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Organization of the
United Nations



Ministry of Agriculture



Environment Quality Authority

GCF Concept Note

CLIMATE-RESILIENT AND INCLUSIVE

FRUIT TREES VALUE CHAINS DEVELOPMENT IN PALESTINE



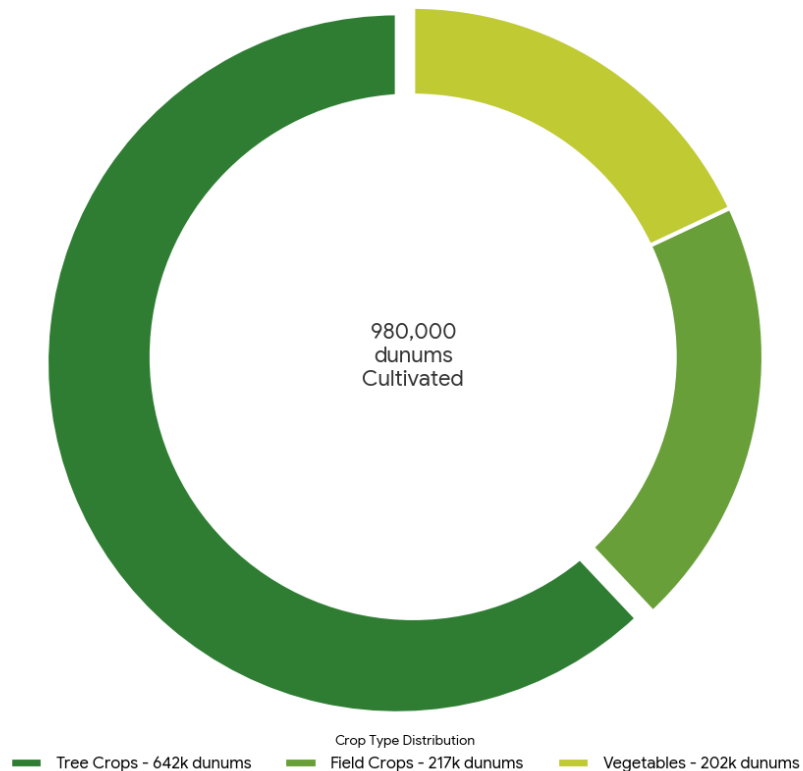
Background: Palestinian Agrifood System & Fruit Value Chains



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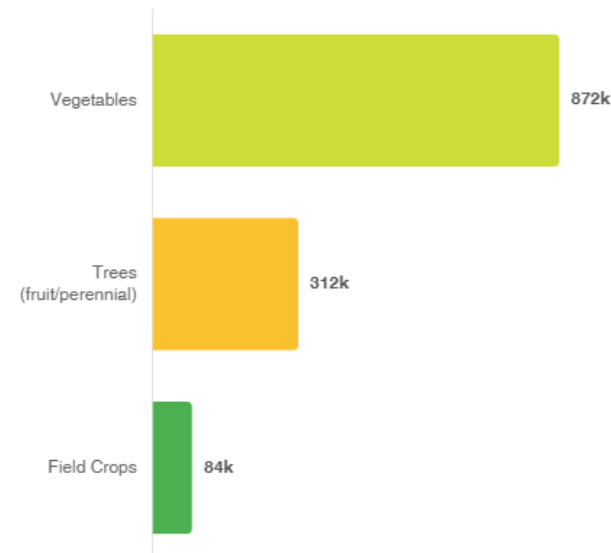
The West Bank's agrifood system is a vital component of the local economy and social structure. Spanning nearly a million dunums, it balances traditional tree crops, supporting hundreds of thousands of lives and contributing significantly to national economy and exports.

Cultivated Land Distribution by Crop Type



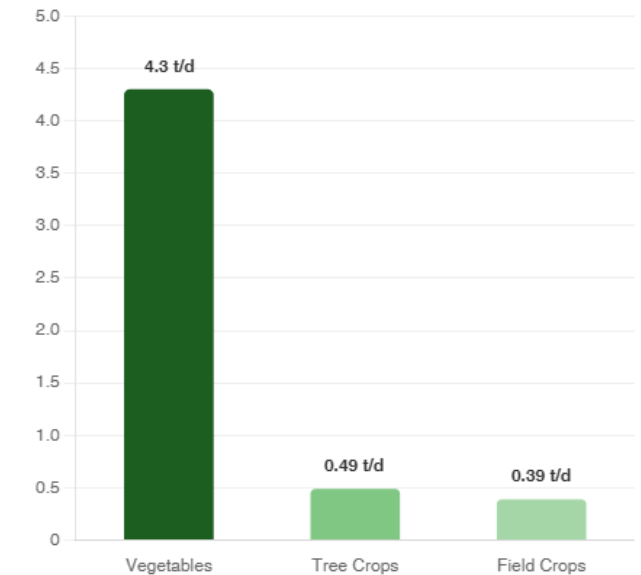
Output Mass (Annual)

Despite occupying the smallest land area, **Vegetables** generate the massive bulk of production volume, reaching nearly 900,000 tons annually. This highlights the intensive nature of vegetable farming compared to tree crops.



Yield Efficiency

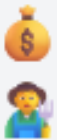
Efficiency is key. Vegetables yield a staggering **4.3 tons per dunum**, nearly 10x the output efficiency of Field Crops and Tree Crops. This data underlines the potential for high-value intensive agriculture.



Background: Palestinian Agrifood System & Fruits Value Chains



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Agrifood System Socio-Economic Impact

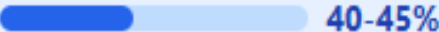


A breakdown of the total contribution of the Agrifood System and the significant share derived from the Fruit Value Chains.

6.3%

GDP Contribution
of national GDP

Fruit Value Chain Share

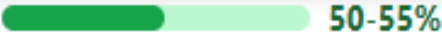


40-45%

**USD
150M+**

Annual Agrifood
Exports
in total value

Fruit Value Chain Share

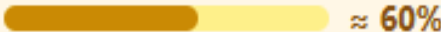


50-55%

140,000

Agricultural Holdings
active units

Fruit Value Chain Share

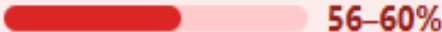


≈ 60%

750,000

People Supported
providing livelihoods

Fruit Value Chain Share



56-60%

Climate Trajectory in Palestine

From Historical Shifts to Future Scarcity (1970s – 2100)

LAST 40-50 YEARS
🕒 The Shift

- 📈 **+1.6°C**
Rise in avg. temperature since the 1970s
- ☁️ **-20%**
Decline in total annual rainfall
- 🚰 **-25%**
Decrease in groundwater recharge

RECENT 5-10 YEARS
⚠️ The Reality

- 📅 **2-3 yrs**
Drought frequency (previously every 7-10 yrs)
- 💧 **6,000ppm**
Groundwater salinity in agricultural zones

🔥 Jericho recently recorded 41.9°C (+3.4°C anomaly)

PROJECTIONS (2050-2100)
📉 The Alarm

- 📈 **+5.8°C**
Potential warming by 2100 (RCP 8.5)
- 40%**
Projected rainfall decrease by 2100
- 🌿 **Severe water scarcity & loss of traditional crops**

Sources: IPCC AR6 Regional Projections, Palestinian NDC, FAO Analyses

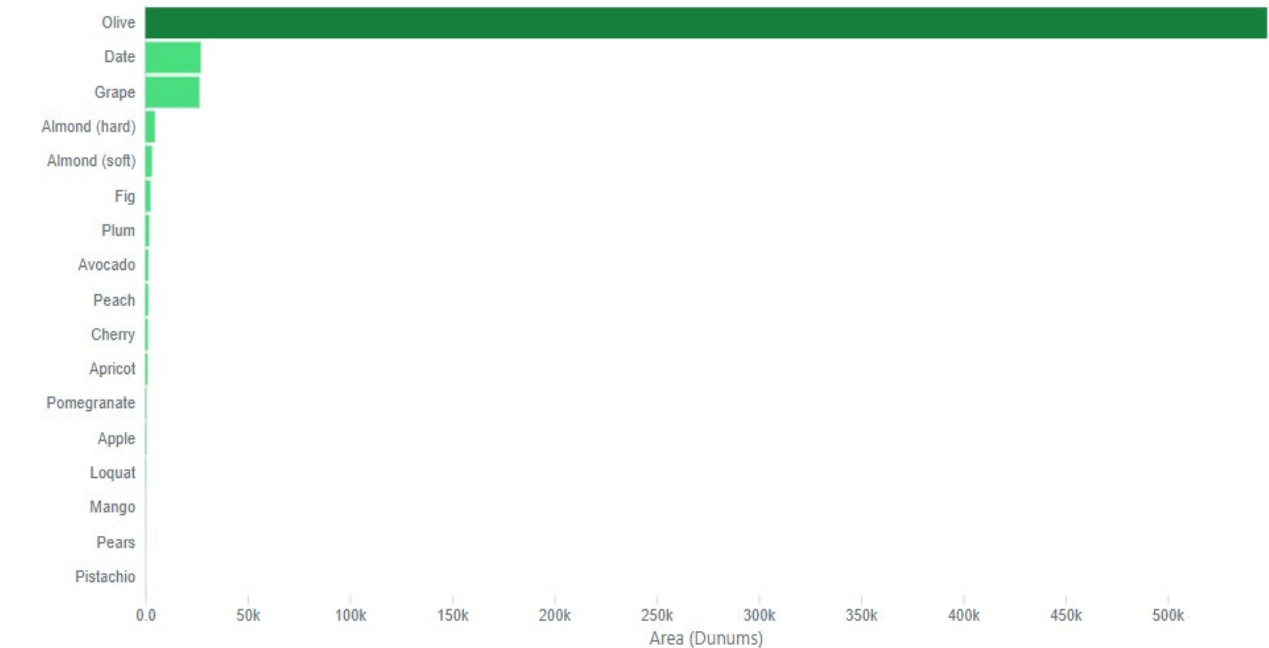


Problem: Climate Vulnerability of Fruit Value Chains

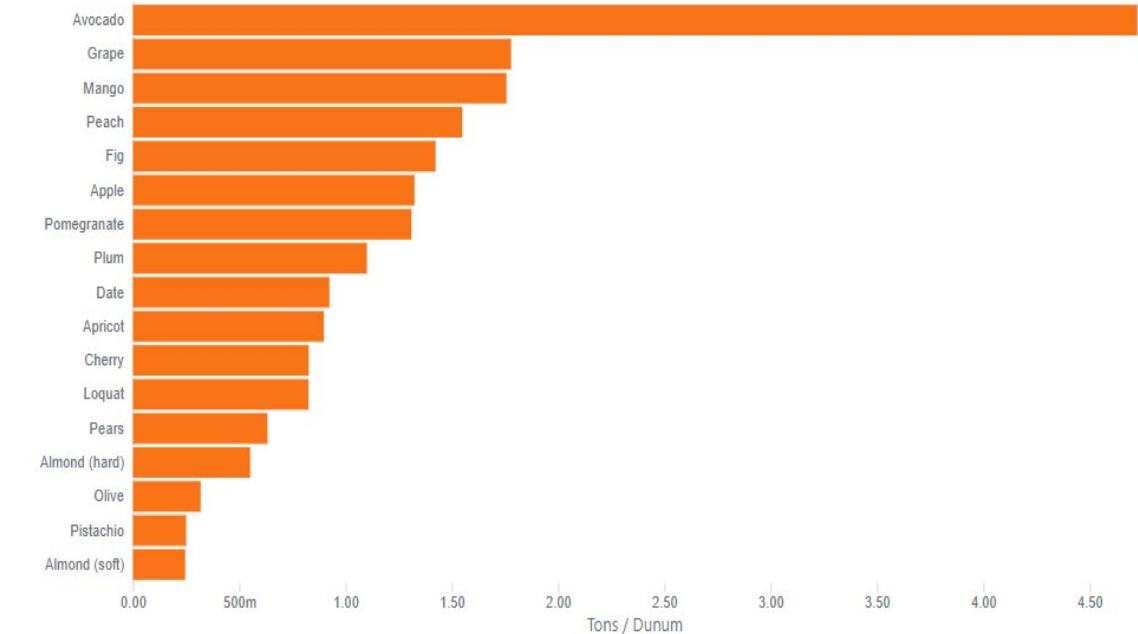


Prioritization is based on combining climate vulnerability with the scale of land allocation and yield efficiency, ensuring that high-exposure fruit trees with significant economic footprint are addressed first.

🏠 Fruit Tree Land Allocation



⚡ Comparative Yield Efficiency (T/Dunum)



Problem: Climate Impacts Fruit Value Chains



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- ✓ This reflects a baseline climate-vulnerability analysis for selected priority fruits, not the full set of selected value chains.
- ✓ Date Palm and Olive show extreme sensitivity to heat, drought, and salinity.
- ✓ Grapes, Almond, and Stone Fruits exhibit very high sensitivity due to chilling loss and frost/heat stress.
- ✓ These categories guide the prioritization of climate-resilient interventions under the proposed project.

Fruit Value Chains Climate Vulnerability

Sensitivity Legend

Extreme

Very High

High

Medium-High

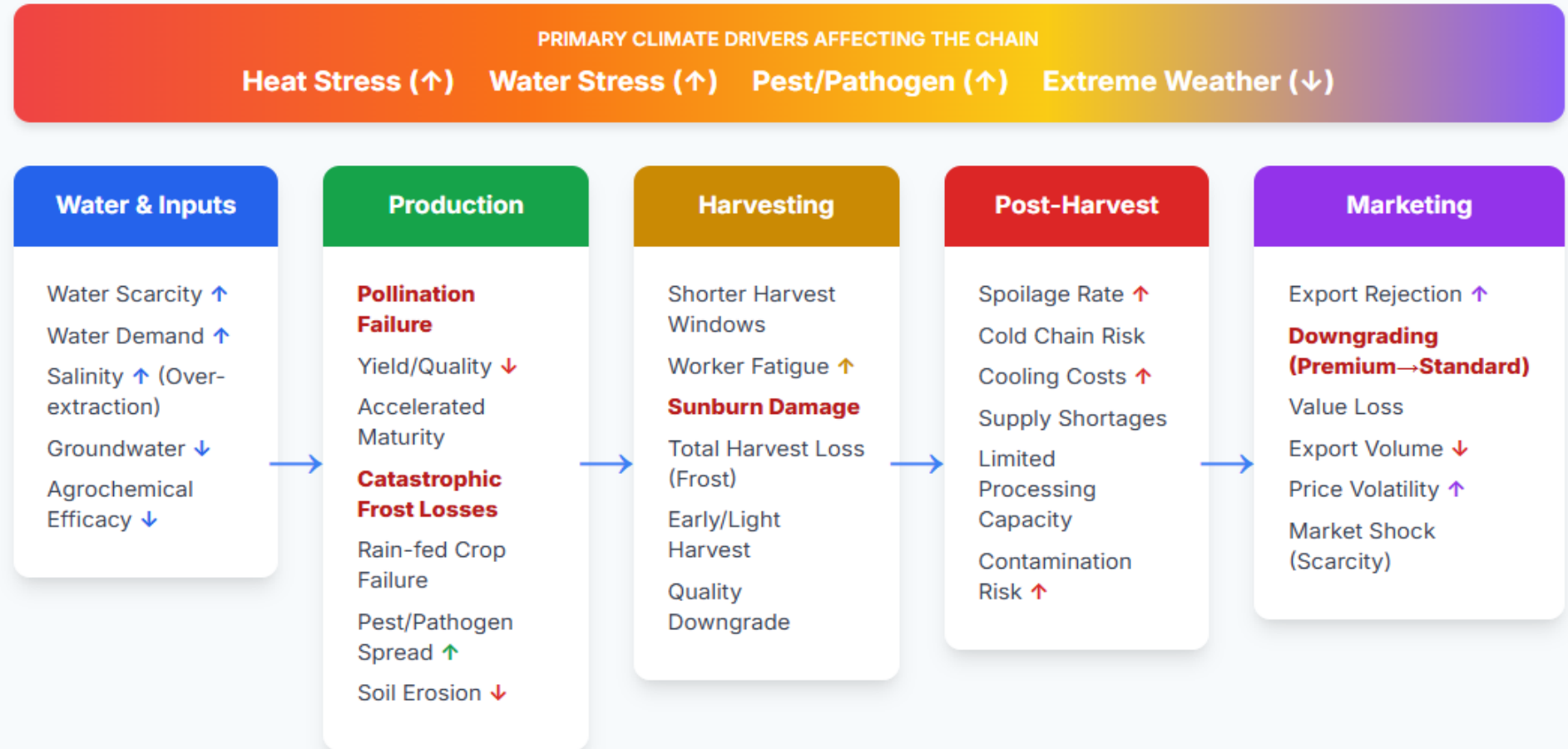
VALUE CHAIN	CLIMATE SENSITIVITY	MAIN CLIMATE VULNERABILITY DRIVERS
Date Palm	Extreme	Salinity escalation (>4 dS/m), >45°C pollination collapse, chronic water scarcity, RPW spread, evapotranspiration peaks
Olive	Extreme	Heatwave-induced fruit set collapse, severe alternate bearing cycles, long-duration drought, elevated fruit fly pressure, erratic rainfall impacting flowering & oil accumulation
Grapes	Very High	Spring frost damage, cluster desiccation, berry cracking under thermal spikes, mildew outbreaks post-heat
Almond	Very High	Frost bloom mortality, chilling decline, flower abortion under heat, drought stress
Stone Fruits	Very High	Chilling hour loss, late frost mortality, heat extremes during flowering, fruit grading downgrades

Problem: Climate Impacts across Fruit Value Chains



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Climate drivers affect the fruit value chains at multiple points, affecting input and water, production, harvesting, and post-harvest systems and their impacts cascade downstream, amplifying losses.



This results in reduced yields, higher spoilage, weakened market performance, and highlights the need for targeted climate adaptation across all value chain stages.

Solution: Project Logic “Climate-resilient and Inclusive Fruit Trees Value Chains Development”



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CO 1. CLIMATE-SMART INVESTMENT FOR FRUIT VALUE CHAINS ADAPTATION

Direct Beneficiary Grant (DBG)
Contracts & LoAs

Output 1.1 Climate Smart Production, Processing, and Value addition; *“Recycle and reuse, Solarization, smart fertigation, bi-products generation, Quality enhancement, etc”*

Output 1.2 Water availability and irrigation efficiency enhanced for climate-resilient production; *“Cistern, ponds, WAPOR, Salinity reduction, water saving technologies, etc”*

Output 1.3 Climate-linked phytosanitary surveillance and response systems strengthened; *“Smart traps, pesticides reduction, early interventions, data driven extensionists decisions, damage and loss reduction, etc”*

Output 1.4 Cooperative and wholesale market climate adaptation measures operationalized; *“Postharvest loss reduction, Solarization of storage units, Regulated climate adaptive operations, PPP, etc”*



- ✓ National Adaptation Plan (NAP)
- ✓ National Determined Contributions (NDCs)
- ✓ National Program for Development and Reform (NP4DAR)
- ✓ Country Programme Framework (CPF) to GCF
- ✓ Ministry of Agriculture Strategy 2025-2027/ seeds of change initiative



CO 3. CLIMATE-RESILIENT FRUIT PRACTICES ADOPTION

Conditional Cash Support
Contracts & LoAs

Output 3.1 Climate-Resilient Practice Adoption Support Implemented *“Intercropping, Diversification, income generation, resilient livelihood”*

Output 3.2 Farmer Field Schools on Climate-Resilient Practices Implemented *“Knowledge sharing, adoption”*

CO 2. YOUTH AND WOMEN- LED CLIMATE SMART AGRIFOOD SKILLS DEVELOPMENT AND STARTUP SUPPORT

Contracts & LoAs
Direct Beneficiary Grant (DBG)

Output 2.1 Climate-Resilient Agrifood Skills and Technical Competencies Delivered; *“Climate champions, Climate smart innovations, Universities, Market driven climate skills.”*

Output 2.2 Youth and women supported in developing innovative climate-resilient and economically viable startups; *“Ideation, Incubation , Acceleration, Market driven startups”*

Output 2.3 Vocational training centres, incubators, and accelerators strengthened to deliver CRA-focused training; *“Climate curriculums, skilled professionals, job opportunities”*

Building on

1. “PSE-RS-004” GCF-Readiness project - FAO
2. FP119 on climate-resilient water - AFD
3. Support Economic Growth through Optimized Agricultural Value Chains in the West Bank
4. MAPI & MAP II
5. Green Jobs



Core Project: Climate Resilient & Inclusive Fruit Trees Value Chains Development

Main Initiative



✓ Complementary Initiative (WFP - Approved GCF CN)

Scaling up Climate Resilient Agriculture (CRA) to enhance the resilience and food security of climate vulnerable smallholder

Theory of Change and Funding Sources



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Theory of Change: Strategic Pathway

Climate-Resilient and Inclusive Fruit Trees Value Chains Development in Palestine

IF: PROJECT INTERVENTIONS (INPUTS)

Targeted Climate-Smart Investment in Fruit Value Chains

Fruit farmers, cooperatives, processors, and market actors receive targeted climate-smart investments to enhance resilience, productivity, value addition, and market access across priority fruit tree value chains.

Youth and Women-Led Climate-Resilient Startup Support

Youth and women are equipped, financed, and mentored to establish climate-resilient, market-oriented startups linked to fruit tree production, processing, and services.

Climate-Resilient Practice Demonstration and Capacity Building

Climate-resilient fruit production, water management, and pest management practices are demonstrated through adoption pilots, farmer field schools, and technical training.



THEN: KEY OUTCOMES (INTERMEDIATE RESULTS)

O1: Resilient Fruit Value Chain Performance

Climate-smart investments improve the resilience, productivity, and value-addition performance of fruit tree value chains under increasing climate stress.

O2: Viable and Inclusive Income Opportunities

Youth and women access sustainable, climate-resilient income sources through employment, entrepreneurship, and service provision within fruit value chains.

O3: Scaled Adoption of Climate-Resilient Fruit Practices

Climate-resilient fruit production and post-harvest practices are adopted and scaled at farm, cooperative, and market levels.



ULTIMATE IMPACT

Adaptive capacities, production stability, and climate-shock absorption of Palestine's fruit tree value chains are strengthened, contributing to a climate-resilient and inclusive fruit-based agrifood economy with improved livelihoods and reduced climate vulnerability.

CRA Project Funding Sources

Total Co-financing and Contribution Breakdown

Project Grand Total

USD 65,000,000

ANCHOR GRANT

Green Climate Fund (GCF)

Financial Instrument

Grant

Amount (USD)

50M

Total Amount

Co-Financing & Local Contributions (USD 15,000,000)

Private Sector

14,000,000

Cash & in-kind

Cooperatives & Women-led Entities

500,000

Cash & in-kind

Youth

500,000

Cash & in-kind

Total Local Contribution

5,000,000

C&W Entities + Youth

Budget and Beneficiaries



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Component & Outputs	Budget (USD M)
Co.1 – Climate-Smart Investment for Fruit Value Chains Adaptation	40.0
1.1 – Climate-smart production, processing & value addition systems established	20.0
1.2 – Water availability, irrigation efficiency & salinity resilience enhanced	15.0
1.3 – Climate-linked phytosanitary surveillance & rapid response strengthened	3.0
1.4 – Cooperative & wholesale market climate adaptation operationalized	2.0
Co.2 – Youth & Women–Led Climate-Smart Agrifood Skills Development and Startup Support	10.0
2.1 – Climate-resilient agrifood skills & technical competencies delivered to youth & women	1.5
2.2 – Youth supported in climate-resilient agrifood enterprise development	6.0
2.3 – Incubators & vocational centers strengthened to deliver CRA-focused training & startups services	2.5
Co.3 – Climate-Resilient Fruit Practices Adoption	11.5
3.1 – Climate-resilient practice adoption support (conditional cash + adaptive packages)	10.0
3.2 – Farmer field schools & CRP demonstration cycles implemented	1.5
Project Management	3.5
Grand Total	65.0 M

Beneficiaries Breakdown by Component

COMPONENT	DIRECT	INDIRECT	TOTAL
1. Climate-Smart Investment for Fruit Value Chains Adaptation	16,000	35,000	51,000
2. Youth and Women-Led Climate-Smart Agrifood Skills Development & Startup Support	5,000	2,000	7,000
3. Climate-Resilient Fruit Practices Adoption	8,000	40,000	48,000
PROGRAM TOTAL	29,000	77,000	106,000



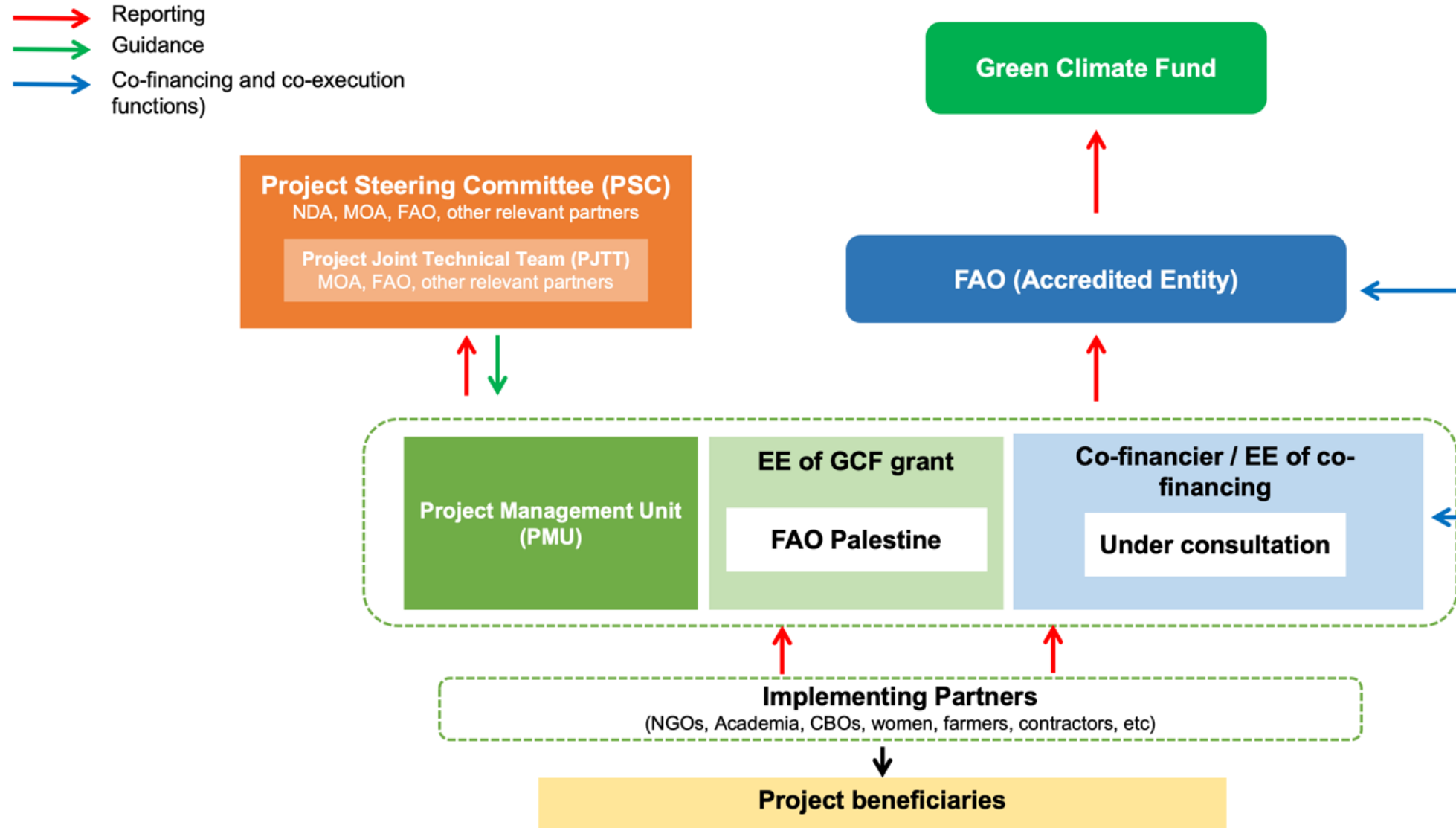
Project Alignment with GCF Investment Criteria

CRITERIA INDICATORS	KEY ALIGNMENT & IMPACT
Impact Potential	<ul style="list-style-type: none">• Targets climate-vulnerable fruit tree value chains supporting ~420k people.• 33k direct / 62k indirect beneficiaries through climate-adaptive investments.• Reduces climate-driven livelihood and asset losses.
Paradigm Shift	<ul style="list-style-type: none">• Moves from fragmented pilots to integrated fruit value-chain adaptation at scale.• Combines investment, skills, practice adoption, and markets under one Theory of Change (ToC).• Designed for replication beyond project lifetime.
Sustainable Development	<ul style="list-style-type: none">• Economic: stabilized incomes, value addition.• Social: food security, rural resilience.• Environmental: water efficiency, salinity reduction.• Gender: supports youth & women-led startups and jobs.
Needs & Ownership	<ul style="list-style-type: none">• Addresses high climate vulnerability, fiscal constraints, and limited access to climate finance.• GCF enables scale and risk-sharing not achievable nationally.• Country Ownership: Aligned with NDCs, NAP, NP4DAR, and MoA Strategy 2025–2027.• Developed with MoA and EQA (NDA) to be implemented by FAO as AE.

Implementation Arrangements



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Risks and Mitigation



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RISK	MITIGATION MEASURE
Global Market Price Volatility	Strategic storage; export-timing agreements.
Agri-Equipment Import Restrictions	Cost buffers; advance procurement clearance.
Low Productivity Due to Low-Quality Inputs	Systematic quality assurance of all supported inputs.
Movement & Access Restrictions	Decentralized delivery hubs; UN-facilitated access.
Stakeholder (Farmer/Coop) Commitment Gaps	Participatory planning; binding cooperative MoUs.
Constrained Extension Services	ESO workload mapping; digital advisory integration.
Youth Startup Viability Risks	Phased seed funding; incubation; buyer linkages.
Cold Chain / Power Outages	Solar cold rooms; backup power; efficiency retrofits.
Climate-Driven Pest & Pathogen Surges	Early-warning traps; bio-control; rapid-response units.
National Economic Fiscal Crises	Stabilize livelihoods and strengthen resilience through climate-smart productivity and sustainable resource use.

Thank you!