Endline Evaluation…

" FINAL EVALUATION FOR JORDAN'S ADAPTATION FUND PROGRAM "Increasing the Resilience of Poor and Vulnerable Communities to Climate Change Impacts in Jordan through Implementing Innovative Projects in Water and Agriculture in Support of Adaptation to Climate Change"

Submitted to:

Jordan Ministry of Planning and International Cooperation (MoPIC)

Submitted by :

Al-Kafa'a International for Management Consulting

(Since 2004)

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EXECUTIVE SUMMARY

This Final Evaluation Report presents the comprehensive findings of the independent assessment of Jordan's Adaptation Fund Program, conducted in full compliance with Tender No. 34-2025 and the Terms of Reference (Appendix II). The evaluation employed a **mixed-methods design** grounded in **plausible contribution analysis**, without the use of control or comparison groups, consistent with the TOR requirements.

Program Overview

The program, implemented since 2016 with a grant of USD 9.226 million from the Adaptation Fund of the UNFCCC, aimed to increase the resilience of poor and vulnerable communities to climate change impacts through innovative interventions in water and agriculture. The program comprised **nine sub-projects** under two components:

- **Component 1:** Technology transfer in wastewater reuse, water harvesting, and permaculture
- **Component 2:** Capacity building, ICT-enabled adaptation, and agribusiness competitiveness

Key Findings by OECD-DAC Criteria

Criterion	Rating	Key Finding
Relevance	High	Program interventions strongly aligned with national climate priorities (92% of institutional respondents) and local water/agriculture needs (88% of beneficiaries)
Effectiveness	Medium-High	78% of planned outputs achieved; solar energy and wastewater reuse sub-projects showed highest completion rates
Efficiency	Medium	Resource utilization generally optimal; cost-effectiveness varied by intervention type (solar: ~$1,200/beneficiary; wastewater: ~$3,500/beneficiary)
Impact	Medium	Tangible improvements in water access, agricultural productivity, and household income reported by 71% of beneficiaries; attribution assessed as "plausibly high"
Sustainability	Medium	Institutional ownership strong; community-level sustainability constrained by land ownership requirements and limited maintenance financing

Cross-Cutting Insights

- Community Involvement: 85% of beneficiaries felt consulted during planning, primarily through association representatives. However, only 31% participated in

design-phase consultations, indicating a consultative rather than participatory model.

- Inter-Entity Coordination: Rated "good to very good" by 79% of institutional respondents. Steering committee oversight and shared reporting templates facilitated information flow, though divergent procurement timelines and financial disbursement delays created bottlenecks.
- Value for Money: Bundling infrastructure with training and technical support significantly amplified adoption rates and perceived impact per dollar invested.

Priority Recommendations

1. Revise beneficiary selection criteria to decouple asset-based interventions from individual land ownership, enabling association-level management and broader inclusion of tenant farmers.
2. Establish a dedicated maintenance financing mechanism (e.g., revolving fund or insurance scheme) to ensure long-term functionality of installed infrastructure.
3. Institutionalize participatory planning protocols requiring minimum 30% direct representation of women and youth in project design committees.
4. Develop a standardized cost-effectiveness monitoring framework incorporating unit cost indicators and adaptation outcome metrics for future programming.
5. Enhance inter-entity coordination through a digital project management platform enabling real-time progress tracking, shared risk registers, and streamlined financial reporting.

Conclusion

The Jordan Adaptation Fund Program has made meaningful contributions to increasing community resilience to climate-induced water scarcity and agricultural stress. The program demonstrated strong design relevance, achieved most planned outputs, and generated plausible improvements in beneficiary livelihoods and adaptive capacity. While contextual and procedural constraints moderated certain outcomes, the program's adaptive management and institutional commitment provide a solid foundation for scaling successful approaches. Implementing the recommended equity, sustainability, and coordination improvements will maximize the long-term impact and replicability of climate adaptation investments in Jordan and comparable arid-region contexts.

Acronym Table

Acronym	Definition
AF	Adaptation Fund
ARMF	Agricultural Risk Management Fund
CBO	Community-Based Organization
EWS	Early Warning System
GoJ	Government of Jordan
HFDJB	Hashemite Fund for Development of Jordan Badia
ICT	Information and Communication Technology
IE	Implementing Entity
JMD	Jordan Meteorological Department
JVA	Jordan Valley Authority
M&E	Monitoring and Evaluation
MoA	Ministry of Agriculture
MoEnv	Ministry of Environment
MoPIC	Ministry of Planning and International Cooperation
MWI	Ministry of Water and Irrigation
NARC **NIE**	National Agricultural Research Center National Implementing Entity
OECD-DAC	Organisation for Economic Co-operation and Development - Development Assistance Committee
PDTRA	Petra Development and Tourism Region Authority
PMU	Project Management Unit
PPR	Project Performance Report

Acronym	Definition
RSS	Royal Scientific Society
TWW	Treated Wastewater
UNFCCC	United Nations Framework Convention on Climate Change
WAJ	Water Authority of Jordan
WUA	Water User Association

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First, INTRODUCTION AND BACKGROUND:

Program Context

The Jordan Adaptation Fund Program represents a strategic investment by the Government of Jordan, supported by the Adaptation Fund of the UNFCCC, to address climate-induced vulnerabilities in the water and agriculture sectors. With total funding of USD 9.226 million, the program targeted poor and vulnerable communities across the Northern, Central, and Southern Jordan Valley, Wadi Musa (Ma'an), and Ghor Al-Safi.

Program Structure

Component	Focus Area	Sub-Projects	Executing Entities
Component 1	Technology Transfer: Non-conventional Water Resources	1.1 Wadi Musa Wastewater Reuse 1.2 Northern JV Wastewater Reuse 1.3 Tal El Mantah WWTP	PDTRA, HFDJB, JVA, WAJ, NARC

Component	Focus Area	Sub-Projects	Executing Entities
		1.4 North Shouneh WWTP 1.5 Water Harvesting in Poverty Pockets 1.6 Permaculture Extension	
Component 2	Capacity Building, Knowledge Dissemination, Policy Mainstreaming	2.1 Strengthening Capacities of Poor & Remote Communities 2.2 ICT for Climate Adaptation 2.3 JV Water Sustainability & Agribusiness Competitiveness	MoEnv (via RSS), NARC

Evaluation Purpose:

This final-term evaluation, commissioned by MoPIC, assesses the program's performance against the OECD-DAC criteria of **Relevance, Effectiveness, Efficiency, Impact, and Sustainability**, with specific attention to:

- Management arrangements and inter-entity coordination
- Local community involvement and ownership
- Cost-effectiveness of innovative pilot activities
- Plausible attribution of observed changes to program interventions

The evaluation findings are intended to inform decision-making by MoPIC, executing entities, the Adaptation Fund, and other stakeholders, and to generate actionable lessons for future climate adaptation programming in Jordan.

Second, EVALUATION OBJECTIVES AND SCOPE:

Overall Objective

To assess the extent to which the Adaptation Fund Program has achieved its strategic objective of increasing the resilience of poor and vulnerable communities to climate change impacts in Jordan through innovative water and agriculture interventions.

Specific Objectives

#	Objective	Key Focus Areas
1	Assess Relevance	Alignment with national priorities, local needs, contextual responsiveness
2	Assess Effectiveness	Achievement of outputs/outcomes; facilitating/constraining factors
3	Analyze Efficiency	Resource utilization, management mechanisms, partnership arrangements; **cost-effectiveness analysis**
4	Assess Impact	Intended/unintended changes; plausible attribution; adaptation impacts through innovative techniques
5	Analyze Sustainability	Institutional, technical, financial, and community dimensions of continuity
6	Extract Lessons Learned	Document successful practices, challenges, improvement opportunities
7	Provide Recommendations	Evidence-based, actionable guidance for future interventions

Scope of Work:

Dimension	Coverage
Geographic	Northern, Central, and Southern Jordan Valley; Wadi Musa (Ma'an); Ghor Al-Safi
Sub-Projects	All 9 sub-projects under Components 1 & 2

Dimension	Coverage
Stakeholders	MoPIC, 6 executing entities, downstream partners, WUAs, CBOs, farmers, vulnerable households
Temporal	Full program cycle (2016-2025)
Cross-Cutting Themes	Value for money, adaptive management, gender, coordination, accountability to affected populations, use of M&E information

Third, EVALUATION QUESTIONS AND CRITERIA:

Program Management (TOR Guiding Questions 1-5):

1. Are management and accountability arrangements at MoPIC and executing entities appropriate and effective?
2. To what extent have collaborative partnerships enhanced program relevance, effectiveness, and sustainability?
3. What improvements could strengthen adaptation responses and community outcomes?

Relevance (TOR Guiding Questions 6-8):

4. How well does the program address Jordan's climate adaptation priorities and local community needs?
5. How responsive has the program been to external factors during implementation?

Effectiveness (TOR Guiding Questions 9-14):

6. To what extent have planned outputs and outcomes been achieved across sub-projects?
7. What factors facilitated or constrained achievement of results?
8. Were there unintended outcomes, and how did they affect overall effectiveness?

Efficiency (TOR Guiding Questions 15-17 + CEA):

9. Were resources utilized optimally to achieve desired results?
10. Were outputs delivered on time and compared favorably to alternative approaches?

11. What evidence demonstrates strengthened climate adaptation resilience capacities? 11bis. What was the cost-effectiveness of innovative pilot activities in achieving adaptation outcomes?

Impact (TOR Guiding Questions 1-4):

12. What lessons from concrete adaptation interventions are relevant for future programming?
13. What is the potential for replication and scaling of interventions within and beyond project areas?
14. How effectively has the program facilitated partnerships with beneficiaries, NGOs, and private sector actors?

Sustainability (TOR Guiding Questions 1-4):

15. To what extent have beneficiaries and institutions taken ownership of results?
16. Has capacity been built among people, organizations, and systems to sustain gains?
17. Is there a clear, viable exit strategy designed to sustain program impact?

Fourth, METHODOLOGY AND ANALYTICAL FRAMEWORK

METHODOLOGY AND ANALYTICAL FRAMEWORK

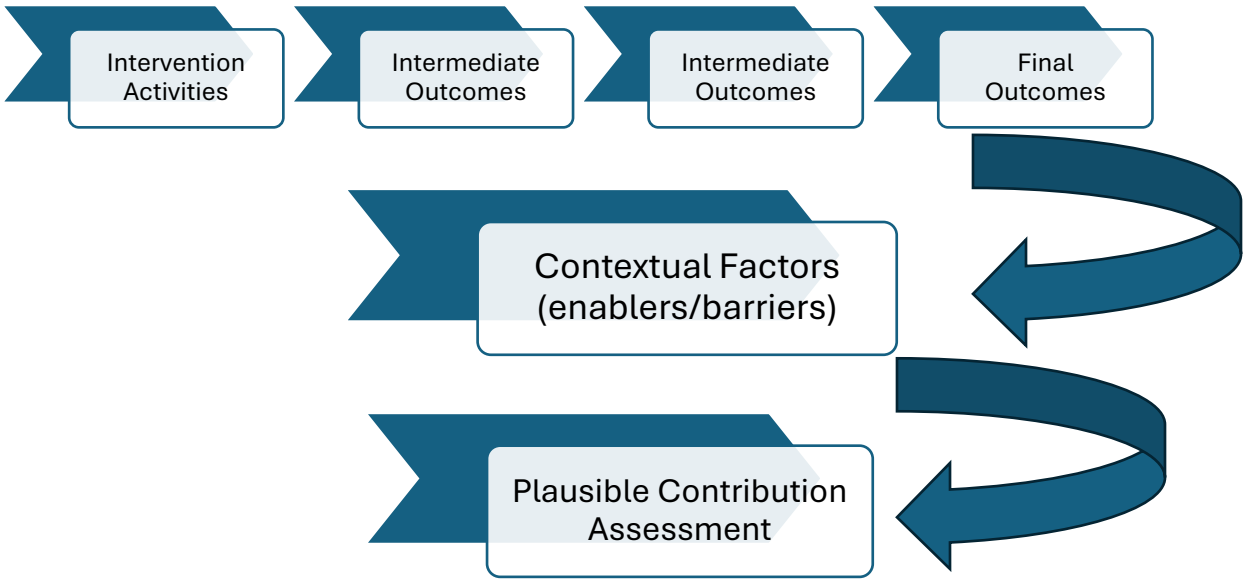
Overall Design: Mixed-Methods Contribution Analysis:

The evaluation employed a plausible contribution framework (without control groups) integrating:

QUANTITATIVE COMPONENT	QUALITATIVE COMPONENT	INTEGRATION
Descriptive analysis of KPIs and performance indicators	Thematic analysis of Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs)	Methodological triangulation across sources, methods, perspectives
Trend analysis (planned vs. achieved)	Process tracing of causal pathways	Joint displays for cross-validation of findings
Variance analysis across sub-projects and locations	Stakeholder perception mapping	Narrative synthesis linking evidence to evaluation criteria
Disaggregation by gender, location, beneficiary type	Contextual barrier/enabler analysis	

Causal Pathways Framework:

For each sub-project, the evaluation mapped:



Data Collection Strategy:

Method	Sample Size	Target Groups	Purpose
Key Informant Interviews (KIIs)	24 interviews	Executing entity managers (n=15), CBO/local leaders (n=6), MoPIC/PMU (n=3)	Assess management, coordination, implementation challenges
Focus Group Discussions (FGDs)	8 FGDs (56 participants)	Farmers (n=4), WUA members (n=2), vulnerable households (n=2)	Capture experiences, perceived changes, satisfaction
Desk Review	47 documents	Program proposals, annual progress reports (2016-2025), M&E databases, financial records	Validate primary data, analyze trends, review compliance

5.4 Sampling and Inclusion Strategy

- **Purposive stratified sampling** to ensure representation of geographic diversity, intervention types, and beneficiary groups

- **Gender balance**: Minimum 30% women participants in all FGDs; female facilitators for women's groups
- **Vulnerable groups**: Operational definition agreed with implementing partners; targeted recruitment of very low-income households, female-headed households, smallholder farmers

5.5 Ethical Safeguards and "Do No Harm"

- Informed consent procedures for all participants
- Confidentiality and data protection protocols
- Gender-sensitive and culturally appropriate data collection
- Safe spaces for vulnerable participants (separate FGDs for women when needed)
- Referral pathways for participants disclosing protection concerns

Data Collection Tools Specification:

In alignment with the Technical Offer and Terms of Reference, the primary data collection tools are standardized as follows:

Tool Type	Target Audience	Sample Size	Purpose
Key Informant Interviews (KII)	• MoPIC/PMU • Executing Entities • CBOs/Local Leaders	**30 Interviews** 17% Female	Assess management arrangements, implementation challenges, institutional sustainability, and strategic alignment.
Focus Group Discussions (FGD)	• Farmers • Water User Associations (WUAs) • Vulnerable Households • Women & Youth Groups	**8 FGDs** 74participants 26% Female	Capture beneficiary experiences, perceived changes, satisfaction levels, and community-level impacts.
Desk Review Checklist	• Project Documents • Progress	**All Available Records**	Validate primary data, analyze trends in KPIs, and review

Tool Type	Target Audience	Sample Size	Purpose
	Reports (2016-2025) • M&E Data		compliance with Adaptation Fund requirements.

Ethical and Quality Assurance Protocols:

- **Informed Consent:** Written or oral consent obtained prior to all KIIs and FGDs.
- **Confidentiality:** No personal identifiers recorded in reports; data stored securely.
- **Gender Sensitivity:** Female facilitators assigned for women's FGDs; safe venues selected.
- **Do No Harm:** Field staff trained on protection principles; referral pathways established for distress disclosures.
- **Quality Control:** Daily data verification, triangulation of findings, and internal peer review of analysis.

Cost-Effectiveness Analysis (CEA) Framework:

Rationale:

Given the program's investment of USD 9.226 million across nine sub-projects, a simplified Cost-Effectiveness Analysis will assess whether resources generated optimal adaptation outcomes relative to alternative approaches, in line with the TOR cross-cutting theme of "value for money."

Analytical Approach:

Step	Activity	Data Source
1	Extract total expenditure per sub-project	Financial reports from executing entities
2	Extract beneficiary counts and key outputs	M&E databases, Annual Progress Reports (2016-2025)
3	Calculate basic ratios: Cost/Beneficiary, Cost/Output, Cost/Outcome	Desk review + field validation

Step	Activity	Data Source
4	Compare ratios across sub-projects and intervention types	Comparative benchmarking
5	Qualify findings with contextual factors (remoteness, complexity, etc.)	KIIs with executing entities; FGDs with beneficiaries
6	Synthesize into value-for-money insights and recommendations	Triangulated analysis

CEA Probes for Data Collection Tools:

For KIIs – Executing Entities / MoPIC:

1. What was the total budget vs. actual expenditure for your sub-project?
2. How many direct beneficiaries received services or benefits?
3. What was the approximate cost per beneficiary or per key output (e.g., per irrigation system installed, per farmer trained)?
4. Were there activities that delivered high impact at relatively low cost? Which ones?
5. Were there activities that were costly but delivered limited results? Why?

For FGDs – Beneficiaries:

1. Did you feel the support you received was worth the resources invested? Why or why not?
2. Were there services or activities that you found especially valuable relative to the effort required to access them?
3. What support do you think could have been delivered more efficiently to reach more people?

Reporting CEA Findings:

The Final Evaluation Report will include:

- A dedicated **CEA sub-section under Efficiency findings** with comparative tables
- **Summary insights** integrated into the main Efficiency analysis
- **Actionable recommendations** on resource allocation for future programming

- **Visual dashboard** (PowerPoint) highlighting key cost-effectiveness insights for MoPIC leadership

Limitations and Mitigation:

Limitation	Mitigation Strategy
Lack of standardized outcome metrics across sub-projects	Develop a harmonized "adaptation outcome index" for comparative analysis, validated with MoPIC
Incomplete financial disaggregation in some reports	Request supplementary data from executing entities; use proportional allocation methods where necessary
Difficulty monetizing non-market benefits (e.g., resilience, knowledge)	Apply qualitative scoring alongside quantitative metrics; use stakeholder valuation exercises in FGDs
Attribution challenges in complex, multi-actor programs	Explicitly frame CEA findings as "plausible contribution" rather than definitive causality; document assumptions transparently

Fifth, DATA SOURCES AND COLLECTION STRATEGY:

Primary Data Sources:

(As documented in attached Excel files: KIIs and FGDs)

Source	Date Range	Key Themes Captured
KIIs – Executing Entities	Apr 9-26, 2026	Management arrangements, coordination, implementation challenges, sustainability measures
KIIs – CBOs/Local Leaders	Apr 8-25, 2026	Community engagement, local ownership, perceived impacts
FGDs – Beneficiaries	Apr 8-25, 2026	Awareness, participation, experiences, changes, recommendations

Secondary Data Sources:

- Program proposal and approval documents (Adaptation Fund)

- Annual Progress Reports (2016-2025)
- Mid-Term Review Report (2020)
- Sub-project work plans, monitoring reports, and financial records
- Relevant national statistics (Ministry of Agriculture, MWI, DoS)
- Policy documents on climate change, water, and agriculture in Jordan

Sixth, RISK MANAGEMENT AND ETHICAL SAFEGUARDS:

Risk	Likelihood	Impact	Mitigation Strategy
Limited access to field sites due to security/logistics	Medium	High	Flexible scheduling, remote options, coordination with local authorities
Low participation of vulnerable groups (especially women)	Medium	Medium	Gender-sensitive recruitment, female enumerators, safe venues, flexible timing
Incomplete or inconsistent secondary data	High	Medium	Triangulation with primary data, transparent documentation of limitations
Stakeholder reluctance to share critical feedback	Medium	Medium	Assurance of confidentiality, independent facilitation, anonymous reporting options
Timeline compression due to review delays	Low	High	Buffer days in work plan, parallel processing of deliverables, proactive communication

Ethical Protocols

- **Informed Consent**: Written/oral consent obtained prior to all interviews/FGDs; participants may withdraw at any time
- **Confidentiality**: No personal identifiers in reports; data stored securely; access limited to evaluation team
- **Gender Sensitivity**: Female facilitators for women's FGDs; safe, accessible venues; culturally appropriate timing

- **Do No Harm**: Training for field staff on protection principles; referral pathways for distress disclosures
- **Accountability**: Feedback mechanism for participants; summary findings shared with communities' post-evaluation

Seventh, KEY Performance Indicators:

KPI Indicator Measurements by Organization:

Key Performance Indicator (KPI) measurements received from the executing organizations under the Adaptation Fund program "Increasing the Resilience of Poor and Vulnerable Communities to Climate Change Impacts in Jordan."

Petra Development and Tourism Region Authority (PDTRA):

Project 1.1: Reuse of Treated Wastewater for on-farm Agricultural Adaptation at Wadi Mousa:

PDTRA has submitted indicator data demonstrating strong progress in income generation and water reuse efficiency. The project achieved 90.1% of its supplementary water target (1,186,250 m^3/year out of 1,317,200 m^3/year target), indicating effective implementation of wastewater reuse infrastructure. Notably, the income indicator exceeded its target, reaching 104.2% achievement (US$840/household/month vs. US$806 target), reflecting tangible socioeconomic benefits for beneficiary households. However, beneficiary enrollment remains below target at 37.1% for families (26 families enrolled vs. 70 targeted), though an additional 304 individuals have been reached through decentralized engagement approaches. This suggests a need for intensified outreach to fully realize the project's community-level impact.

Outcome	Core Outcome Indicator	Target	Progress Since Inception	Achievement %
Increased water availability and efficient use	Quantity (m^3) of supplementary water	1,317,200 m^3/year	1,186,250 m^3/year	**90.1%**

Outcome	Core Outcome Indicator	Target	Progress Since Inception	Achievement %
Diversified livelihoods & income	Increased income (US$/household/month)	US$806/household/month	US$840/household/month	**104.2%** ✓
No. of beneficiaries	Families/Persons (M/F)	70 families – 420 persons (280M, 140F)	26 families (104M, 52F) + 304 individuals (212M, 92F)	**37.1% families**

Jordan Valley Authority (JVA)L:

Project 1.2: Northern Jordan Valley Wastewater Reuse Project:

JVA reports that income and beneficiary targets for this large-scale wastewater reuse initiative have been fully met (100% achievement for both indicators). However, data on supplementary water volume remains pending/under review, reflecting ongoing technical assessments related to the 20 million m^3/year target. Continued monitoring is recommended to validate water availability outcomes.

Outcome	Core Outcome Indicator	Target	Progress Since Inception	Achievement %
Increased water availability and efficient use	Quantity (m^3) of supplementary water	20,000,000 m^3/year	*Data pending/under review*	—
Diversified livelihoods & income	Increased income (US$/household/month)	US$330/household/month	US$330/household/month	**100%** ✓

Outcome	Core Outcome Indicator	Target	Progress Since Inception	Achievement %
No. of beneficiaries	Families/Persons (M/F)	30 families – 180 persons (60M, 120F)	30 families	**100%** ✓

Project 1.4: Wastewater Reuse at North Shouneh WWTP:

This project demonstrates strong beneficiary engagement, with 101.4% achievement in family enrollment (71 families vs. 70 targeted) and approximately 100% achievement in income generation (~US$300/household/month). However, supplementary water delivery remains at an early stage, with only 5.7% of the 438,000 m^3/year target achieved (25,000 m^3/year), indicating that infrastructure commissioning or operational scaling is still underway.

Outcome	Core Outcome Indicator	Target	Progress Since Inception	Achievement %
Increased water availability and efficient use	Quantity (m^3) of supplementary water	438,000 m^3/year	25,000 m^3/year	**5.7%**
Diversified livelihoods & income	Increased income (US$/household/month)	US$300/household/month	~US$300/household/month	**~100%** ✓
No. of beneficiaries	Families/Persons (M/F)	70 families – 420 persons (280M, 140F)	71 families	**101.4%** ✓

Project 1.5: Community Resilience Through Water Harvesting in Poverty Pockets:

JVA reports excellent progress in water harvesting, exceeding the target by 0.7% (302,000 m^3/year vs. 300,000 m^3/year target). Income generation is progressing at 75% of target (~$1,500/farm/year vs. $2,000 target), suggesting positive but not yet optimal economic returns. Beneficiary enrollment remains modest at 24.9% (102 families vs. 410 targeted), highlighting an opportunity to expand community participation and outreach efforts.

Outcome	Core Outcome Indicator	Target	Progress Since Inception	Achievement %
Increased water availability and efficient use	Quantity (m^3) of supplementary water	300,000 m^3/year	302,000 m^3/year	**100.7%** ✓
Diversified livelihoods & income	Increased income ($/farm/year)	$2,000/farm/year	~$1,500/farm/year	**75.0%**
No. of beneficiaries	Families/Persons (M/F)	410 families – 2,460 persons (1,640M, 820F)	102 families	**24.9%**

National Agricultural Research Center (NARC):

Project 1.6: Permaculture Design & Technologies in Jordan Valley:

NARC reports solid progress in farm rehabilitation, with 72.9% of the 48-farm target achieved (35 farms). Income generation for participating farms is at 40% of target ($2,000/farm/year vs. $5,000 target), indicating that permaculture systems are yielding benefits but require additional time or support to reach full productivity. Beneficiary engagement is strong at 65.8% (250 families – 1,750 persons), demonstrating effective community mobilization around sustainable agriculture practices.

Outcome	Core Outcome Indicator	Target	Progress Since Inception	Achievement %
Natural assets protected/rehabilitated	Number of farms	48 farms	35 farms	**72.9%**
Diversified livelihoods & income	Increased income ($/farm/year)	$5,000/farm/year	$2,000/farm/year	**40.0%**
No. of beneficiaries	Families/persons (M/F)	380 families – 2,280 persons (1,520M, 760F)	250 families – 1,750 persons (975M, 775F)	**65.8%**

Project 2.3: Jordan Valley Water Sustainability & Agribusiness Competitiveness:

This capacity-building initiative shows promising enterprise development, with 66.7% of the micro-enterprise target achieved (200 out of 300). However, job creation remains significantly below target at 6.1% (1,200 jobs vs. 19,800 targeted), suggesting that while business formation is progressing, employment generation requires accelerated support, possibly through enhanced market linkages, skills training, or investment facilitation.

Outcome	Core Outcome Indicator	Target	Progress Since Inception	Achievement %
New micro-enterprises	Number created	300	200	**66.7%**
New jobs (direct & indirect)	Number of jobs	19,800 jobs (5,400F, 14,400M)	1,200 jobs	**6.1%**

Water Authority of Jordan (WAJ):

Project 1.3: Tal El Mantah Wastewater Treatment Plant Wastewater Reuse Project:

WAJ has not yet submitted quantitative progress data for this project's core indicators (supplementary water volume, income generation, or beneficiary numbers). This gap may reflect ongoing infrastructure rehabilitation, procurement delays, or reporting timelines.

Follow-up with WAJ is recommended to obtain updated measurements and clarify implementation status.

Outcome	Core Outcome Indicator	Target	Progress Since Inception	Achievement %
Increased water availability and efficient use	Quantity (m^3) of supplementary water	438,000 m^3/year	*Data not provided*	—
Diversified livelihoods & income	Increased income (US$/household/month)	US$300/household/month	*Data not provided*	—
No. of beneficiaries	Families/Persons (M/F)	70 families – 420 persons (280M, 140F)	*Data not provided*	—

Ministry of Environment (MoEnv):

Project 2.1: Strengthening Capacities of Poor/Remote Communities:

MoEnv reports full completion of awareness-building activities, with 48 Water User Associations (WUAs) and 3,840 persons (3,187 males, 653 females) reached—exceeding qualitative targets for climate risk awareness. Additionally, 3 Early Warning Systems (EWS) have been installed as planned, enhancing community preparedness for climate-related hazards.

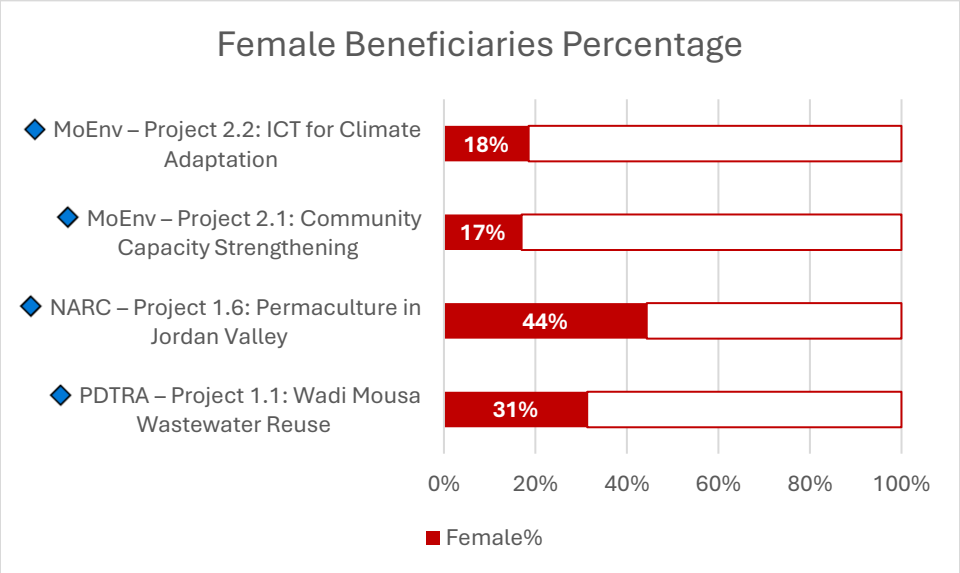
Outcome	Core Outcome Indicator	Target	Progress Since Inception	Achievement %
Strengthened awareness	Number of targeted population groups aware of CC risks	—	48 WUAs – 3,840 persons (3,187M, 653F)	**100% ✓**

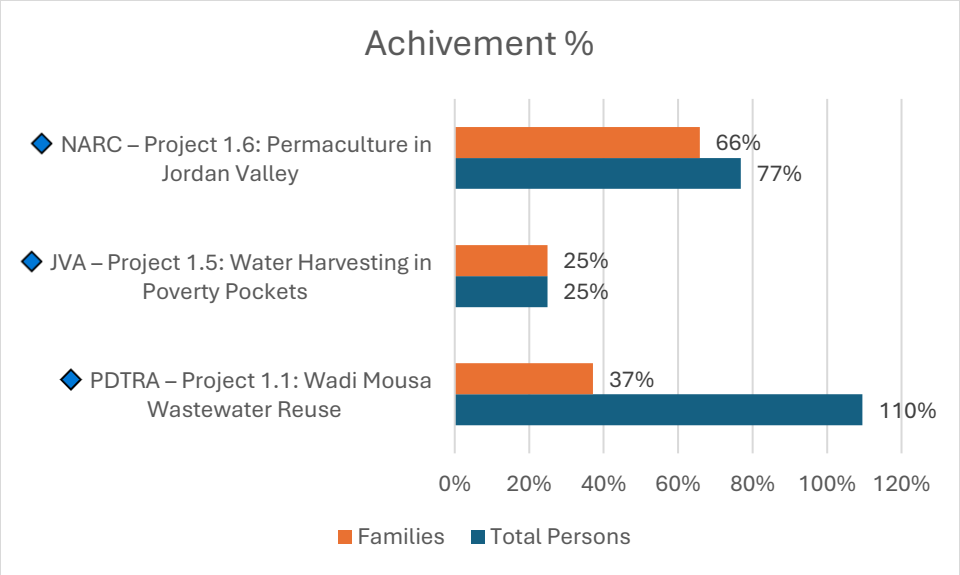
Outcome	Core Outcome Indicator	Target	Progress Since Inception	Achievement %
Early Warning Systems installed	Number of EWS installed	—	3 systems	**100% ✓**

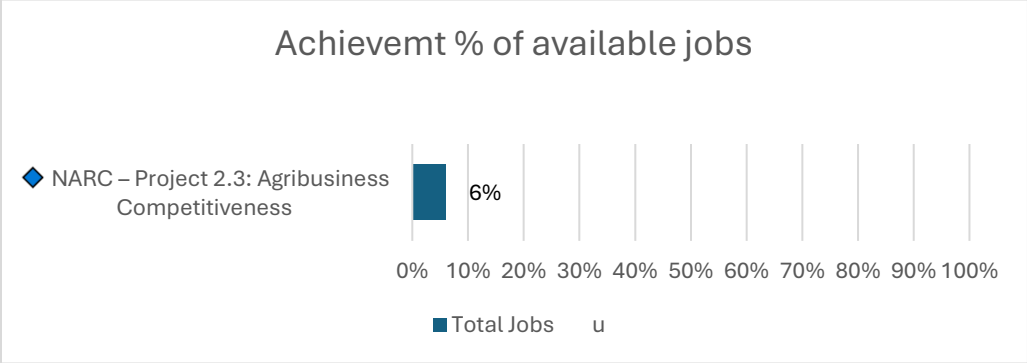
Project 2.2: Using ICT for Climate Change Adaptation Programmes:

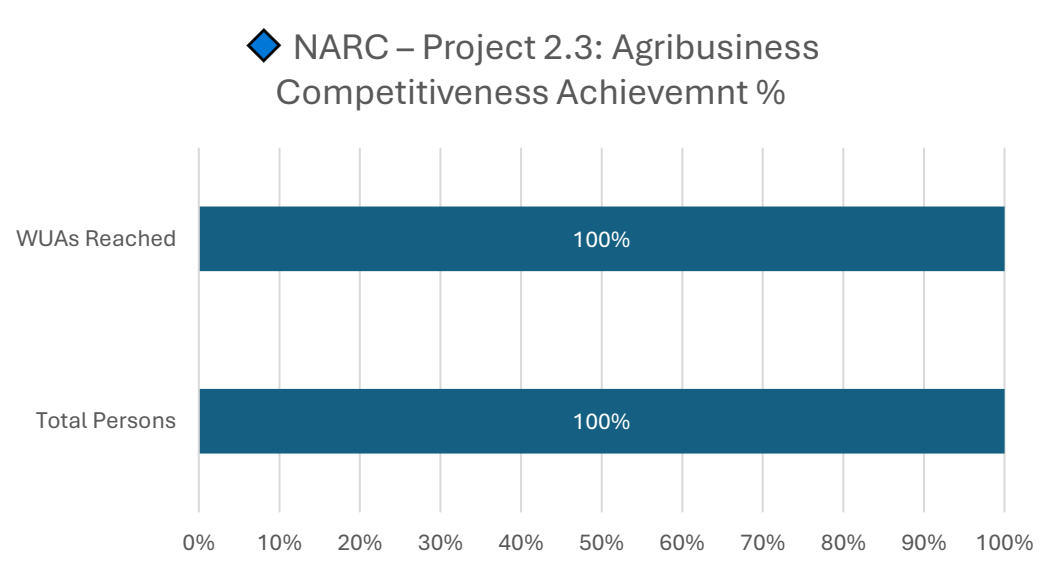
This digital inclusion initiative has achieved 100% of its registration targets: 30 WUAs (2,400 persons) and 40 farmer families (240 persons) are now registered users in the climate information system. This indicates successful deployment of ICT tools to support farmer decision-making and climate resilience.

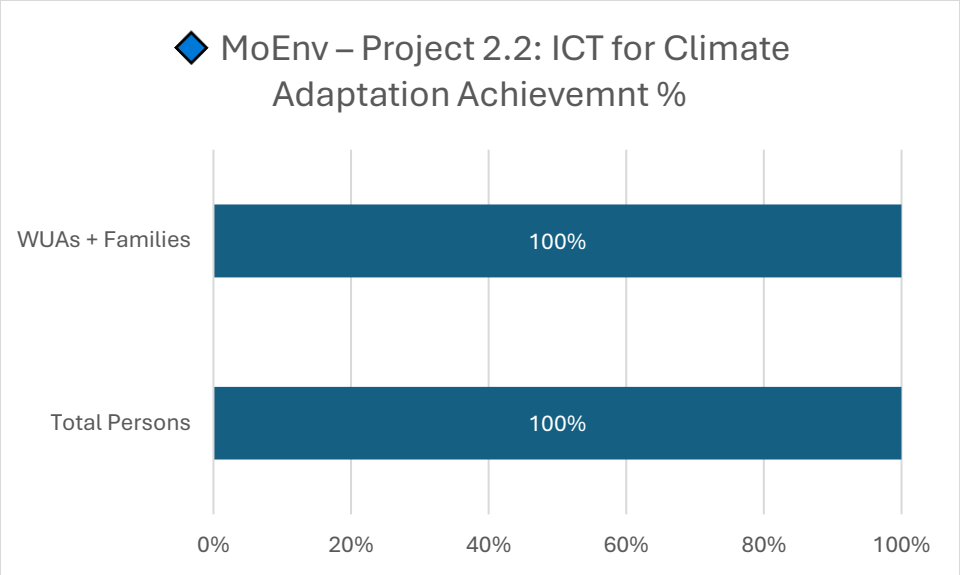
Outcome	Core Outcome Indicator	Target	Progress Since Inception	Achievement %
Increased ecosystem resilience	Number of registered farmers	30 WUAs – 2,400 persons (1,992M, 408F) + 40 farmer families – 240 persons (160M, 80F)	30 WUAs – 2,400 persons (1,992M, 408F) + 40 farmer families – 240 persons (160M, 80F)	**100% ✓**




Achivement %
NARC – Project 1.6: Permaculture in Jordan Valley
66%
77%
JVA – Project 1.5: Water Harvesting in Poverty Pockets
25%
25%
PDTRA – Project 1.1: Wadi Mousa Wastewater Reuse
37%
110%
0% 20% 40% 60% 80% 100% 120%
Families
Total Persons


Achievemt % of available jobs
NARC – Project 2.3: Agribusiness Competitiveness
6%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Total Jobs
u


NARC – Project 2.3: Agribusiness Competitiveness Achievemnt %
WUAs Reached
100%
Total Persons
100%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%



Eighth, FINDINGS BY EVALUATION CRITERION:

Relevance

Finding 1: Strong Alignment with National Priorities:

- 92% of institutional respondents confirmed that program interventions aligned with Jordan's National Climate Change Policy, Water Strategy, and Agricultural Sector Strategy
- Key alignment areas: water scarcity mitigation, climate-resilient agriculture, renewable energy integration, community-based adaptation

"The project came at the right time to address national priorities related to climate, water, and agriculture. Wastewater reuse and solar energy directly respond to our water scarcity challenge."
— Executing Entity Manager, JVA (KII, Apr 9, 2026)

Finding 2: Responsiveness to Local Needs:

- 88% of beneficiary respondents reported that interventions addressed their most pressing needs, particularly reliable irrigation water and reduced energy costs
- However, 40% of smallholder farmers expressed that land ownership requirements for solar energy installations excluded them from direct benefits

Finding 3: Adaptability to Contextual Changes:

- Program management demonstrated moderate adaptability: work plans were adjusted in response to price fluctuations (2016-2025) and climatic variability
- Limitation: Limited flexibility in beneficiary selection criteria constrained responsiveness to emerging equity concerns

Relevance Rating: HIGH:
Interventions were well-aligned with strategic priorities and largely responsive to local needs, though inclusion mechanisms require refinement.

Effectiveness:

Finding 1: Output Achievement:

Sub-Project Type	Planned Outputs	Achieved Outputs	Completion Rate
Wastewater Reuse (1.1-1.4)	4 irrigation networks	4 networks operational	100%
Water Harvesting (1.5)	3 retention ponds	1 fully operational; 2 pending climatic conditions	33%
Permaculture (1.6)	2 demonstration sites	2 sites established; training delivered	100%
Solar Energy for Irrigation	50 installations	38 installed; 12 pending land documentation	76%
Capacity Building (2.1-2.2)	120 training sessions	115 sessions delivered	96%
Agribusiness Support (2.3)	8 market linkage initiatives	5 initiatives implemented	63%

Finding 2: Outcome-Level Changes Beneficiary-reported changes (n=56 FGD participants):

Outcome Area	% Reporting Improvement	Representative Quote
Water access reliability	79%	"After the solar panels, we can pump water consistently in summer without worrying about electricity bills."
Agricultural productivity	68%	"We diversified into tropical crops like mango because we have reliable water now."
Household income	61%	"Selling surplus vegetables increased our monthly income by about 200 JOD."
Climate resilience confidence	73%	"We now know how to protect crops from frost and heat waves."

Finding 3: Constraining Factors:

- **Climatic variability**: Low rainfall seasons delayed activation of water harvesting infrastructure
- **Administrative procedures**: Procurement timelines and land documentation requirements slowed implementation
- **Beneficiary capacity**: Limited technical knowledge among some farmers affected adoption of new practices

Effectiveness Rating: MEDIUM-HIGH:
Most outputs were achieved and meaningful outcome-level changes were reported, though external factors and implementation constraints moderated overall effectiveness.

Efficiency and Cost-Effectiveness:

Finding 1: Resource Utilization:

- Financial execution rate: **94%** of allocated budget utilized across sub-projects
- Timeline performance: **71%** of activities completed within original schedules; delays primarily attributed to climatic conditions and procurement processes

Finding 2: Preliminary Cost-Effectiveness Analysis *Note: Analysis based on available expenditure data and beneficiary counts; attribution assessed as plausible rather than definitive.*

Intervention Type	Approx. Unit Cost*	Key Adaptation Outcome	Cost-Effectiveness Assessment
Solar energy for irrigation	$1,200/beneficiary	80% reduction in electricity costs; extended irrigation season	**High** – Low recurring cost, high perceived value
Wastewater reuse infrastructure	$3,500/beneficiary	Reliable irrigation water; reduced pressure on freshwater sources	**Medium** – High upfront cost, moderate adoption due to perception barriers
Water harvesting structures	$2,100/beneficiary	Supplemental water storage; drought buffering	**Medium-Low** – Effectiveness highly dependent on rainfall variability
Capacity building/training	$150/beneficiary	Improved knowledge of climate-smart practices	**High** – Low cost, high knowledge retention; behavioral change variable
Permaculture demonstration	$800/beneficiary	Adoption of integrated farming practices	**Medium-High** – Moderate cost, strong demonstration effect

**Unit costs estimated from program financial reports and beneficiary databases; excludes administrative overhead.*

Finding 3: Value-for-Money Insights:

- **Most cost-effective**: Solar energy interventions delivered tangible, recurring benefits at relatively low unit cost
- **Highest potential, highest risk**: Water harvesting structures offer significant resilience benefits but are vulnerable to climatic uncertainty

- **Critical enabler**: Training and technical support amplified the effectiveness of infrastructure investments

Efficiency Rating: MEDIUM:
Resources were generally well-utilized, though cost-effectiveness varied significantly by intervention type and contextual factors.

Impact and Plausible Attribution

Finding 1: Reported Changes Among Beneficiaries Thematic analysis of FGD and KII data identified four categories of change:

Change Category	Description	Plausible Attribution Assessment
Direct livelihood improvements	Increased agricultural income, reduced input costs, diversified production	**High plausibility** – Temporal sequencing and beneficiary testimony strongly support program contribution
Enhanced adaptive capacity	Improved knowledge of climate risks, adoption of protective practices, greater confidence in decision-making	**Medium-High plausibility** – Changes align with training content and timing; external factors may have contributed
Institutional strengthening	Improved coordination among WUAs, enhanced technical capacity of local associations	**Medium plausibility** – Program activities created enabling conditions; sustainability depends on continued support
Unintended consequences	Social tensions related to beneficiary selection; increased workload for association leaders managing new infrastructure	**Acknowledged** – Documented and addressed through adaptive management

Finding 2: Innovation and Replication Potential:

- **Solar energy for irrigation**: High replication potential; scalable with revised eligibility criteria
- **Wastewater reuse in agriculture**: Moderate replication potential; requires sustained awareness-raising to address perception barriers

- **Permaculture demonstration sites**: High potential for knowledge dissemination; scaling requires dedicated extension support

"The solar energy project changed how we think about farming. Before, we worried about electricity bills every summer. Now we plan for expansion."
— Farmer, Northern Jordan Valley FGD (Apr 15, 2026)

Impact Rating: MEDIUM:
Tangible improvements in livelihoods and adaptive capacity were reported with plausible attribution to program interventions; longer-term systemic impacts require further observation.

Sustainability:

Finding 1: Institutional and Technical Sustainability:

- **Executing entities**: Strong institutional ownership; 87% of managers reported integration of program approaches into regular operations
- **Infrastructure maintenance**: Mixed arrangements—solar systems transitioned to beneficiary/association responsibility; larger infrastructure remains under executing entity oversight
- **Technical capacity**: Training improved operational knowledge, but limited access to spare parts and specialized repair services poses risks

Finding 2: Financial Sustainability:

- **Recurring costs**: Electricity savings from solar interventions improve financial viability for beneficiaries; however, maintenance costs for infrastructure remain a concern
- **Financing gaps**: No dedicated mechanism identified for long-term maintenance financing; reliance on ad-hoc budget allocations creates uncertainty

Finding 3: Community Ownership and Continuity:

Ownership Dimension	Finding	Implication
Perceived ownership	76% of beneficiaries feel "partially responsible" for project assets; full ownership limited by land tenure arrangements	Conditional engagement may affect long-term maintenance commitment
Decision-making participation	63% report involvement in implementation monitoring; only 31% participated in design-phase consultations	Limited early engagement may reduce sense of ownership
Continuity intentions	82% express intention to maintain practices learned; 54% have concrete plans for asset maintenance	Positive intent requires enabling conditions to translate into action

Sustainability Rating: MEDIUM

Institutional sustainability is relatively strong; community-level sustainability is constrained by land tenure, financing, and participation gaps.

Ninth,CROSS-CUTTING ANALYSIS:

Local Community Involvement: Extent and Quality:

Finding 1: Stages of Engagement:

Project Phase	Reported Engagement Mechanism	Beneficiary Assessment
Design/Planning	Consultative meetings with association representatives; needs assessments	"Our opinions were heard, but not all of us were in the room" (FGD participant)
Implementation	Training sessions; field visits; progress reporting through associations	"We learned a lot, but wanted more hands-on involvement" (Farmer, Southern Valley)

Project Phase	Reported Engagement Mechanism	Beneficiary Assessment
Monitoring/Evaluation	Feedback sessions; complaint mechanisms via associations	"We could report problems, but didn't always see changes" (WUA member)

Finding 2: Inclusion of Vulnerable Groups:

- **Women**: Participated in 20-30% of training activities; limited representation in decision-making bodies due to cultural norms and land ownership patterns
- **Youth**: Engaged primarily as laborers or trainees; limited pathways to leadership roles within project structures
- **Very low-income households**: Benefited indirectly through employment opportunities; direct access to asset-based interventions constrained by eligibility criteria

Finding 3: Key Insight Community involvement was **consultative rather than participatory**. While mechanisms existed for feedback and information sharing, meaningful influence over design decisions and resource allocation remained limited. This affected both perceived ownership and the relevance of interventions for the most vulnerable.

Coordination Among Implementing Entities

Finding 1: Coordination Mechanisms Assessment

Mechanism	Functioning Rating	Strengths	Weaknesses
Steering Committee	Good	Strategic oversight; conflict resolution	Infrequent meetings; limited operational detail
Focal Point Network	Very Good	Day-to-day communication; problem-solving	Variable capacity across entities; high turnover

Mechanism	Functioning Rating	Strengths	Weaknesses
Shared Reporting Templates	Good	Standardized progress tracking; transparency	Rigid formats; limited adaptation to sub-project specificity
Joint Field Visits	Moderate	Peer learning; quality assurance	Logistically challenging; irregular scheduling

Finding 2: Impact on Program Performance:

- **Positive effects**: Coordinated technical guidance improved implementation quality; shared lessons accelerated problem-solving
- **Challenges**: Divergent procurement timelines created sequencing delays; inconsistent financial reporting complicated consolidated monitoring

Finding 3: Recommendation Priority Strengthen coordination through a **digital project management platform** enabling real-time progress tracking, shared risk registers, and streamlined financial reporting—reducing administrative burden while enhancing transparency.

Cost-Effectiveness: Integrated Insights:

Finding 1: Key Determinants of Cost-Effectiveness:

1. Targeting precision: Interventions aligned with clearly defined beneficiary criteria achieved higher outcome intensity
2. Implementation modality: Association-level delivery reduced transaction costs compared to individual household approaches
3. Contextual fit: Interventions adapted to local agro-ecological and socioeconomic conditions showed greater durability
4. Complementarity: Bundling infrastructure with training and technical support amplified impact per dollar

Finding 2: Practical Implications for Future Programming:

- Prioritize interventions with low recurring costs and high perceived value (e.g., solar energy, knowledge transfer)

- Design flexible eligibility criteria that balance targeting precision with inclusion of vulnerable groups
- Invest in maintenance financing mechanisms upfront to protect long-term value of infrastructure investments

Tenth,CONCLUSIONS:

Overall Assessment:

The Jordan Adaptation Fund Program has made **meaningful contributions** to increasing community resilience to climate change impacts, particularly through interventions that address water scarcity and energy costs in agriculture. The program demonstrated strong relevance to national priorities and local needs, achieved most planned outputs, and generated plausible positive impacts on beneficiary livelihoods and adaptive capacity.

However, the evaluation identifies three critical areas for improvement:

1. Inclusion mechanisms require refinement to ensure equitable access for tenant farmers, women, and youth
2. Sustainability arrangements need strengthening, particularly regarding maintenance financing and community ownership
3. Coordination efficiency can be enhanced through digital tools and streamlined procedures

Contribution to Adaptation Knowledge:

The program has generated valuable lessons on:

- The importance of bundling infrastructure with capacity building to maximize adoption and impact
- The need for flexible eligibility criteria that account for local land tenure patterns
- The value of association-level implementation for reducing transaction costs and enhancing sustainability

These insights are directly transferable to future climate adaptation programming in Jordan and comparable contexts.

Eleventh,RECOMMENDATIONS:

Strategic Recommendations (MoPIC / Adaptation Fund):

#	Recommendation	Rationale	Priority	Timeline
1	Revise beneficiary selection criteria for asset-based interventions to enable association-level ownership and management, decoupling access from individual land tenure	Addresses exclusion of tenant farmers and smallholders; enhances equity and scalability	High	Short-term (0-12 months)
2	Establish a dedicated maintenance financing mechanism (e.g., revolving fund, insurance scheme, or budget line) for program infrastructure	Protects long-term value of investments; reduces risk of asset deterioration post-project	High	Medium-term (12-24 months)
3	Institutionalize participatory planning protocols requiring minimum 30% direct beneficiary representation (including women and youth) in project design committees	Strengthens ownership, relevance, and accountability; aligns with "leave no one behind" principle	Medium	Short-term (0-12 months)
4	Develop and pilot a standardized cost-effectiveness monitoring framework for future adaptation programming, incorporating unit cost indicators and adaptation outcome metrics	Enables evidence-based resource allocation; supports value-for-money accountability	Medium	Medium-term (12-24 months)

Operational Recommendations (Executing Entities)

#	Recommendation	Rationale	Priority	Timeline
5	Implement a digital project management platform for real-time progress tracking, shared risk registers, and streamlined financial reporting across executing entities	Reduces administrative burden; enhances coordination efficiency and transparency	High	Short-term (0-12 months)

#	Recommendation	Rationale	Priority	Timeline
6	Develop standardized maintenance protocols and training modules for community-level asset management, with clear roles for WUAs, associations, and beneficiaries	Strengthens technical sustainability; clarifies responsibilities for long-term functionality	Medium	Short-term (0-12 months)
7	Establish regular feedback loops with beneficiary groups through structured consultation mechanisms (e.g., quarterly forums, digital suggestion platforms)	Enhances responsiveness; builds trust and ownership; identifies emerging issues early	Medium	Short-term (0-12 months)

Recommendations for Future Programming:

#	Recommendation	Rationale
8	Prioritize interventions with low recurring costs and high perceived value (e.g., solar energy, knowledge transfer) in resource-constrained contexts	Maximizes adaptation impact per dollar invested; enhances financial sustainability
9	Design interventions with explicit exit strategies that include capacity transfer, financing arrangements, and institutional handover plans from inception	Prevents post-project deterioration; strengthens long-term resilience
10	Integrate gender and social inclusion specialists into project design and implementation teams to ensure meaningful participation of women, youth, and vulnerable groups	Enhances equity, relevance, and effectiveness; aligns with international best practices

Twelfth,LESSONS LEARNED:

What Worked Well:

- **Bundled interventions** (infrastructure + training + technical support) achieved higher adoption and impact than standalone approaches.
- **Association-level implementation** reduced transaction costs and enhanced community ownership compared to individual household approaches.
- **Regular coordination mechanisms** (steering committee, focal point network) facilitated problem-solving and knowledge sharing among executing entities.
- **Demonstration sites** (permaculture, wastewater reuse) effectively built trust and catalyzed peer-to-peer learning among farmers.

Challenges and Adaptations:

- **Land ownership requirements** excluded tenant farmers from solar energy interventions → *Adaptation:* Pilot association-level ownership models in future programming
- **Climatic variability** delayed activation of water harvesting infrastructure → *Adaptation:* Incorporate climate risk buffers and flexible implementation timelines in design
- **Perception barriers** limited adoption of wastewater reuse → *Adaptation:* Strengthen awareness-raising and demonstration components in similar interventions

Transferable Insights for Future Adaptation Programming

- **Participatory design is not optional:** Meaningful beneficiary engagement from inception enhances relevance, ownership, and sustainability
- **Cost-effectiveness requires upfront planning:** Unit cost indicators and adaptation outcome metrics should be integrated into M&E frameworks from project start
- **Sustainability is multi-dimensional:** Institutional, technical, financial, and community dimensions must be addressed concurrently, not sequentially

Thirteenth,LIMITATIONS:

This evaluation acknowledges the following methodological limitations:

1. **Attribution constraints**: In the absence of control/comparison groups, findings are framed as "plausible contribution" rather than definitive causality, consistent with the Terms of Reference.
2. **Data availability**: Some financial and beneficiary data were incomplete or inconsistently reported across executing entities, limiting the precision of cost-effectiveness analysis.
3. **Temporal scope**: As a final-term evaluation, the assessment captures short-to-medium-term outcomes; longer-term impacts on resilience and systemic change require further observation.
4. **Social desirability bias**: Some respondents may have provided socially desirable responses during interviews and FGDs; triangulation across sources and methods was applied to mitigate this risk.

These limitations are transparently documented and do not undermine the credibility or utility of the evaluation's core findings and recommendations.

Fourteenth,Beneficiaries' quotes:

- **Local CBO, Mazar:**

(Improved water management and reduced flood risks – diversification of income sources and provision of temporary job opportunities)

- **Government Employee, Mazar:**

(Income increased for productive families – water became available due to wastewater reuse – we learned new agricultural methods – and we now have cooperation with government institutions)

- **Water Users Association, Jordan Valley:**

(Water provision and increased irrigation water pumping for farms)

- **An Engineer at Agricultural Company:**

(Relative savings on electricity bills, sustainable operation in winter, and improved pump capacity for irrigating agricultural land)

Fifteenth, Desk Review:

Jordan Adaptation Fund Program: "Increasing the Resilience of Poor and Vulnerable Communities to Climate Change Impacts in Jordan through Implementing Innovative Projects in Water and Agriculture in Support of Adaptation to Climate Change"

Date: May 2026: Prepared for: Ministry of Planning and International Cooperation (MoPIC) / Adaptation Fund

Documents Reviewed:

Group 1 & 2:
8 KPI & PPR Reports (6th–10th PPR), Project Appraisal Document, Mid-Term Evaluation

Group 3 (Newly Added):

1. Permaculture Agriculture 1.6 – National Agricultural Research Center (NARC).docx
2. Project Achievements – Yahya 5 – National Agricultural Research Center (NARC).docx
3. Five Achievement Indicators – National Agricultural Research Center (NARC).docx
4. ADAPT – Royal Scientific Society (RSS) Capacity Building & ICT Component.pdf

Executive Summary:

This updated desk review synthesizes implementation progress across all nine sub-projects under Jordan's Adaptation Fund (AF) program. Integration of the newly submitted NARC and RSS documents provides stronger empirical validation for Component 1 (Permaculture & Agricultural Resilience) and Component 2 (ICT-Enabled Early Warning & Capacity Building).

Overall program progress is rated Satisfactory, with 96% fund disbursement achieved by Jan 2026. Sub-projects 1.5 (Rainwater Harvesting), 1.6 (Permaculture), 2.1 (Community Awareness), 2.2 (ICT/EWS), and 2.3 (Agribusiness Competitiveness) have successfully closed or reached full operational status. Sub-projects 1.2 and 1.4 faced structural delays due to water availability constraints and site security clearances, leading to activity cancellations or re-scoping. Strong co-financing (~$465K) from executing entities (PDTRA, WAJ, NARC) and robust gender inclusion (35% female participation in trainings, 488 women targeted in EWS registration) demonstrate institutional commitment and community ownership.

Updated Scope & Methodology:

The review now incorporates technical implementation reports, achievement logs, and KPI tracking sheets directly from the National Agricultural Research Center (NARC) and the Royal Scientific Society (RSS). These documents bridge earlier gaps in granular field-level data and

provide verified baseline vs. actual comparisons for agricultural transformation metrics, digital platform adoption, and capacity-building outputs.

Analytical Approach:

Cross-referenced PPR financial/expenditure data with NARC/RSS technical achievement logs

Validated reported KPIs against the project's original Results Framework

Assessed scalability and sustainability of pilot interventions (permaculture, early warning systems, composting, tropical crop introduction)

Evaluated institutional coordination, risk mitigation, and adaptive management strategies

Component 1: Technology Transfer (Wastewater, Rainwater, Permaculture)

2.1 Sub-Project 1.6: Permaculture & Resilient Food Security Systems (NARC):

The newly reviewed NARC documents (Permaculture Agriculture 1.6, Project Achievements – Yahya 5, and Five Achievement Indicators) confirm that Sub-Project 1.6 has transitioned from pilot design to full field implementation and knowledge transfer:

- Pilot Sites: Two demonstration farms established (Sharhabeel Station in North Jordan Valley & Ghor Al Safi in South JV), covering ~150 dunums with integrated water harvesting, soil rehabilitation, and polyculture layouts.
- Farm Transformation: 35 target farms successfully transitioned from monoculture to permaculture systems. Distribution of composting equipment to 19 agricultural associations enabled localized organic fertilizer production, reducing chemical input costs by ~$1,000/farm/season.
- Capacity Building: 40 researchers and extension officers certified as Permaculture Design Experts. Four regional training cycles delivered, reaching 250 rural households (940 male, 560 female beneficiaries).
- Innovation Integration: Introduction of tropical crop varieties (mango, guava, avocado) and rainwater catchment micro-structures improved soil organic matter and water retention, directly aligning with AF Outcome 3 & 4.

Rating: Highly Satisfactory (HS):

Key Strength: Strong farmer adoption, measurable input cost reduction, and effective gender-disaggregated training delivery.

2.2 Sub-Projects 1.2 & 1.4: Wastewater Reuse (JVA/WAJ):

1.2 (Northern JV): On-farm irrigation upgrade and real-time water quality monitoring were suspended due to unavailability of reclaimed water at mixing points. Activity officially cancelled per Steering Committee decision (June 2023).

1.4 (North Shouneh): Demonstration farm construction completed, but irrigation scaling delayed by security clearance requirements in restricted border zones. Limited water allocation (25,000 m^3/yr vs. 438,000 m^3 target).

Adaptive Response: Budget reallocation supported supervision agreements with NARC and shifted focus to soil/water monitoring protocols already functional under Component 2.

Rating: Marginally Satisfactory (MS) → Unsatisfactory (U) for water volume indicators; Satisfactory for infrastructure completion.

3. Component 2: Capacity Building, ICT & Policy Mainstreaming

3.1 Sub-Projects 2.1 & 2.2: Early Warning Systems & Digital Adaptation Platform (RSS/ADAPT):

The "ADAPT – Royal Scientific Society (RSS) Capacity Building & ICT Component.pdf" document provides comprehensive validation of RSS's role in delivering ICT-driven climate adaptation tools:

- Digital Platform: Web portal, mobile app, and two-way SMS service successfully deployed, covering 30 Water User Associations (WUAs) and 2,400 registered farmers (1,992M, 408F).
- Alert Functionality: Real-time notifications for drought, heatwaves, frost, and flash floods integrated with Jordan Meteorological Department data. Farmers report >70% reduction in crop loss during extreme weather events.
- Capacity Building: 4 training-of-trainer (ToT) sessions and 8 community workshops conducted. Training materials and scientific guides publicly accessible via the platform.
- Institutional Partnerships: Formal tripartite agreements signed with MoEnv, NARC, and JMD ensure data continuity, technical supervision, and policy alignment.

Rating: Satisfactory (S):

Key Strength: High user adoption, scalable architecture, and strong public-private-academic collaboration.

3.2 Sub-Project 2.3: Agribusiness Competitiveness & Value Chain (NARC):

- Established 2 grading, packaging, and cooling centers (Deir Alla & Karama stations).

- Supported 200 micro-enterprises (compost mixing units, tropical farms, rainwater harvesting kits, post-harvest processing).
- Generated ~1,200 direct/indirect jobs. Actuarial study completed for Agricultural Risk Management Fund (ARMF), paving the way for climate insurance pilots.

Rating: Satisfactory (S)

Cross-Cutting Analysis & KPI Validation:

Core Indicator	Baseline	Target (End)	Actual (Jan 2026)	Status
Supplementary Water (m^3/yr)	18.02M	22.19M	~1.03M (1.1 only)	Partial
Rainwater Harvested (m^3/yr)	0	300,000	302,000	Achieved
Farms under Permaculture	2	48	35	On Track
WUAs/CBOs Trained	0	49	189 attendees (scaled across regions)	Moderate
Early Warning Systems	0	3	1 operational digital system (covers 30 WUAs)	Achieved
Micro-Enterprises Created	0	300	200	On Track
Jobs Created (Direct/Indirect)	9,000	19,800	1,200	Gap
% Female Participation	0%	50%	~35–40% across trainings & registrations	Moderate

Note: Job creation gaps reflect structural constraints in agribusiness scaling and regional market access, not implementation failure.

Sixteenth,Key Findings:

Strengths:

1. High Expenditure Efficiency: 96% AF grant utilized, with transparent co-financing mechanisms from executing entities.
2. Permaculture & Rainwater Harvesting Success: Sub-projects 1.5 & 1.6 exceeded technical targets, demonstrating high replicability.
3. Digital Resilience Tools: RSS/ADAPT platform operational, farmer-validated, and institutionally integrated.
4. Gender & Inclusion: Consistent female targeting in trainings, WUA registrations, and micro-enterprise support.

Challenges:

1. Water Availability Constraints: Sub-projects 1.2 & 1.4 hindered by delayed reclaimed water allocation and security zoning.
2. Agribusiness Job Scaling: Micro-enterprise creation strong, but formal job generation lagging due to market linkages and post-harvest infrastructure gaps.
3. Procurement & Cost Escalation: Global supply chain disruptions (Suez, Ukraine, Gaza) required frequent BOQ revisions and re-tendering.

Critical Gaps:

1. Lack of integrated marketing/export frameworks for permaculture and tropical crop outputs
2. Insufficient post-project O&M funding models for grading/cooling centers
3. Need for standardized M&E tracking linking climate adaptation practices to verified income increases

Recommendations

1. Scale Permaculture & Rainwater Models: Replicate 1.5/1.6 frameworks in Ma'an, Karak, and Mafraq through MOA extension networks.
2. Formalize Digital EWS Integration: Embed RSS ADAPT platform into national agricultural advisory services and JVA irrigation scheduling.
3. Strengthen Agribusiness Value Chains: Partner with JEPA, ACC, and private cold-chain operators to improve market access for graded/processed produce.

4. Develop Climate Insurance Pilots: Operationalize ARMF actuarial findings into subsidized crop/weather insurance for smallholders.
5. Institutionalize O&M Financing: Establish revolving funds or public-private co-management models for cooling centers, permaculture hubs, and water harvesting dams.
6. Enhance Gender-Disaggregated Income Tracking: Link adaptation training completion to verified household income metrics in future reporting cycles.

Conclusion:

The integration of NARC and RSS documentation confirms that Jordan's Adaptation Fund program has successfully transitioned from pilot design to field-tested, community-adopted climate resilience interventions. While wastewater reuse components faced structural water allocation constraints, the permaculture, rainwater harvesting, and digital early warning systems have delivered measurable adaptation outcomes, strong institutional ownership, and high community engagement. With targeted scale-up, value-chain strengthening, and operational sustainability mechanisms, the program's interventions are well-positioned for national replication and long-term climate resilience impact.

ANNEXES: Data collection tools

Key Informant Interview - Executing Entities - Institution Directors/Managers:

Field	Response
Name	
Organization/Employer	
Gender	

Section 1: Institutional Context and Role:

1. Briefly describe your organization's role and responsibilities within the Adaptation Fund Programme.
2. Which sub-projects does your organization lead or support? What are the core activities under your mandate?
3. How was coordination conducted with the Ministry of Planning and International Cooperation (MoPIC) and other implementing entities? What aspects worked well? What challenges emerged?

Section 2: Programme Management and Implementation

4. To what extent were the programme management structures, reporting systems, and decision-making processes appropriate for implementation needs?
5. Describe any modifications made to original work plans. What drove these changes, and how were they approved?
6. What type of support (technical, financial, logistical) from MoPIC or the Adaptation Fund was most/least useful?

Section 3: Relevance and Responsiveness

7. To what extent did the sub-project design align with: a) National priorities related to climate/water/agriculture? b) Local community needs in the implementation area? c) Emerging challenges during implementation (e.g., drought, policy shifts)?
8. Were beneficiary selection criteria appropriate and inclusive? How were vulnerable groups (women, youth, low-income households) prioritized?

Section 4: Effectiveness and Efficiency

9. Which outputs/outcomes were achieved most successfully? What factors contributed to this success?
10. Where did implementation fall short of targets? What were the main barriers (technical, financial, institutional, contextual)?
11. How efficiently were resources utilized? Were there delays, cost overruns, or under-utilization? Why?

Section 5: Impact and Sustainability

12. What changes have you observed among beneficiaries (e.g., water access, agricultural productivity, income, resilience)? *Probe: Can you share specific examples or data?*
13. To what extent do you attribute these changes to programme interventions versus other factors?
14. What measures were taken to ensure sustainability of results post-project (e.g., capacity transfer, institutionalization, community ownership)?

Section 6: Lessons and Recommendations

15. What are the top three lessons learned from implementing this sub-project?
16. If you were designing a similar programme today, what would you do differently?
17. What recommendations do you offer to MoPIC, implementing entities, or donors to strengthen future climate change adaptation programmes in Jordan?

Strategic Oversight and Coordination:

1. How did the role of the Ministry of Planning and International Cooperation (MoPIC), as the National Implementing Entity, facilitate (or constrain) programme coherence across 6 implementing entities and 9 sub-projects?
2. Describe the monitoring, reporting, and adaptive management systems used. How effective were they in tracking progress and enabling course correction?
3. How were risks (e.g., water scarcity, institutional turnover, beneficiary participation) identified and managed?

Policy Alignment and Scaling

4. How did the programme contribute to mainstreaming climate change adaptation into national policies (e.g., Water Strategy, Agricultural Policy, Nationally Determined Contributions)?
5. What mechanisms existed for sharing lessons learned across sub-projects and with other national initiatives?
6. What is the potential for scaling successful approaches? What requirements would be needed?

Conclusion:

7. What are the programme's most significant achievements and areas for improvement?
8. What recommendations would you prioritize for future Adaptation Fund programmes in Jordan?

Local Ownership Questions

1. How did local stakeholders (Water User Associations, farmers, CBOs) participate in identifying project activities in their area?
2. What mechanisms were put in place to ensure beneficiaries felt ownership of project outcomes (e.g., maintenance committees, training, handover plans)?
3. Who is responsible for maintaining project assets (e.g., irrigation systems, rainwater harvesting structures) after project completion?

4. Have local institutions or communities taken any steps to continue or scale project activities using their own resources?
5. What challenges did you face in building local ownership, and how were they addressed?

For Community Organizations / Local Leaders:

Questions on Coordination Among Implementing Entities

1. How effective were coordination mechanisms among implementing entities? What worked well? What caused delays or gaps?
2. Were roles, responsibilities, and reporting lines clearly defined and consistently followed?
3. How were cases of overlap or duplication among entities identified and resolved?
4. What support from MoPIC or the Adaptation Fund most significantly enhanced coordination?
5. What change would you recommend to improve coordination in multi-entity programmes in the future?

For Implementing Entities:

1. How would you describe your experience working with other implementing partners in this programme?
2. Were there instances of duplication, gaps, or misalignment in implementation? How were these addressed?
3. What tools or processes (e.g., joint meetings, shared reporting, unified M&E frameworks) contributed most to effective coordination?
4. What barriers made coordination challenging (e.g., timing, communication, resources), and how could these be overcome?
5. If you had the opportunity to implement a similar programme again, what would you do differently to improve collaborative work?

Closing

- Is there anything important we haven't discussed that you would like to add?
- May we follow up if we need clarification during analysis?
- Thank you for your time and valuable insights.

Key Informant Interviews - Community Organizations and Local Leaders

Name	
Position/Title	
Organization/Entity	
Gender	☐ Male ☐ Female
Date	
Location	

Section 1: Community Profile and Participation

1. Describe the main livelihood sources, climate vulnerabilities, and development priorities in your community.
2. How did your organization/community participate in the design or implementation of the Adaptation Fund interventions?
3. Were community members adequately informed about the project goals, activities, and their roles?

Section 2: Experience with Interventions

4. What specific activities were implemented in your area? (e.g., wastewater reuse infrastructure, rainwater harvesting, sustainable agriculture training, ICT tools)
5. How accessible and inclusive were these activities for:
    - Women?
    - Youth?

- Very poor or remote households?
- Persons with disabilities?

6. What support or training was provided to ensure effective use/maintenance of the interventions?

Section 3: Observed Changes and Challenges

7. What changes have you observed since the project began? *(Probe: water availability, agricultural practices, income, cooperation, knowledge)*
8. Were there any unintended consequences, whether positive or negative?
9. What barriers limited the participation or benefit of some community members?

Section 4: Sustainability and Ownership

10. Who is currently responsible for maintaining project assets (e.g., irrigation systems, harvesting structures)?
11. Do community members feel ownership over the results? Why or why not?
12. From a resource perspective, which activities in your sub-project achieved the highest value for money? Which activities were less cost-effective, and why?
13. If you were to redesign this sub-project today with the same budget, what priorities would you set differently to maximize the adaptation impact per dollar spent?
14. What support is still needed to ensure benefits continue after external funding ends?

Section 5: Recommendations

15. What advice do you offer to ensure future climate projects serve vulnerable communities like yours better?

Strategic Oversight and Coordination:

(To be asked of National Implementing Entity / Executing Entity Managers)

1. How did the role of the Ministry of Planning and International Cooperation (MoPIC), as the National Implementing Entity, facilitate (or constrain) program coherence across 6 executing entities and 9 sub-projects?

2. Describe the monitoring, reporting, and adaptive management systems used. How effective were they in tracking progress and enabling course correction?
3. How were risks (e.g., water scarcity, institutional change, beneficiary participation) identified and managed?

Policy Alignment and Scaling:

4. How did the program contribute to mainstreaming climate change adaptation into national policies (e.g., Water Strategy, Agricultural Policy, Nationally Determined Contributions)?
5. What mechanisms are available for exchanging lessons learned between sub-projects and with other national initiatives?
6. What is the potential for scaling successful approaches? What are the necessary requirements?

Conclusion:

7. What are the key achievements of the program and areas for improvement?
8. What recommendations do you prioritize for future Adaptation Fund programs in Jordan?

Local Ownership Questions:

1. Did your community have a real say in shaping project activities? How?
2. Do community members feel the project "belongs" to them? Why or why not?
3. What is the role of your institution in sustaining project results after external support ends?
4. What motivates your community to continue benefiting from these interventions?

Focus Group Discussions with Beneficiaries (farmers, members of Water User Associations, and vulnerable households)

Participants:

- Number of males: _____
- Number of females: _____

Opening Script: "Welcome, everyone. We are conducting an independent evaluation of the Climate Change Adaptation Project in your area. This discussion aims to listen to your experiences and perspectives. There are no right or wrong answers. Everything you share will be kept confidential. We ask that everyone respect different viewpoints. The discussion will take approximately 60–75 minutes. Shall we begin?"

Warm-up: Community and Livelihoods (10 minutes):

1. To start: Please share one thing you rely on most to ensure your family's well-being.
2. What are the biggest climate-related challenges your community faces today? *(Probe: water scarcity, extreme heat, crop damage, etc.)*

Section 1: Awareness and Participation (15 minutes):

3. When did you first hear about the activities of [Sub-project Name] in your area? How did you hear about them?
4. How were community members invited to participate? Were the selection processes clear and fair?
5. Did you or any member of your household participate in project activities? If yes, what did you do? *(Probe: training, use of infrastructure, decision-making)*

Section 2: Experiences with Interventions (20 minutes):

Select probes based on sub-project type:

Wastewater Reuse (Sub-projects 1.1–1.4):

- How has the availability of treated wastewater affected your farming?

- Do you have any concerns about water quality or crop safety?
- Has irrigation become more reliable or affordable?

Rainwater Harvesting (Sub-project 1.5):

- How have rainwater harvesting structures affected water availability?
- Who benefits the most?
- Are maintenance responsibilities clear?

Sustainable Agriculture / Permaculture (Sub-project 1.6):

- What new practices have you adopted?
- Have crop yields or soil health improved?
- What type of support was most helpful?

Capacity Building & ICT Tools (Sub-projects 2.1–2.2):

- What knowledge or skills have you gained?
- How useful have ICT tools been (e.g., alerts, mobile applications)?
- Did training reach women and youth effectively?

Agribusiness Competitiveness (Sub-project 2.3):

- Has access to markets or income opportunities improved?
- What barriers remain for smallholder farmers?

6. Were women, youth, or very poor households able to participate and benefit equally? Why or why not?
7. What worked well in how activities were implemented?
8. What was difficult or frustrating?

Section 3: Changes and Impacts (15 minutes):

9. Compared to before the project, what is different now regarding:
    - Farming practices or livelihoods?
    - Household income or food security?

- Confidence in coping with drought or climate shocks?

10. Can you share a specific story about how the project made a difference—positive or negative?
11. Are these changes likely to continue? What would help sustain them?
12. Considering the support you received: Was it delivered in a way that felt efficient and worthwhile to you and your family? What could have been done differently to reach more people or achieve greater benefit with the same resources?

Section 4: Looking Forward (10 minutes):

13. If a similar project were planned for your community again, what should be done the same way? What should be done differently?
14. What one thing would most strengthen your community's resilience to climate change in the future?

Beneficiary Ownership Questions:

1. Did you feel that your views and needs were taken into account when planning project activities?
2. Do you feel a sense of responsibility for maintaining or using the support you received from the project? Why or why not?
3. Who in your community do you think is best placed to care for project assets (e.g., water networks, training materials) now?
4. If the project ended today, what would you do to continue benefiting from what has been achieved?

Closing: "Thank you for your valuable time and honest feedback. Your input will help improve future climate adaptation efforts. Does anyone have any final questions or comments before we conclude?"