (PDO) and Global Environmental Objective (GEO) is to enable rural people to increase their productive assets in ways that improve natural resource management and resilience to climate change in selected climate vulnerable sites



FINANCING

	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
World Bank Financing			
TF-14523	9,450,000	9,450,000	9,449,999
TF-14521	5,400,000	5,353,855	5,353,854
IDA-D0850	1,800,000	827,684	824,946
TF-A0431	2,000,000	1,999,356	1,999,356
Total	18,650,000	17,630,895	17,628,155
Non-World Bank Financing			
Borrower	0	0	0
Local Communities	2,460,000	0	0
Total	2,460,000	0	0
Total Project Cost	21,110,000	17,630,894	17,628,155

KEY DATES

Approval	Effectiveness	MTR Review	Original Closing	Actual Closing
29-Mar-2013	03-Oct-2013	18-Apr-2016	31-May-2018	31-May-2018
30-Jun-2015		18-Apr-2016		31-May-2018

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US\$M)	Key Revisions
15-Dec-2015	3.29	Change in Results Framework Change in Components and Cost Cancellation of Financing Change in Financing Plan

**KEY RATINGS**

Outcome	Bank Performance	M&E Quality
Satisfactory	Satisfactory	Substantial

RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US\$M)
01	25-Jun-2013	Satisfactory	Satisfactory	0
02	05-Nov-2013	Satisfactory	Satisfactory	0
03	26-Apr-2014	Satisfactory	Satisfactory	.80
04	23-Nov-2014	Satisfactory	Satisfactory	1.02
05	23-Jun-2015	Satisfactory	Satisfactory	2.09
06	06-Oct-2015	Satisfactory	Moderately Satisfactory	2.72
07	21-Apr-2016	Satisfactory	Moderately Satisfactory	4.79
08	11-Aug-2016	Satisfactory	Moderately Satisfactory	6.13
09	03-Mar-2017	Satisfactory	Moderately Satisfactory	9.96
10	19-Sep-2017	Satisfactory	Satisfactory	14.44
11	16-Nov-2017	Satisfactory	Satisfactory	15.49
12	29-May-2018	Satisfactory	Satisfactory	17.44



SECTORS AND THEMES

Sectors

Major Sector/Sector (%)

Agriculture, Fishing and Forestry 100

Agricultural Extension, Research, and Other Support Activities	44
Fisheries	3
Irrigation and Drainage	23
Public Administration - Agriculture, Fishing & Forestry	9
Livestock	3
Other Agriculture, Fishing and Forestry	18

Themes

Major Theme/ Theme (Level 2)/ Theme (Level 3) (%)

Private Sector Development 100

Jobs	100
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Finance 11

Finance for Development	11
Agriculture Finance	11

Urban and Rural Development 68

Rural Development	68
Rural Markets	11
Rural Infrastructure and service delivery	28
Land Administration and Management	29

Environment and Natural Resource Management 21

Climate change	7
Mitigation	7
Renewable Natural Resources Asset Management	14
Biodiversity	7
Landscape Management	7



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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. CONTEXT AT APPRAISAL

Country Context

1. Between 1997 and 2011, Tajikistan enjoyed relative political stability and had steady economic growth with real GDP growth of 7.4% in 2011. Much of the growth was driven by external factors including increased remittances, a good cotton harvest and high world cotton prices, as well as increased export earnings from aluminum. Despite an improved fiscal position in 2011, the government's capacity to respond to adverse events (e.g. seasonal energy shortages, periodic food insecurities, climate change risks) remained limited. Some structural reforms were undertaken in the agriculture, energy, transport and private and financial sectors, but these reforms needed to be accelerated aimed at creating a more sustainable basis for economic development. Low agricultural productivity and rudimentary safety nets had left 45% of the Tajik population living below the poverty line, vulnerable to shocks and stresses. Tajikistan was (and continues to be) rated as the most vulnerable to climate change impacts within the Europe and Central Asia (ECA) region; a function of its high exposure and sensitivity to climate change impacts, coupled with very low adaptive capacity.

Sectoral and Institutional Context

2. *Tajikistan's rural population, particularly those pursuing subsistence agriculture or pastoralism, were facing considerable challenges in improving their livelihoods in a sustainable way.* About 90% of Tajikistan's area (around 14.1 million hectares) is considered upland and mountainous, and only 6% is arable land. More than two thirds of the population are rural, predominantly poor and dependent on agriculture, which was generally characterized by low productivity. Restructuring collective farms into family and individual farms was often accompanied by a drop in skills among new farmers, leaving communities vulnerable to external shocks. Widespread adoption of sustainable land and water management strategies and practices for agro-ecosystems, together with improved technologies and knowledge, was needed by rural households and communities to enhance their livelihoods, thereby strengthen resilience to climate change.

3. *Key vulnerabilities and issues of land degradation and resource management needed to be addressed in the agriculture sector.* Environmental degradation and unsustainable use of natural resources posed considerable constraints for rural development, particularly in the agriculture sector. Mono-cropping and improper land use practices (e.g. wasteful irrigation methods, inadequate drainage) had resulted in soil degradation and stagnating yields, especially in lowland areas. Pasture degradation, due in part to overgrazing and poor stocking practices was a serious threat. In upland areas, the conversion of steep slopes to cereal production had contributed to land degradation, which in turn affected forests and rain-fed agriculture.

4. *Climate change variability and expected change posed additional and significant risks to the sustainable development of the rural sector.* Observed and predicted climate change impacts reinforced the need to support rural households with increased productive assets to sustainably manage their underlying resource base. Tajikistan's agriculture sector was particularly exposed to climate risks, including increasingly low and erratic rainfall, drying up of water resources through increased regional temperatures, higher evapotranspiration, reduced snow accumulation in mountain glaciers and an increased frequency of extreme events (e.g. flash floods, intense droughts). The impacts for the country's uplands and rain-fed farming areas were likely to include reduced water inflows and crop and rangeland productivity, changes in crop and forage quality, and additional water stress with the need for



enhancements in water storage capacity and management. These changes were likely to compound existing food security issues and impact those involved in rain-fed subsistence agriculture or pastoralism. The coping capacity of the rural poor, chiefly among them women, remained limited by social, economic and political barriers as well as natural resource constraints and limited knowledge. Adapting to climate change would increase the coping capacity of rural households, assisting them in moving towards greater climate resilience.

5. *The Tajik Government had several national strategies and programs¹ addressing land resource management and agriculture but lacked resources and capacity to fully implement them.* Important agricultural reforms in support of sustainable development included actions to resolve the cotton farm debt, measures to ensure the freedom to farm independently of government mandates, accelerated efforts to ensure proper land titling, improve irrigation and drainage infrastructure and institutions, improve farmers' access to finance and collateral and increase returns to farmers. A key feature of Government efforts was to maximize the role of (WUAs) in water management. In addition, a draft Pasture Law² was being considered by Parliament that would contain provisions for establishing Pasture User Unions (PUUs). At Appraisal, the Government was preparing the Third National Communication on Climate Change which aimed to enhance the evidence base for climate change risks and impacts on priority sectors (natural resources, national economy and human health) and provided opportunities to mainstream climate adaptation and mitigation activities in national development policy and programs.

6. *Rationale for Bank Involvement:* This project (Environmental Land Management and Rural Livelihoods, ELMARL) built on the achievements and lessons learned under the Tajikistan Community Agriculture and Watershed Management Project (CAWMP, closed April 2012). ELMARL expanded the geographic and sectoral scope, particularly in districts not previously covered by CAWMP with a focus on climate change adaptation and lowland water and soil management. The ELMARL project design also reflected lessons learned and findings from past and then on-going Bank financed projects and analytical work in Tajikistan.³ The Bank offered extensive operational experience in local demand-driven approaches to agricultural development, which also drew on best practices and lessons developed by international NGOs and other donors.⁴

7. *Building climate resilience with support from the Pilot Program for Climate Resilience (PPCR).* Tajikistan had been selected as one of the 18 countries participating in the PPCR. With funding from PPCR, the project aimed at improving rural livelihoods and increasing the adoption of sustainable land management (SLM) practices, thereby building greater resilience to climate related shocks. Under Government leadership, Tajikistan developed its Strategic Program for Climate Resilience that defined the underlying investment program for PPCR support. Under Phase 1 of the PPCR, an assessment of SLM practices and agriculture livelihoods provided recommendations and findings (e.g. on the most vulnerable sites) that then served as the analytical underpinnings for project design (as part of Phase 2 of the PPCR). Annex 8 provides details on the overall PPCR investment program in Tajikistan.

¹ This included the National Framework Programme to Combat Desertification (2005), the National Action Plan for Climate Change Mitigation (2003), and the National Communications on Climate Change (2002, 2008).

² One of the principle objectives of the Law "On Pastures", passed by Presidential Decree #951, March 19, 2013, was the effective use of pasturelands and protection of the natural environment.

³ Land Registration and Cadaster System for Sustainable Agriculture Project, Public Employment Project I, Farmers and Farm Worker Perceptions of Land Reform and Sustainable Agriculture, PPCR Phase 1 Assessment of SLM and agriculture.

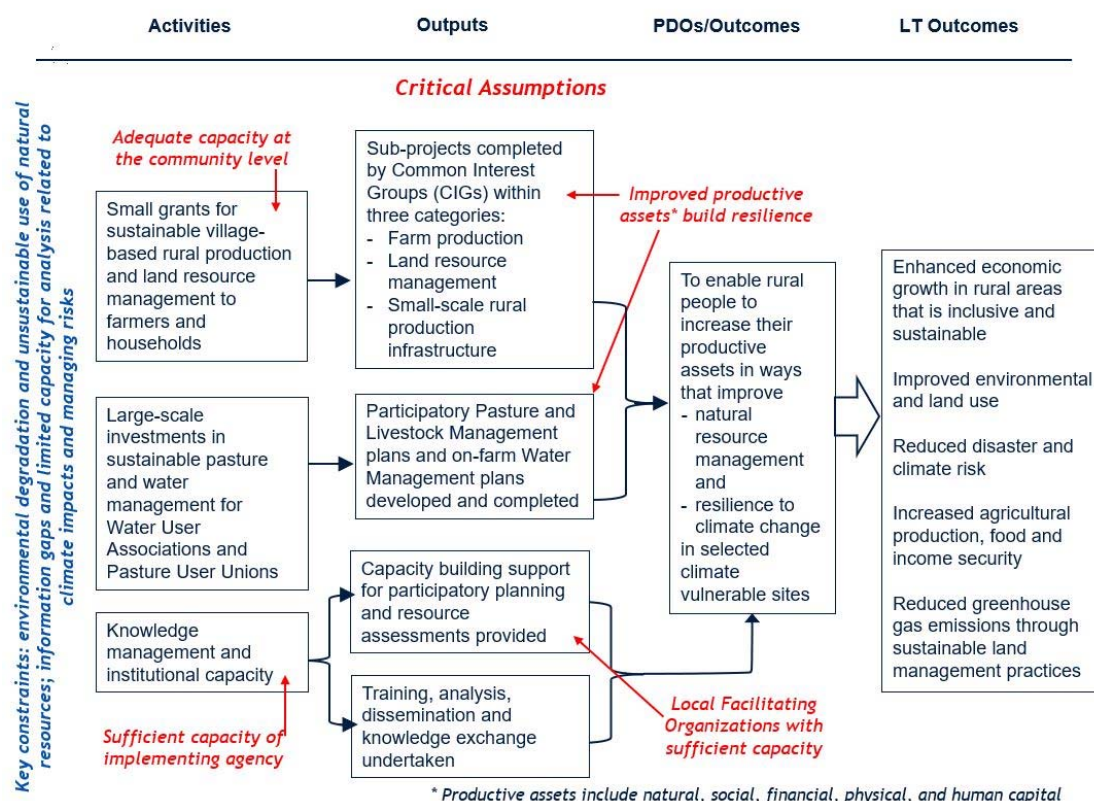
⁴ Aga Khan Foundation, Mercy Corps International, German Agro Action, ACTED, Care International, and United Nations Development Programme.



Theory of Change (Results Chain)

8. The project's theory of change is illustrated in Figure 1 below. The project focused on several areas of support that would strengthen the productive assets of rural households and address environmental degradation and unsustainable use of natural resources. The integrated nature of realized outputs means that the availability of improved productive assets and approaches to natural resources management would contribute to the resilience of project beneficiaries to the impacts of climate change.⁵

Figure 1. The Results Chain



Project Development Objectives (PDOs)

9. The overall Project Development Objective (PDO) and Global Environment Objective (GEO) as stated in the PPCR, GEF and IDA Grant Agreements (as well as the PAD) is: to enable rural people to increase their productive assets in ways that improve natural resource management and resilience to climate change in selected climate vulnerable sites.

10. The main outcomes captured in the PDO are: (i) to increase the productive assets of rural people; with two supporting outcomes (ii) to improve natural resource management, and (iii) to improve resilience to climate change. Together, they addressed the constraints identified in the sector context above.

⁵ Note that Figure 1 only presents the logic behind the results chain as described in the PAD. The key project outputs are presented in Annex 1.



Key Expected Outcomes and Outcome Indicators

11. The key outcomes and associated outcome indicators used to assess the achievement of the project's PDO are as follows:

PDO Outcome 1: to increase the productive assets of rural people⁶

- Outcome Indicator 3, "Proportion of population by household in target villages reporting at least 20% increase in well-being or household/livelihood assets"
- Outcome Indicator 5, "Direct project beneficiaries"

PDO Outcome 2: to improve natural resource management

- Outcome Indicator 1, "Number of households supported [in project area] that have adopted climate change and sustainable land management practices" (also relevant for outcome 1)
- Outcome Indicator 2, "Land users adopting sustainable land management practices as a result of the project" (also relevant for outcome 1)
- Outcome Indicator 4, "Number of hectares in project area covered by effective agricultural, land and water management practices suited to local agro-ecological conditions and climate change resilience"

PDO Outcome 3: to improve resilience to climate change

- In interpreting the PAD Results Framework (RF), a key assumption was that improved productive assets and improved natural resource management (i.e. interventions designed to protect and restore the underlying natural resource base upon which rural people depend) would help build climate resilience of beneficiaries. As such, each of the outcome indicators noted above is used to assess achievement of PDO Outcome 3.

Components

12. **Component 1 – Rural Production and Land Resource Management Investments** (*estimated: US\$10.14 million, actual: US\$11.32 million*): This component provided grant financing to communities in selected climate vulnerable sites⁷ to implement rural production and land and water resource management investments. It comprised two sub-components: (i) village-level investments to help groups of households (Common Interest Groups - CIGs) improve their livelihoods; and (ii) larger-scale initiatives beyond the village, particularly sustainable community pasture management involving PUUs and on-farm water management in lowland areas involving WUAs. A community-driven development approach was used to ensure participants took responsibility for the choice, design and management of rural investments and resource management plans.

13. **Component 2 – Knowledge Management and Institutional Support** (*estimated: US\$4.74 million, actual: US\$6.44 million*): This component comprised two sub-components: (i) facilitation support and technical advice for sustainable village-based rural production and land resource management and larger-scale initiatives in sustainable community land management; and (ii) training, analysis, dissemination and knowledge management.

⁶ Productive assets were understood to include various types of capital: social (through participatory approaches and formation of community-based groups and associations), human (through knowledge management and training), natural (through improvement of land conditions), physical (through small-scale investments in infrastructure) and financial (through provision of grants and other project support). Based on the sustainable livelihoods framework adapted by DFID (Department for International Development).

⁷ Selection of project districts was based on analytical work undertaken as part of Phase 1 of PPCR and included districts in the lowlands (Farkhor, Kulyob), middle hills (Baljuvon, Khovaling) and uplands (Tavildara/Sanghvior, Jirgatal/Lakhsh).



14. **Component 3 – Project Management and Institutional Support** (*estimated: US\$2.00 million, actual: US\$1.84 million*): This component financed the operating costs of project management functions to be carried out by the Implementing Group (IG) within the Committee for Environmental Protection (CEP). This component also included coordination with the overall country PPCR program, including participation and contributions to programmatic monitoring and evaluation and knowledge management.

15. Further details on the project components are included in Annex 7.

B. SIGNIFICANT CHANGES DURING IMPLEMENTATION (IF APPLICABLE)

Revised PDOs and Outcome Targets

16. The project was approved by the World Bank Board of Directors on March 29, 2013 and the PPCR and GEF Grant Agreements were signed on June 11, 2013. The project became effective on October 3, 2013. The PDO was not revised. The project underwent restructuring to provide an Additional Financing (AF) grant of US\$3.8 million comprising IDA (US\$1.8 million) and additional PPCR (US\$2.0 million) resources to strengthen and expand support under components 1 and 2. The AF restructuring revised some of the Results Framework (RF) indicator targets and added two intermediate results indicators to reflect the scale up of knowledge management activities and to capture the percent of “*feedback/grievances resolved within the stipulated service standards for response time*”.

17. Following the approval of the AF (on June 30, 2015), a partial cancellation of IDA grant financing took place (December 2015) that reduced the IDA grant amount to US\$0.82 million.⁸ Despite the reduction in IDA financing, the project was on track to exceed some of the indicator targets, which were revised in a Supplemental Letter to the AF Financing Agreement and PPCR Grant Agreement. During the project Mid-Term-Review (April 18-29, 2016), one of the key recommendations was to support additional WUAs in the northern part of Tajikistan and to modify some end-of-project development objective targets, which were expected to be higher. Following the Ministry of Finance’s official request to change the project end targets, the RF was adjusted as part of an Amendment to the Supplemental Letter on April 24, 2017. A summary of changes to outcome indicators is presented in Table 1 below as well as in Annex 6, which provides a summary of all RF changes, including intermediate indicators.

Table 1: Results Framework Changes to PDO Indicators

Indicator Name	Original Project	AF 2015	Revision 2016	Revision 2017	Rationale
Number of households supported [in project area] that have adopted climate change and sustainable land management practices	21,000	26,350	33,100	40,500	As part of the AF, it was estimated that an additional 5,350 households will participate in village level rural investments. Despite the partial IDA cancellation, it had become clear in late 2015 (after the AF approval and based on available project M&E data) that the project would be able to support a greater number of households than originally estimated. ⁹ Project savings (under component 2 and 3) also allowed for additional households to be included in the project. Therefore, the end target was increased further in January 2016 and

⁸ During the preparation of the AF, the Bank and the Ministry of Finance planned for potential national IDA resources of US\$1.8 million (at 100% grant terms). Following approval of the AF (June 30, 2015), a balancing of the credits and grants in Tajikistan’s FY15 IDA portfolio was agreed between the Bank and the Ministry of Finance to meet a required 45% Grant/55% Credit ratio. The Ministry of Finance gave its consent to a partial cancellation of IDA resources (in the amount of US\$1 million) in a letter dated September 30, 2015.

⁹ The PAD foresaw that at least 50% of village households should participate in rural production and land resource management investments. The initial end target value for the indicator was conservative and based on best available government data at the time. It was understood that the actual number of households reached may far exceed the initial estimate.



					April 2017.
Land users adopting sustainable land management practices as a result of the project	12,000	16,000	24,000	23,100	Similarly, the number of land users was conservatively estimated during project preparation and the project was able to reach a greater number of land users despite the partial IDA cancellation and due to the project savings.
Proportion of population by household in target villages reporting at least 20% increase in well-being or household/ livelihood assets	50%	No change	No change	No change	N/A
Number of hectares in project area covered by effective agricultural, land and water management practices suited to local agro-ecological conditions and climate change resilience	30,000	32,000	70,000	41,500	The end target was increased as part of the AF to reflect the additional rural investments that would lead to effective management of project areas. The final revision reflects a more accurate estimate based on the project environmental database, which includes the number of hectares covered for each sub-project.
Direct project beneficiaries	126,000	159,000	206,250	243,000	The end target adjustments reflect the increase in number of households supported (assuming ~6 persons per household) and includes beneficiaries under WUAs/PUUs that were not originally counted towards this indicator. Original estimates were based in part on outdated government data, while later estimates were based on more reliable M&E data collected by the IG.
Female beneficiaries	40%	No change	No change	No change	N/A

Revised PDO Indicators

18. None, with the exception of the changes to outcome targets described in this section.

Revised Components

19. The AF grant (signed on January 22, 2016; effective on June 22, 2016) would enable the project to (i) expand its geographic coverage and support to different climate vulnerable districts, by scaling up support for innovative rural production and SLM measures at the village level and (ii) improve access to the best or most appropriate knowledge on the adoption of SLM and climate resilient practices among the rural population and households. Annex 7 provides further details on the AF changes to components and cost.

Other Changes

20. As part of the AF restructuring, the project triggered OP 7.50 (Projects on International Waterways), because project activities would use water from 'international waterways' such as the Amu Darya and its tributaries.

Rationale for Changes and Their Implication on the Original Theory of Change

21. The AF responded to a Government request (through the National PPCR Focal Point) to avail additional PPCR resources, which had become available in early CY2013, just prior to Negotiations of the parent project (approved February 28, 2013).¹⁰ The AF also included IDA resources requested by the Deputy Prime Minister.

22. The project continued to be relevant and was able to deliver and, in some cases, surpass its original objectives. The TOC was not affected by the changes. Due to the AF and project savings of about US\$490,000 under the three

¹⁰ The timing of the project restructuring (18 months into implementation and 12% of grant resources disbursed) was aligned to ensure that the PPCR Sub-Committee would not withdraw the additional resources. The PPCR Sub-Committee approved the proposal for the additional resources in February 2014.



components, it was possible to reach a greater number of beneficiaries than originally anticipated. The project was also able to support 16 instead of 8 Water Management Plans (WMPs). Under the knowledge component, the AF enabled the project to deliver more results through additional training and production of best practice videos on SLM as well as better knowledge management (including the creation of a Knowledge Management Platform for Sustainable Land Management, www.slm.tj.net).

II. OUTCOME

A. RELEVANCE OF PDOs

Rating: High.

Assessment of Relevance of PDOs and Rating

23. The project objectives were aligned with the priorities of the FY13-14 CPS (on achieving inclusive, sustainable growth) and ECA Regional Strategy (on climate action for sustainable growth) and have remained highly relevant in the context of Tajikistan's CPS for the period FY15-18. The project supported the CPS' cross-cutting theme of mainstreaming climate change by helping communities improve rural land management practices, particularly in the agriculture sector, and strengthen resilience and rural livelihoods through local planning adapted to climate change. The project contributed to the FY15-18 CPS Pillar 2: Social Inclusion by expanding opportunities for poor farmers including women and strengthening human capital through increased access to and better-quality knowledge. In addition, the project contributed to the CPS goal of creating economic opportunities for poor and vulnerable groups through community-driven development approaches that provided grants to rural households. The project also supported the cross-pillar priority of gender by encouraging female entrepreneurship and participation in all aspects of the project and enabling better access to land and other rural productive assets.

24. The project objectives remain relevant in light of the 2018 Systematic Country Diagnostic for Tajikistan, which recognizes the threat of climate change to the country's economic and social development and highlights the need to further build capacity to respond to these challenges. The project objectives are consistent with the new Country Partnership Framework for the period FY19-23, which includes cross-cutting themes of rural economic development and socio-economic resilience strengthening focused on the poorest, highest-risk regions of Tajikistan. The project results are in line with the strategic priority objectives of the Government and the PDO remains relevant for Tajikistan's own policies, programs and international commitments, particularly on climate change, as outlined in its Nationally Determined Contribution (NDC) under the Paris Agreement, but also related to implementation of the Agriculture Reform Programme (2012-2020), the State Programme for Study and Preservation of Glaciers (2010-2030), and other sectoral programs.

B. ACHIEVEMENT OF PDOs (EFFICACY)

Rating: Substantial.

Assessment of Achievement of Each Objective/Outcome

25. This section is organized around each of the three outcomes included in the PDO (see para 11).



Outcome 1: to increase the productive assets of rural people.

26. The project supported rural people through direct grant financing to implement sub-projects that contributed to an increase in their productive assets covering five dimensions: social, human, financial, physical and natural capital. The outcome was achieved based on the following evidence:

PDO Outcome indicator 3: “Proportion of population by household in target villages reporting at least 20% increase in well-being or household/livelihood assets” (baseline: 0, target: 50%, achieved: 53%)¹¹

27. *Social capital:* The project enabled rural people to build social capital using a community-based-development approach facilitated by participatory approaches. Social cohesion and cooperation in participating villages and institutional arrangements for resource management, all important factors in coping with external shocks, were strengthened through the formation of 2,349 Common Interest Groups (CIGs) and eight PUUs, plus support to 16 existing WUAs. Participating households saw a greater increase in leisure time (a determinant for social well-being) than non-participating households over the period 2015-2017. Qualitative data from the well-being assessment indicates that the project contributed to create a common sense of purpose amongst residents of the participating communities with greater cohesion between neighbors, CIG group members and villages. Increased scores on the management effectiveness of PUUs and WUAs showed improvement in institutional arrangements and governance (see Annex 9 for more details). At the end of the project, there was a network of 16 active Community Based Organizations (CBOs) working to promote SLM through a knowledge platform (www.slmtj.net).

28. *Human capital:* Extensive technical and non-technical trainings (in total, 36,836 client days were delivered, and more than 350 different types of training and communication materials produced) enabled beneficiaries to select, implement and manage appropriate SLM interventions. The knowledge management platform was an innovative and new way for Tajikistan to share learning and best practices and contributed to increased knowledge on climate adaptation and SLM investment opportunities. Results from project assessments (incl. the economic impact assessment) indicate that knowledge and capacities are being embedded in beneficiary households and communities and have been taken up by other members of villages. Health and living conditions (a contributor to human capital) improved as a result of project interventions that, for example, improved access to drinking water and production of more nutritious foodstuffs, and also fostered an enhanced sense of achievement resulting from sub-project implementation. In 2015, almost 30 percent of in-project participants recorded having a “very poor or poor health” status, versus less than 20 percent in 2017. Those respondents reporting a “fair health” condition (around 25 percent in 2015) increased to over 30 percent in 2017.

29. *Financial capital:* The project provided small and large-scale grants to households and farmers that increased their productive assets and socio-economic position. In total, the project provided \$11.32 million in investments toward enhanced rural production and land resource management (as reported under intermediate results indicator #1). The assessment of the well-being specifically demonstrates that 53% of in-project households in the lowlands and uplands were able to improve their well-being by 25% on average (compared to 46% of non-participating households). Purchasing power remained stable (while it dropped for non-project households) indicating that project participants were better able to absorb shocks at a time when the country experienced a banking crisis and depressed household consumption (due to lower remittances in 2015-16). Opportunities were created for temporary employment and permanent jobs in range of investments such as infrastructure rehabilitation, and agro-processing. Across the project regions, women saw a higher increase in well-being than men. Specifically, the project



was able to create work opportunities for rural women (*"We [women in the CIG Laziz, Khovaling] did not have a job... now there is an opportunity to earn money and support my family"*).

30. *Physical capital*: Rural households benefited from the realized infrastructure and land management improvements resulting from the physical capital (small-scale infrastructure, tools and equipment) provided under the investment grants. Initial investments of creating and restoring physical capital contributed not only to increased productivity (e.g. increased water from repaired irrigation infrastructure, access to markets and pasture from rehabilitated roads), but also increased efficiency of resource use, such as the installation of water meters and drip irrigation. Evidence for improvements in physical assets also comes from data on the value of rural investments (intermediate indicator 1.1). Details on the types of physical capital provided and restored is included in Annex 1.

31. *Natural capital*: Validation of this dimension is discussed under Outcome 2 below.

PDO Outcome Indicator 5: "Direct project beneficiaries" (baseline: 0, target: 243,000, achieved: 323,393).

32. Overall, 323,393 direct beneficiaries, including CIG members and WUA/PUU beneficiaries were reached by the project, 48% of whom were women. See Annex 1 for more details.

Outcome 2: to improve natural resource management.

33. The project helped improve natural resource management by providing the technical and financial support needed by beneficiaries to implement effective practices suited to local agro-ecological conditions (e.g. prevent or reduce soil erosion; increase vegetative cover through perennial crops and pasture; provide soil and moisture conservation; improve soil quality; improve water use efficiency; increase sustainable fodder or wood supply; increase sustainable renewable energy supply; extend integrated pest management). Key results are as follows:

PDO Outcome Indicator 1, "Number of households supported [in project area] that have adopted climate change and sustainable land management practices" (baseline: 0, target: 40,500, achieved: 53,390) and PDO Outcome Indicator 2, "Land users adopting sustainable land management practices as a result of the project" (baseline: 0, target: 23,100, achieved: 22,582).

34. Evidence from sub-project documentation shows that 53,390 households have adopted SLM and climate change practices in climate-vulnerable areas including Tavildara/Sangvor, Jirgatal/Lakhsh, Baljuvon, Hovaling, Kulob and Farkhor. A sub-set of 22,582 households adopted practices specifically related to SLM. See Annex 1 for additional details.

PDO Outcome Indicator 4, "Number of hectares in project area covered by effective agricultural, land and water management practices suited to local agro-ecological conditions and climate change resilience" (baseline: 0, target: 41,500, achieved: 44,235).

35. A total of 44,235 hectares was covered with effective agricultural, land and water management practices, of which more than 90% was assessed as improved/rehabilitated with decreased stoniness of land, reduced salinization and waterlogging, afforestation of territories and planting of trees, bushes and grasses, as well as improved pastures and haying¹², and 43,731 hectares with better soil structure (from restored and enhanced carbon stocks). Surveys and

¹¹ As specified in the PAD, a well-being index was designed to monitor Outcome indicator 3 using a participatory approach that defined specific Tajik domains of well-being: health, money and workplace, living conditions, food, leisure and social connections, safety, and subjective well-being. Quantitative and qualitative surveys were conducted in 2015 and 2017, covering eight districts in three agro-ecological zones.

¹² Based on aggregate reporting of sub-projects on a number of environmental indicators that were part of the project's Environmental Management Framework. See Annex 1 for details.



interviews with beneficiaries, indicated that sub-projects contributed to increasing land areas suitable for agricultural production (e.g. through the provision of irrigation and equipment) and greater output from agricultural production. For example, practices such as the use of biological compost or planting more resilient plant varieties increased production by up to 24% for fodder crops. Upland areas such as Lakhsh, benefited from previously unused and degraded land coming under orchards, and growing high value potato varieties suited to local conditions. Interventions also contributed to a decrease in pest quantity, animal disease, and mortality of cattle and greater resilience towards natural disaster. Anecdotal evidence reveals that a fundamental shift has taken place in rural participants' mindsets to treat natural resources with care. There is recognition of the value of environmental protection for their livelihoods, which serves as motivation to adopt and maintain SLM practices that are now viewed as a viable alternative to 'business as usual' agricultural practices.

36. The most prevalent sub-project types implemented by CIGs are presented in Table 2.

Table 2: Top 5 Investment Categories under Sub-component 1.1.

Sub-project Type	Number of sub-projects	Percent of Total
Horticulture (e.g. perennial crops and trees, establishing orchards)	527	22%
Livestock breeding (e.g. more productive small breeds to reduce land/grazing pressure)	410	17%
Beekeeping	220	9%
Greenhouses (e.g. for the production of vegetables and lemons)	194	8%
Poultry development	178	7%

37. Resource Assessments (RAs) enabled beneficiaries to learn about environmental threats and vulnerabilities to disasters and climate change and use this information as an input to Participatory Rural Appraisals (PRAs). PRAs supported communities in analyzing their socio-economic and environmental situations and design and prioritize the most appropriate interventions for improving NRM and climate resilience as part of Community Action Plans (CAPs) and PMPs/WMPs.¹³ This is evidenced by the high degree (average score of 80%) to which villages integrated the findings of the climate change adaptation and environmental appraisals into CAPs to ensure implementation of appropriate investments. District-level committees comprising relevant government representatives review all investments, helping to ensure alignment with local development plans and mainstreaming of SLM practices. An IG assessment of CIGs, WUAs, PUUs showed that eagerness to learn, high attendance at capacity building and peer-to-peer learning activities led to a stark increase in capacity, including on reporting and implementing safeguard requirements. The environmental safeguard process was critical in building capacity for screening of all sub-projects, which afforded learning opportunities integrating and monitoring environmental aspects of rural and on-farm investments. This process proved effective in raising the level of understanding among beneficiaries of the importance of environmental protection for their livelihoods.

Outcome 3: to improve resilience to climate change.

38. Enhancing the productive assets of rural people while improving natural resource management also provides evidence that the third intended outcome inherent in the PDO, **to improve resilience to climate change**, was achieved. Livelihood assets are necessary for building resilience to climate change. To become resilient to climate

¹³ Annex 7 provides additional details on the Planning Process for Rural Production and Land Resource Management Investments under Component 1.



change requires that poor and vulnerable groups, particularly those dependent on natural resources, have assets available to cope with shocks and adapt¹⁴ to both rapid and slow-onset climate change.¹⁵ While land degradation and poor natural resource management can undermine resilience and coping strategies, functioning institutions and knowledge are key elements of resilience. In effect, improved climate resilience is the impact of outcomes 1 and 2 above. Specifically, the project built capacity to adopt SLM practices at the local level, but also provided a process to integrate climate considerations in local development planning. The project was targeted at climate-vulnerable areas in three agro-ecological zones and project activities were clearly linked to the climate vulnerability context in Tajikistan (more broadly) and the respective villages (more specifically). Participatory approaches emphasized local context and knowledge upon which resilience depends. The financing provided under the Project addressed the risks and vulnerabilities of communities and strengthened the adaptive capacity of households through approaches and measures that are widely considered to be adaptation activities.¹⁶ Annex 1 provides additional details.

39. The project also contributed to better soil conditions and thus resilience through enhanced carbon sequestration. Specifically, the overall carbon balance (defined as the net balance from all greenhouse gases expressed in CO₂ equivalents that were emitted or sequestered due to project implementation as compared to a business-as-usual scenario) for CIG investments amounts to -262,490.58 tons of carbon dioxide equivalent (tCO₂-e) over 20 years and that for PUU and WUA investments to -713,970.12 tCO₂-e demonstrating that the project contributed to the enhancement of global carbon stocks by a total of 976,460.80 tCO₂-e over 20 years.¹⁷

Justification of Overall Efficacy Rating

40. The overall efficacy with the PDO largely achieved is rated as **Substantial**. The combination of investments for rural production and land resource management, specifically targeted at climate vulnerable districts, and capacity building as well as knowledge management led to the achievement of all three sub-objectives: to enable rural people to increase their productive assets in ways that improve natural resource management and resilience to climate change. However, it is noted that the degree of resilience is challenging to assess because long-term climatic change may not yet be evident at the time of this evaluation and resilience results can be difficult to determine in the absence of a shock or stress.

C. EFFICIENCY

Rating: Substantial.

Assessment of Efficiency and Rating

41. *Financial Analysis.* At appraisal and AF, a financial analysis was conducted. The project was expected to generate a variety of benefits not all of which would be able to be quantified. Key quantifiable benefits expected included increased agricultural productivity resulting in greater household financial capital and contributions to national-level economic growth. Non-quantifiable benefits included improved capacities and knowledge in

¹⁴ The IPCC defines adaptation as an “adjustment in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts [which involves] adjustments to reduce the vulnerability of communities to climatic change.” When adaptive capacity is enhanced, it “represents a practical means of coping with changes and uncertainties in climate.” See <http://www.ipcc.ch/ipccreports/tar/wg2/index.php?idp=643>.

¹⁵ World Bank. 2014. *Turn Down the Heat: Confronting the New Climate Normal*. Washington DC: World Bank. License: Creative Commons Attribution—NonCommercial—NoDerivatives 3.0 IGO (CC BY-NC-ND 3.0 IGO).

¹⁶ Although not comprehensive, the Joint Report on Multilateral Development Banks’ Climate Financing (2016) provides a list of the types of activities considered to contribute to adaptation and climate resilience building, many of which were implemented under ELMARL.

¹⁷ Carbon Balance Accounting Report, 2018.



environmentally sound land management practices at farm-level and also the sustainability of project benefits. An ex-post financial analysis based on the distribution of beneficiaries across types of investments, and data gathered in project assessments shows higher returns than forecast at appraisal and AF. At completion, the NPV is \$28 million (was \$15 million at Additional Financing) driven primarily by a higher number of beneficiaries overall, and related uptake of investments in farm productivity and land management. The financial internal rate of return is 56% (compared to 47% at Additional Financing). An important global benefit is the carbon balance of the project with more than 900,000 tCO₂-e sequestered over a 20-year time period. A summary of the two analyses is provided in Table 3 (with details in Annex 4). Key non-quantifiable benefits include improved food security and human health, increased vegetative cover and soil and water conservation, with the project environmental benefits contributing to critical ecosystem services for millions of downstream populations in Tajikistan and Central Asia.

Table 3: Ex-post Financial Analysis

A. Ex-post Financial Analysis (over 20 years)
<p>Based on total number of 63,000 (45,400 at AF, 38,200 at appraisal) participating households, and no investments implemented in Year 1.</p> <ul style="list-style-type: none"> • Total Net Present Value (NPV) of the project (at 12% discount rate) to investments in rural production (covering farm productivity, land management and rural infrastructure) is \$28 million (\$14 million at appraisal and \$15 million at additional financing) • Financial internal rate of return (IRR) to rural production investments based solely on quantifiable benefits is about 56% (47% at appraisal and additional financing). • NPV becomes positive in year 6 as a significant number of investments reach full development.
B. Carbon Balancing Accounting
<p>Enhancement of global carbon stocks by a total of 976,460.80 tCO₂-e over 20 years from rural production investments. No ex-ante analysis was conducted, but ex-post analysis carried out with Ex-ACT tool.</p> <ul style="list-style-type: none"> • With a low shadow price starting at \$34 per tonne of CO₂-e, the NPV is estimated at about \$4 million (discount rate of 12%). Using the higher shadow price range starting at \$78 per tonne of CO₂-e, the NPV is estimated at about \$8 million. • It is likely that the values are an underestimation since they do not take into account expansion and replication of rural investments by participants and non-participants with independent financing.

42. *Overall project expenditures.* Savings were achieved allowing funds to be allocated to an additional 63 rural investments under sub-component 1.1. thereby increasing the number of intended beneficiaries. IG costs were estimated at 10% of total project funding (excluding beneficiary contributions), which is comparable to similar community-driven projects that require significant levels of implementation support. Additionally, there was very low staff turnover for the life of the project, with only one technical consultant replaced. At project closure, approximately \$45,000 was returned.

43. *GEF Post completion incremental cost review* – At the time of appraisal, a separate incremental cost assessment was not required. However, the project financial analysis does cover aspects of GEF financing including the benefits of carbon sequestration. In the ELMARL project, GEF financing leveraged DFID/GIZ funding for rural growth, and complemented PPCR support for building resilience, and brought to the project a focus on key environmental dimensions, particularly SLM. Under Components 1 and 2, GEF financing helped ensure a focus on introducing and adopting practices in sustainable land and water management, that resulted in land (44, 235 hectares) under more effective management. Additionally, carbon balance accounting conducted for the first time in Tajikistan provided valuable insight into the effectiveness of various interventions, raised awareness of sequestration impacts of agriculture and land management, and built in-country capacity to assess such parameters (more details in Annex 4).



44. *Rating of Efficiency:* Efficiency is what would be expected in the project's sector and therefore is rated as *Substantial*.

D. JUSTIFICATION OF OVERALL OUTCOME RATING

Rating: Satisfactory.

45. The overall outcome rating is based on the **high** relevance of objectives, the **substantial** efficacy rating with the achievement of all PDO objectives and the **substantial** efficiency rating with significant positive short and long-term economic rates of return. Although a Level-2 Restructuring took place to include AF, and some indicator targets changed, it does not warrant a split evaluation because the scope and direction of the project remained the same and only the geographic coverage was expanded.

E. OTHER OUTCOMES AND IMPACTS (IF ANY)

Gender

46. The project sought to address gender and social inclusion issues through its use of participatory processes and monitoring project results with disaggregated data. Monitoring data were used to adapt PRAs, trainings and outreach to better engage women as well as people with disabilities. Of the 323,393 direct project beneficiaries, 48 percent were women (PDO Indicator #5) a result higher than in similar projects such as CAWMP (38 percent). Among the CIGs supported by the project, 21 percent were female-led and 2 percent were women-only, creating employment opportunities. Similarly, three Board members of supported WUAs and 18 Council members of PUUs are female. Annex 10 includes additional data on women's participation under component 1.

Institutional Strengthening

47. The project was crucial in building capacity of local communities and households, PUUs and WUAs, local NGOs, as well as regional and national level stakeholders¹⁸ more participatory approaches to environmental land management and climate change adaptation. The entire second component was devoted to providing institutional support, technical advice, training and capacity building to facilitate knowledge management. Facilitation and capacity building support was almost entirely provided by Tajik organizations. Please refer to Annex 11 for further details.

Mobilizing Private Sector Financing

48. The private sector's share of GDP and employment in Tajikistan is growing, but still remains low by international and regional standards.¹⁹ While the project did not directly support greater financing from the private sector,²⁰ many individual, private stakeholders (i.e. farmers, households) and entrepreneurs (e.g. support for private veterinarian clinics) benefitted from the project's interventions. The project also contributed to providing access to markets and offered training and resources to increase productivity of work. Agricultural produce from project investments (e.g. potatoes, watermelons, poultry products, milk products, dried fruits and nuts, honey) is of high quality and can be sold in domestic markets. As part of component 2 (knowledge management support), the IG engaged local IT-professionals

¹⁸ Project stakeholders included: Government of Tajikistan, Committee for Environmental Protection and the IG, PPCR Secretariat and the Inter-Ministerial Commission, District CEP and Rayon (District) Review Committees, Technical Consultants and their Assistants, Facilitating Organizations, Community-based units, scientific institutes / research firms.

¹⁹ Tajikistan: Strategic Programme for Climate Resilience.

²⁰ As part of the overall PPCR Programme in Tajikistan, EBRD supported support private sector investments in technologies which contribute towards development of climate resilience in Tajikistan as part of its "Small Business Climate Resilience Financing Facility".



and a private internet provider in Tajikistan to ensure the sustainability of the project's Knowledge Management Platform for Sustainable Land Management (www.slm.tj.net). Analytical work carried out under the project on Payments for Ecosystem Services (PES) in Tajikistan examined investment opportunities in support of PES, including the possibility of involving interested private sector capital.²¹

Poverty Reduction and Shared Prosperity

49. The project contributed to employment creation in rural and mountainous areas as well as improved social cohesion. Rural populations in climate vulnerable sites, often located in remote areas that lack economic opportunities, benefitted from project interventions in ways that increased their productive household assets. Improved agricultural productivity contributed to increased household incomes from sales and served as a “safety net” by providing produce for people's own consumption. The Well-Being assessment indicates that project support acted as a “shock absorber” in the context of the national economic crisis, with purchasing power of project beneficiaries remaining stable while non-participants saw a decline.

Other Unintended Outcomes and Impacts

50. The project supported many interventions with positive impacts that went beyond the project's intended outcomes. A few examples are described in Annex 11.

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. KEY FACTORS DURING PREPARATION

51. The objectives were highly relevant given the rural livelihood, environmental and climate change challenges facing Tajikistan and included multiple outcomes related to these issues. Given that the process of building resilience is complex, multi-faceted and takes time, the PDO's outcome to improve resilience to climate change was ambitious and difficult to measure. The objectives were aligned with the priorities of the PPCR, GEF as well as the FY13-14 Country Partnership Strategy and ECA Regional Strategy; they also supported the Government's development and poverty reduction strategies. The project incorporated lessons from earlier operations and was underpinned by rigorous analytical work, including demonstrated good practices.²² It was complementary to and informed by other programs and projects (e.g. Central Asia Hydrometeorology Modernization Project, PPCR projects supported by other Multilateral Development Banks). At the time of preparation, resilience-focused interventions were still relatively novel²³ as was the focus on environmental land management, but they were and remain critical for Tajikistan's sustainable development.

52. The project design was logical with clearly structured components and scaled-up the successful approach initiated under CAWMP. The main design elements remain relevant.²⁴ The selection of climate vulnerable sites was based on sound criteria.²⁵ The initial sequencing of tasks and timing was appropriate in

²¹ Institutional and Legal Assessment on the Possible Application of the PES approach in Tajikistan (Dushanbe, 2018).

²² Specifically, under PPCR Phase 1, which encompassed technical assistance activities to strengthen Tajikistan's capacity and analytical evidence base as well as a stocktaking and institutional assessment of the country's capacity for climate resilience.

²³ The Climate Investment Funds (CIF), launched in 2008, represents one of the first global efforts to provide dedicated climate finance. The CIF consists of the Clean Technology Fund (CTF) and the Strategic Climate Fund (SCF). The latter includes the PPCR (established 2009).

²⁴ Subsequent projects, including the Central Asia Climate Adaptation and Mitigation Program (P151363) and the Kyrgyz Republic Integrated Forest Ecosystem Management Project (P151102) are in part based on design elements of ELMARL.

²⁵ This included the degree of climate and other environmental vulnerability, based on findings from the PPCR Phase 1 assessment.



that it focused on contracting FOs to facilitate community mobilization, participatory planning, identification of community-based units, rural investment planning and implementation, and capacity building. Selection of stakeholders was appropriate, as was the choice of implementing agency (given CEP's role as National Focal Point for GEF and GCF).

53. The set of PDO and Intermediate Results Indicators was aligned with the operational objectives, relevant PPCR Transformation Indicators and the GEF Land Degradation Focal Area Strategy expected outcome indicator for Strategic Objective 1, as well as the relevant World Bank Core Sector Indicator.²⁶ While the RF included baselines (all of which were zero), the end targets were based on best available estimates at the time of preparation; some expected results had to be revised multiple times (once during the AF, and in two subsequent adjustments). The project EMF included a comprehensive set of environmental indicators to assess each investment throughout implementation. The main risks for implementation were captured²⁷ and adequate mitigation measures put in place. Still, the project suffered from significant delays (12-15 months) at project start-up due to unforeseen changes in CEP's institutional structure two months after project launch.²⁸

B. KEY FACTORS DURING IMPLEMENTATION

Factors subject to government and/or implementing entities control, include:

54. The project came about due to strong interest from the Government of Tajikistan for continued cooperation with the Bank in support of improved productivity and management of mountain agro-ecosystems, and addressing environmental issues and climate variability and risks.²⁹ Government commitment remained strong until project closing, as evidenced by the positive feedback received from government officials (including the Ministry of Finance and State Committee on Investments and State Property) at central and district levels and members of parliament. One measure of beneficiary commitment is their contributions which totaled US\$2.03 million.

55. Signing of the PPCR and GEF Grant Agreements took place around 2.5 months after Board approval of the project and the IG worked diligently toward effectiveness (October 3, 2013). In parallel, preparation of the AF was advancing, and a proposal was presented formally to the PPCR Secretariat in November 2013. Good progress was made in contracting consultants to support the existing IG when institutional changes took place within CEP following the November 2013 elections in Tajikistan. This necessitated the selection of a new project coordinator (consultant) and new component and fiduciary managers,³⁰ who were unfamiliar with the project design. While orientation workshops took place in project districts (between December 2013 to January 2014), changes within CEP significantly delayed the implementation of project activities. The contracting of FOs and trainers (internationally contracted) was a lengthy process. Rural investments for both village-level and larger-scale initiatives eventually were underway in CY2015. Initial attention to the

²⁶ At preparation, reporting on relevant Core Sector Indicators (CSIs) was required for operations greater than USD5 million. The project's PDO Indicator #2, "Land users adopting sustainable land management practices as a result of the project", was included as a CSI in ELMARL.

²⁷ The overall implementation risk rating was Moderate. Implementing agency capacity and the project's community development approach were rated as substantial risks.

²⁸ Although the IG had been selected during project preparation (as a mitigation measure to the IG appointment process being delayed), the change in institutional structure resulted in the appointment of a new CEP Chairperson in December 2013 and new IG members.

²⁹ The Government submitted a request for a follow-on project to CAMWP, which closed in April 2012.

³⁰ Selection of the new CEP staff for the IG and contracting of the new IG project coordinator was completed by February 28, 2014.



implementation and utilization of the Monitoring & Evaluation (M&E) system could have been stronger. Significant efforts were made to improve M&E starting from the Mid-Term-Review (April 2016).

Factors subject to World Bank control, include:

56. Throughout project preparation and implementation, the Bank team provided timely support and effectively addressed issues that arose, balancing the interests of the Government, the donors (PPCR and GEF) and the Bank. Regular implementation support missions provided technical advice, as well as fiduciary and safeguard oversight. Aide Memoires and ISRs were detailed with recommendations to address issues and challenges. During the early stages, supervision focused on achieving project effectiveness, addressing the institutional changes within CEP and the IG, and supporting FO contracting. M&E requirements were reviewed as part of the regular supervision missions, but there was limited progress to report³¹ and other issues dominated. During the MTR period, the Bank team and IG reviewed the RF and targets in detail and clarified the purpose of the M&E system.

57. The Bank team is to be commended for securing the additional PPCR resources and processing the AF at the time it did.³² Although the project had to be restructured shortly after the AF was approved, the additional resources allowed for strengthening and expanding of Components 1 and 2. The Bank team closely monitored implementation and disbursements, which continued to be delayed during CY2015 (partly due to the institutional changes, as well as the challenges of a community driven development approach, which was identified as a substantial risk during project preparation). The Task Team Leader (TTL) of the project changed once in October 2016 when a detailed hand over mission was conducted (October 12-21, 2016).

Factors outside of the control of government and/or implementing entities, including:

58. The economic crisis in Tajikistan in 2015-2016 caused a serious drop in remittance inflows, growing prices and taxes, currency depreciation, and failure of the national banking sector. As a result, the project's macroeconomic risk was upgraded to *Substantial* in August 2016. The banking sector as a whole was facing liquidity issues (local and foreign currency), delays in processing transactions/payments, and issuing bank statements. Despite these difficulties, the project faced only slight delays in processing payments and the project team closely monitored the situation and maintained the *Substantial* rating until project closing.

59. Reporting under the Grievance Redress Mechanism revealed that natural disasters (e.g. heavy snow, flooding) caused damage to some rural and livestock infrastructure (in 7% of the 145 feedbacks recorded).

³¹ The project started making progress against the PDO indicators around May 2015.

³² The project had been under implementation for only 18 months when the AF was being processed, with 12% of grant resources disbursed (March 2015). While there was uncertainty about the IDA financing grant amount, resulting from the need to rebalance Tajikistan's FY15 IDA portfolio, the Bank team found that any further delay in processing might risk that the PPCR Sub-Committee would withdraw the additional resources (available already in CY2013). The AF Decision Review Meeting agreed to plan for US\$1.8 million in national IDA, at 100% grant terms.



IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

A. QUALITY OF MONITORING AND EVALUATION (M&E)

Rating: Substantial.

M&E Design

60. The PDO statement was organized around three interlinked outcomes.³³ Part of the PDO could have been worded more wisely, i.e. to focus on the adaptive, absorptive and transformative capacities in climate resilience rather than the difficult to measure “*resilience to climate change*”.³⁴ The RF included five PDO level indicators and eight intermediate result indicators, which were supplemented by 16 environmental indicators (included as part of the 2012 EMF) as well as Monitoring Effectiveness Tools (MET)³⁵ for PUUs and WUAs. In addition, the project reported on performance using the GEF Land Degradation Tracking Tool. An index of well-being was developed through a participatory process and for which baseline and final assessments were conducted in 2015 and 2017 respectively. Starting with the AF, a Grievance Redress Mechanism was included to reflect the Bank’s approach to strengthening grievance capacity. These instruments were adequate to report on project objectives. At the PDO level, some indicators could have been more focused and concise as they contained several results (e.g. “number of households that have adopted climate change and sustainable land management practices”, “number of hectares covered by effective agricultural, land and water management practices suited to local agro-ecological conditions and climate change”). Some intermediate indicators (e.g. related to “enhancement of carbon stocks”) were more reflective of outcome indicators and could have been more tightly worded (“degree to which villages have integrated climate change adaptation and environmental appraisals into community action plans and are implementing appropriate investments”). The use of primary data from project beneficiaries was supplemented with secondary data from existing sources and baseline values were established.

M&E Implementation

61. The CEP and IG’s limited experience with community-driven-development (CDD) projects and community participation initially contributed to uneven performance in reporting and analysis, environmental monitoring, and measuring PDO indicators. Implementation of the M&E system significantly improved after the MTR, when the RF targets were revised and the meaning, as well as measurement of indicators was clarified. Based on key recommendations from the MTR, the IG pro-actively addressed weaknesses and data collection and analysis markedly improved. This included better quality control and verification of data on the ground (e.g. through site visits of each CIG by the project’s technical advisors and FOs to verify the number of households benefitting from interventions). A comprehensive M&E database was developed (in March 2017) and maintained until project closing to methodically collect data about investments (e.g. gender, district, type of activities, environmental categories, carbon balance accounting, environmental indicators). During the later stages of the project, reliability and quality of data was substantial as was the quality of progress reporting and analysis. Under the implementing arrangements, the M&E

³³ For instance, the project supported increasing productive assets through grants enabling rural people to implement eligible rural productivity measures that improved natural resource management and enhanced resilience to climate change (e.g. planting of perennial crops with greater resilience to climate change, requiring reduced fertilizer and energy, and producing more food, thus contributing to the overall well-being).

³⁴ Resilience-building most often entails long-term endeavors and numerous interventions. Based on World Bank operational guidance (Evaluation of Resilience-Building Operations, August 2017), project task teams should generally consider increased resilience as a longer-term outcome beyond the control and lifetime of a single project.

³⁵ See Annex 9 of this ICR.



system involved the IG, regional CEP offices, FOs, CBOs, project beneficiaries and other stakeholders in collecting, processing and disseminating essential project data and results.

M&E Utilization

62. M&E data were regularly used to track progress towards project objectives, assess performance, and inform project management. For instance, based on monitoring data, the IG and Bank team found that the number of households supported by the project exceeded the initial (conservative) estimate of 21,500. At the MTR, the RF was restructured to adjust the end target values to reflect increases in households supported (40,500), the number of direct project beneficiaries and area covered by project interventions. Environmental, economic, and social data from sub-project screenings and the PRAs were used to determine eligibility of rural grants in line with project objectives and district development strategies. Another example of using M&E data for decision-making related to the participation of women in project activities. Data initially showed a low share of female participation, in response to which the IG undertook a concerted effort to better understand the underlying reasons (e.g. through initiating focus groups and outreach in project-supported areas) and actively engage women in project activities.

Justification of Overall Rating of Quality of M&E

63. The overall rating for the quality of M&E system is *substantial*. Despite the limited capacity for M&E early on during project implementation, the M&E system was significantly strengthened during the second half of project implementation as a result of the dedicated efforts by the Bank team and the IG.

B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

64. **Safeguard compliance** was rated Satisfactory throughout project implementation except for a period in 2017 when the rating was downgraded to Moderately Satisfactory reflecting a few practices that were non-compliant but were resolved swiftly by the IG. The project was classified as environmental category B and triggered the following safeguards policies: Environmental Assessment (OP/BP 4.01), Natural Habitats (OP/BP 4.04), Pest Management (OP 4.09) and Projects on International Waterways (OP 7.50)³⁶. An overall EMF was prepared and served as a guide for environmental management during project design and implementation. All rural investments were screened for environmental and social issues, and site-specific Environmental Management Plans were prepared as needed. Mission findings were recorded in the Aide Memoires and documented with photos of the site visits. The Bank's Environmental Safeguard Specialist was located in the Region (in Moscow and Almaty) and provided close implementation support and supervision. The capacity of the IG's Environment and Social Specialists and local technical consultants was adequate³⁷ and the project helped build knowledge of environmental and social safeguards at the local level, which contributed to achieving improved natural resource management.

65. **Financial Management (FM)** was rated Satisfactory throughout, except for a period in 2014-2015 when it was downgraded to Moderately Satisfactory following a Bank review in Spring 2014. An action plan was developed and implemented to bring accounting and reporting, internal control procedures, planning and budgeting, external audits, funds flow, organization and staffing arrangements to a satisfactory level. A FM

³⁶ OP 7.50 was triggered as part of the approved project restructuring in 2015 because project activities would use water from 'international waterways' such as the Amu Darya and its tributaries. It was recognized that the activities financed would not increase the amount of water abstracted or lead to appreciable impact on water sources or local hydrological regimes.

³⁷ The CEP had experience with environmental assessments, environmental management and legal and regulatory requirements.



Specialist based in the Bank office in Dushanbe carried out regular implementation support missions and provided a detailed record of FM issues in the aide memoires. The quarterly Interim Unaudited Financial Reports were submitted to the Bank for review on time and there were no inconsistencies for follow-up. The latest project audit for the year ending in December 31, 2017 resulted in an unmodified (clean) opinion on the project financial statements. The IG is to be commended for maintaining satisfactory FM arrangements even during the banking sector crisis in 2015-2017 when the Designated Accounts for the project, held with Tajik commercial banks, had to be transferred into widely-known international banks outside the country.

66. **Procurement** was rated Satisfactory throughout project implementation. Procurement processes were implemented based on the applicable guidelines at the time of project appraisal³⁸ and in accordance with the procurement plan, which was duly updated, reviewed by the Bank and disclosed regularly. The last post review was conducted in April 2018 and found that procurement capacity was adequate and in line with the work load. Procurement processes and asset verification under the small grants program were verified by external auditors acceptable to the Bank, and no issues were raised. A Procurement Specialist was based in Dushanbe, which allowed for direct and frequent interaction with IG procurement staff. Training was provided to CEP/ IG and technical specialists overseeing component implementation, facilitation organizations, as well as rural communities. Regular supervision missions were carried out to assess the quality of investments under Component 1, which were generally assessed as acceptable. Maintaining a satisfactory rating throughout project implementation despite initial low procurement capacity and limited CDD operational experience, should be noted as a significant achievement. In large part due to the excellent support provided by the Bank team, and adequate risk mitigation measures, procurement capacity was strengthened (as seen by lowering of the Procurement risk rating, from High under the Parent Project, to Substantial under the AF).

C. BANK PERFORMANCE

Rating: Satisfactory.

Quality at Entry

67. This project built on and expanded support from previous Bank financed projects in Tajikistan in an area that remains relevant and strategic for the country's efforts to improve rural livelihoods, sustainable land management as well as climate change resilience. The bottom-up, community-driven development (CDD) approach (still relatively new in Tajikistan at the time) provided direct investments to farmers and, coupled with facilitation and training, built capacity and ownership for SLM. It supported Tajikistan at a critical time when other donors, including PPCR, sought to strengthen adaptation and build resilience of the most vulnerable communities. The balance of components was appropriate in that it placed greater emphasis on subproject investments, although there could have been stronger efforts to support knowledge management from the outset of the project, particularly on establishing a knowledge dissemination system early on. The design of the RF could have benefited from more concise wording of the PDO and outcome indicators (see discussion on M&E Design). Institutional capacity was correctly identified as a substantial risk that could delay project start-up and aspects of implementation. This included the risk that the IG appointment process is delayed. Although the Bank team mitigated this risk by selecting the IG during project preparation, the institutional

³⁸ "Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" and "Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" (January 2011), as well as the "Guidance Note for Design and Management of Procurement Responsibilities in Community-Driven Development Projects" (March 15, 2012).



changes following the November 2013 election would nevertheless impact and delay project start-up for the first 12-15 months. While the Bank anticipated substantial risks related to the implementing agency's capacity in managing World Bank projects, minimal experience with preparing adequate TORs for critical FO consultancies proved challenging.³⁹ Capacity constraints of the local FOs were also underestimated, which was a contributing cause for slow disbursement and lagging sub-project implementation in the beginning. Unfamiliarity with the project modalities, the CDD approach, and in preparing sub-project proposals more generally, proved to be a challenge and led to implementation delays.

Quality of Supervision

68. The Bank closely supervised project implementation through implementation support missions (10 missions over the lifetime of the project) to review progress and identify key issues including those that needed management attention. Fiduciary and safeguard aspects were regularly supervised. Performance reporting was candid and of high quality – aide memoires were detailed and recorded critical milestones, key decisions and next steps as well as information on sub-project visits; ISRs were also candid and filed on time. Attention to M&E could have been stronger initially, but by the time of the MTR more emphasis was placed on monitoring and reporting aspects. A detailed handover mission was conducted with adequate handover arrangements when the TTL-ship changed

Justification of Overall Rating of Bank Performance

69. Based on the Quality at Entry and Supervision, the overall Bank performance is rated **Satisfactory** reflecting minor shortcomings in quality at entry and quality of supervision as described above.

D. RISK TO DEVELOPMENT OUTCOME

70. The Government remains committed to the sustainability of project interventions as evidenced by ongoing projects that build on the ELMARL project design and lessons learned in support of SLM and climate adaptation.⁴⁰ More broadly, the Government, as part of its NDC under the UNFCCC is committed to global efforts to combat the threat of climate change and reduce the vulnerability of key sectors such as agriculture to climate impacts. While State programs and strategies are in place to support these efforts⁴¹, limited financial resources hinder full implementation; as such there is a risk to development outcomes in the absence of additional external resources. From an institutional viewpoint, the CEP's increasing capacities and leadership in Tajikistan's climate change agenda (e.g. as the National Designated Authority (NDA) for the Green Climate Fund) will help sustain the outcomes. In addition, the CDD approach has contributed to ownership and benefit generation, which in turn provides motivation to sustain results⁴². Inherent in the project design was the focus on SLM practices that would not undermine the natural resource base but generate benefits and value over the long-term. Beneficiary contributions (in-kind and cash) built ownership, which is viewed as a sign of sustainability of adopted interventions. The knowledge management platform continues to be an active source of information on SLM and climate adaptation. Many of the beneficiaries interviewed in the ICR mission

³⁹ The project design envisioned contracting FOs for sub-component 1.1. to come before that for sub-component 1.2. In fact, facilitation support for WUAs and PUUs was contracted first as it proved less complex to procure. Support for WUAs and PUUs was in place by June and July 2014, respectively, while FO support for lowland and upland sites was not contracted until September 2014 and January 2015, respectively.

⁴⁰ Central Asia Climate Adaptation and Mitigation Program for Aral Sea Basin (CAMP4ASB), which includes support to WUAs and PUUs for sustainable on-farm water and pasture resource management and continued capacity building and community support.

⁴¹ Including: Development Programme of the Republic of Tajikistan (2016-2020); Agriculture Reform Programme (2012-2020); State Programme for Study and Preservation of Glaciers (2010-2030); State Development Programme of Geology Industry (2012-2020); National Plan for Emergency Preparedness and Response; and other sectoral programmes. (Source: Tajikistan, First NDC)

⁴² See Well-Being Assessment.



communicated that they have used their own resources, or other grant funding, to continue and expand interventions.

71. Despite sustainability across these dimensions, there are a few risks to development outcomes:

72. Insecure land tenure and land acquisition rights present challenges, particularly for PUUs' transition to fully self-sustaining institutions. Without secure rights to pasture land, PUUs face difficulties in collecting membership fees to cover the future costs of implementing pasture management plans. It is worth noting that at project closing, one PUU had acquired land rights, and some others were in active discussions with district governments regarding long-term leases of land, which would improve fee collection and grazing management.

73. Weaknesses in the development of the agro-marketing sector present may limit continued generation of economic benefits. Although the project helped improve the quality of produce and processed products, there is a continued need to improve access to markets and develop agro-processing. Current challenges remain (including limited storage facilities, weak links between processors and farmers, insufficient trade promotion and marketing opportunities, limited information on food safety and health requirements, and few export possibilities) that could jeopardize the maintenance of achieved results.

74. Climate change and extreme weather events have the potential to undermine development outcomes. As mentioned earlier, building climate resilience is a long-term process that requires a sustained, multi-faceted approach taking into account the complexity of resilience. Uncertainty about actual climate change patterns (including the frequency and intensity of extreme events, as well as their socio-economic impact) poses significant risks to development outcomes even in the face of improved resilience as a result of project interventions. However, sub-projects were specifically designed to take into account and respond to climate change risks and vulnerabilities.

V. LESSONS AND RECOMMENDATIONS

75. **Direct investment support to farmers is effective but requires considerable capacity.** Ownership was created among beneficiaries to take responsibility for the interventions and maintain their livelihoods in sustainable ways through CCD planning and decision-making approaches. Although these were effective in ensuring transparency and prioritizing local needs, significant facilitation support and capacity building was required. Future CDD interventions should allocate sufficient time and resources in that regard.

76. **Mechanisms for engaging district-level decision makers were critical for buy-in and helped elevate SLM and climate resilience issues to the district level.** The Rayon (District) Review Committees proved to be a well-functioning mechanism critical for project success and sustainability as they facilitated integration of interventions on environmental protection and SLM as part of the overall local development agenda. Future projects should consider establishing similar mechanisms as a way to reinforce relationships between communities and local government, as well as to build ownership at the district level.

77. **An effective implementation structure, including local representation, is important for the success of community-based projects.** After initial difficulties, the project had in place a well-staffed, motivated IG with dedicated personnel (16 regular consultants plus field-based local technical consultants) providing critical day-to-day management. Local technical consultants served as interlocutors for maintaining dialogue between the IG and project beneficiaries and building ownership at the local level. Combined with Government



commitment, this was key to achieving results and meeting project objectives. Implementation structures in future CDD efforts would benefit from building in local representation, in terms of capacity and resources, which can help facilitate buy-in at the local level in support of project implementation.

78. Establishing a knowledge dissemination system early on is crucial for information management and sharing of successful project tools and approaches. The knowledge dissemination system piloted as part of ELMARL (K-Link⁴³) and the creation of the SLMTJ platform (www.slmtj.net) were unique in the Tajik context and helped raise farmers' interest, awareness and understanding of environmental aspects and climate resilience of livelihood activities. It initiated knowledge sharing with national and regional stakeholders and enabled the participating CBOs to become active users and contributors to the best and most appropriate knowledge on SLM and climate adaptation. Achieving sustainability of knowledge management requires that measures are implemented at the outset with a clear vision and mandate, accompanied by a financial strategy. Following a unified approach to knowledge management (between donors and across projects in Tajikistan) would further contribute to sustainability of results by building on the existing knowledge base and lessons learned.

79. While building climate resilience is complex, there are innovative measures that can provide benefits. Evidence of resilience strengthening can take time as it entails long-term endeavors and numerous interventions, including outside of the project context. Although genuine resilience-building is only proven in the face of shocks and stresses, there are useful measures that can be assessed that were innovative for Tajikistan, such as the well-being index and carbon balance accounting, which provide a broader picture of resilience. Improving productive assets and protecting and restoring the underlying natural resource base upon which people depend, contributes to climate resilience. Future projects should consider these or similar measures, in tandem with a robust M&E system based on guiding principles of resilience operations, to support evidence-based evaluation and learning.

⁴³ K-Link is a knowledge management initiative initially piloted by GIZ aimed at connecting and managing information sources in a centralized fashion, utilizing a K-Box (a mini-server installed in a specific institution, and a digital library for information management and sharing).



ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: The indicator relates to PDO outcomes (i) increase the productive assets of rural people, (ii) improve natural resource management, and (iii) improve resilience to climate change.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of households supported [in project area] that have adopted climate change and sustainable land management practices	Number	0.00 29-Mar-2013	21000.00 29-Mar-2013	40500.00 24-Apr-2017	53390.00 31-May-2018

Comments (achievements against targets): Achieved (132%). The indicator captures the adoption of practices by households (considered to include 6 persons) as a result of implementing eligible investments that improved natural resource management. Eligible practices were widely considered to be adaptation activities, thus contributing to improved climate resilience. The indicator is calculated as the aggregate number of all households who benefited from project interventions under sub-components 1.1. and 1.2. The project supported 53,390 households (37,179 under sub-component 1.1. and 16,211 under sub-component 1.2.) in the implementation of 2,349 sub-projects that contributed to natural resource management and climate resilience in climate-vulnerable areas including Tavildara / Sangvor (229 sub-projects), Jirgatol / Lakhsh (223), Baljuvon (347), Hovaling (341), Kulob (516), Farkhor (693). Sub-projects included investments in rural farm production (e.g. improving agronomic practices to enhance production and minimize inputs), land resource management (e.g. biological pest and disease control), as well as water (e.g. repair of existing channels and small canals) and pasture management (e.g. improved cropping system). The majority of investments focused on horticultural interventions (e.g. planting perennial crops and trees, establishing orchards,



crop rotation) and livestock breeding (e.g. more productive small breeds to reduce land/grazing pressure). They also included the development of beekeeping, the establishment of greenhouses for the production of vegetables and lemons, poultry development, agricultural interventions (e.g. quality seed development, production of produce), village infrastructure (e.g. rehabilitation of village roads and bridges, electricity poles), fodder production, and rehabilitation of irrigation systems. This indicator also relates to PPCR Transformation Indicator (core) A1.3 on "number of people supported by PPCR to cope with effects of climate change" (December 2012). Data source: sub-project documentation delivered by beneficiaries and recorded and verified by the Implementation Group (IG) in the M&E database. Further details are provided in the project M&E Database as well as Annex 7 of the ICR on Eligible Sub-Project Activities.

Objective/Outcome: The indicator relates to PDO outcomes (i) increase productive assets of rural people, (ii) to improve natural resource management, and (iii) improve resilience to climate change.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Land users adopting sustainable land mgt. practices as a result of the project	Number	0.00 29-Mar-2013	12000.00 29-Mar-2013	23100.00 24-Apr-2017	22582.00 31-May-2018

Comments (achievements against targets): Achieved (98%). The indicator was part of the Bank's core sector indicator requirement at the time of appraisal. It is considered a sub-indicator of PDO Indicator #1 and specifically captures interventions related to land resource management (project category II investments). It covers the 22,582 households under sub-component 1.1. and 1.2. who adopted land resource management practices as a result of the project, integrating (i) proper plowing and irrigation techniques depending on climate and soil conditions of selected sites, (ii) using biological compost and natural fertilizer, (iii) growing perennial crops and grasses, (iv) reforestation along the land slopes and soil stabilization, (v) on-farm irrigation techniques and (vi) targeted pasture and livestock management process to decrease land degradation. It excludes project types related to alternative energy, beekeeping, bridge rehabilitation, drinking water system, fish development, poultry development, processing of produce and village road rehabilitation. Data source: sub-project documentation delivered by beneficiaries and recorded and verified by the IG in the M&E database. Further details are provided in the project M&E Database as well as Annex 7 of the ICR on Eligible Sub-Project Activities.



Objective/Outcome: The indicator relates to PDO outcomes (i) increase the productive assets of rural people and (iii) improve resilience to climate change.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Proportion of population by household in target villages reporting at least 20% increase in well-being or household/livelihood assets	Percentage	0.00 29-Mar-2013	50.00 29-Mar-2013		53.00 31-May-2018

Comments (achievements against targets): Achieved (106%). The indicator captures the increase in well-being, including household assets, over time based on a project-specific well-being index. Development of the index followed a participatory approach to capture the perceptions of well-being of the Tajik population over time. The index includes indicators on health, money and workplace, living conditions, food, leisure and social connections, safety, and subjective well-being, and was complemented by a qualitative survey (involving 125 respondents in focus groups). These indicators were chosen to fit into a climate change resilience framework (using four dimensions: diversity of economy/livelihoods, sustainable infrastructure and technology, self-organization, learning) and encompass household assets that are fundamental for the adaptation capacity of households (water access, roads, income, diversified household assets, social cohesion, etc.). The assessment was carried out on a sample size of 649 households in the low and high lands (with 55.5% female participation) and 180 households (with 53.9% women) in the middle hills. The results of the assessment show that 53 percent of households reported to have increased their well-being by at least 25 percent as a result of the project. Specifically, the respondents noted that project participation enabled them to increase their capacity to cope with shocks and stresses, including climate change, due to improved household assets (e.g. through the provision of rural farm production assets, knowledge and skills), self-governance and social cohesion (by virtue of organizing into groups to make investment decisions on sub-project). This is evidenced by a reported increase in well-being amongst the project-households by four points compared to non-project households. Details of the methodology framework and assessment results are available in the Final Report of the Well-Being Assessment. This indicator also relates to PPCR Transformation Indicator A1.1 on “change in percentage of households (in areas at risk) whose livelihoods have improved (acquisition of productive assets, food security during sensitive periods of the year)” Data source: Data source: Well-Being Assessment report containing quantitative and qualitative data and analyses.



Objective/Outcome: The indicator relates to PDO outcomes (ii) improve natural resource management and (iii) improved resilience to climate change.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of hectares in project area covered by effective agricultural, land and water management practices suited to local agro-ecological conditions and climate change resilience	Hectare(Ha)	0.00 29-Mar-2013	30000.00 29-Mar-2013	41500.00 24-Apr-2017	44235.00 31-May-2018

Comments (achievements against targets): Achieved (107%). The indicator measures the number of hectares where improvements in NRM have taken place, contributing to increased climate resilience. It is calculated based on the Environmental Monitoring Indicators for sub-projects including "land areas improved and/or rehabilitated" (e.g. improvement of soil structure, decreasing of stoniness, salinization or anthropogenic waterlogging, improvements in soil fertility and productivity), "area of fixed slope land" (e.g. planting of trees, bushes, grasses, and other activities), "area of afforested territories" (not on slopes), and "area of established or improved pastures and haying". It measures practices with direct environmental impacts (e.g. area under drip irrigation) and indirect impacts (e.g. reducing pasture loads). Overall, the project area covered by effective practices reached 44,235 hectares (9,172 hectares covered by interventions under sub-component 1.1. and 35,063 hectares under sub-component 1.2.). Data source: sub-project documentation (such as safeguard and rural investment records including project proposals with baseline information and sub-project result forms), collected, aggregated and verified by the IG.

Objective/Outcome: The indicator relates to PDO outcome (i) increase the productive assets of rural people.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Direct project beneficiaries	Number	0.00 29-Mar-2013	126000.00 29-Mar-2013	243000.00 24-Apr-2017	323393.00 31-May-2018



Female beneficiaries	Percentage	0.00	40.00		48.00
		29-Mar-2013	29-Mar-2013	24-Apr-2017	31-May-2018
Comments (achievements against targets): Achieved (133%). The indicator captures the outcome on productive assets by measuring the total number of beneficiaries who benefitted from the project interventions. According to the project Monitoring and Evaluation database, the project supported 323,393 direct beneficiaries of which 224,967 were CIG (Common Interest Group) members, 48,930 PUU beneficiaries and 49,496 WUA beneficiaries. Among the project beneficiaries 48% were female (155,228). Data source: Subproject documentation delivered by beneficiaries and verified by the IG based on field checks for inclusion in the project M&E database.					

A.2 Intermediate Results Indicators

Component: Rural Production and Land Resource Management Investments

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Total value in USD m of rural production and land resource management investments (including at least 25% beneficiary match) in villages where project is operational	Amount(USD)	0.00 29-Mar-2013	10140000.00 29-Mar-2013	10940000.00 24-Apr-2017	11320000.00 31-May-2018
Comments (achievements against targets): Achieved (103%). The indicator relates to PDO outcome (i). This indicator is calculated based on the total value of rural production and land resource management investments under component 1. The total amount of beneficiary contributions reached US\$2.03 million as expected at appraisal (i.e. 25% of US\$10.14 million). Most beneficiary contributions were in-kind matches for rural investments such as labor costs and operational/maintenance expenses. Some small-scale infrastructure investments required 5% cash contributions from beneficiaries to ensure operation and maintenance. Data source: financial reports delivered and verified					



by IG based on rural investment records and database, delivered by beneficiaries.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of pasture management plans under implementation by Pasture User Groups	Number	0.00 29-Mar-2013	8.00 29-Mar-2013		8.00 31-May-2018

Comments (achievements against targets): Achieved (100%). The indicator relates to PDO outcome (ii). As part of sub-component 1.2., the project supported the development and implementation of 8 pasture management plans (PMPs) in 8 PUUs in climate vulnerable districts including Tavildara/Sangvor, Jirgatal/Lakhsh, Faizabad and Rogun. As part of the PMPs, 158 activities were implemented to improve sustainable community land and pasture management (livestock breeding, purchasing of efficient agricultural machinery, production of fodder crop, establishment of demonstration plots, etc.). This included, among others, construction of 9 bridges to improved access to more than 2,000 ha of under-utilized far pasture; 23 animal shelters that allow for lengthening of the pasture season by about 30 days and reduction in livestock mortality by 10-15%; fodder planting on about 330 ha primarily for winter feed production; and establishment of 19 watering points to limit animal travel. Data source: progress reports delivered by PUUs and verified by the IG.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of on-farm water management plans under implementation by Water User Associations in lowland areas	Number	0.00 29-Mar-2013	8.00 29-Mar-2013	16.00 24-Apr-2017	16.00 31-May-2018

Comments (achievements against targets): Achieved (100%). This indicator relates to PDO outcome (ii). As part of sub-component 1.2., the



project supported the development and implementation of 16 on-farm water management plans in 16 WUAs in climate-vulnerable districts including Kulyab, Farkhor, Yavan, Muminabad, Hamadoni, B Ghaffurov, Kanibadam and Khovaling. As part of the water management plans, 134 activities were carried out, largely in support of rehabilitating on-farm irrigation systems with an emphasis on also improving efficiency of water delivery. This included preventing erosion and gully formation; reducing water-logging and mud-flows on to fields; improving water distribution in the fields through land-leveling; and relieving partial irrigation. An independent assessment of WUA's effectiveness (carried out in 2017) showed that farming areas witnessed an average increase from 47 to 67% in water availability during 2016-2017 as a result of the investments. This also contributed to an increase in the collection rate of membership fees to 75-90%, compared to 40-50% before the project based on improved credibility and service delivery of WUAs. Data source: progress reports delivered by WUAs and verified by the IG.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Hectares in which local communities have adopted management practices in land use and land use change, resulting in restoration and enhancement of carbon stocks.	Hectare(Ha)	0.00 29-Mar-2013	30000.00 29-Mar-2013	39125.00 24-Apr-2017	43675.00 31-May-2018

Comments (achievements against targets): Achieved (112%). The indicator relates to PDO outcomes (ii) and (iii). The original target was revised as part of the AF (increase to 32,000 hectares) and further increased to 39,125 hectares as part of the Supplemental Letter in 2017. The indicator is calculated based on 2,311 sub-projects under sub-component 1.1. as well as the analysis of all activities undertaken by the WUAs and PUUs using FAO's EX-Ante Carbon Balance Tool (EX-ACT). Based on the carbon balance assessment, the project contributes to the enhancement of carbon stocks through the adoption of sustainable land management practices. The overall carbon balance is estimated at -262,490 tons of CO₂-equivalent for sub-component 1.1. and -713,970 tons of CO₂-equivalent for sub-component 1.2, with a total overall carbon balance of -976,460 tons of CO₂-equivalent over a 20 year period. A crucial input to the report was the analysis of over 1,000 soil samples to determine the soil nutrient content and chemical composition. Data source: sub-project documentation delivered by beneficiaries and recorded and verified by the IG in the M&E database.



Component: Knowledge Management and Institutional Support

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Degree to which villages have integrated climate change adaptation and environmental appraisals into community action plans and are implementing appropriate investments	Percentage	0.00 29-Mar-2013	75.00 29-Mar-2013		80.00 31-May-2018

Comments (achievements against targets): Achieved (107%). The indicator relates to PDO outcomes (ii) and (iii). The project financed investments that addressed environmental issues at the village and jamoat level, were economically and socially feasible, and demonstrated clear linkages to the community adaptation and environmental appraisals. Based on a score-card Community Action Plans (CAPs) implemented by villages, scored on average 80% on their integration of climate change adaptation and environmental appraisals. This degree of integration was ensured as part of the proposal process through revisions of sub-project applications to ensure overlap between the participatory rural appraisals and the community action plans. This indicator also relates to PPCR Program Outcomes Indicator (core) B1: "extent to which vulnerable households, communities, businesses and public sector services use improved PPCR supported tools, instruments, strategies, activities to respond to Climate Variability and Climate Change" (December 2012). Data source: assessment of community action plans and rural appraisals based on scorecard, delivered by independent project evaluation consultant.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of client days of training provided in organizational and technical	Days	0.00 29-Mar-2013	42000.00 29-Mar-2013		38620.00 31-May-2018



topics

Comments (achievements against targets): Partially achieved (92%). The indicator relates to PDO outcome (i). Estimation of the number of client days was difficult to forecast during project preparation - hence the slight overestimation of client days of training provided. In total, 38,620 client days of training were provided to beneficiaries, including 8,235 female participants. Specifically, beneficiaries under sub-component 1.1. received 30,670 client days of training which covered, among other subjects: sub-project proposal writing, finance and procurement management, design of Participatory Rural Appraisals and CAPs, pasture management, sustainable production of agricultural products, awareness raising of environmental issues, and improving water use efficiency and protection at the community and jamoat level. Beneficiaries under sub-component 1.2. received 2,738 client days of training, which covered topics including, e.g. on-farm water management, implementation of environmental protection plans, legal framework of WUA activities, operational maintenance of irrigation systems, climate change adaptation, capacity building of PUUs, etc. Additional trainings (5,212 client days) were held on a range of other topics (e.g. crop management, dissemination of SLM videos as learning tools, pasture productivity improvements, knowledge management). A complete list of trainings is available in the Borrower Completion Report. Data source: progress reports delivered by FOs and IG.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Instructional good practice short videos produced	Number	0.00	50.00		102.00
		30-Jun-2015	30-Jun-2015		31-May-2018

Comments (achievements against targets): Achieved (204%). The indicator relates to PDO outcome (i), and was added as part of the AF. In total, 102 instructional good practice videos have been produced by the FOs, including 32 training videos (incl.15 short videos about the project) by the Youth Ecological Association, 56 videos on SLM best practices by participants of the network of Community-Based-Organizations and 14 videos by the National Association for Dekhan Farms. The contents of the videos covers best practices from sub-project interventions on sustainable land and livestock management, effective use of water and local technologies on crop and land management adopted across the country. All videos have been developed in local Tajik language and are available on the K-Box, www.slm.tj.net. At the Final Project Review Conference, a number of best practice videos were showcased. Data source: progress reports delivered by FOs and IG.



Unlinked Indicators

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Feedback/grievances resolved within the stipulated service standards for response times (100%)	Percentage	0.00 30-Jun-2015	100.00 30-Jun-2015		100.00 31-May-2018

Comments (achievements against targets): Achieved (100%). This indicator was added as part of the AF in line with Bank requirements. The GRM process was outlined in the Project Operational Manual and all guidelines and criteria were followed. Overall, 145 feedbacks were recorded, 80% of which related to queries on project activities, concerns with payment delays or issues with sub-project finance reporting. 14% of feedback showed appreciation for the project. 7% of recorded feedbacks were dedicated to force majeure notifications (e.g. damages caused to rural and livestock infrastructure by natural disasters such as floods and snow). Local technical consultants acted as GRM registries in the participating project sites, while the IG served as GRM focal point. All feedback and concerns were addressed and there are no grievances logged, nor any outstanding issues. Data source: records delivered by local technical consultants, and verified by the IG.



B. KEY OUTPUTS BY COMPONENT

Objective/Outcome 1: to increase productive assets of rural people	
Outcome Indicators	<p>#3 Proportion of population by household in target villages reporting at least 20% increase in well-being or household/livelihood assets</p> <p>#5 Direct project beneficiaries</p>
Intermediate Results Indicators	<ul style="list-style-type: none"> – Total value in USD m of rural production and land resource management investments (including at least 25% beneficiary match) in villages where project is operational – Number of client days of training provided in organizational and technical topics – Instructional good practice videos produced
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	<p>Component 1 – Rural Production and Land Resource Management Investments:</p> <ul style="list-style-type: none"> – Created 2,349 CIGs and 8 PUUs, and supported 16 existing WUAs who implemented sub-projects – Invested US\$11.32 million toward enhanced rural production and land resource management, related to agricultural crops, horticulture and gardening, livestock breeding, poultry development, beekeeping, irrigation system rehabilitation, drinking water rehabilitation and bridge and road rehabilitation, but also knowledge, training and capacity building – Purchased productive assets including: 5,162 beehives; 674 cattle of improved breed; 5,258 sheep of improved breed; 29 horses; 16,695 poultry (chicken, turkey, goose, duck, ostrich, royal bird, partridge, peacock, pheasant); 35 rabbits; 260,225 fish; 247,494 fruit trees; 159,517 non-fruit trees; 263,977 meters of fencing; 48 wool processing tools; 10 incubators; 2 generators; 806,442 kg of good quality seeds; 150 yoghurt processing equipment; 9 solar panels; 13 sewing machines; 73 tons of briquets; 74 small agricultural machinery; 127,842 meters of pipes; 93 irrigation pumps; 131 water gates; and other irrigation related equipment – Constructed or rehabilitated 11 veterinary clinics; 27 livestock watering points; 8 veterinary pharmacies; 25 kashars (resting places for herders and animals) in pasture lands; 2 butcher shops; 237 greenhouses; 21 bridges; 196,300 meters of pasture roads; 172,268 meters of internal village roads; 8 wells; 257 aqueducts; 177 water distribution valves; 113 water distribution hydrants; 5 irrigation dams



	<p>Component 2 – Knowledge Management and Institutional Support:</p> <ul style="list-style-type: none"> – 36,836 client days of training provided to enhance knowledge of SLM and climate resilient practices as well as build capacity of farmers to implement sub-projects (topics included, but not limited to, sub-project proposal writing, financial and procurement management, sustainable production of agricultural products, improve soil productivity, improve water use and efficiency, beekeeping, awareness raising of ecological issues, dried fruits and vegetables, etc.) – 132 good practice videos produced to share knowledge and lessons learned regarding SLM – 3 exchange visits organized to share lessons with other projects (implemented by ADB, DFID/GIZ, USAID); 3 study tours conducted; 9 conferences/seminars organized
Objective/Outcome 2: to improve natural resource management	
Outcome Indicators	<p>#1 Number of households supported [in project area] that have adopted climate change and sustainable land management practices</p> <p>#2 Land users adopting sustainable land management practices as a result of the project</p> <p>#4 Number of hectares in project area covered by effective agricultural, land and water management practices suited to local agro-ecological conditions and climate change resilience</p>
Intermediate Results Indicators	<ul style="list-style-type: none"> – Number of pasture management plans under implementation by Pasture User Groups – Number of on-farm water management plans under implementation by Water User Associations in lowland areas – Hectares in which local communities have adopted management practices in land use and land use change, resulting in restoration and enhancement in carbon stocks – Degree to which villages have integrated climate change adaptation and environmental appraisals into community action plans and are implementing appropriate investments
Key Outputs by Component (linked to the achievement of the Objective/Outcome 2)	<p>Component 1 – Rural Production and Land Resource Management Investments:</p> <ul style="list-style-type: none"> – 2,349 sub-projects implemented by CIGs, of which 1,045 sub-projects specifically contributed to category II investment to improve NRM, including: planting perennial crops and grasses; reducing pasture pressure through livestock breeding; introduction of biological compost and natural fertilizer to improve soil productivity; establishing orchards with drip irrigation; cleaning irrigation canals; establishing greenhouses, proper plowing and irrigation techniques depending on climate



and soil conditions of selected sites, targeted pasture and livestock management processes to decrease land degradation, and other NRM activities

- Covered 44,235 hectares with effective agricultural, land and water management practices suited to local agro-ecological conditions and climate change resilience: planted trees, bushes, grasses on 736 hectares of slope land; afforested 12 hectares of land; established or improved 15,459 hectares of pastures; decreased stoniness/salinization/waterlogging and improved soil structure/fertility on 28,028 hectares of land
- Decreased grazing pressure through 11,559 reduced heads of livestock; protected 12,485 meters of rivers banks and canals; implemented 440 sub-projects contributing to water/energy/resource savings; substituted biological pesticides (for chemicals) on 110 hectares of land
- 8 pasture management plans developed and under implementation by PUUs (a total of 158 activities implemented, e.g. 8 GIS based community pasture maps completed (indicating boundaries, paddocks, infrastructure, and ecological sites) and submitted to IG; detailed annual budgets prepared annually for all PUUs)
- 16 on-farm water management plans developed and under implementation by WUAs in lowland areas (a total of 134 activities implemented, e.g. all or most WUA fields prepared to provide suitable run-off and reduced erosion; actions taken to address salinity issues and waterlogging in all 16 WUAs)
- Expected total overall carbon balance of -976,460 tons of CO₂-equivalent over a 20-year period.⁴⁴
- Findings of climate change and environmental appraisals integrated into CAPs (average of 80% score for integration based on scorecard developed under the project to assess plans)

Component 2 – Knowledge Management and Institutional Support:

- Knowledge Management Platform for Sustainable Land Management (www.slm.tj.net) established with active membership of CBOs working in Tajikistan on SLM, which houses a variety of project-generated knowledge products (e.g. 102 videos, 75 case studies and best practices on SLM; 44 project stories) on climate change adaptation and SLM investment opportunities and best practices to facilitate learning and knowledge exchange among different stakeholders

⁴⁴ Based on the carbon accounting analysis conducted for this Project, the largest carbon stock potential is expected to result from large-scale activities on land, pasture and on-farm management (sub-component 1.2.) that together are estimated to cover around 34,299 hectares. Small-scale investments of sub-component 1.1. contributed around 9,200 hectares.



	<ul style="list-style-type: none"> – Booklets, guidelines and other knowledge products developed and disseminated that cover topics such as drip irrigation, environmental monitoring of pastures, developing pasture and livestock management plans, methods of preparing and applying biological compost; disease management in vegetable growing, improvement of grassland, restoration of degraded lands, etc.
Objective/Outcome 3: to improve climate resilience	
Outcome Indicators	<p>#1 Number of households supported [in project area] that have adopted climate change and sustainable land management practices</p> <p>#2 Land users adopting sustainable land management practices as a result of the project</p> <p>#3 Proportion of population by household in target villages reporting at least 20% increase in well-being or household/livelihood assets</p> <p>#4 Number of hectares in project area covered by effective agricultural, land and water management practices suited to local agro-ecological conditions and climate change resilience</p>
Intermediate Results Indicators	<ul style="list-style-type: none"> – Hectares in which local communities have adopted management practices in land use and land use change, resulting in restoration and enhancement in carbon stocks – Degree to which villages have integrated climate change adaptation and environmental appraisals into community action plans and are implementing appropriate investments
Key Outputs by Component (linked to the achievement of the Objective/Outcome 3)	<p>Component 1 – Rural Production and Land Resource Management Investments and Component 2 – Knowledge Management and Institutional Support:</p> <ul style="list-style-type: none"> – See above, under Objectives/Outcomes 1 and 2 <p>While evaluation of resilience-building projects is inherently challenging⁴⁵, the following project interventions provided the building blocks and evidence base for improved climate resilience (including but not limited to): technical capacity building for trainers of trainers in the agricultural sector; capacity building of local producers to sustain their own livelihoods; completion of climate risk assessments prior to selection of investments; choice of crops that are more resilient to climate extremes and variability; multi-cropping systems, drip irrigation, leveling and other land improvements that reduce the risk of crop failures due to increasing drought and shorter rainy</p>

⁴⁵ See World Bank Report. August 2017. Evaluation of Resilience-Building Operations. Operational Guidance Paper for Project Task Teams. Washington DC.



	seasons; increased production of fodder crops to offset possible decrease in forage quality due to extreme weather events; adoption of sustainable fisheries to compensate for the reduction in local food supplies; enhanced water-saving techniques to address possible shortages; anti-erosion measures to reduce the risk of landslides; village and livestock infrastructure that are more robust to withstand extreme weather events; restoration of ecological biodiversity of pasture lands to improve productivity; increased vegetation cover to enhance agricultural productivity.
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ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION

A. TASK TEAM MEMBERS

Name	Role
Preparation	
Supervision/ICR	
Drite Dade	Task Team Leader(s)
Dilshod Karimova	Procurement Specialist(s)
Niso Bazidova	Financial Management Specialist
David Gordon Lugg	Team Member
Nandita Jain	Social Specialist
Linh Van Nguyen	Team Member
Lisa Lui	Counsel
German Stanislavovich Kust	Environmental Safeguards Specialist
Tojinniso Yenije	Team Member
Rustam Arstanov	Environmental Safeguards Specialist

B. STAFF TIME AND COST

Stage of Project Cycle	Staff Time and Cost	
	No. of staff weeks	US\$ (including travel and consultant costs)
Preparation		
FY11	2.475	46,874.82
FY12	3.600	72,963.24
FY13	6.275	129,146.99
FY14	0	11,471.10
FY15	0	- 463.60
Total	12.35	259,992.55
Supervision/ICR		



FY13	1.000	5,387.63
FY14	17.765	164,525.17
FY15	5.554	94,618.46
FY16	14.095	164,050.76
FY17	14.400	143,728.11
FY18	19.688	160,359.60
FY19	6.200	29,616.39
Total	78.70	762,286.12


ANNEX 3. PROJECT COST BY COMPONENT

Components	Amount at Approval (US\$M)	Actual at Project Closing (US\$M)	Percentage of Approval (US\$M)
Rural Production and Land Resource Management Investments	10.14	11.32	112%
<i>of which PPCR</i>	<i>5.61</i>	<i>5.80</i>	<i>103%</i>
<i>of which GEF</i>	<i>2.50</i>	<i>2.66</i>	<i>106%</i>
<i>of which IDA</i>	<i>0.00</i>	<i>0.82</i>	<i>-</i>
<i>of which beneficiary contributions</i>	<i>2.03</i>	<i>2.03</i>	<i>100%</i>
Knowledge Management and Institutional Support	4.74	6.44	136%
<i>of which PPCR</i>	<i>2.34</i>	<i>4.16</i>	<i>178%</i>
<i>of which GEF</i>	<i>2.40</i>	<i>2.28</i>	<i>95%</i>
Project Management and Coordination	2.00	1.84	92%
<i>of which PPCR</i>	<i>1.50</i>	<i>1.38</i>	<i>92%</i>
<i>of which GEF</i>	<i>0.50</i>	<i>0.46</i>	<i>92%</i>
Total	16.88	19.60	116%

Financing Sources	Amount at Approval (US\$M)	Additional Amount at Restructuring (US\$M)	Actual at Project Closing (US\$M)
Strategic Climate Fund Grant (PPCR)	9.45	2.00	11.34
GEF	5.40	0.00	5.40
IDA	0.00	1.80	0.82
Local Communities	2.03	0.43	2.03
Total	16.88	4.23	19.60

Note: Disbursements may not exactly match due to rounding.



ANNEX 4. EFFICIENCY ANALYSIS

1. Economic Efficiency

Project Context. At appraisal, a financial analysis was prepared at the request of PPCR. It was noted at that time there were difficulties given the community-driven focus of the project, which meant it was difficult to accurately predict the nature and composition of project activities and the total number of households participating. However, it was expected that the project would generate productivity gains in cropping and livestock systems, and corresponding increases in gross revenues as a result of investments for the participating households. At appraisal and Additional Financing for the purposes of the cost-benefit analysis, the quantifiable benefits covered expected increases in agricultural and horticultural productivity as a result of investments in on-farm production, horticulture, pasture and water management, and use cost savings from rural infrastructure.

Project Performance Analysis. The total project financing was \$19.60 million spread over a period of five years. With the late start to project implementation, there were no disbursements for rural investments in the first year. There was a phased implementation of rural investments across the project sites in the subsequent years, with more than 70% of households implementing investments in Years 3 and 4. Phasing in the post completion analysis was based on disbursement rates for subcomponents 1.1 and 1.2. Investments under Component 1 were grouped as shown in Table 4 below, based mostly on similar categories at appraisal. The numbers of households deriving benefits were based project data on participation by type of investment. Production values of investments by households were based on data from project monitoring and assessments.

Table 4: Economic Analysis Assumptions

Participating Households	Additional Financing (AF)	Completion
Total number of participating households	45,400 (38,200 at appraisal)	63,000
Phasing of rural investment implementation	Across all five years	Years 2-5
Years to full development	15	16
Attrition (dropout) rate by participating households due to investment failure or for other reasons	20%	20%
Changes in Rural Productivity	Production Value at Appraisal and AF (farm gate) and percentage of total households	Production Value at Completion (farm gate) and percentage of total households
<ul style="list-style-type: none"> <i>Crop and related production</i> – Based on wheat, potato, forage crops and vegetable production in both rainfed and irrigated systems. Increases in yield and value from improved soil and water management, changes in cropping systems, new areas under cultivation, and production practices. 	US\$200-300/HH 27%	US\$300/HH Full production in four years 19%
<ul style="list-style-type: none"> <i>Small-scale farm enterprises</i> – Farm machinery hire, agro-processing, green houses. Revenue from value of products and services. 	Not used at appraisal	US\$200/HH Full production in four years 7%
<ul style="list-style-type: none"> <i>Livestock</i> – Increases in the production of livestock herds are expected mainly through introduction of improved breeds, grazing management, animal feeding and veterinary services. Revenues from the sales of livestock products. 	US\$200-\$300/HH 9%	US\$350/HH Full production in four years 9%
<ul style="list-style-type: none"> <i>Horticultural Crops</i> – A range of fruit and nut trees were planted in project areas. Horticulture was conducted on fallow 	Apple – 45 kg/tree (at 9 years)	Apple – 45 kg/tree (at 9 years)



<p>land, replaced annual crops and restocked orchards. Almost half of horticulture investments were in the middle hills in Years 4 and 5. Apples and walnuts have been taken to represent horticulture.</p> <ul style="list-style-type: none"> • <i>Agro-forestry</i> – uptake was very small and benefits are comparable to horticulture 	<p>Walnuts - 30kg/tree (at 12 years)</p> <p>Each HH has 35 apple trees and 15 walnut trees</p> <p>20%</p>	<p>Walnuts - 30kg/tree (at 12 years)</p> <p>Each participating HH has 20 apple trees and 12 walnut trees</p> <p>12%</p>
<ul style="list-style-type: none"> • <i>Beekeeping</i>. Revenues generated primarily from the value of honey produced, with most investments in middle hills and lowlands, (although households may increase hive numbers annually and sell on to others) 	<p>Not used at appraisal</p>	<p>US\$350/HH</p> <p>Full production in four years</p> <p>5%</p>
<ul style="list-style-type: none"> • <i>Poultry Production</i>. Households in project areas have established poultry production units. Revenues generated from the value of eggs and chickens, as well as the provision of incubation services. 	<p>Not used at appraisal</p>	<p>US\$300/HH</p> <p>Full production in four years</p> <p>4%</p>
<p>Off-farm and secondary benefits include:</p> <ul style="list-style-type: none"> • <i>Improved Water and Energy Supply</i> – Benefits in time saved in water and fuel collection, from investments in water and renewable energy supply, and infrastructure. • <i>Other infrastructure</i> – Benefits in time saved from repaired bridges, improved roads, riverbank strengthening, etc. <p>The benefit per household is calculated by multiplying the time saved by the opportunity cost of rural labor – between 8-12 days per household.</p>	<p>\$50/HH</p> <p>44%</p>	<p>US\$50-75/HH</p> <p>Full benefits are reached in two years.</p> <p>43%</p>

With the assumptions above, the project is expected to reach full production in year 15. Based on the data in Table 4, the net present value (NPV) of the project is calculated to be about \$28 million and becomes positive in Year 6 as a significant number of farm production investments reach full development. The associated financial internal rate of return for the project is estimated 56%, compared to 47% at Additional Financing. The higher returns at completion are driven primarily by an increased number of beneficiaries compared to that at appraisal (63,000HH to 45,400 HH at Additional Financing) and a corresponding increase in the number of investments in farm production and horticulture. Furthermore, at Additional Financing, the estimate of households for sub-component 1.1 was based on only 50% of households participating (the minimum requirement), but in practice communities decided to distribute their available fixed budgets among a great percentage of households.

Sensitivity Analysis. Varying the household-level benefit from \$100 to \$500 or more is a key driver of the results. For example, when household benefits are reduced by 25% from all types of investments, the internal rate of return drops by 10% to 47% and generates a NPV of \$22 million compared to \$27million. With increased climate variability a likely scenario for Tajikistan, reductions of this magnitude are possible in the agriculture sector, but it is important note that the returns from the project to household and nationally are expected to remain positive. Changing the discount rate to reflect current commercial rates of interest of between 30 to 33% for agricultural production loans,⁴⁶ reduces the NPV to about \$1.4 to \$0.8 million, but has little impact on the IRR which is 56%.

Incentive Framework. The project recognized the need to combine direct support for rural economic production (through grants) with activities that increased communities' knowledge and awareness of environmental transformations and therefore enabled communities to embed this knowledge in their

⁴⁶ See http://eskhata.com/en/individuals/lending/lending_types/ and <http://www.arvand.tj/en/kredit-na-vyirashhivanie-selxozkultur.html>.



decision-making processes and institutions. Results from project assessments (of well-being, management effectiveness of pasture and water management groups, knowledge management) indicate that knowledge and capacities are being embedded in households and communities. The selection of village investments within fixed budget constraints provided an incentive, which encouraged prioritization of investments with maximized marginal returns within a site-specific context. Working with fixed budget constraints also encouraged prioritization and selection of investments with maximized marginal returns within a site-specific context. Investment viability was strengthened the project's community-driven approach and beneficiary requirements, creating local ownership, improving operations and management and improving cost-efficiency. Investment viability was further strengthened through the preparation and screening process which took into account economic and financial considerations as well as the inclusion of vulnerable groups in public good investments and other technical, environmental and social criteria. Overall it is expected that benefits can be sustained through farmers and groups continuing to build knowledge and capacity to transform their practices and adoption of incentives linking economic returns to environmentally sound land management, and usufruct rights with stewardship responsibilities.

Non-quantified Benefits. The project has generated various benefits that have not been quantified nor included in the analysis. These include key off-farm benefits (other than environmental benefits discussed below) such as:

- *Food Security* – Evidence from the well-being assessment shows that benefits have been generated for participants and non-participants in project sites in terms of food security. There is more diversity of foodstuffs available, with surplus being shared with vulnerable and less well-off households and individuals. The positive results from Sanghvor district, have been particularly notable given that in earlier studies, Sanghvor was assessed as one district that was both most food insecure and vulnerable to climate change⁴⁷;
- *Health benefits* - About 900 (34%) rural investments were considered to provide human health benefits including through the provision of piped and tapped drinking water supplies, greater diversity of food stuffs grown and consumed, improved drainage, improved waste management; and
- *Knowledge and spillover from greater sharing of experiences.* Within Tajikistan, ELMARL has been participating actively in the National Pasture Management Network and collaborating with other projects including GREAT, Joint Forest Management and donors such as IFAD. Building on prior activities and sharing experiences have provided cost-savings in terms of investment design by ELMARL participants.

Environmental Benefits. Benefits of the project have a positive impact on the environment and natural resource base of the project area. Key benefits include: 44,235 ha covered by more effective agricultural, land and water management practices resulting from project investments, and 43,675 ha in which local communities have adopted management practices in land use, and land use change resulting in enhancement of carbon stocks. The latter achievement is an important benefit and is explored in more detail below. It should also be noted that improvements in the country's pastures builds the basis for these areas to provide critical ecosystem services to many millions of downstream populations in Tajikistan and other Central Asia countries who are dependent on irrigation, drinking water, hydropower and other benefits.

⁴⁷ Wolfgramm, B., Stevenson, S., Lerman, Z., Zähringer, J., Liniger, H., (2011) PPCR: Tajikistan, Component A5, Phase 1: Agriculture and Sustainable Land Management.



2. Carbon Balance Accounting

The results obtained show that project activities have been positive in terms of reducing carbon emissions. While each district has different values of carbon balance and the contribution of a particular region to the carbon balance is not the same, it is possible to highlight some general trends.

Effective interventions are characterized by a Gross Sequestration Result with a negative carbon balance (absorption and long-term carbon sequestration), while inefficient interventions are characterized by positive balances (emission into the atmosphere). Based on the following investments, an analysis was conducted using the Ex-ACT methodology:

- Component 1.1 - 2311 local subprojects implementing in the rural areas from 2014-2017.⁴⁸
- Component 1.2. WUA (water users association) – 134 local projects; PUU (pasture users union) – 158 local projects

The total area, which was transformed directly or indirectly through the implementation subprojects of Component 1.1. is 9,439.03 hectares. The total area, which was transformed directly or indirectly through the implementation subprojects of Component 1.2. is 34,290.86 hectares. (PUU: 11,746.86ha, WUA: 22,544.00ha).

For Component 1, the area, which was transformed directly or indirectly through the implementation ELMARL Project, including Component 1.1 and Component 1.2, is 43,729.89 hectares. Among all these investments at 43,731.26 of ha in which local communities have adopted management practices in land use and land use change 43,675.07 ha result in restoration and enhancement of carbon stocks. The remaining 56.19 ha result in emission greenhouse gases due to direct impact. And about 925.81 ha have changes due to indirect influence of investments.

The Overall carbon-balance for sub-component 1.1 is negative (carbon sink) and amounts to **-262,490.58 tCO₂-e per 20 years**. This means that carbon conservation processes predominate over GHG emissions in general and ELMARL contributes to the accumulation of carbon in natural pools.

The Overall carbon-balance for sub-component 1.2 also is negative and amounts to **-713,907.12 tCO₂-e per 20 years**. Contribution of *Pasture Users Union* sub-activities is **-210,615.32 tCO₂-e per 20 years**, and for *Water Users Association* sub-activities is **-503,354.80 tCO₂-e per 20 years** respectively.

Thus, the Total Overall carbon-balance is 976,460.80 tCO₂-e per 20 years.

Discussion. Findings show that the contribution of each of the pilot districts is not the same (see Table 5) with investments in the highlands contributing almost 50%.

⁴⁸ This analysis does not include a small number of investments implemented in the last few months of the project.



Table 5: Overall carbon-balance for the project's macro-regions, Component 1.1

GENERAL DATA								
Climat region	District	% of the Overall carbon- balance	Number of subprojects	Hectares	Overall carbon-balance per 20 years, tCO2-eq	OCB per year, tCO2-eq \year	Average carbon balance per ha, tCO2-eq \ha	OCB per hectare per year, tCO2-eq\ha \year
Moist and semi-dry highlands	<i>Jirgatal</i>	24,77	223	1660,28	-65010,53	-3250,52	-39,16	-1,96
	<i>Tavildara</i>	24,36	229	1702,22	-63946,19	-3196,67	-37,57	-1,88
		49,13	452	3362,50	-128956,72	-6447,84	-38,35	-1,92
Moist foothills	<i>Baljuvon</i>	17,94	345	490,70	-47098,53	-2354,93	-95,98	-4,80
	<i>Khovaling</i>	11,02	336	394,20	-28939,47	-1446,97	-73,41	-3,67
		28,97	681	884,90	-76038,00	-3801,90	-85,93	-4,30
Dry lowlands	<i>Kulob</i>	24,85	485	4243,39	-65224,89	-3263,19	-15,37	-0,77
	<i>Farkhor</i>	-2,94	693,00	948,24	7729,03	386,45	8,15	0,41
		21,90	1178	5191,63	-57495,86	-2874,79	-11,07	-0,55
TOTAL		100,00	2311	9439,03	-262490,58	-13125,82		

Formulas for calculating here and below in the text:

Overall carbon-balance per year = OCB per 20 years\20 years;

Average carbon balance per ha = OCB per 20 years\ Hectares

Overall carbon-balance per ha per year= OCB per 20 years\20years\Hectares

The data obtained show that although the investments in the micro-projects are small in scale, there are differences in the amounts of carbon sequestered associated with types of agro-ecological systems the technologies applied. Almost 50% of the effective carbon sequestration can be accounted for by sustainable land management activities implemented in the highlands, primarily due to the micro-projects in horticulture and pasture management. In the foothills 28 % is provided by effective sustainable land management primarily due-to similar agronomic practices. Only 22% is contributed by agronomic activities in dry lowland. Average efficiency of the micro-projects evaluated by the carbon absorption criterion is 2.2 times higher in the highlands than in the valley with irrigated agriculture and about 1.7 times higher than in the foothills. If data of Gross Emission Results are compared, highland districts have almost 10 times values lower than for lowland amount to 77% by Gross Emission Results. But at the same time, combinations of subprojects in the foothills are most effective of the three climatic zones evaluated by average values.

Ex-Post Economic Analysis of Carbon Balance

Although no analysis was conducted at appraisal for a monetary value of expected carbon sequestered, using data from the EX-ACT analysis and guidance from the EX-ACT technical team on approaches and the World Bank on shadow prices of carbon⁴⁹, the NPV of greenhouse gas mitigation has been estimated on completion. With a low shadow price starting at \$34 per tonne of CO2-e, the NPV is estimated at about \$4 million (discount rate of 12% and a duration of 20 years). Using the higher shadow price range starting at \$78 per tonne of CO2-e, the NPV is estimated at about \$8 million. It is likely that the values are an underestimation since they do not take into account expansion and replication of rural investments by participants and non-participants with independent financing. Comparable data are not available for other similar community-driven projects, since very few, if any, have entered each small-scale investment, such as those in ELMARL, individually into EX-ACT. However, the analysis shows that the project has generated important economic benefits from carbon sequestration.

⁴⁹ World Bank, Guidance Note on Shadow Price of Carbon in Economic Analysis, November 2017.



3. GEF Incremental Cost Review

At the time of appraisal, a separate incremental cost assessment was not required. However, the project financial analysis does cover aspects of GEF financing including the benefits of carbon sequestration.

In the ELMARL project, GEF financing leveraged DFID/GIZ funding for the GREAT program, and complemented PPCR support for building resilience, and brought to the project a focus on key environmental dimensions, particularly SLM. As noted during design, climate variability and change only reinforces the need for those populations pursuing subsistence agriculture or pastoralism to follow sound land resource management. Furthermore, in Tajikistan the need for knowledge of SLM is particularly relevant given the breakup of collective farms and a resulting drop of skills among recently independent farmers. Thus, GEF financing from the Land Degradation focal area was critical to supporting the integration of SLM principles and practices throughout the project and generating environmental benefits (see section above). Under Components 1 and 2, GEF financing helped ensure a focus on introducing and adopting practices in sustainable land and water management, e.g., drip irrigation, inter-cropping, fodder production, pasture rotations, water meters, etc., that resulted in land (44, 235ha) under more effective management. Improved effectiveness of land and water resource management, have increased the institutional viability of resource management organizations, especially WUAs in the project, which are now able to better serve their members.

As part of the project's M&E system, GEF funds enabled a concerted effort to assess the restoration and enhancement of carbon stocks resulting from project investments (see section 2 above). Conducted for the first time in Tajikistan, this process has not only, provided valuable insight into the effectiveness of various interventions and raised awareness of sequestration impacts, but also built in-country capacity to assess such parameters. As such, the results are important baselines for key agro-ecological zones in the country for the government and other organizations, and moving forward provide data and evidence for local, regional and national policy-making. Building on the importance of ecosystem services to the country and the region, the project conducted an exploratory study into the potential for PES schemes in Tajikistan.



ANNEX 5. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

The Bank team shared the draft ICR with the Borrower (CEP and IG) in October 2018 following the Decision Meeting. The following comments were provided by the CEP in a letter dated November 12, 2018, in addition to some editorial comments from the IG, all of which have been reflected, as appropriate, in this ICR.

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ҲУКУМАТИ ҶУМҲУРИИ
ТОҶИКИСТОН
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COMMITTEE OF ENVIRONMENTAL PROTECTION UNDER THE GOVERNMENT OF THE REPUBLIC OF TAJIKISTAN

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№ 118-03-2100 12.11.2018 соли 2018
Ба № _____ аз « _____ » _____ соли 2018

Mr. Jan Peter Olters
Country Manager
World Bank Office in the
Republic of Tajikistan

Dear Mr. Olters,

RE: ELMARL: Draft Implementation Completion and Results Report (for Review and Comments)

Referring to your mail dated October 22, 2018 we would like to inform you that the draft Implementation Completion and Results Report (ICR) for the Tajikistan Environmental Land Management and Rural Livelihoods (ELMARL) project was reviewed by the committee and the Implementation Group of the committee.

The committee finds the ICR to be acceptable; positively reflecting the project thanks to substantial reviews and interviews that were held during the assessment period. We are glad to acknowledge that the mission was able to participate in the Project Review Workshop held in Tajikistan this year in April.


We would like to highlight two points:

- We believe that the ELMARL knowledge management component could be emphasized in more detail. This component was an innovative and new way in the context of Tajikistan to share learnings and best practices for climate change adaptation and sustainable land management investment opportunities.
- Also, it is worth mentioning that the results of the project were in line with the strategic priority objectives of the Government of the Republic of Tajikistan. Furthermore, we would like to stress the fact that this was the first successful and effective cooperation of the CEP with the Bank at the project implementation level. The CEP was successful in



achieving all project objectives in the initially agreed timeframe despite initial delays as well as additional financing.

We hope to maintain this working relationship and are looking forward to continuing this fruitful collaboration in further potential projects like ELMARL II.

Yours sincerely, 

Khayrullo Ibodzoda
Chair

Committee of Environmental Protection
under the Government of the
Republic of Tajikistan
Project Director

Environmental Land Management and Rural Livelihoods

The Borrower Completion Report was prepared by the Committee for Environmental Protection (CEP) under the Government of Tajikistan / the ELMARL Implementation Group (IG), dated June 30, 2018. The report contains detailed tables and information on project implementation by component and incorporates lessons learned and recommendations as well as information from the various evaluations and assessments referenced in this ICR. The findings of this ICR draw on the Borrower's Completion Report. The full report is available in the project files.



ANNEX 6. SUMMARY OF RESULTS FRAMEWORK CHANGES

Indicator Name	Original Project	AF Jun 2015	Revision 1 Jan 2016	Revision 2 Apr 2017	Rationale
PDO Indicators					
Number of households supported [in project area] that have adopted climate change and sustainable land management practices	21,000	26,350	33,100	40,500	As part of the AF, it was estimated that an additional 5,350 households will participate in village level rural investments. Despite the partial IDA cancellation, it had become clear in late 2015 (after the AF approval and based on available project M&E data) that the project would be able to support a greater number of households than originally estimated. ⁵⁰ Project savings (under component 2 and 3) also allowed for additional households to be included in the project. Therefore, the end target was increased further in January 2016 and April 2017.
Land users adopting sustainable land management practices as a result of the project	12,000	16,000	24,000	23,100	Similarly, the number of land users was conservatively estimated during project preparation and the project was able to reach a greater number of land users despite the partial IDA cancellation and due to the project savings.
Proportion of population by household in target villages reporting at least 20% increase in well-being or household/ livelihood assets	50%	No change	No change	No change	N/A
Number of hectares in project area covered by effective agricultural, land and water management practices suited to local agro-ecological conditions and climate change resilience	30,000	32,000	70,000	41,500	The end target was increased as part of the AF to reflect the additional rural investments that would lead to effective management of project areas. The final revision reflects a more accurate estimate based on the project environmental database, which includes the number of hectares covered for each sub-project.
Direct project beneficiaries	126,000	159,000	206,250	243,000	The end target adjustments reflect the increase in number of households supported (assuming ~6 persons per household) and includes beneficiaries under WUAs/PUUs that were not originally counted towards this indicator. Original estimates were based in part on outdated government data, while later estimates were based on more reliable M&E data collected by the IG.
Female beneficiaries	40%	No change	No change	No change	N/A
Intermediate Results Indicators					
Total value (USD, millions) of rural production and land resource management investments (including at least 25% beneficiary match) in villages where project is operational	10.14m	12.3	10.89	10.94	The initial increase, reflects the additional resources (US\$2.13 million) as part of the AF. Following partial cancellation of IDA resources, the indicator target was revised downward, and then adjusted again

⁵⁰ The PAD foresaw that at least 50% of village households should participate in rural production and land resource management investments. The initial end target value for the indicator was conservative and based on best available government data at the time. It was understood that the actual number of households reached may far exceed the initial estimate.



					following the findings of the MTR.
Number of pasture management plans under implementation by Pasture User Groups	8	No change	11	8	The AF did not foresee supporting additional pasture management plans (PMPs). However, following the partial cancellation of IDA resources, it was initially decided to use PPCR resources to support 3 more PMPs. As part of the RF revisions following the MTR, the final target was adjusted to be in line with the original estimate.
Number of on-farm water management plans under implementation by Water User Associations in lowland areas	8	No change	11	16	The AF did not foresee supporting additional on-farm water management plans. Following the partial IDA cancellation, it was decided to support additional on-farm WMPs using PPCR resources. Project savings under components 2 and 3 allowed for the support of additional WUAs.
Hectares in which local communities have adopted management practices in land use and land use change, resulting in restoration and enhancement of carbon stocks	30,000	32,000	No change	39,125	The target was revised to reflect the increase in the number of hectares covered under outcome indicator #4. (Because not all sub-project activities resulted in enhancement of carbon stocks, the number of hectares is less than what is covered under outcome indicator #4).
Degree to which villages have integrated climate change adaptation and environmental appraisals into community action plans are implementing appropriate investments	75	No change	No change	No change	N/A
Number of client days of training provided in organizational and technical topics	42,000	46,000	No change	42,000	The MTR confirmed that the initial target would be achieved but not exceeded; the end target was revised accordingly.
Instructional good practice short videos produced (number)	N/A	50	No change	No change	This indicator was added to reflect additional activities under the AF.
Feedback/grievances resolved within the stipulated service standards for response times (percent)	N/A	100	No change	No change	This indicator was added in response to corporate commitments on gender and citizen engagement in effect at the time of AF processing (specifically, in response to comments received at the AF DM).



ANNEX 7. SUMMARY OF PROJECT COMPONENTS INCLUDING ADDITIONAL FINANCING AND ELIGIBLE SUB-PROJECT ACTIVITIES

Component 1 – Rural Production and Land Resource Management Investments (*estimated: US\$10.14 million, actual: US\$11.32 million*):

This component provided grant financing to communities in selected climate vulnerable sites⁵¹ to implement rural production and land and water resource management investments. It comprised two sub-components: (i) village-level investments to help groups of households (CIGs) improve their livelihoods and become more resilient to climate change and (ii) larger-scale initiatives involving user groups and associations to implement pasture and on-farm water management at scales beyond the village, particularly sustainable community pasture management involving PUUs and on-farm water management in lowland areas involving WUAs. A community-driven development approach was used to ensure participants took responsibility for the choice, design and management of rural investments and resource management plans.

Sub-component 1.1. Sustainable village-based rural production and land resource management. This sub-component financed investments (up to \$7,000 with 25% beneficiary contribution) for groups of households (Common Interest Groups, CIGs) in lowland, middle hill, and upland districts in three categories with a focus on encouraging innovative sub-projects in response to environmental risks and climate variability:

- farm production – field and horticultural crop productivity and diversification, livestock production efficiency, agro-processing and market access;
- land resource management – pasture management, water management, soil fertility, integrated pest management, and sustainable sloping lands cultivation (including orchards, woodlots, shelter-belts);
- small-scale rural production infrastructure – irrigation/drainage system rehabilitation, minor transport infrastructure, renewable energy, and energy efficiency measures

Participatory Rural Appraisals (PRAs⁵²) at the jamoat and village level were conducted to help beneficiaries assess and understand the extent of climate change impacts and environmental risks and support the selection, prioritization and planning of investments. Based on the PRAs, Community Action Plans (CAPs) were developed which then served as the basis for the preparation of sub-project proposals. Villages would prioritize investments based on a fixed budget⁵³ for each type of rural investment determined by the number of households, ensuring fair allocation of resources.⁵⁴ Project-financed grants to CIGs would not exceed US\$7,000 and would require a match of 25% in beneficiary contributions (in cash or in-kind). Villages would

⁵¹ Selection of project districts was based on analytical work undertaken as part of Phase 1 of PPCR and included villages in the lowlands (Farkhor, Kulyob), middle hills (Baljuvon, Khovaling) and the uplands (Tavildara, Jirgatal).

⁵² PRAs were used as the main pre-assessment mechanism to analyze the socio-economic and environmental situation in the selected areas and provide context for the selection of appropriate sub-project investments. PRAs included a needs assessment of the rural population of climate resilience activities, consideration of gender specific aspects, as well as institutional set-up and operational processes for sub-project implementation.

⁵³ In some cases, under exceptional circumstances, where there was insufficient land with secure tenure to support land resource management investments (primarily in certain lowland areas), exceptions to budget limits could be considered (Aide Memoire, April 27-May 8, 2015).

⁵⁴ At least 50% of the village households should participate in either farm production or land resource management investments.



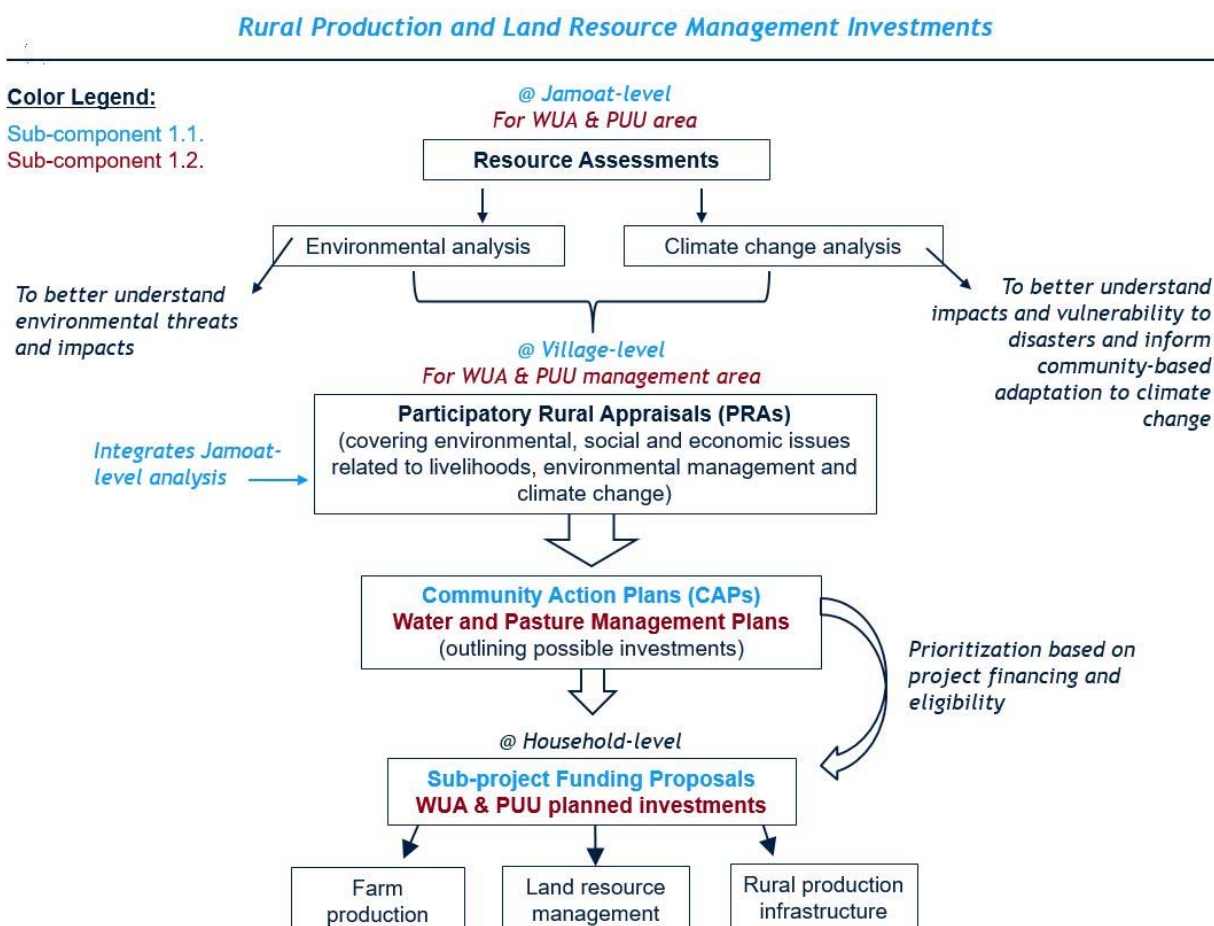
use a toolkit with best practices⁵⁵ to ensure that those investments selected are the most appropriate to address NRM challenges and climate risks identified in the assessment. Only those investments that had a clear linkage to the findings of community adaptation and environmental appraisals and that were environmentally, economically and socially feasible would be financed. In addition, rural investments had to be consistent with Jamoat (village) development plans. Rayon (District) Review Committees (RRC) were established as a decentralized governance mechanism to help review eligibility of community sub-projects against jamoat development plans, screen for environmental criteria and ensure overall quality of the investments. See Figure 2 for a schematic of the investment planning process under sub-component 1.1.

Sub-component 1.2. Larger-scale initiatives in sustainable community land management. This sub-component helped establish eight Pasture User Groups (PUGs) under the new Pasture Law and provided grants in selected jamoats in hilly and upland districts to develop and implement community-based Participatory Pasture and Livestock Management plans. The plans would define: (a) measures to improve pasture productivity; (b) grazing utilization levels; (c) animal health requirements and breed improvement measures; (d) investment needs; and (e) implementation responsibilities, targets and indicators. Investments could include: infrastructure to access and use remote pastures (e.g. stock watering points, shelters and stock-pens, milk cooling equipment); small machinery to produce and harvest fodder; rehabilitation measures for degraded areas such as fencing, weed and shrub control, and re-seeding; inputs for supplementary fodder production such as seeds; vaccinations and parasite control; and artificial insemination. This sub-component also financed on-farm water management practices in irrigated cropland, primarily in lowland districts and supported eight existing Water User Associations (WUAs), primarily in lowland districts, in developing and implementing sustainable on-farm water management plans. Investments could include: provision of equipment for drip irrigation and land-leveling; cleaning drains to alleviate water logging and control salinity; provision of seedlings for planting shelter belts, protecting canals and as an intercrop; materials for conservation agriculture; and seeds of improved drought, pest, disease and salt-tolerant varieties. Grants required at least a 25% beneficiary match (in case or kind). Grant funds could also be used for training and the provision of office equipment and furnishings for PUGs and WUAs. See Figure 2 for a schematic of the investment planning process under sub-component 1.2.

⁵⁵ Including from the Land Registration and Cadastre System for Sustainable Agriculture's compendium of good practices, posters from World Overview of Conservation Approaches and Technologies, materials from GREAT (including land use plans), GIZ, KfW and other projects and organizations.



Figure 2: Planning Process for Rural Production and Land Resource Management Investments under Component 1



Component 2 – Knowledge Management and Institutional Support (estimated: US\$4.74 million, actual: US\$6.44 million):

This component comprised two sub-components: (i) facilitation support and technical advice for sustainable village-based rural production and land resource management and larger-scale initiatives in sustainable community land management, as well as participatory environmental, climate change and village appraisals and (ii) training, analysis, dissemination and networking which included a project orientation phase to share project goals, approaches and activities with project partners and key stakeholders (line ministries, local governments, local NGOs and community-based organizations), field visits to “best farmer practice competitions”⁵⁶, a program on knowledge and skills in key topics (such as environmental assessment and monitoring, integrated land, water and grazing planning and management, integrated pest management, participatory processes, gender and other social development issues and climate change adaptation) and analytical support to provide guidance for the design and sustainability of rural investments both within and

⁵⁶ Including from CAWMP and the Land Registration and Cadastre System for Sustainable Agriculture Project (closed March 2016).



beyond the Project (including a pilot analysis of project results using a framework of “payments for environmental services” and support for project evaluation as well as other studies and investments).

Component 3 – Project Management and Institutional Support (estimated: US\$2.00 million, actual: US\$1.84 million):

This component financed the operating costs of project management functions to be carried out by the Implementing Group (IG) within the Committee for Environmental Protection (CEP). Existing staff of the CEP would be given responsibilities in the IG for overall project management, coordination, financial management, procurement, administration, monitoring and evaluation, and implementation of components 1 and 2. This component also included coordination with the overall country PPCR program, including participation and contributions to programmatic monitoring and evaluation and knowledge management.

ADDITIONAL FINANCING

The AF, approved on June 30, 2015, introduced the following changes to project components and cost:

Sub-component 1.1. Sustainable village-based rural production and land resource management (*estimated additional financing at: US\$2.16 million: US\$1.73 million from IDA and US\$0.43million from beneficiary contributions*). Activities associated with the AF required no changes to the design. It was anticipated that at least an additional 5,350 households would participate in village level rural production investments by including an additional climate vulnerable district in the middle hills region of the country.

Sub-component 2.1. Facilitation support and technical advice (*estimated additional financing at: US\$0.07 million from IDA*). AF activities included support for contracting a locally-based international agency or NGO (Facilitating Organization) for community mobilization, participatory planning and implementation support of village-level, rural production investment plans in the selected additional district.

Sub-component 2.2. Training, Analysis, Dissemination and Networking (*estimated additional financing at: US\$2.00 million from PPCR*). AF activities comprised: establishment of an innovative farmer/land user focused knowledge management/information and delivery system in the CEP (US\$1.20 million from PPCR); capacity building to facilitate use of knowledge management products by farmers/land users and interested parties (US\$0.50 million from PPCR); networking and dissemination to increase adoption of SLM practices among the rural population (US\$0.20 million from PPCR); and analysis and planning for knowledge management (US\$0.10 million from PPCR).



Table 6: Eligible Sub-Project Investment Activities

Sub-Group ID	Sub-Group Description Component 1.1 and 1.2	Rural Production and Land Resource Management Investments		
		Category I	Category II	Category III
		Farm Production	Land Resource Management	Small-scale Rural Production
AC	Agricultural Crop	Growing quality potato seeds, growing water melon, growing crops under plastic, potato seed production, wheat production, fodder and grain production, seed development, tomato production	Planting trees in slope lands, growing crops under plastic, corn planting and various vegetables, potato production, rice-growing, wheat production and planting	n/a
AE	Alternative Energy	Briquets, bread preparation using briquets	Using briquets to reduce cutting of trees, improvement of soil productivity through introduction of bio compost	installation of solar panels for water heating (community hall, kinder garden) and energy supply (bakery shop), changing power poles, chicken coop restoration
AH	Animal Health	Improvement of veterinary clinic, veterinarian supplies, improving livestock service through vaccinations	n/a	Improvement of veterinary clinic, veterinarian supplies, improving livestock service through vaccinations
AM	Agricultural Machinery	Purchasing mini tractors, purchasing small agriculture machines, agricultural processing machinery	Agromachinery for planting perennial crops, procurement of small agricultural machinery to process lands, purchase of small tractors	n/a
BC	Biological Compost	Bio compost preparation	Using bio compost to increase soil fertility	n/a
BK	Bee keeping	Beekeeping development	Improving pasture lands for beekeeping, planting fruit trees for beekeeping,	n/a
DS	Drinking water System	n/a	n/a	Development or rehabilitation of drinking water systems, installation of meters etc.
FC	Fodder Crop	Fodder crop production, fodder crop planting, livestock fodder production	Planting perennial crops, establishing orchards	n/a
FY	Fishery	Development of fish ponds and other activities for fishery	Development of fish ponds on unusable lands	n/a
FO	Forest	n/a	Growing of non-fruit trees for forest restoration and/or soil stabilization	n/a
GH	Greenhouse	Growing vegetables/ lemons in greenhouses, establishing greenhouses, including drip irrigation	Greenhouse construction, lemon houses, growing vegetables/ lemons	Greenhouse construction
HA	Horticulture	Sea buckthorn fruit processing for the production of oil and syrup, creating orchards, restoration and fencing of orchards, fruit production	Planting perennial crops and trees, establishing orchards, crop rotation, fencing of orchards	Prevention of degradation of lands



Sub-Group ID	Sub-Group Description Component 1.1 and 1.2	Rural Production and Land Resource Management Investments		
		Category I	Category II	Category III
		Farm Production	Land Resource Management	Small-scale Rural Production
IS	Irrigation System	n/a	Rehabilitation of main irrigation canal, improving access water for orchards, irrigation canal cleaning, drainage rehabilitation	Rehabilitation of main irrigation canal, improving access water for orchards, irrigation canal cleaning, drainage rehabilitation
LB	Livestock Breeding	Purchase of small livestock (sheep, cows or other animals except poultry and bees), small livestock breeding,	Livestock breeding, planting of fodder crops	n/a
LI	Livestock Infrastructure	n/a	Pasture road rehabilitation, livestock watering point rehabilitation or establishment, rehabilitation of livestock sheds	Pasture road rehabilitation, bridge repair and rehabilitation
PD	Poultry Development	Purchase of poultry (turkey, goose, ostrich, pheasant, chicken, duck) or equipment for poultry development (e.g. incubator)	n/a	Rehabilitation of poultry farm
PP	Processing of Produce	Support in establishing shops (e.g. bakery, tailoring) or purchasing smaller equipment for processing of produce (drying fruit, milk or wool processing)	Rehabilitation of dried fruit shop, wood processing, fuel switching to electricity to conserve trees	Construction of agriculture shops
RB	River Bank Protection	n/a	Stabilization of river banks and canals through planting of trees or scrubs	Bank enforcement through larger infrastructure intervention
VI	Village Infrastructure	n/a	n/a	Infrastructure that is not for livestock (rehabilitation of village roads and bridges, electricity poles etc.)



ANNEX 8. PPCR INVESTMENT PROGRAM IN TAJIKISTAN⁵⁷

PPCR Program in Tajikistan: Phase 1 Technical Assistance

Activity	
A1	Review of Tajikistan's climate change institutional arrangements and capacity needs
A2	Tajikistan's Climate Science and Impact Modeling Partnership
A3	Raising awareness of climate change in Tajikistan
A4	Identifying options for enhancing the climate resilience of Tajikistan's energy sector
A5	Analysis of sustainable land management approaches for changing climate conditions in Tajikistan
A6	Analysis of river basin approaches to climate resilience

PPCR Program in Tajikistan: Phase 2 Investments

Name	PPCR Funding (USD million)	Co-Financing (USD million)	MDB
Building Capacity for Climate Resilience	6	0	ADB
Building Climate Resilience in the Pyanj River Basin Project	21.55	1	ADB
Enhancing the Climate Resilience of the Energy Sector	11	54	EBRD
Enhancing the Climate Resilience of the Energy Sector	10		EBRD
Environmental Land Management and Rural Livelihoods – AF	2	2	IBRD
Environmental Land Management and Rural Livelihoods Project	9.45	7	IBRD
Improvement of Weather, Climate, and Hydrological Delivery Project	7	15	IBRD
Small Business Climate Resilience Financing Facility	5	8	EBRD

⁵⁷ The PPCR is the world's largest active adaptation fund targeting the most vulnerable countries. It is one of three programs (together with the Forest Investment Program and the Scaling-Up Renewables in Low-Income Countries Program) under the Strategic Climate Fund, which is one of two funds (together with the Clean Technology Fund) of the Climate Investment Funds (CIFs). CIFs were designed by developed and developing countries and implemented with Multilateral Development Banks (MDBs) to bridge the financing and learning gap between international climate change agreements. Using a two-phase, programmatic approach, the US\$1.2 billion PPCR assists national governments in integrating climate resilience into development planning across sectors and stakeholder groups. In Tajikistan, the World Bank (WB), European Bank for Reconstruction and Development (EBRD) and the Asian Development Bank (ADB) supported a programmatic approach entailing analytical activities and linked investment projects. Available at <https://www.climateinvestmentfunds.org/country/tajikistan> and https://www.climateinvestmentfunds.org/sites/cif_enc/files/spcr_tajikistan_revised_012511_0.pdf.



ANNEX 9. MONITORING EFFECTIVENESS TOOL SCORES FOR WUAS AND PUUS

Staff and members of WUAs and PUUs benefited from trainings that provided the necessary skills to implement sub-projects. Among other topics, trainings covered: irrigation of gardens using inexpensive drip irrigation technology; creation of intensive orchards using drip irrigation; preparation and use of bio compost; agro-technical measures for the cultivation of crops from improved, salt tolerant seed varieties resistant to droughts, pests and diseases; inventory of irrigation and waterworks, budgeting and accounting in WUAs; rehabilitation of water distribution gates to improve the supply of irrigation water, prevention of water logging and water erosion; use of groundwater by drilling wells to prevent drought and desertification (crop loss and fall of trees); organization of water accounting in farms, measuring the flow and determining the volume of irrigation water; measures to reduce water loss, bogging and soil salinity; rotation of pastures supported by additional points of watering; improving the environment; effective management of irrigation water; and sanitary norms for the use of drinking water. Table 7 and Table 8 provide details on the average score by MET classification for WUAs and PUUs, respectively, highlighting improvements along all dimensions.

Table 7: Average score by MET classification for WUAs

Classification	Max score	Initial	Second	Third	Final
Governance	15	3.94	8.25	10.38	12.13
Financial management	24	4.5	12.5	16.38	18.75
Water scheduling and delivery	9	1.94	4.32	6.19	7.25
Irrigation	9	1.38	4.06	6.25	7.75
Collecting fees	6	1.06	2.88	4.13	4.56
Conflict resolution	9	1	3.69	5.63	6.13
Organizational learning/knowledge	6	0.88	2.06	3.19	3.32
Sustainable water and land mgmt.	12	1.44	4.5	7.38	8.13
Gender	6	1	3.19	4.13	4.75
TOTAL	96	17.13	45.44	63.63	72.75

Explanation of MET Classification (related to WUAs)

- **Governance:** including criteria on election of board members and management team; decision-making processes; registration; bylaws; organizational structure
- **Financial management:** membership fees; financial procedures and reporting systems; annual financial projections; budget; planning for system maintenance, repair and rehabilitation; inventory control systems; knowledge of relevant sections of the Tajikistan tax code; WUA use of financial resources to repair and rehabilitate their system
- **Water scheduling and delivery:** member services; water delivery schedule; access to irrigation water, relative to amount needed
- **Irrigation:** irrigation system improvements/rehabilitation (canals, drainage systems, gates, etc.); infrastructure maintenance management; maintenance of drainage and flood control systems
- **Collecting fees:** irrigation water service fees; equitability
- **Conflict resolution:** conflict resolution skills; WUA legal rights; conflict resolution between WUAs
- **Organizational learning/knowledge:** climatic data; crops calendar
- **Sustainable water and land management:** crop water needs adjusted to weather; erosion control; salinity control; water logging control
- **Gender:** empowerment of women and men to access irrigation water; women representation in representative Assembly, Board of Directors, Executive Body

*Table 8: Average score by MET classification for PUUs*

Classification	Max score	Initial	Second	Third	Final
Governance	16	0	6.25	10	12.38
Management	21	0.5	6.5	12	15.38
Planning	15	0	7.5	10	10.51
Financial Management	6	0	3.25	4.38	4
Input	15	0	7.88	10.13	10.75
Outcomes	11	0	4.5	6.5	7.63
TOTAL	84	0.5	35.88	53	60.63

Explanation of MET Classification (related to PUUs)

- **Governance:** pasture management organization; pasture management objectives; pasture management regulations; enforcement of regulations; conflict resolution within community
- **Management:** pasture use and access management; work assignments in PUU; pasture resource inventory; record keeping; neighboring communities and other land owners; monitoring and evaluation
- **Planning:** management plan; feeding requirements and feed balances; mapping; pasture area boundary demarcation
- **Financial Management:** fee collection and security of budget
- **Input:** capacity of PUU; research; infrastructure; equipment; advisory services and training
- **Outcomes:** pasture condition and productivity; use and access management; economic benefits



ANNEX 10. GENDER ASPECTS OF ELMARL

Table 9: Female participation in Component 1

	CIG	PUU	WUA	Total
# beneficiaries	224,967	48,930	49,496	323,393
# female beneficiaries	104,606	23,012	26,593	154,211
% female	46.50%	47.03%	53.73%	47.69%
Female % of # of beneficiaries	32.35%	7.12%	8.22%	47.69%
Female % of # female beneficiaries	67.83%	14.92%	17.24%	100.00%
# HH	37,179	5,263	10,948	53,390
# WHH	3,056	121	99	3,276
% WHH	8%	2%	1%	6%

Table 10: Female participation in Sub-component 1.1., by District

District	Total CIGs	Women headed CIG	% of Women headed CIGs	Women only CIGs	% of women only CIG
Kulob	516	129	25%	11	2%
Farkhor	693	188	27%	8	1%
Lakhsh	223	24	11%	10	4%
Sangvor	229	38	17%	5	2%
Baljuvon	347	68	20%	3	1%
Khovaling	341	44	13%	3	1%
Total	2349	491	21%	40	2%



ANNEX 11. INSTITUTIONAL STRENGTHENING AND OTHER IMPACTS

Institutional Strengthening. The project brought together key government institutions and stakeholders to strengthen their capacity for dealing with environmental land management and climate change. One of the key challenges facing Tajikistan's institutions in responding to climate change has been an information gap and limited capacity for information generation and analysis.⁵⁸ The project contributed to closing this gap. Participatory approaches and voice and agency of women in decision making are now considered important by community members and local district representatives for raising and resolving issues around SLM and climate resilience. The bottom-up approach to planning and prioritizing investments and the technical support provided by the project were praised at the Final Project Review Conference in March 2018.

Initially, institutional capacity of the CEP and IG was assessed as limited at appraisal. By mid-term, implementation capacity had improved as a result of training and technical support related to fiduciary and procurement aspects, monitoring and evaluation, safeguards and overall operational aspects of managing and administering project activities. Over the lifetime of the project, the CEP and IG's implementation capacity was strengthened significantly including among CEP district officers who provided additional support at the field level (e.g. as reviewers under the Rayon Review Committees). The project also coordinated extensively with other development partners and donors (GIZ, FAO, UNDP, IFAD, etc.) providing opportunities for institutional learning and knowledge exchange.

At the community-level, local NGOs (Facilitating Organizations, FOs) helped build the technical and organizational capacities of the community-based organizations (CIG, PUG, WUA) who took responsibility for the choice, design and management of rural investments and management plans. A total of over 38,000 client days in training was provided to beneficiaries on a wide range of relevant topics (e.g. training on sub-project proposal writing, natural resource management, greenhouse construction, improved water management, to name a few). Knowledge exchange was facilitated through peer-to-peer learning events (e.g. study tours and field visits, including to neighboring countries such as Kyrgyz Republic and Uzbekistan) that helped to further strengthen institutional capacities. In addition, training-of-trainers was provided to the FOs (including on Participatory Rural Appraisal design, climate change resilience, project management, procurement and financial management, reporting, ecological monitoring, etc.) as their capacity and understanding of the project initially was low.

Institutional strengthening also took place at the PUU and WUA level. The project established eight PUUs⁵⁹ (Soyaru, Umed, Navruz, Sayod, Dusti, Ozod, Obi Garm, Sorkho) that are active, with an elected board that meets regularly and holds frequent pasture user meetings with decisions being made in an informed and democratic manner. This contributed to improved pasture management guided by a clear set of agreed objectives (e.g. increased productivity, balanced use of remote and nearby pastures) as evidenced by the approved pasture management plans that were developed and implemented with the input of key stakeholders. Similarly, WUAs⁶⁰ effectiveness as water management institutions improved as a result of enhanced capacity for: democratic governance and participatory decision-making processes (e.g.

⁵⁸ PPCR Phase 1 Assessment of Tajikistan's capacity for climate resilience.

⁵⁹ No formal PUUs existed at project outset.

⁶⁰ Project-supported WUAs included: Sitorai Yovon, Iram-2014, Sarob-2017, Mirzomalik, Zilol Chashma, Tutak, B. Ghafurov, Eliyor, KKK, Obi Shirin D, Karl Marks, Vatan, Sangak Safarov, Buston, Chubek 13, and Obshoroni Yovon.



transparently elected Board Members, updated bylaws, more clearly defined organizational structure), which helps create the enabling environment for better management of on-farm irrigation and development of food security strategies; management of WUA finances to improve credit worthiness (e.g. detailed budget developed and controlled by Audit Committee, detailed plans developed for system maintenance, repair and rehabilitation); organization and provision of services to members including timely delivery of irrigation water, improvements in irrigation efficiency and other activities that reduce costs and increase profitability for members (e.g. access to irrigation water, relative to the amount needed, improved to up to 80% in all but one of the 16 WUAs); maintenance of on-farm irrigation and drainage systems (e.g. nearly 90 percent of rehabilitation needs were completed in the majority of WUAs); irrigation water delivery to on-farm canals using collected fees by WUAs (e.g. fee collection rates increased from less than 20 percent in the majority of WUAs to up to 75 percent with some WUAs reaching up to 100 percent in fee collection); knowledge and application of skills in conflict resolution, farmers' legal rights and advocacy as well as resources including geospatially explicit maps compiled in GIS (e.g. awareness of available climatic information, improved knowledge on developing crop calendars); sustainable water and land management (e.g. managing uncertainty and variability to cope with rainfall and other changes in temperature, run-off, and water availability and use); and empowering women and men to access irrigation equally.

Unintended Outcomes and Impacts.

The Rayon (District) Review Committees (RRC) naturally evolved to be much more engaged in the project than originally envisioned and proved to be an effective decentralized governance mechanism. The RRC made an effort (above and beyond their envisioned role) to review community sub-projects against jamoat development plans, screen for environmental criteria and ensure overall quality of the investments. It provided the larger context within which community activities were implemented and strengthened the bottom-up approach by serving as a vehicle for collaboration between farmers and representatives of district CEP offices and jamoat/local authorities, contributing to increased ownership. There were instances, when members of the RRC took the initiative to meet with potential beneficiaries in the field, prior to approving sub-projects, to learn more about the proposed interventions and their potential value beyond the village level. This dedication ensured that rural investments were consistent with district/jamoat level development plans and helped demonstrate to policy makers that good results can be achieved with community-based interventions. Results of the project are recognized at the national level, including the Ministry of Finance as evidenced by their expression of appreciation for the project during the ICR mission.

Some Pasture User Unions were able to build on project support to achieve greater impacts: PUU "Sorkho" (Fayzobod district), for instance, applied the new skills and knowledge acquired to secure external funding to continue their operations and implement additional interventions under their Pasture Management Plans while PUU "Ozod" leveraged their institutional legitimacy to secure land rights for pasture areas, contributing to financial viability and SLM. Overall, the project was able to expand opportunities for the rural population and many beneficiaries referred to ELMARL as a "New Deal" – away from "business as usual" towards a more sustainable and environmentally and climate friendly alternative to generate economic benefits and reduce poverty in rural areas.

Additionally, among the range of knowledge products produced under the project, some SLM best practices and approaches are being submitted to the World Overview of Conservation Approaches and Technologies (WOCAT, www.wocat.net), which has been officially recognized by the UNCCD as the primary recommended database for SLM best practices.



ANNEX 12. SUPPORTING DOCUMENTS

1. Assessment of Index of Well-Being and Livelihoods Assets (2018)
2. Carbon Balance Accounting Report (2018).
3. Impact Assessment of Implementation of Pasture Land Management Plans.
4. Impact Assessment of Implementation of Water Management Plans.
5. Field Study Report on the Assessment and Selection of WUAs (2016).
6. Final Report on Technical Capacity Building of WUAs, PUUs as well as CIGs' Beneficiaries for Water Management in the Pilot Districts
7. External Project Evaluation Report (2018), commissioned by the IG.
8. Economic Impact Assessment, commissioned by the IG.
9. Institutional and Legal Assessment on the Possible Application of the Payment for Environmental Services Approach in Tajikistan (2018).
10. Soil Laboratory Analysis and Soil Quality Reporting (2018).
11. Gender Mainstreaming and Social Inclusion in ELMARL (2018).
12. Final Activity Report on Unstructured Data-Management Consultation, prepared by OneOffTech (2018).
13. Borrower Completion Report (2018).
14. Implementation Completion Report, Tajikistan Community Agriculture and Watershed Management Project.
15. World Bank Group Country Partnership Strategy (CPS) for Tajikistan for the Period FY15-18.
16. Performance and Learning Review of the CPS for Tajikistan for the Period FY15-18 (2017).
17. Tajikistan: Strategic Programme for Climate Resilience, prepared under the Pilot Program for Climate Resilience (2011).
18. Project Environmental Assessment and Environmental Management Framework (2012).
19. Tajikistan Systematic Country Diagnostic (May 2018).



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