Funding Proposal

FP310: Improving Climate Resilience in the Steppe and Dry Forest Areas of the Algerian Green Dam (ICR-AGD)

Algeria | Food and Agriculture Organization of the United Nations (FAO) | Decision B.46/04

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Note to Accredited Entities on the use of the funding proposal template

- Accredited Entities should provide summary information in the proposal with cross-reference to annexes such as feasibility studies, gender action plan, term sheet, etc.
- Accredited Entities should ensure that annexes provided are consistent with the details provided in the funding proposal. Updates to the funding proposal and/or annexes must be reflected in all relevant documents.
- The total number of pages for the funding proposal (excluding annexes) **should not exceed 60**. Proposals exceeding the prescribed length will not be assessed within the usual service standard time.
- The recommended font is Arial, size 11.
- Under the GCF Information Disclosure Policy, project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Accredited Entities are asked to fill out information on disclosure in section G.4.

Please submit the completed proposal to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:

"FP-[Accredited Entity Short Name]-[Country/Region]-[YYYY/MM/DD]"

LIST OF ACRONYMS	
AE	Accredited Entity
AF	Adaptation Fund
AFOLU	Agriculture, Forestry and Other Land Use
AGD	Algerian Green Dam (Barrage Vert)
AFR100	The African Forest Landscape Restoration Initiative
AI	Artificial Intelligence
AMA	Accreditation Master Agreement
AML	Anti-Money Laundering
ANGEM	The National Agency for the Management of Microcredit
ANCC	National Climate Change Agency
ANRH	National Agency for Water Resources
APC	Communal Popular Assemblies
APR	Annual Performance Report
AR6	Sixth Assessment Report (IPCC)
ARA	Adaptation Results Area
ASA	Automatic Synoptic Station
ASAL	Algerian Space Agency
BADR	Bank of Agriculture and Rural Development
BAU	Business-as-Usual
BCR	Benefit-Cost Ratio
BH	Budget Holder
BNEDER	National Bureau for Rural Development Studies
CAGR	Compound Annual Growth Rate
CBAM	Carbon Border Adjustment Mechanism
CED	Executive Directorate for Development
CFT	Countering the Financing of Terrorism
CIEWS	Climate Information and Early Warning Systems
CIF	Climate Investment Funds
CMIP6	Coupled Model Intercomparison Project Phase 6
CN	Concept Note
CNMA	National Mutual Agricultural Insurance Fund
COP	Conference of the Parties
CRSTRA	Centre for Research in Astronomy, Astrophysics and Geophysics
CSA	Climate-Smart Agriculture
DFCI	Forest Fire Defence System
DGF	General Directorate of Forests
DSA	Daily Subsistence Allowance
DZD	Algerian Dinar
EE	Executing Entity
EFA	Economic and Financial Analysis
EIRR	Economic Internal Rate of Return

ERP	Enterprise Resource Planning
ESG	Environmental, Social and Governance
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
ESS	Environmental and Social Safeguards
FA	Funding Activity
FAA	Funded Activity Agreement
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	FAO Statistical Database
FFS	Farmer Field School
FGAR	The SME Credit Guarantee Fund
FI	Financial Institution
FIRR	Financial Internal Rate of Return
FLO	Funding Liaison Officer
FNDIA	National Agricultural Investment Development Fund
FP	Funding Proposal
GAP	Gender Action Plan
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GGW	Great Green Wall
GHG	Greenhouse Gas Emissions
GIS	Geographic Information System
GPS	Global Positioning System
GRM	Grievance Redress Mechanism
GRMS	Global Resource Management System
HCDS	High Commission for Steppe Development
HQ	Headquarters
ICT	Information and Communication Technology
IDP	Information Disclosure Policy
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
INRAA	National Institute of Agronomic Research of Algeria
INRF	National Institute for Forest Research
IOC	Investment Oversight Committee
IoT	Internet of Things
IPCC	Intergovernmental Panel on Climate Change
IPM	Integrated Pest Management
IRMF	Integrated Results Management Framework
IRR	Internal Rate of Return

ITC	International Trade Centre
KHIBRA	National Knowledge-Sharing Platform
KYC	Know Your Customer
LDN	Land Degradation Neutrality
LTO	Lead Technical Officer
MA&D	FAO's Market Analysis and Development methodology
M&E	Monitoring and Evaluation
MADRP	Ministry of Agriculture, Rural Development and Fisheries
MGI	Middle East Green Initiative
MoE	Ministry of Environment (Algeria)
MRA	Mitigation Results Area
MRV	Monitoring, Reporting and Verification
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NASDA	The National Agency for Contract Support and Development
NESDA	National Entrepreneurship Support and Development Agency
NGARA	NGARA approach in restoration of degraded lands in sub-Saharan Africa: Lessons learnt from Kenya and Niger
NGO	Non-Governmental Organization
NPIU	National Project Implementation Unit
NPV	Net Present Value
NRM	Natural Resource Management
NWFP	Non-Wood Forest Products
O&M	Operation and Maintenance
OEC	Observatory of Economic Complexity
OHS	Occupational Health and Safety
ONEDD	The National Observatory for Environment and Sustainable Development
ONM	National Meteorological Office
ONS	National Office of Statistics
PAN-MCPD	Algeria's National Action Plan for Sustainable Consumption and Production – 2016-2030
PAP	Pluriannual Action Plan
PMU	Project Management Unit
PNC	National Climate Plan
PPF	Project Preparation Facility
PPP	Public-Private Partnership
PSC	Project Steering Committee
PSEA	Protection from Sexual Exploitation and Abuse
PTF	Project Task Force
RCP	Representative Concentration Pathway

REDD+	Reducing Emissions from Deforestation and Forest Degradation, and the Role of Conservation, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks
RFP	Request for Proposals
RNE	FAO Regional Office for the Near East and North Africa
RSF	Risk Sharing Facility
SDG	Sustainable Development Goal
SEA	Sexual Exploitation and Abuse
SEAH	Sexual Exploitation, Abuse and Harassment
SEPAL	System for Earth Observation Data Access, Processing and Analysis for Land Monitoring
SH	Sexual Harassment
SLMP	Sustainable Land Management Plan
SME	Small and Medium-sized Enterprise
SONATRACH	National Hydrocarbon Company
SSP	Shared Socioeconomic Pathway
SURAGGWA	Scaling Up Resilience of the Great Green Wall through Sustainable Agriculture and Water Management
TAPE	Tool for Agroecology Performance Evaluation
TBC	To Be Confirmed
tCO_2eq	Tonnes of Carbon Dioxide Equivalent
ToC	Theory of Change
TOR	Terms of Reference
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
USD	United States Dollar
USP-2	Updated Strategic Plan 2024–2027
USTHB	University of Science and Technology Houari Boumediene
VC	Value Chain
VCM	Voluntary Carbon Market
WB	World Bank

A. PROJECT/PROGRAMME SUMMARY

A.1. Project or programme	Project	**A.2. Public or private sector**	Public
A.3. Request for Proposals (RFP)	Not applicable		

A.4. Result area(s)

*Check the applicable GCF result area(s) that the overall proposed project/programme targets below. For each checked result area(s), indicate the estimated percentage of **GCF and Co-financers' contribution** devoted to it. The total of the percentages when summed should be 100% for GCF and Co-financers' contribution respectively.*

	GCF contribution	Co-financers' contribution[1]
Mitigation total	Enter number %	Enter number %
☐ Energy generation and access	Enter number %	Enter number %
☐ Low-emission transport	Enter number %	Enter number %
☐ Buildings, cities, industries and appliances	Enter number %	Enter number %
☒ Forestry and land use	**45 %**	**44 %**
Adaptation total	Enter number %	Enter number %
☒ Most vulnerable people and communities	**43 %**	**46 %**
☒ Health and well-being, and food and water security	**6 %**	**5 %**
☐ Infrastructure and built environment	Enter number %	Enter number %
☒ Ecosystems and ecosystem services	**6 %**	**5%**

A.5. Expected mitigation outcome *(Core indicator 1: GHG emissions reduced, avoided or removed / sequestered)*	**By end of project implementation: 540,355 tCO_2eq, including 188,611 tCO_2eq by the project mid-term** **Over the project lifetime: 1,838,910 tCO2eq**	**A.6. Expected adaptation outcome** *(Core indicator 2: direct and indirect beneficiaries reached)*	**1,084,103 people (2.1% of Algeria's total population) = 25.57 % of the 6 target wilayas (45% women)**	
			Direct: 142,433 (38.6% women)	**Indirect: 941,670 (46% women)**
			0.31% of Algeria's total population- 3.4% of population of the 6 target wilayas	**2% of Algeria's total population- 22.2% of population of the 6 target wilayas**

A.7. Total financing (GCF + co-finance[2])	**99,500,000 USD**	**A.9. Project size**	**Medium (Upto USD 250 million)**
A.8. Total GCF funding requested	**43,000,000 USD**		

[1] Co-financer's contribution means the financial resources required, whether Public Finance or Private Finance, in addition to the GCF contribution (i.e. GCF financial resources requested by the Accredited Entity) to implement the project or programme described in the funding proposal.
[2] Refer to the Policy of Co-financing of the GCF.

A.10. Financial instrument(s) requested for the GCF funding	☒ **Grant** **43,000,000 USD** ☐ Loan Enter number ☐ Guarantee Enter number ☐ Equity Enter number ☐ Results-based payment Enter number		
A.11. Implementation period	**7 Years**	**A.12. Total lifespan**	**20 years**
A.13. Expected date of AE internal approval	*4/30/2026*	**A.14. ESS category**	**B**
A.15. Has this FP been submitted as a CN before?	Yes ☒ No ☐	**A.16. Has Readiness or PPF support been used to prepare this FP?**	Yes ☐ No ☒
A.17. Is this FP included in the entity work programme?	Yes ☒ No ☐	**A.18. Is this FP included in the country programme?**	Yes ☒ No ☐
A.19. Complementarity and coherence	Yes ☒ No ☐		
A.20. Executing Entity information	1-The Government of Algeria acting through The General Directorate of Forests (DGF) of the Ministry of Agriculture, Rural Development and Fisheries (MADRP); a government institution registered in Algeria and established in 1995. It serves as the principal executive body responsible for implementing the country's national forest policy, including the management, conservation, and sustainable development of forest and rangeland resources, under the Ministry of Agriculture, Rural Development and Fisheries (MADRP). 2- The Food and Agriculture Organization of the United Nations (FAO)		
A.21. Executive summary (max. 750 words, approximately 1.5 pages)			

i. Algeria's Green Dam landscape — spanning 1,500 km across the country's pre-Saharan steppe — is caught in a vicious cycle of climate stress and maladaptation. Temperatures have risen by up to 2.7°C per century, rainfall has declined by up to 20% in the most affected wilayas, and projections under the SSP2-4.5 scenario indicate that warming will exceed the Paris Agreement's 1.5°C threshold by mid-century. As droughts intensify, pastoralists overgraze already degraded rangelands, accelerating soil erosion, desertification, and the collapse of the ecosystem services their livelihoods depend upon. Vegetation recovery has fallen below 15%, forests face escalating wildfire and pest pressure, and water infrastructure has lost up to 58% of its storage capacity to siltation. While adaptation practices such as rotational grazing, drip irrigation, and climate-adapted species exist, their adoption remains limited due to an outdated regulatory framework, fragmented institutions, absent climate information, and restricted access to finance, particularly for women and youth.

ii. This project aims to break that vicious cycle by scaling the adoption of climate-resilient practices across 454,138 hectares in 12 pilot municipalities spanning six wilayas (project coverage area), delivering both adaptation and mitigation benefits with a total investment of USD 99.5 million. The theory of change holds that if degraded ecosystems are restored, an enabling policy environment established, institutional and community capacities are strengthened, and communities are connected to climate-smart value chains and sustainable finance, then pastoral and rural communities will become stewards of forest and steppe ecosystems, restored landscapes will function as carbon sinks delivering sequestration outcomes diversified livelihoods will reduce pressure on natural resources, and strengthened institutions will sustain these gains — achieving lasting socio-economic resilience across the Green Dam.

iii. Three interdependent components operationalize this approach. The first establishes the enabling governance and climate information framework: Output 1.1 reforms the 1975 Pastoral Code, designs a domestic AFOLU carbon offset mechanism, facilitates voluntary carbon market access, and creates a multi-stakeholder governance platform across 15 institutions; Output 1.2 deploys agrometeorological stations, a climate observatory, an integrated GIS platform, and AI-enhanced advisory services with training for over 120 focal points from institutions such as: the General Directorate of Forests (DGF), wilaya water-resources directorate (DRE), wilaya offices for groundwater monitoring (ANRH), High Commission for Steppe Development (HCDS), wilaya agricultural extension (DSA) and National Bureau of Studies for Rural Development (BNDER). The second component delivers large-scale restoration: Output 2.1 rehabilitates pastoral and forest heritage through nurseries (community- and women-managed) producing 12.7 million seedlings, a Resilient Rangelands Programme with rotational grazing across 12 communes, agroforestry, dune stabilization, silvicultural management, and fire protection infrastructure; Output 2.2 restores water and agricultural systems through rehabilitated agricultural and rural tracks, soil conservation structures, water mobilization infrastructure, and efficient irrigation. The third component builds resilient livelihoods: Output 3.1 develops six climate-resilient value chains with market partnerships and micro-enterprise support, and designs climate-informed financial instruments and facilitates microcredit access, prioritizing women and youth; Output 3.2 diversifies income through livestock modules, hydroponic forage, fruit orchards, and solar energy access.

iv. The project is closely aligned with Algeria's Nationally Determined Contribution (NDC), contributing to three of its four adaptation objectives- strengthening ecosystems resilience, combating land degradation, and mainstreaming climate change into sectoral strategies- while supporting the 7–22% GHG reduction target by 2030. It advances the National Climate Plan, the National Sustainable Development Plan 2020–2035, and Algeria's Land Degradation Neutrality targets under the UNCCD, and advances the National Biodiversity Strategy objectives on ecosystem restoration, native species conservation. It reinforces commitments to the Great Green Wall Initiative (GGW), supporting cross-regional knowledge exchange through collaboration with GCF 's SURAGGWA project (FP268), and commitments to the Middle East Green Initiative (MGI).

v. Through reforestation, rangeland rehabilitation, and ecosystem diversification across priority steppe wilayas, the project contributes to Algeria's goal of restoring 1,245,000 hectares of degraded land, addressing critical implementation gap, particularly the National Reforestation Plan, where only 1,256 km² of a 4,750 km² target has been achieved, and the management of 20,000 km² of steppe rangelands by 2030.

vi. The project was developed with the Ministry of Environment (MoE) serving as Algeria's GCF National Designated Authority. It will directly benefit 142,433 people and indirectly reach 941,670 people totaling 1,084,103 beneficiaries (45% women), while rehabilitating over 454,138 hectares of degraded forest and

rangeland (project coverage area), reducing greenhouse gas emissions by 1,838,910 tCO2eq through improved land management, and generating approximately 17,189 employment opportunities. The project will directly contribute to the following targeted results in alignment with the GCF's Updated Strategic Plan (USP-2); T3 (CIEWS), T4 (Food), and T5 (Ecosystem). By embedding adaptation and mitigation within reformed governance structures, the project transforms the current cycle of maladaptation into one where restored ecosystems, empowered communities, and responsive institutions reinforce one another across Algeria's Green Dam landscape.

B. PROJECT/PROGRAMME INFORMATION

B.1. Climate context (max. 1000 words, approximately 2 pages)

The Algerian Green Dam

1. Overview: The Algerian Green Dam (*Barrage Vert*, AGD), launched in 1971, is one of Algeria's most ambitious environmental programs, creating a forested ecological belt approximately 1,500 km long and 20 km wide, from the Moroccan to the Tunisian border, bounded by the Saharan Atlas Mountains to the south. Situated in Algeria's pre-Saharan arid and semi-arid zones, AGD covers approximately 4.7 million ha across 13 wilayas and 187 communes. The broader Steppe Agro-ecological Domain in which it lies extends over 32 million ha (9% of Algeria's total area), comprising 20 million ha of steppe, and 12 million ha of pre-Saharan rangeland, with land use dominated by pastoral activities (70%), followed by agriculture (12%) and forest/plantation exploitation (10%)[3].

2. Poverty, inequality and climate vulnerability: persistent poverty across the Green Dam region stems largely from scarce employment opportunities and a heavy reliance on climate-sensitive livestock rearing and crop production, leaving pastoral communities particularly vulnerable to the impacts of climate change. Women, who play a vital role in livestock management and food provision, face structural barriers in accessing productive resources, financial services, and climate-related information, which considerably diminishes their adaptive capacity. The absence of viable economic alternatives has compelled communities to increase their herds and extend grazing areas as a survival strategy, thereby intensifying overgrazing and accelerating land degradation.

3. Unsustainable natural resource utilization and environmental degradation: Structural degradation of the Green Dam has resulted from increasingly adverse environmental conditions compounded by unsustainable land use practices, leaving the region highly exposed to desertification and the escalating impacts of climate change. Declining soil organic matter, increased erosion, and the proliferation of non-palatable weeds have reduced palatable grazing cover from 50% to 43.5% between 1985 and 2000, driving greater reliance on supplementary livestock feeding. The intensification of grazing pressure, coupled with growing livestock numbers, has significantly undermined productivity. Meanwhile, extensive rainfed agriculture- with 91–96% of cultivated land devoted to cereal-fallow systems, remains acutely vulnerable to climatic variability. The scattered distribution of populations combined with high sheep and goat pressure on rangelands, declining groundwater levels, and increased evapotranspiration have further diminished forage availability, intensified water scarcity, and disrupted traditional pastoral systems[4]. These vulnerabilities and exposure to climate change impacts are projected to increase under future climate change scenarios, as described below.

Climate of the Algerian Green Dam:

4. Most of Algeria's territory is arid or semi-arid, with an average annual precipitation and temperature of 84.1 mm and 23.6°C, respectively. The AGD has a Mediterranean climate, varying from arid zones (El Bayadh, Naâma, M'Sila) to semi-arid zones (Djelfa, Khenchela, Tébessa), with average annual rainfall of 200 and 400 mm[5], dry periods, ranging from six months to year-round[6] and average annual temperature reaching 30°C[7].

5. Observed climate change:

- *Temperature*: Since 1900, temperatures across Algeria have risen by up to 2.7°C per century, with an increasing number of days exceeding 35°C since 1991[11]. For 1981–2020, minimum, mean, and maximum temperatures increased by 1.4°C, 1°C, and 0.9°C, respectively. Diachronic studies (1913–1938 / 1971–2001) confirm warming trends across the AGD, with increases of 0.33°C in Tébessa, 1.35°C in Djelfa, 1.41°C in M'Sila, 2.39°C in Naâma, and 2.53°C in El Bayadh.

- *Precipitation*: Erratic rainfall has driven a 30% precipitation decline across Algeria in recent decades[8], with historic data indicating a reduction of 12.4 mm/month per century since 1960. Across the AGD, average

[3] Limited success of plantations and degradation of pine forests confirmed by remote sensing https://www.mdpi.com/2071-1050/13/14/7953

[4] https://cgspace.cgiar.org/items/5593fac1-301d-4ca4-9e72-baabf2e5cbd2

5 BNEDER and FAO (2022). Energy study for the formulation of the proposal for financing by the green climate fund", for the project "Improving climate resilience in the steppes and dry forest areas of the Algerian green dam"

[6]BNEDER and FAO (2022). Energy study for the formulation of the proposal for financing by the green climate fund", for the project "Improving climate resilience in the steppes and dry forest areas of the Algerian green dam"

[7]https://climateknowledgeportal.worldbank.org/country/algeria/climate-data-historical

[8] https://openknowledge.fao.org/server/api/core/bitstreams/45b76014-d564-4072-9e26-baa843ecee3e/content

annual precipitation decreased by 7% in Tébessa, 19% in M'Sila, and 20.5% in El Bayadh (1913–1938 / 1971–2001)[9]

6. Projected climate change:

- *Temperature*: According to IPCC CMIP6 projections, average temperatures will increase across Algeria, with average minimum temperatures rising by 2.17°C by 2040 and 3.75°C by 2100 under SSP2–4.5 and mean annual temperatures increasing by at least 1°C by 2040 and 2°C by 2100[10]. Within the AGD specifically, minimum temperatures are projected to rise by 0.98°C by 2040 and 2.64°C by 2100, while average annual temperatures could increase by 1.05°C by 2040 and 2.85°C by 2100 under the same scenario[11].

- *Precipitation:* Under SSP2–4.5, average annual rainfall across Algeria is projected to decline by 3% by 2060 and 5% by 2100[12]. The AGD faces steeper declines of up to 6.3% by 2040 and 16% by 2100, with M'Sila wilaya most affected[13].

Climate change impacts on the Algerian Green Dam

7. Observed climate change impacts: Over the past five decades, Algeria—including the AGD—has experienced an increasing severity and intensity of droughts, flooding, and wildfires. Droughts have become significantly more frequent and severe over recent decades. While few drought events were recorded between 1960 and 1970, a prolonged multi-year drought struck in the 1990s[14], and analysis of the Palmer Drought Severity Index over a 500-year period indicates that the 1999–2002 drought was the most severe since at least the 15th century[15]. Maximum drought duration has also increased markedly, from 15 days per annum during the period 1913–1938 to approximately two months during 1971–2001[16], contributing to accelerating desertification through the regression of perennial and palatable grass species observed since the 1980s. Prolonged droughts affected 68% of the AGD in 2021, particularly in the western and central regions. Between 1983 and 2020, there were eight cycles of drought. Two-year dry periods became more common, and Naâma and El Bayadh recorded droughts that lasted up to five years.[17]Extreme heat, flooding, and land degradation have caused extensive losses in soil organic matter and pasture productivity, with Algeria losing approximately 400,000 hectares of soil annually to erosion. Since 1970, climate change has disrupted crop planting and harvesting schedules, resulting in grain yield losses of up to 50%. Wildfire risk has intensified due to variable rainfall and extreme heat, with annual agricultural and infrastructure losses estimated at USD 19 million since 2010, and extreme temperatures in 2021 causing wildfires that damaged 89,000 hectares of rangelands and crops across 35 states[18].

8. Projected climate change impacts:

- By 2050, climate change is expected to intensify the frequency and severity of extreme heat events, droughts, wildfires, and flooding across the AGD, exacerbating water stress, salinity, and susceptibility to pests and diseases[19].
- Variable precipitation and extreme heat are projected to adversely affect both crop and livestock production through reduced water availability and declining forage resources[20]. Deteriorating pasture quality will increase livestock vulnerability and reduce overall productivity[21], with compounding effects on the livelihoods of agro-pastoral communities in the AGD area[22].

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9 BNEDER and FAO (2022). Energy study for the formulation of the proposal for financing by the green climate fund", for the project "Improving climate resilience in the steppes and dry forest areas of the Algerian green dam"

10 IPCC. Sixth Assessment Report. 2023. Algeria climate projections. Available here.

11 BNEDER and FAO (2022). Energy study for the formulation of the proposal for financing by the green climate fund", for the project "Improving climate resilience in the steppes and dry forest areas of the Algerian green dam"

12 IPCC. Sixth Assessment Report. 2023. Algeria climate projections. Available here.

13 BNEDER and FAO (2022). Energy study for the formulation of the proposal for financing by the green climate fund", for the project "Improving climate resilience in the steppes and dry forest areas of the Algerian green dam"

14 https://www.sciencedirect.com/science/article/pii/S2214581816303482

15 Long term context for recent drought in northwestern Africa - Touchan - 2008 - Geophysical Research Letters - Wiley Online Library

16 BNEDER, 2012, Etude de réhabilitation et d'extension du barrage vert: note méthodologique. [2] Climate change in Algeria and its impacts. 2022. Available online: https://assafirarabi.com/en/48562/2022/11/05/climate-change-in-algeria-and-its-impacts/

17 Climate change in Algeria and its impacts. 2022. Available online: https://assafirarabi.com/en/48562/2022/11/05/climate-change-in-algeria-and-its-impacts/

18 Climate change in Algeria and its impacts. 2022. Available online: https://assafirarabi.com/en/48562/2022/11/05/climate-change-in-algeria-and-its-impacts/

19 https://openknowledge.fao.org/server/api/core/bitstreams/45b76014-d564-4072-9e26-baa843ecee3e/content

20 UNDP, 2015. Diagnostic study on Biodiversity & climate change in Algeria. 135

21 FAO: Transforming the livestock sector through the Sustainable Development Goals. 2018. Available online: https://www.fao.org/3/CA1201EN/ca1201en.pdf

22 https://iris.who.int/handle/10665/246137

- Rising temperatures and prolonged dry conditions are projected to be the principal drivers of forest ecosystem vulnerability over the next 50 years. Increasing aridity is expected to reduce the productivity of non-wood forest products, while deteriorating soil health will intensify susceptibility to invasive species, compounding pressures on already fragile forest ecosystems[23].
- Under the RCP 4.5 scenario, by 2040 aridity across the AGD area could increase by up to 15%, while soil moisture and runoff may decline by up to 20%. Wildfire risk is projected to remain high[24], and is expected to increase even further.
- These pressures compound socio-economic challenges given that more than half of Algeria's nomadic population resides within this climate-sensitive area, facing threats from declining water availability, biodiversity loss, heat waves, and accelerating soil erosion[25].
- These climate pressures compound existing socio-economic challenges, particularly given that more than half of Algeria's nomadic population resides within this climate-sensitive area. These communities face mounting threats from declining water availability, biodiversity loss, intensifying heat waves, and accelerating soil erosion, all of which undermine the foundations of agro-pastoral livelihoods and long-term resilience[26].
- Poor households and those headed by women and young people experience greater farm income losses, reflecting their lower adaptive capacity[27].

Climate change adaptation practices and barriers for scaling

9. Local communities and pastoralists have long relied on a range of sustainable and traditional agricultural practices that hold significant potential for enhancing the resilience of the AGD to climate change impacts. These include crop diversification, rotational cropping, fodder production, drip irrigation, and the cultivation of climate-resilient orchard and crop species. In the plains of the AGD, vegetable crops, fodder crops, cereals, and fruit are cultivated where irrigation water is available. Under conditions of water scarcity, farmers practice a biennial cereal–fallow rotation incorporating cereals, fodder crops, and fallow periods to maintain soil productivity. In the higher plains and highland areas, cereal cultivation is practiced in association with livestock grazing, supporting income diversification, and contributing to climate-resilient soil management, provided stocking rates remain within sustainable limits. Market gardening is mainly seasonal, representing an important supplementary income for small-scale agricultural producers in Khenchela, M'sila, and Tébessa, and is closely dependent on the availability of drip irrigation or borehole water and family labour. Potatoes are frequently intercropped with or rotated alongside vegetables, promoting crop diversification, enhancing farm resilience to climate variability, and supporting income diversification at the household level.

10.Over the last decade, the expansion of pivoted irrigation and the adoption of water-saving technologies such as drip irrigation have enabled the production of potatoes, peppers, and tomatoes in the regions of Biskra and El Oued. Fig and olive cultivation across the AGD has long relied on species naturally adapted to variable rainfall and drought conditions. More recently, the introduction of nursery programs and seed storage initiatives has further strengthened the adaptive capacity of these production systems, supported the availability of locally adapted planting and contributed to the long-term sustainability of agriculture in the AGD area[28].

11. While sustainable agricultural practices hold considerable potential for enhancing climate resilience in the AGD, their adoption among pastoralists and crop producers remains limited, and significant room exists to upscale their utilization across the landscape.

12. Despite the evident urgency of climate risks affecting the Algerian Steppe Agro-Ecological Domain, which AGD is part of, pastoral and farming communities face multiple structural constraints that limit their capacity to adopt climate-resilient practices at scale. Based on the diagnostic analysis of the socio-economic, climate, environmental, and agro-ecological context, as well as stakeholder consultations conducted across the target wilayas, several interconnected barriers for scaling adaptation practices have been identified. These barriers include:

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[23] FAO: Cork Oak landscapes, their products and climate change policies. 2014. Available online

[24] ESCWA, RICCAR, FAO, GIZ, ACSAD, and UNEP (2017). *Arab Climate Change Assessment Report – Main Report*. Beirut: United Nations Economic and Social Commission for Western Asia (ESCWA). Available at: https://www.unescwa.org/publications/riccar-arab-climate-change-assessment-report

[25] UNCCD. *Great Green Wall Initiative*. Available at: https://www.unccd.int/our-work/ggwi

26 UNCCD. Great Green Wall Initiative. Available at: https://www.unccd.int/our-work/ggwi

27 FAO. 2024. The unjust climate – Measuring the impacts of climate change on rural poor, women and youth. Rome. https://doi.org/10.4060/cc9680en

28 BNEDER and FAO (2022). Energy study for the formulation of the proposal for financing by the green climate fund", for the project "Improving climate resilience in the steppes and dry forest areas of the Algerian green dam"

- Policy and regulatory barriers: Climate change is not systematically integrated in natural resource management frameworks, with inadequate fiscal incentives for sustainable rangeland management leaving agro-pastoral systems structurally exposed to overexploitation and climate shocks.
- Institutional barriers: Weak institutional capacities and limited coordination among institutions, leaving pastoral communities without a unified institutional focal point.
- Information barriers: Lack of science-based climate information and limited evidence-based decision-making system, constrained by limited access to reliable climate and environmental data.
- Financial barriers: Lack of incentives for local communities to manage natural resources sustainably.
- Market and value-chain barriers: Poor marketing conditions and weak value chain linkages limiting income opportunities for small-scale NWFP producers
- Gender and social inclusion barriers: Women have limited knowledge, decision-making power and capital to enable them to invest in land restoration and NWFP value chains.

GHG emissions from Agriculture, Forestry and Other Land Use

13. Algeria's Agriculture, Forestry and Other Land Use (AFOLU) sector is a significant and growing source of GHG emissions, driven primarily by increasing livestock numbers and land degradation. In 2021, total national emissions reached approximately 273 Mt CO_2eq, with AFOLU emissions trending upward due to rising methane and nitrous oxide from enteric fermentation and manure management, and land recorded as a net emitter since 1994. Algeria's NDC commits to reducing total GHG emissions by 7% unconditionally and up to 22% conditionally by 2030, covering AFOLU among other sectors[29]. However, the country currently lacks a fully operational MRV system for AFOLU, though implementation of a permanent cross-sectoral MRV system is underway. The restoration of degraded steppe and forest ecosystems across the Green Dam zone represents a critical mitigation opportunity — reducing land degradation, improving carbon stocks, and transitioning toward sustainable pastoral systems — directly supporting Algeria's NDC targets and its forthcoming update[30].

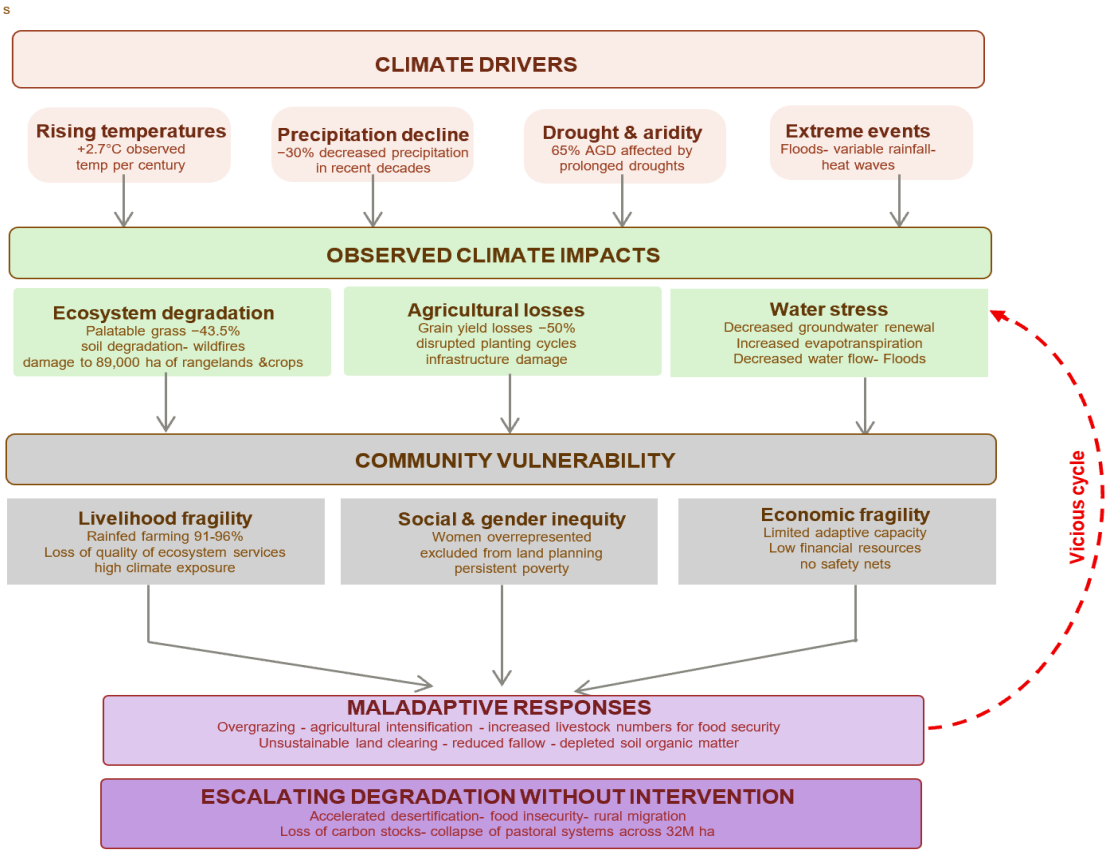


Figure 1: Climate Rationale

29 Algeria - INDC (English unofficial translation) September 03,2015.pdf

30 Algeria's Updated NDC: Republic of Algeria (2021). *Updated Nationally Determined Contribution (NDC)*. Submitted to the UNFCCC. Available at: https://unfccc.int/sites/default/files/NDC/2023-11/CDN%20Actualise%CC%81e_ANGLAIS.pdf

Project area

14. The project covers 454,138 hectares (project coverage area) across 12 municipalities in six wilayas — Tébessa and Khenchela in the east, M'sila and Djelfa in the center, and El Bayadh and Naâma in the west.

15. The selection of the six project wilayas was informed by household surveys across the 12 pilot municipalities and guided by technical, geographical, and socio-economic considerations — including territorial sensitivity to desertification and climate change, suitability for green belt establishment and biodiversity preservation, and potential livelihood contributions for climate-vulnerable populations. Projected climate impacts further supported the selection: under SSP2-4.5, average temperatures across the selected 6 AGD wilayas are expected to increase between 0.87°C and 2.87°C, while precipitation is projected to decrease progressively, ranging from 1.71–12.31mm (2021–2040) to 11.10–32.20mm (2081–2100).

Related projects/interventions- Complementarity and Coherence

16. This FP is closely linked and builds on several ongoing and completed projects and programmes. The activities to be financed by the GCF under this project are complementary to these initiatives and have been designed to avoid duplication and overlapping. Instead, they fill identified gaps, scale up successful approaches, and generate synergies that enhance the overall impact and sustainability of existing investments.

National Initiatives

17. FAO/GEF Bibans Project — *GEF ID 10170 | Budget: USD 3.2M | Status: Ongoing since August 2022.* The FP builds directly on this existing FAO/GEF Bibans project covering 32,257 ha in two pilot communes in the Tell Atlas northern mountain forests. Established institutional relationships, particularly resource management approaches, specific-site matching techniques, and NWFP value chain models developed under this project directly informed GCF project design and reduced preparation costs. The two projects are geographically complementary, spanning from the northern mountain forests to the arid Green Dam steppe, with the GCF project scaling up the Bibans pilot approaches to six wilayas, 101 communes, and approximately 3.4 million hectares. Knowledge exchange will be facilitated through the shared KHIBRA Platform. The project faced significant delays before its official launch in July 2025. The national partner and the FAO will draw on the experience gained during the project's formulation and the establishment of its institutional arrangements to enhance overall implementation efficiency.

18. FAO/GEF Cork Oak Project — *GEF ID 9806 | Budget: USD 27.9M | Status: Ongoing since March 2021.* The FP draws on this existing FAO/GEF Cork Oak project covering 22,530 ha across pilot zones in Béjaïa, Jijel, and Tlemcen, targeting 60 SMEs and community-based organizations with at least 40% women participation. Biodiversity inventories and digitized mapping informed the project design and reduced duplication of effort. The two initiatives are ecologically complementary, spanning from the humid northern Mediterranean forest to the arid and semi-arid Green Dam steppe. It promotes sustainable management of forest ecosystems with few reforestation activities (rustic fruits plantation). This FP scales up the Cork Oak initiative's integrated landscape management approach to the national level across Algeria's diverse dryland ecosystems. At this stage of the project implementation, several important lessons can be learned. These concern the technical, institutional, and socio-economic aspects of the sustainable management of Algerian cork oak forests:

- Participatory approach: The development of sustainable forest management plans is more effective when it involves forestry services, local authorities, forest users, associations, and local communities. This participatory approach fosters ownership of actions, reduces conflicts over land use, and improves acceptance of conservation measures.
- Capacity building produces concrete changes on the ground in terms of forest planning, sustainable ecosystem management, fire prevention, and participatory approaches.
- Management decisions based on up-to-date scientific data: The forest inventories, ecological studies, and socio-economic assessments carried out by the project have made it possible to better target investments and priority actions.
- Forest conservation is inseparable from local economic development: Identifying the value chains of Non-Wood Forest Products (NWFP), aromatic and medicinal plants, and income-generating activities for local communities is a key lever for reconciling conservation and development.
- Women are major players in the development of forest areas: Women responded strongly to training and entrepreneurship opportunities. While the initial target for female participation was 40%, their participation exceeded 62%.
- The consultation platform improves forest governance: Multi-stakeholder dialogue mechanisms facilitate coordination between institutions, reduce fragmented sectoral approaches, and allow for better consideration of the various uses of the forest. Shared governance is a key factor in sustainability.

- The project's integrated approach is relevant and replicable: The project demonstrates that it is possible to simultaneously integrate ecological restoration, biodiversity conservation, forest governance, risk prevention, and local socio-economic development. This integrated approach is likely one of the project's main lessons and could serve as a model for other forest ecosystems in Algeria.

19. UNDP/GEF Aleppo Pine Project — *GEF ID 11179* | *GEF grant: USD 3.5M* | *Total budget: USD 27.5M* | *Concept approved: June 2024.* The present FP builds on the UNDP/DGF Aleppo Pine project, implemented across three Aleppo pine sites at Senalba, Telagh, and Beni Imloul. Both projects share a common focal species — *Pinus halepensis*, covering approximately 68% of Algeria's 4.1 million hectares of forest — and address the transition of fragile monoculture pine stands toward more diverse and resilient ecosystems. The relationship follows a clear pilot-to-scale logic, with the UNDP/GEF project developing silvicultural frameworks and monitoring tools to be subsequently scaled across the Green Dam zone under this FP. Institutional coherence and knowledge transfer are ensured through the shared involvement of the General Directorate of Forests (DGF) and the Ministry of Agriculture, Rural Development and Fisheries (MADRP) with restoration protocols and monitoring tools directly applicable.

20. Adaptation Fund / IFAD Halfah Project — *AF ID AF00000405* | *Financing requested: USD 10M* | *Status: Concept endorsed; full proposal under preparation.* The FP is closely complementary to this AF/IFAD Halfah project, targeting El Bayadh wilaya across three components: steppe restoration, livelihood transformation, and adaptation mainstreaming. Both projects share the same geography, agro-pastoral communities, and focal species (halfah or alfa grass), which declined by 30% in El Bayadh between 2008 and 2024. Institutional coherence is ensured through shared partners, including the High Commission for Steppe Development (HCDS). Nursery infrastructure and seed bank outputs from the Halfah Project directly feed into this project, while livelihood and value chain interventions target the same communities.

Regional Initiatives

21. Great Green Wall Initiative: The FP supports the Pan-African Great Green Wall (GGW) initiative and its goal of restoring 100 million hectares of degraded land across the Sahel and North Africa by forming the northern part of a continental ecological corridor aimed at combating desertification and enhancing climate resilience around the Sahara. While the GGW extends across the Sahel from Senegal to Djibouti, Algeria's 1,500 km Green Dam anchors the northern flank of this regional effort. The present GCF FP reinforces this linkage by aligning Algeria's restoration agenda with the GGW's integrated and community-centered approach to landscape restoration, combining biodiversity, livelihoods, water security, and climate adaptation. It also strengthens Algeria's role in regional South–South cooperation through knowledge exchange on pastoral governance, value chains, and MRV foundation for climate.

22. Scaling-up resilience of Africa's Great Green Wall (SURAGGWA): The FP builds on the GCF-financed SURAGGWA programme, which combines large-scale dryland restoration, climate-resilient NWFP and fodder value chains, and institutional strengthening across eight Sahelian countries. Of particular relevance is SURAGGWA's approach to establishing the technical and institutional foundations for future carbon markets. It combines geospatial monitoring tools, including Africa Open DEAL and SEPAL, with field data, soil-carbon analysis and AFOLU GHG accounting to generate transparent and verifiable evidence of restoration and carbon outcomes. It also strengthens national capacities to incorporate land restoration into carbon-accounting frameworks and progressively engage with voluntary carbon markets and Article 6 mechanisms. The Algerian project adapts this approach to the Green Dam by strengthening AFOLU MRV, improving the measurement of restoration and carbon outcomes, and building the institutional coordination and technical capacity required for credible carbon accounting. These foundations can enable Algeria's future participation in carbon markets, while knowledge exchange with SURAGGWA countries will support compatible monitoring approaches and the sharing of experience in dryland restoration and pastoral land management.

23. Middle East Green Initiative (MGI): Algeria's renewable energy transition targets and emissions reduction commitments align with the MGI's objective of reducing regional carbon emissions. The project's investments in solar energy infrastructure (Activity 3.2.5) and ecosystem-based carbon sequestration support the MGI's emphasis on clean energy adoption and large-scale land restoration as pathways to climate resilience.

24. FAO REINVEST NENA Programme: Algeria's agricultural modernization, water efficiency, and rural livelihood strengthening efforts align with REINVEST NENA's focus on boosting sustainable investment in agri-food systems across the Near East and North Africa. The project's climate-smart agriculture practices and value chain development directly support the programme's goal of mobilizing responsible private-sector investment in climate-resilient food production systems.

25. Across six target NWFP value chains (prickly pear, olive, rosemary, wool, alfa, peppermint), prior interventions in Algeria, the Maghreb and IFAD/GEF-supported projects converge on five cross-cutting success factors:

- Quality certification and origin labeling (organic, geographical indications, Global G.A.P., Fair Trade) are decisive for premium-market access — demonstrated for prickly pear, olive, rosemary and peppermint, with documented returns of 200–300 % for certified rosemary producers.
- Cooperative formalization and women-led producer groups are central to capturing value — especially for prickly pear, wool and peppermint — and to securing access to processing assets, finance, and markets.
- Processing and post-harvest infrastructure — cold chains (prickly pear), community oil presses with quality testing (olive), improved distillation units (rosemary, peppermint), and quality-control points (alfa, peppermint) — are prerequisites for accessing higher-value market segments.
- Sustainable management protocols — rotational harvesting, community-based monitoring (alfa), and sustainable wild-collection (rosemary) — are required to prevent resource depletion and protect long-term viability.
- Anchor-firm and market linkages — eco-tourism and artisanal branding (wool); pharmaceutical and cosmetic buyer networks (peppermint); pulp, paper and composite-materials buyers (alfa); structured off-take with quality testing (olive) — convert production gains into reliable income. Algeria's particular comparative advantage is most pronounced for alfa grass (world's largest natural reserves) and prickly pear (regional production tradition with proven oil and cosmetic demand). The transferable design implication for the project is that each value chain must combine certification + cooperative structure + processing infrastructure + sustainable harvesting + anchor-firm market linkages — none of these elements works in isolation.

B.2 (a). Theory of change narrative and diagram (max. 1500 words, approximately 3 pages plus diagram)

26. The project's theory of change responds to a compound climate, ecological, and socio-economic challenge, by establishing a coherent causal pathway from outputs to outcomes and impact. The project starts from the diagnosis that the structural drivers of degradation in Algeria’s steppe- open-access pastoral regimes, monoculture rehabilitation models, and the disconnection between ecosystem management and livelihood incentives- cannot be addressed by physical restoration alone. The project therefore deploys three interlocked outcomes: Outcome 1 (Enabling Governance and Climate Information) creates the policy, institutional and informational conditions for climate- resilient land management; Outcome 2 (Ecosystem Restoration and Water Management) physically restores 59,320 ha of degraded landscapes and secure water resources; and Outcome 3 (Climate-Resilient Livelihoods) translates restored natural capital into diversified, market-integrated incomes for 1.08 million beneficiaries.

27. The transition from project outputs to durable impact rests on three paradigm-shifting drivers- incentives, capacity development, and tenure and recognition- operationalized through a local participation approach. The causal pathway is conditional on three principal assumptions: continued commitment of Government of Algeria, acting through the DGF of the MADRP, validated by USD 56.5 M of co-financing; functional incentives; and the absence of major political or climatic disruption- risks for which mitigation measures are detailed in Section F. At present, smallholder farmers and pastoralists rely on unsustainable rangeland practices that accelerate land degradation and increase vulnerability to climate change impacts. At the same time, prevailing policy approaches have tended to frame pastoral communities as drivers of degradation rather than partners in sustainable land management. The project seeks to transform this paradigm by promoting behavioral change through incentives, scaling up climate adaptation practices, strengthening land tenure governance, and repositioning pastoralists and farmers as custodians of natural resources. It will support a transition from a predominantly state-led, single-species conservation model with limited community engagement toward an integrated, climate-resilient landscape management approach. This approach will foster a paradigm shift based on multi-stakeholder collaboration, including active engagement of the private sector and financial institutions, to catalyze long-term environmental sustainability, resilience, and inclusive economic development (See figure 2).

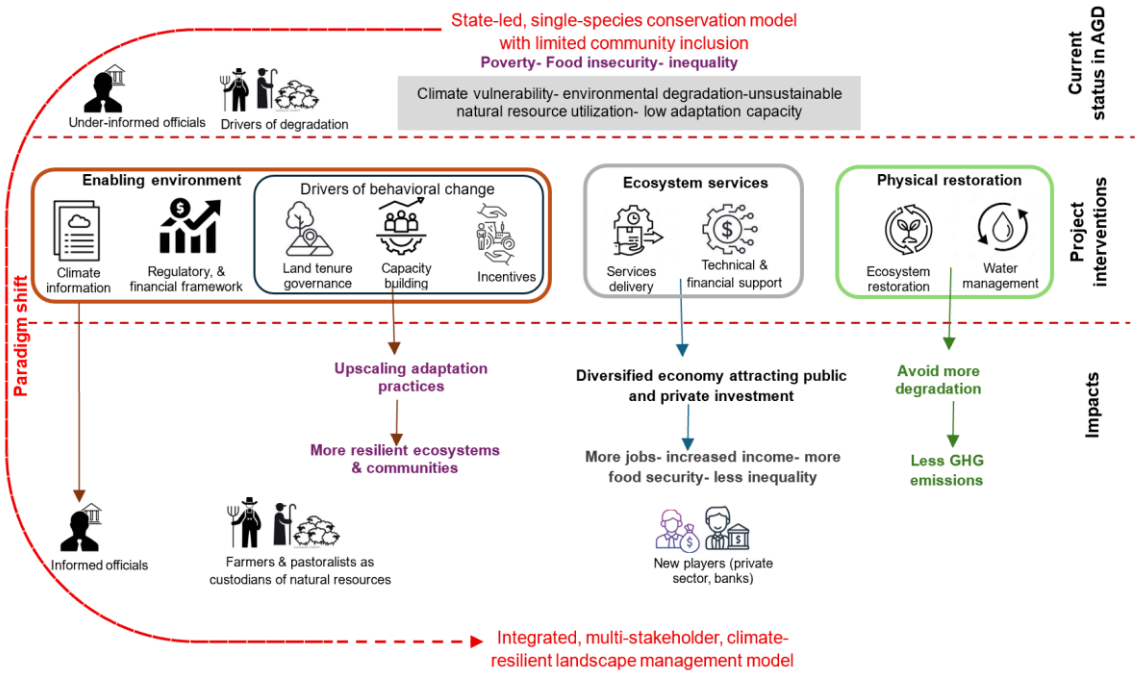


Figure 2: Project Rationale

28. By linking adaptation and mitigation objectives across steppe, forest, semi-arid grassland, and agro-pastoral systems, the project contributes to transformational climate resilience and ecosystem recovery at scale, while improving the livelihoods of farmers, pastoralists, and private sector actors across the Green Dam landscape. The *Theory of Change of the project is: IF the policy and institutional framework is modernized, climate-vulnerable agro-sylvo-pastoral ecosystems are restored and sustainably managed, and climate-smart value chains are anchored in sustainable financing, supported by science-based climate information; THEN a paradigm shift toward climate-resilient, low-emission ecosystem development is achieved across the project intervention area (454,138 hectares) within theAlgerian Green Dam, generating durable adaptation and mitigation impacts; BECAUSE three reinforcing drivers- Incentives, Capacity Development, and Tenure & Recognition- reposition pastoral and rural communities from drivers of degradation into custodians of natural capital: adopting climate-adaptive practices, holding legal rights to the land they manage, sharing fairly in the value their stewardship creates, accessing diversified climate-smart livelihoods, and leading ecosystem restoration — strengthening the long-term climate resilience of vulnerable communities in the Green Dam landscape.* The three project components underpinning this theory of change are presented below and further described in Section B.3. Project outcomes, outputs, and activities are illustrated in Figure 3.

Component 1: Enabling Governance Framework and Climate Information

29. This component strengthens the enabling environment through reformed policies, climate information systems, and institutional capacity to sustain and scale up climate-resilient agro-pastoral management across Algeria's steppe regions. It mainstreams climate resilience into national policies through reformed pastoral governance and the foundations of an AFOLU carbon offset mechanism, deploys science-based climate information systems — including an integrated GIS, agrometeorological network, and AI-driven desertification observatory — for evidence-based decision-making; and strengthens inter-institutional coordination, inclusive governance platforms, and training programs to crowd in public and private investment for long-term sustainability. These foundations underpin Components 2 and 3.

Component 2: Ecosystem Restoration and Climate-Resilient Land Management

30. This component translates the enabling environment into large-scale ecosystem restoration across the Green Dam landscape, with the direct outcome of reducing GHG emissions. Guided by the climate information systems and reformed governance framework under Component 1, it rehabilitates rangelands, restores forest heritage, stabilizes dunes, establishes agroforestry systems, and mobilizes water resources — strengthening the resilience

of steppe and forest ecosystems to drought, desertification, and land degradation while enhancing carbon sequestration, water retention, and soil fertility.

Component 3: Climate-Resilient Services, Access to Finance and Technical Support

31. Building on the restored resource base of Component 2 and the enabling conditions of Component 1, this component strengthens the climate resilience and adaptive capacity of vulnerable rural communities. It develops six priority climate-resilient value chains, deploys small-scale livestock and hydroponic forage systems, promotes circular economy solutions, provides aceess solar energy, and facilitates access to finance — through partnerships with financial institutions, including the Bank of Agriculture and Rural Development (BADR), which has issued a letter of intent, diversifying household incomes, reducing pressure on natural resources, and linking communities to markets and climate finance, with a strong focus on women-led enterprises and youth employment. Figure 3 below illustrates the relationships and complementarities among the three components.

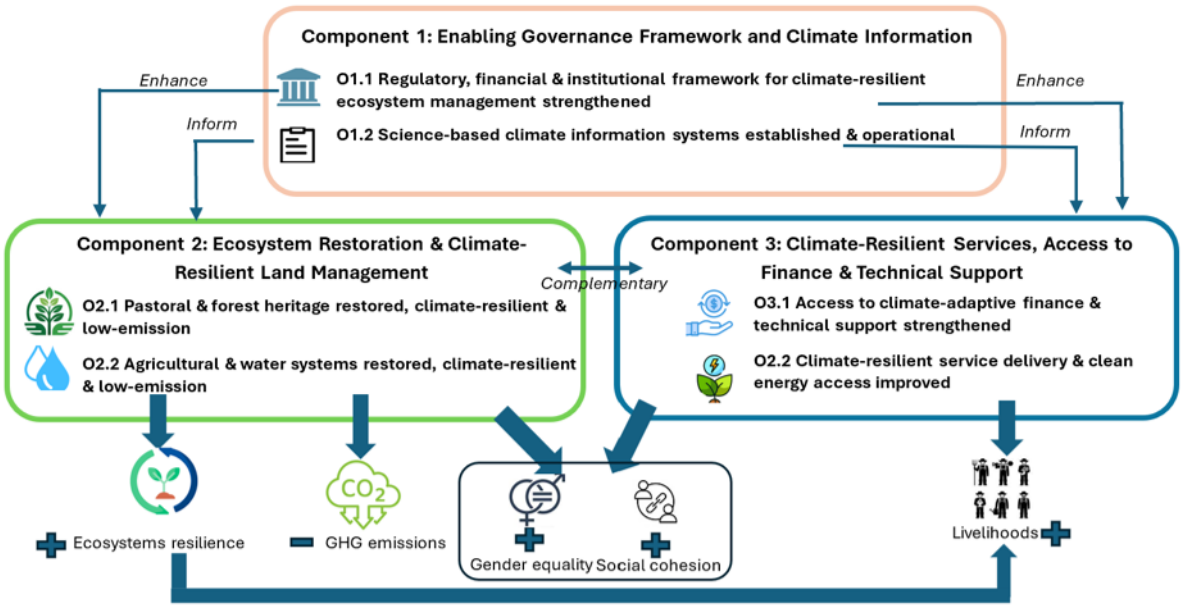


Figure 3: Project components and interrelationships

Table 1 below shows the barriers, underlying causes, and project response to key barriers.

Table 1 - Interconnected barriers identified in Section B.1

Barriers	Underlying causes	Project Response to Key Barriers
Policy and regulatory barriers: Climate change is not systematically integrated as a driver in natural resource management frameworks, with inadequate financial incentives for	Absence of a formal pastoral concession system. Limited regulation of pastoral land tenure. The 1975 Pastoral Code — never effectively enforced — pre-dates current climate realities, leaves Arch (collective) tenure uncodified and links no fiscal incentive to sustainable management.	The project addresses this barrier by modernizing the Pastoral Code, mainstreaming climate adaptation into land and resource management policies, and designing an MRV system for carbon reporting, thus building the foundations of carbon finance.

sustainable rangeland management-	Absence of clear policies to enable the foundations of carbon finance.	
Institutional barriers: Limited institutional capacities and lack of coordination among institutions, leaving pastoral communities without a unified institutional focal point.	Limited coordination among 17 institutions across seven ministries results in fragmented knowledge sharing, weak policy coherence, duplicative interventions, and ineffective translation of national climate strategies into local adaptation actions, while also leaving pastoral communities without a unified institutional focal point.	The project addresses this barrier by developing a Climate governance platform, DGF-anchored, convening the 17 institutions to align mandates and translate national strategies into wilaya-level workplans.
Information barriers: Lack of a science-based decision-making system, constrained by limited access to reliable climate and environmental data.	Sparse agrometeorological monitoring coverage in steppe zones Fragmented and non-integrated datasets across institutions Absence of an operational GIS for drought management and land degradation monitoring Absence of science-based decision-support system on climate risks (for decision-makers, farmers and pastoralists)	The project addresses this barrier through deploying an integrated digital climate-information ecosystem — web-based monitoring platform, agricultural-drought and land-use GIS, IoT-enabled agrometeorological stations, and a Climate and Desertification Observatory — feeding digital advisory services that deliver timely, actionable climate intelligence to decision-makers, farmers, and pastoralists.
Financial barriers: Lack of incentives for local communities to manage natural resources sustainably	Absence of economic incentives for restoration causing degraded ecosystems and water infrastructure, reducing water efficiency. Increased pressures on dryland ecosystems due to increase in human and livestock populations, aggravated by climate change, and by the increased inter-community conflicts	The project addresses this barrier through benefit sharing agreements under a modernized Pastoral Code, converting ecosystem stewardship into a tangible income source and embedding the incentive within the tenure architecture.
Market and value-chain barriers: Poor marketing conditions and weak value chain linkages limiting income opportunities for small-scale NWFP producers	Limited access to microcredit and market linkages, preventing smallholders' farmers and pastoral communities- particularly women- from investing in climate-resilient value chains Limited access to technical advisory services, legal assistance, and entrepreneurship Limited private sector engagement	The project addresses this barrier through climate-resilient value chain development, producer-private sector partnerships, and micro-enterprise support through awareness rising support on financing mechanisms, including microcredit and subsidized loans to enable adoption of climate-resilient practices.
Gender and social inclusion barriers: Women have limited knowledge, decision-	Constrained access to finance — women lack collateral, credit	The project addresses this barrier through a Gender Action Plan, operationalized by five concrete instruments: women-led nurseries with business/marketing training,

making power and capital to enable them to invest in land restoration and NWFP value chains.	history, and formal-sector connections Under-representation in local governance — pastoral councils, WUAs, and tribal decision-making bodies. Informality and invisibility of women's economic activities, particularly in NWFP collection, suppressing income, and excluding them from certified value chains.	women's collective concessions on the six NWFP value chains, microcredit window with women specific eligibility; ≥30% women's representation on Wilaya Climate Adaptation Committees, climate Wise Women network — embedded across capacity-development activities.

Risks:

32. Risks identified at the project preparation phase include:

- Weak institutional performance and coordination, alongside delays in policy reform.
- Low adoption of climate-resilient practices by farmers and pastoralists.
- Limited engagement of community in restoration and lack of agreement on restoration with local stakeholders.
- Economic shocks that could delay co-financing and disrupt implementation schedules.
- Insufficient private sector interest, constraining investment in climate-resilient technologies and rural entrepreneurship.
- Limited willingness of financial institutions to adapt their products and procedures to the specific needs of agro-pastoral and dryland farming clients, restricting beneficiaries' access to finance.

Key Assumptions:

33. The successful implementation of the project depends on external assumptions that are critical for ensuring effective implementation and sustainability of results. Key assumptions include:

- The Government of Algeria (acting through the DGF of the MADRP) maintains strong political commitment to and ownership of the project, ensuring continuity of leadership and institutional support throughout implementation
- Effective coordination among relevant ministries, agencies, and sub-national authorities is sustained, enabling coherent and timely implementation across all project activities
- Planned co-financing from national public sources is mobilized and disbursed in a timely manner, preventing delays arising from funding gaps.
- With adequate government support, pastoral and farming communities demonstrate willingness to participate in ecosystem restoration activities and adopt climate-resilient practices.
- Demand for non-wood forest products and climate-resilient agricultural products from smallholders is sustainably increased, and marketing conditions — including access to certification, market infrastructure, and value chain linkages — are progressively improved over the project period.

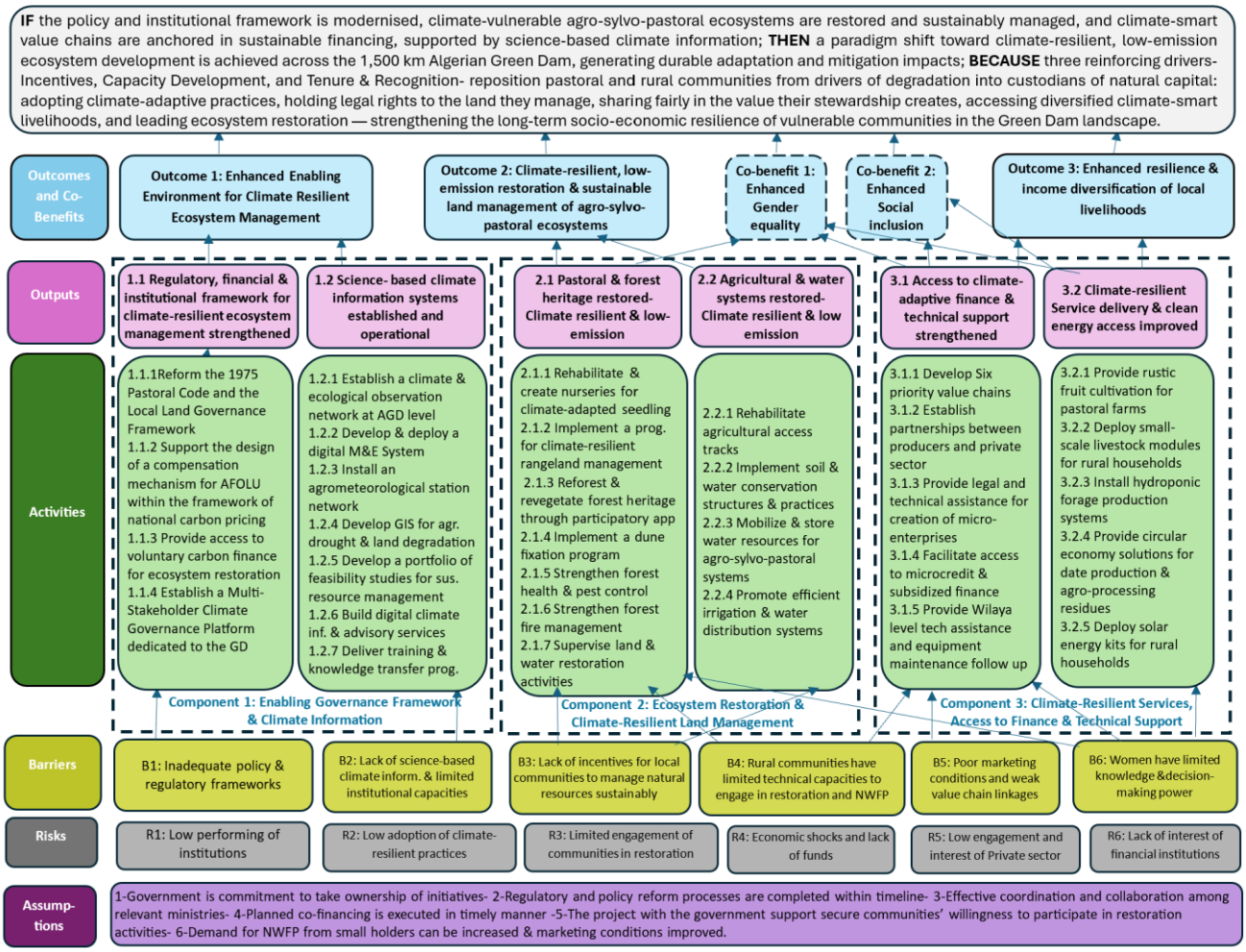


Figure 4: Theory of Change of the project

B.2 (b). Outcome mapping to GCF results areas and co-benefit categorization

Outcome number	GCF Mitigation Results Area (MRA 1-4)				GCF Adaptation Results Area (ARA 1-4)			
	MRA 1 Energy generation and access	**MRA 2** Low-emission transport	**MRA 3** Building, cities, industries, appliances	**MRA 4** Forestry and land use	**ARA 1** Most vulnerable people and communities	**ARA 2** Health, well-being, food and water security	**ARA 3** Infrastructure and built environment	**ARA 4** Ecosystems and ecosystem services
Outcome 1	☐	☐	☐	☐	☒	☐	☐	☐
Outcome 2	☐	☐	☐	☒	☒	☒	☐	☒
Outcome 3	☐	☐	☐	☐	☒	☒	☐	☒

Co-benefit number	Co-benefit					
	Environmental	**Social**	**Economic**	**Gender**	**Adaptation**	**Mitigation**
Co-benefit 1	☐	☐	☐	☒	☐	☐
Co-benefit 2	☐	☒		☐	☐	☐

B.3. Project/programme description (max. 2500 words, approximately 5 pages)

Component 1: Enabling Governance Framework and Climate Information

34. lays out the regulatory, institutional, and knowledge foundations for climate-resilient ecosystem management. It modernizes the pastoral legal framework, design and build the foundation of carbon market, establishes multi-stakeholder governance platforms, and deploys integrated climate information systems and digital advisory services - supported by baseline studies and capacity building - to enable evidence-based decision-making at all levels.

Outcome 1: Enhanced Enabling Environment for Climate Resilient Ecosystem Management

Output 1.1: Regulatory, Financial & Institutional Framework for Climate-Resilient Ecosystem Management Strengthened

35. This output will deliver a modernized and updated legal, financial, and institutional architecture to underpin climate-resilient land and ecosystem management across Algeria's Green Dam landscape.

Activity 1.1.1 Reform the 1975 Pastoral Code and the Local Land Governance Framework
Activity 1.1.2 Support the design of a compensation mechanism for AFOLU within framework of national carbon pricing
Activity 1.1.3 Provide access to voluntary carbon finance for ecosystem restoration
Activity 1.1.4 Establish a Multi-Stakeholder Climate Governance Platform dedicated to the Green Dam

Activity 1.1.1 Reform the 1975 Pastoral Code and the local land governance framework

36. This activity updates Algeria's legal, regulatory, and fiscal framework for pastoral land management in the steppe regions, addressing tenure insecurity, weak regulation, and the absence of a formal concession system. it introduces Algeria's first pastoral concession system with science-based stocking rates and seasonal grazing rotations, establishes concession agreements in 12 communes linking land-use rights to sustainable management, reforms fiscal policy to incentivize sustainable practices, reviews the Commercial Code to remove trade barriers, and develops a national rotational grazing framework informing the Resilient Rangelands Programme under Activity 2.1.2.

Activity 1.1.2 Support the design of the foundations of compensation mechanism for AFOLU within a framework of national carbon pricing

37. This activity designs the foundation for a domestic offset mechanism for the AFOLU sector within Algeria's emerging carbon pricing framework. It establishes the legal and institutional framework for carbon rights and benefit-sharing, analyzes needed policy reforms for carbon pricing architecture and AFOLU carbon accounting to meet NDC commitments, advance the Low Carbon Development Strategy, and strengthen Carbon Border Adjustment Mechanism (CBAM) compliance. In close coordination with the Ministry of Environment (MoE), it develops a policy framework for forest and soil carbon offsets, formulates regulatory instruments for carbon credit issuance and benefit-sharing, embeds carbon pricing knowledge into national curricula, ensures NDC alignment, and establishes science-based stocking rate assessments for priority rangeland zones.

Activity 1.1.3 Establish voluntary carbon finance readiness for ecosystem restoration

38. This activity establishes an MRV foundation designed to attract long-term carbon-finance partners beyond the project's lifetime. It builds on FAO's open-source platform tools such as Earth Map, Open Foris, SEPAL, Collect Earth, FAO NEXT tool, TAPE and Kobo ToolBox for geo-referenced field data collection. The MRV framework could be designed to be Verra/Gold Standard- compatible (to be determined during Inception Phase).

39. Two reinforcing data layers underpin the system: a top-down remote-sensing pipeline (satellite imagery, multi-layer GIS, machine learning, cloud-based processing) operated jointly by DGF, the National Office of Meteorology Météorologie (ONM) and the National Centre for Space Technology (CNTS); and a bottom-up field-data layer in which trained village technicians within Restoration Management Committees collect geo-tagged site-level and household-level data, complemented by systematic soil-carbon analysis across the six target wilayas.

40. The dual data flow creates a built-in independent verification mechanism, as community-reported data are systematically corroborated by satellite analysis at national level. A structured training cascade — DGF national → wilaya → commune — develops a dedicated cadre of restoration-monitoring specialists trained over the 7-year horizon, ensuring the system is locally owned and institutionally embedded. The methodology is consistent with GCF-FAO SURAGGWA Programme and builds the foundations required to attract long-term carbon investment to Algeria's steppe restoration. The methodological framework will be developed in accordance with internationally recognized AFOLU carbon accounting principles and internationally accepted MRV methodologies to ensure future compatibility with voluntary carbon market standards, while remaining aligned with Algeria's evolving national carbon framework.

Activity 1.1.4 Establish a multi-stakeholder climate governance platform dedicated to the Green Dam

41. This activity establishes an inclusive digital climate governance platform at wilaya and central levels to strengthen coordination, stakeholder participation, and evidence-based decision-making across the Green Dam landscape. Led by DGF in coordination with the National Climate Change Agency (ANCC), MADRP, HCDS, and multiple partners including FAO, it creates a National AGD Advisory Committee for cross-sectoral coordination, six Wilaya Climate Adaptation Committees with at least 30% women's representation, standardized institutional coordination protocols, multi-stakeholder policy dialogues, participatory land-use planning combining traditional knowledge with GIS tools, and transparent benefit-sharing governance frameworks for carbon market revenues.

Output 1.2: Science-Based Climate Information Systems Established and Operational

42. This output establishes integrated climate monitoring, early warning, and advisory systems to bridge the gap between technical climate knowledge and field-level application, enabling farmers, herders, and land managers to make informed, timely adjustments to their practices in response to climate variability across the Green Dam landscape.

Activity 1.2.1 Establish a climate & ecological observation network at AGD level
Activity 1.2.2 Develop and deploy a digital M&E System
Activity 1.2.3 Install an agrometeorological station network
Activity 1.2.4 Develop GIS for agricultural drought & land degradation
Activity 1.2.5 Develop a portfolio of feasibility studies for sustainable resource management
Activity 1.2.6 Build digital climate information and advisory services
Activity 1.2.7 Deliver training & knowledge transfer programme

Activity 1.2.1 Establish a climate and ecological observation network at the AGD territory level

43. This activity establishes a national climate and ecological observatory in Djelfa as the central hub for data integration, analysis, and forecasting across the Green Dam landscape. In close collaboration with the Scientific and Technical Research Center on Arid Regions (CRSTRA), Houari Boumediene University of Science and Technology (USTHB) the University of Djelfa, and the National Institute of Agronomic Research of Algeria (INRAA), it installs permanent scientific stations for long-term biophysical monitoring; develops AGD-specific forecasting models for drought, rangeland productivity, and desertification, deploys AI and machine learning tools for early warning and predictive analytics, establishes a coordinated research centre network, and ensures full interoperability with the national climate database and GIS platform under Activity 1.2.4.

Activity 1.2.2 Develop and deploy a digital monitoring and evaluation system

44. This activity deploys six automatic agrometeorological stations — one per wilaya — across the AGD to generate real-time agro-climatic data for drought monitoring, climate risk management, and resilient land-use planning. In close collaboration with ONM, it deploys IoT-enabled stations monitoring key climate and soil parameters, integrates real-time data with national meteorological systems, contributes to localized drought and wildfire early warning, ensures interoperability with the digital M&E platform and GIS, and builds technical capacity among relevant institutional staff. The six stations come in reinforcement of the existing network which stations are located near the wilaya urban centers and do not reflect the climate of the green dam area. Managed by CRSTRA, this network will use satellite-derived data via SEPAL, and existing ONM stations in the region. A

network-densification plan is included in the Sustainability section, supported by ONM commitments to expand coverage based on validated project performance.

Activity 1.2.3 Develop an integrated GIS for agricultural drought and land degradation management

45. This activity establishes an integrated GIS to support climate-informed land-use planning and drought and land degradation management across the steppe regions. In close collaboration with the Algerian Space Agency (ASA) through the CNTS, it builds a unified geo-referenced database integrating multi-source data, combines remote sensing with ground-truthing for baseline characterization, consolidates fragmented institutional datasets into an interoperable decision-support platform, produces centralized analytical outputs for drought monitoring, integrates local field-level knowledge, conducts a climate risk assessment following IPCC AR6 methodology, and supports national environmental reporting obligations.

Activity 1.2.4 Develop a portfolio of baseline and feasibility studies for sustainable resource management

46. This activity designs and implements targeted studies to strengthen AGD knowledge and support evidence-based, climate-resilient resource management, addressing gaps in knowledge capitalization and project formulation. Drawing on regional resources including the FAO KHIBRA Platform and ReInvest NENA Programme, findings will be disseminated through the digital M&E platform and Multi-Stakeholder Governance Platform. The portfolio covers six areas: forest management assessments, biodiversity inventories, silting and land degradation impact assessments, protected area feasibility studies, groundwater recharge feasibility assessments, and treated wastewater reuse studies.

Activity 1.2.5 Build digital climate information and advisory services

47. This activity establishes an integrated, gender-responsive digital climate advisory system providing farmers, livestock breeders, and land managers with real-time, actionable climate information across six wilayas. In close collaboration with ONM, it deploys a multi-hazard early warning system; produces tailored climate information products; develops digital tools, including a mobile application and AI-based forecasting services; implements a gender-responsive communication strategy for women, youth, and vulnerable groups; establishes a digital knowledge centre and ensures full interoperability with national climate systems for long-term scalability.

48. The integrated digital climate advisory services provide farmers, livestock breeders, and land managers with real-time actionable climate information across six Wilayas through: a Mobile app (Android-first, with offline mode) — bilingual Arabic and Tamazight, visualizes forecasts, maps, alerts, and personalized advisories; SMS bulletins — push-format advisories to feature phones (still the majority device in the steppe); interactive voice response) — recorded voice alerts in Arabic and Tamazight, accessible to low-literacy users; WhatsApp / Telegram bot — automated push of daily and event-based advisories, with dedicated women's-cooperative, Community radio bulletins — twice-daily climate-advisory slots on wilaya-level local radio; Wilaya-level digital kiosks in DGF offices and commune halls, complemented by an extension-agent dashboard enabling in-person delivery to non-digital users.

49. The advisory outputs feed five named operational decisions, each with an institutional owner and defined cadence: grazing-calendar adjustments (DGF wilaya office + pastoral concession committee — monthly, weekly during drought); restoration sequencing (DGF and Wilaya Forest Conservatories. — quarterly and at rainfall onset); water-allocation rationing within National Agency for Water Resources) ANRH safe-yield thresholds (Water User Associations (WUAs) + ANRH — weekly in the dry season); wildfire alert protocols (DGF + Civil Protection Directorate — daily during fire season); and farmer/herder advisory bulletins on sowing, pests, heat-stress and hydroponic-forage operations (DGF extension services + commune-level female extension agents — daily during agro-climatic events, weekly otherwise). This architecture ensures the observatory (Activities 1.2.1, 1.2.3, 1.2.4, 1.2.6) functions as a decision-support system tied to specific actions, named institutions and defined cadences, not a stand-alone information asset.

Activity 1.2.6 Design and deliver targeted training & knowledge transfer programs to project areas

50. This activity strengthens the capacities of extension agents, focal points, farmers, and private service providers through a structured system of training and knowledge transfer, aligned with tools and policies developed under other project components. Led by DGF and in close collaboration with HCDS, it delivers a comprehensive range of capacity-building interventions, including risk management training, technical training on project digital tools and the revised Pastoral Code, online learning and field schools for climate-smart practices, Training of Trainers sessions on drought management and pasture restoration, targeted training for women, men, and youth in livestock and farming, and dedicated carbon finance training for private service providers.

51. A specialized training structure will be mobilized to address the needs of wilaya-level implementation committee members and to deliver training to 8,401 project beneficiaries (including 5,384 women) across 60 sessions, with a focus on disseminating improved agricultural and pastoral techniques. Capacity-building workshops will also be organized for institutional stakeholders to strengthen their skills in planning, coordination, and project implementation. Collectively, these interventions aim to accelerate the adoption of innovative practices and reinforce the technical and organizational capacities of all stakeholders involved in project delivery.

Component 2: Ecosystem Restoration & Climate-Resilient Land Management

52. Component 2 delivers large-scale ecosystem restoration and climate-resilient infrastructure across Algeria's Green Dam landscape. It rehabilitates pastoral and forest heritage through climate-adapted seedling production, rangeland restoration with Algeria's first formalized rotational grazing system, participatory reforestation and revegetation, dune stabilization, silvicultural management transitioning pine monocultures toward diversified mixed forests, and strengthened wildfire prevention infrastructure. It also restores agricultural and water systems by rehabilitating rural access tracks, constructing soil and water conservation structures, mobilizing and storing water resources through rehabilitated infrastructure, and promoting efficient irrigation — collectively building the resilience of agro-sylvo-pastoral ecosystems while generating GHG emission reduction direct outcomes across six project wilayas. All restoration activities under Component 2 will be designed and implemented in alignment with the Global Biodiversity Standard (TGBS) to ensure verifiable, high-integrity biodiversity outcomes.

Outcome 2: Climate Resilient, Low-Emission Restoration and Sustainable Land Management of Agro-Sylvo Pastoral Ecosystems

53. This outcome captures (1) the adaptation pathway- restoring degraded landscapes and securing water resources to build the climate resilience of agro-sylvo-pastoral ecosystems- and (2) the mitigation pathway- delivering carbon sequestration through reforestation, rangeland soil-carbon, agroforestry, dune fixation and Algeria's first science-based rotational grazing system. The pastoral-concession architecture under Activity 1.1.1 provides the sustainable land management institutional anchor that makes both gains durable.

Output 2.1: Pastoral and Forest Heritage Restored- Climate-Resilient and Low Emission

54. This output will deliver large-scale ecosystem restoration across Algeria's Green Dam landscape through an integrated set of interventions covering climate-adapted seedling production, rangeland rehabilitation, community-based reforestation, dune fixation, silvicultural management, and forest fire protection. By restoring and protecting degraded steppe and forest ecosystems, the output will strengthen natural barriers against desertification, enhance carbon sequestration, and build the long-term ecological and productive resilience of agro-pastoral landscapes across the six project wilayas.

Activity 2.1.1 Rehabilitate & create nurseries for climate-adapted seedling production
Activity 2.1.2 Implement a programme for climate-resilient rangeland management
Activity 2.1.3 Reforest & revegetate forest heritage through participatory app
Activity 2.1.4 Implement a dune fixation program
Activity 2.1.5 Strengthen forest health & pest control
Activity 2.1.6 Strengthen forest fire management
Activity 2.1.7 Supervise land and water restoration activities

Activity 2.1.1 Rehabilitate and create nurseries for climate-adapted seedling production

55. This activity rehabilitates existing nurseries and establishes three new permanent nurseries in Khenchela, Djelfa, and El Bayadh to produce approximately 12.7 million climate-adapted seedlings over seven years, supporting ecosystem restoration across 22,658 hectares. Led by DGF, nurseries will produce a diversified portfolio of forest, fodder, and fruit tree species selected for climate resilience, using strict provenance protocols and INRF-validated growing standards. Nurseries will be managed long-term by community groups — primarily women — trained under this project in plant propagation and seed production.

Activity 2.1.2 Implement a program for climate-resilient rangeland management

56. This activity delivers a comprehensive rangeland management program across 12 communes covering 28,491 ha, integrating pastoral planting, *Opuntia* plantations, deferred grazing and enclosure, and forage seed collection. It aims to restore degraded rangelands, increase productivity, and strengthen ecosystem resilience, while operationalizing Algeria's first formalized rotational grazing system (under Activity 1.1.1) and the scientifically determined sustainable stocking rates (developed under Activity 1.1.2). In close collaboration with HCDS, the

activity emphasizes multi-stakeholder consultation for managing the transition period, follows traditional "g'del" deferred grazing practices, and generates significant mitigation outcomes through reduced GHG emissions, enhanced carbon sequestration, and improved water management.

Activity 2.1.3 Reforest and revegetate forest heritage for climate-resilient management through a participatory approach

57. This activity, implemented in collaboration with service providers and ensuring best practice with selection criteria of beneficiaries (see annex 23), will restore, protect, and expand forest ecosystems in the six project wilayas, thus strengthening the resilience of degraded drylands to climate change while aligning with the Global Biodiversity Standard (TGBS). Through targeted afforestation, reforestation, and alignment planting, the activity will stabilize soils, restore vegetation cover, improve soil organic matter and moisture retention, and protect agricultural lands, road infrastructure, and rural settlements from wind erosion, silting, and sand encroachment. It will conduct reforestation of 1,145 hectares using diverse native species adapted to climate conditions; replant underperforming forest stands across 1,333 hectares with three- to five-year enclosure protection. Women lead the seedling-supply chain through the women-managed nurseries under Activity 2.1.1, are prioritised (with youth) for planting, enclosure-maintenance and monitoring contracts, and hold a minimum 30% share in the community-based restoration management committees). Implementation will follow TGBS criteria on ecosystem integrity, biodiversity enhancement, adaptive management, and community benefits. These interventions will contribute directly to Algeria's NDC adaptation goals and Land Degradation Neutrality (LDN) targets.

Activity 2.1.4 Implement a dune fixation program to control silting and wind erosion

58. This activity will implement a comprehensive dune stabilization programme to control wind erosion and reduce sand encroachment threatening agricultural lands, rangelands, settlements, and infrastructure across the AGD. By combining mechanical and biological fixation techniques, the programme will stabilize mobile dunes, restore degraded landscapes, and protect productive land and rural infrastructure from silting across 3,150 hectares in four highly vulnerable wilayas: El Bayadh, Naâma, M'sila , and Djelfa. Priority will be given to areas where previous dune fixation efforts achieved limited success, applying integrated restoration methods to improve long-term stabilization outcomes.

Activity 2.1.5 Strengthen forest health through silvicultural management and pest control

59. This activity will improve the health, resilience, and productivity of forest stands through targeted silvicultural management, maintenance, and Integrated Pest Management measures across 12,524 hectares in six wilayas: El Bayadh (2,226 ha), Naâma (113 ha), Djelfa (1,500 ha), M'sila (4,285 ha), Tébessa (1,200 ha), and Khenchela (3,200 ha). Interventions will support the long-term success of reforestation efforts and protect forest ecosystems from increasing climate stressors and biological threats, including the pine mealybug (*Matsucoccus feytaudi*) — an invasive scale insect posing a severe and growing risk to Aleppo pine stands across the Green Dam landscape.

Activity 2.1.6 Strengthen forest fire management and protection infrastructure

60. This activity, implemented in collaboration with service providers, will strengthen wildfire prevention and response capacity across four wilayas — Tébessa, Khenchela, M'sila, and Djelfa — through the development of *Protecting Forests Against Fires (*DFCI) infrastructure, which includes firebreaks, water points, and access routes, along with consolidation of forest land tenure through 9,760 km boundary markers. Led by DGF, these interventions are complemented by 129 km of forest tracks under Activity 2.2.1, collectively safeguarding forest cover against the increasing frequency and intensity of climate-related wildfires.

Activity 2.1.7 Supervise the land and water restoration activities

61. This activity will enable the provision of technical senior expertise to support the project management unit on the implementation of land and water restoration activities. Particularly with construction of nurseries, species' selection, planting protocols, water infrastructure design, dune stabilization work and knowledge transferring to ensure technical sustainability over the long run.

Output 2.2 Agricultural and Water Systems Restored- Climate-Resilient and Low-Emission

62. This output restores agricultural and water infrastructure across the AGD through rehabilitation of rural access tracks, soil and water conservation structures, water resource mobilization and storage, and efficient irrigation

systems, addressing increasing drought, soil degradation, and water scarcity to improve rural connectivity, enhance water availability, and strengthen climate resilience for smallholder farmers and pastoralists.

Activity 2.2.1: Rehabilitate agricultural access tracks to improve rural connectivity

63. This activity rehabilitates a total of 478 km of agricultural (313 km) and rural (165 km) tracks (roads) across five wilayas (El Bayadh's existing track network was assessed as adequate during the project formulation -stage technical mission and is therefore not included)**.** The activity directly addresses three intensifying climate stressors that disrupt the functioning of agro-sylvo-pastoral systems and the project's restoration interventions: (i) increased wildfire frequency and severity driven by rising temperatures, prolonged droughts and biomass build-up — requiring rapid emergency-vehicle access to remote forest and steppe ignition zones; (ii) drought-induced food, fodder and water-supply emergencies — requiring rapid logistical access to deliver emergency assistance to pastoral and agro-pastoral households cut off from supply lines during recurrent floods (and drought) episodes; (iii) climate-related disruption to restoration supply chains — requiring reliable access for the movement of seedlings, irrigation components, soil amendments, fodder reserves and equipment that underpin Outputs 2.1 and 2.2 and the project's broader paradigm shift.

64. In close collaboration with the Rural Engineering Group (GGR) and the Public Works Directorate, track rehabilitation prioritizing segments serving (i) emergency access for fire suppression across remote steppe and forest areas; (ii) drought-relief logistics routing to the most vulnerable communities; and (iii) resilience-enabling supply chains for restoration inputs. Tracks are designed to create climate-resilient standards — drainage sized for intensified rainfall events, all-weather surfacing for episodic flash floods, alignment that avoids erosion-prone slopes — ensuring durability under projected mid-century climate conditions. Broader rural-development outcomes, including year-round accessibility and strengthened transport links to markets and essential services, are derivative co-benefits of the climate-specific functions and are not the basis for the additional climate financing rationale.

Activity 2.2.2 Implement soil and water conservation structures and practices

65. This activity aims to slow down the degradation of soil and the loss of water retention by building and repairing hydraulic and erosion-control infrastructure across 1500 Ha. In close collaboration with the Directorate of Water Resources (DRE), it focuses on torrent correction using check dam sequences with gabion-reinforced structures to reduce erosive force, and conservation structures adapted to the semi-arid context to capture runoff, enhance infiltration, and support native planting survival. Implementation is guided by participatory site assessments with local pastoral associations and smallholders.

Activity 2.2.3 Mobilize and store water resources for climate-resilient agro-sylvo-pastoral systems

66. This activity addresses the key climate stressors mentioned previously which threaten the viability of agro-sylvo-pastoral systems across the Algerian Green Dam: (i) declining and increasingly irregular precipitation — projected to decrease by up to 16% by 2080–2100 under SSP2-4.5 — that erodes the reliability of seasonal water availability; (ii) groundwater depletion driven by reduced aquifer recharge under drier conditions combined with rising abstraction pressure on shallow wells; and (iii) recurrent and intensifying drought episodes — 68% of the Green Dam was affected by the 2021 drought alone — producing acute water-supply emergencies for the most vulnerable pastoral and agro-pastoral communities.

67. In close collaboration with the Directorate of Water Resources and the National Agency for Hydraulic Resources (ANRH), the activity offers a diversified portfolio of hydraulic infrastructure adapted to the conditions of the steppe: the construction of new hydraulic infrastructure — including 22 forages, 29 surface water mobilization structures (pond, hillside reservoir, CED, diversion dike) for rainwater and 3 pastoral wells —the rehabilitation of existing hydraulic infrastructure and the pilot implementation of treated wastewater use for the rehabilitation of pastures. Priority sites will be selected through vulnerability assessment and community consultations at the inception phase.

68. The climate-additional benefits are: (a) buffering against climate-driven water-supply volatility through diversified storage modalities — surface reservoirs, ponds, traditional CED structures, and boreholes — that perform under different climate-failure scenarios; (b) drought-resilient water access for the most vulnerable agro-pastoral households cut off from supply lines during recurrent drought episodes; and (c) groundwater-recharge

support through hillside reservoirs and CED structures that recharge shallow aquifers on which downstream wells and pastoral water points depend, mitigating maladaptation risk from sole reliance on boreholes.

69. Groundwater sustainability is secured through three reinforcing measures: (i) a recharge-and-abstraction sustainability analysis based on ANRH data, with safe-yield thresholds defined per aquifer and applied as a binding ceiling for every project water point. In addition, the ANRH estimates the volume (based on the well flow rate), the depth of the aquifer, and its type, using a set of hydrogeological, hydraulic, and geophysical data combined in numerical models; (ii) climate-stress testing of all water infrastructure under worsening drought scenarios (SSP2-4.5 and SSP5-8.5) to confirm that abstraction remains within safe yield even in the most adverse projected futures; and (iii) safeguards against over-abstraction. The corresponding maladaptation risk is explicitly assessed in Section F.

70. These measures are operationalized through a legally anchored, multi-tier enforcement framework aligned with Algeria's national water legislation. At the local level, the withdrawal limits are set by the operating permit where the operator reports monthly on their compliance to the wilaya Directorate of Water Resources (DRE). ANRH oversees groundwater monitoring — including metered abstraction and piezometric data — and issues the technical trigger determinations that underpin adaptive management. Acting on those determinations, the DRE has the legal authority to reduce, suspend, or revoke abstraction permits, with quantified thresholds ensuring that corrective action is initiated before aquifer degradation becomes irreversible.

Activity 2.2.4 Promote efficient irrigation and water distribution systems

71. This activity improves water use efficiency through the deployment of localized irrigation systems and the strengthening of water distribution infrastructure. In close collaboration with the DRE, it includes the installation of drip irrigation systems across 70 hectares and the development of sprinkler irrigation networks over 10 hectares. In addition, the program supports the construction of 9,000 linear meters of irrigation canals (seguias), improving water conveyance, and reducing losses. Together, these interventions contribute to expanding cultivated areas, increasing agricultural productivity, and enhancing the resilience of farming systems in steppe regions. The activity is further supported by capacity-building initiatives that promote inclusive water management practices, including the participation of women farmers. The selection of sites where the drip irrigation, sprinkler systems and irrigation canals will be built are going to take place from baseline studies at Year 1.

Component 3: Climate-Resilient Livelihoods, Value Chains and Sustainable Finance

72. Component 3 strengthens the climate resilience and adaptive capacity of vulnerable rural communities across Algeria's AGD. It improves the technical, organizational, and commercial capacities of smallholders — with a strong focus on women — to produce and market climate-resilient NWFPs and livestock products, linking them to value chains, private sector markets, and sustainable financing mechanisms. It promotes a circular economy by recycling agricultural by-products, reducing waste, and optimizing water use, while prioritizing women-led solutions, enterprises and household income diversification across the six wilayas.

Outcome 3: Enhanced Resilience & Income Diversification of Local livelihoods

Output 3.1: Access to Climate-Adaptive Finance and Technical Support Strengthened

73. This output will strengthen the climate resilience and economic sustainability of rural communities across the AGD by developing and connecting smallholder farmers — with a strong focus on women — to diversified, market-integrated value chains. Through the development of six priority climate-resilient value chains – prickly pear, olive, rosemary, wool, alfa grass and peppermint – the establishment of producer-private sector partnerships, and targeted legal and technical support for micro-enterprise creation, the output will improve household income, reduce dependence on climate-sensitive subsistence production, and promote circular economy principles through the valorization of agricultural and pastoral by-products. These interventions will expand livelihood opportunities, strengthen market linkages, and build the entrepreneurial and organizational capacities of rural communities across the six project wilayas.

Institutional and Commercial Foundations of the Business Model:

74. The project's commercial sustainability is based on progressive strengthening market linkages and improving access to climate-adapted financial services rather than on continued grant support. During implementation,

producer organizations will be supported to establish commercial partnerships with private-sector buyers, while participating financial institutions will develop and operationalize financial products adapted to the characteristics of climate-resilient value chains, including seasonal repayment arrangements and group-based lending mechanisms. These measures are expected to strengthen the commercial viability of beneficiary enterprises and facilitate continued investment beyond the project period.

75. The selected institutional partners bring complementary expertise to the proposed business model as follows:

- DGF — Government of Algeria's national forestry administration under MADRP; 55 years of Green Dam programme implementation; managing ~4 million ha of forest and rangeland; co-implementer of the FAO/GEF Bibans (GEF 10170) and Cork Oak (GEF 9806) projects in the similar contexts; signed as co-Executing Entity for this project with USD 56.5 million (57%) co-financing.
- Private-sector anchor buyers — no anchor buyer contractually pre-identified at proposal stage. Letters of intent (LOI) for value chains are expected to be signed by end of Y2, upon the demonstrated interest of anchor buyers.

76. Additionally, the following institutions, while not institutional partners, have expressed strong interest in supporting facilitation:

- Agriculture and Rural Development Bank (BADR) - Algeria's largest state-owned agricultural bank; administrator of the National Agricultural Investment Development Fund (FNDIA) credit windows and the National Entrepreneurship Support and Development Agency (NESDA) aimed at youth microcredit lines; seasonal-repayment loan product piloted since 2020 in cereal and olive value chains. BADR has issued a letter of intent expressing its interest in collaborating with the project following extensive discussions during project formulation.
- National Agricultural Mutual Insurance Fund (CNMA) - national agricultural mutualist with existing drought-linked insurance and cooperative-lending products; expressed interest in participating in training offered by the project.
- National Company for the Research, Production, Transport, Processing and Marketing of Hydrocarbons (SONATRACH) - an Algerian oil and gas company and Africa's largest. Sonatrach aims to reduce its carbon footprint, particularly through investments in carbon capture and storage facilities, which recently launched a call for tenders for a feasibility study on the creation of certified carbon capture and storage facilities. SONATRACH expressed interest in the project activity 3.1.4.

77. The planned signing of the remaining letters of intent with financial institutions mentioned in paragraph 73 is expected to take place at the end of Year 1. A fallback is not necessary in this case as the Letters of intent (loi) are not a sine qua for the availability and deployment of these banks' financial instruments because the latter are financial products already out in the market. Therefore, no descoping is needed. Please see activity 3.1.4.

Activity 3.1.1 Develop six priority value chains
Activity 3.1.2 Establish partnerships between producers and private sector
Activity 3.1.3 Provide legal and technical assistance for creation of micro-enterprises
Activity 3.1.4 Facilitate access to microcredit and subsidized finance
Activity 3.1.5 Provide Wilaya level tech assistance and equipment maintenance follow up

Activity 3.1.1: Develop six priority climate-resilient value chains

78. This activity develops six climate-resilient value chains — prickly pear, olive, rosemary, wool, alfa grass, and peppermint — targeting small and medium farmers, primarily women, using FAO's Market Analysis & Development (MAD) methodology. Led by DGF and in close collaboration with MADRP, it conducts gender-sensitive market analysis, develops geographical indications and quality certifications, establishes market linkages, creates processing units for agricultural by-products, valorizes traditional crafts linked to eco-tourism markets, and delivers inclusive capacity-building through women-led extension and peer-to-peer learning.

79. The selection and design of the six priority value chains is climate-additional in three respects: (i) all six are based on drought-tolerant, water-efficient species naturally adapted to the steppe agro-ecology, reducing climate exposure compared to climate-sensitive cereal-based livelihoods that currently dominate the AGD; (ii) diversification across six value chains spreads climate-attributable income risk away from over-dependence on single-product streams; (iii) certification (organic, Global G.A.P., Fair Trade) anchors premium-market positioning

that buffers producers against climate-driven local market volatility and provides the price stability needed for households to maintain restoration investments during drought years. Climate-additional benefits: drought-resilient income streams; reduction of climate-attributable income volatility; financial cushion enabling continued restoration adoption during drought years. Broader income-diversification and market-access outcomes are derivative advantages.

80. The six value chains — prickly pear, olive, rosemary, wool, alfa grass and peppermint — are commercially, technically and institutionally feasible, grounded in demonstrated Algerian production capacity, growing domestic and export markets, and Algeria's comparative advantages (world's largest natural alfa reserves, top-ten global olive producer, and long-standing prickly-pear, rosemary, wool and mint traditions across the steppe); combining mature commodities with high-growth premium niches spreads climate-attributable income risk that no single-chain strategy could mitigate. The six value chains have been selected because they are drought-tolerant, water-efficient species suited to the steppe. Also, they help diversify household income and reduce climate-related losses from dependence on climate-sensitive crops (See Section 6 in the Feasibility Study – Annex 2).

81. Implementation will be delivered by DGF in close collaboration with MADRP, INRAA, HCDS, CRSTRA and the wilaya's Directorate of Agricultural Services (DSA) and the Directorate of Water Resources (DRE). The activity integrates five design conditions distilled from prior IFAD/GEF interventions in the Maghreb, namely, certification, cooperative formalization, processing infrastructure, sustainable management, anchor-firm linkages.

Table 2: Indicative market analysis for the six climate-resilient value chains

Value chain	**Current market size — Algeria**	**3–5-year growth trend**	**Domestic vs. export share (Algeria)**
1-Prickly pear (*Opuntia*) — fresh fruit, seed oil, cosmetic derivatives	Several wilayas, including Souk Ahras started to grow massively for, prickly pear seed oil production, which reached 1,000 litres in 2018, up from 300 litres in 2017, with plans to increase production seven-fold. One ton of grains is needed to produce one litre of oil.	Prickly Pear Seed Oil Market grew from USD 132.23 million in 2025 to USD 137.66 million in 2026 [Research &Markets] Future Market Insights projects the prickly pear seed oil nutricosmetic market to grow at 9.4% (CAGR (2026–2036) [fmi]	The value chain is still at an early stage of development, with most processing undertaken by small enterprises and cooperatives. Algerian prickly pear oil is exported to France, Germany and Qatar, with plans to sell in the United States. [phys.org]
2-Olive and olive oil	Algeria olive production (~890,000 tones/year (average annual production varies between about 700,000 and over 1 million tonnes- 8th largest global produce [ioc] Algeria's olive-growing area exceeded 440,000 ha in 2022 [djazagro.com] Production increased by 30.3% in 2022, after a 34.7% decline in 2021, indicating a recovery but also strong	Global olive oil market: Approx USD 19.4 billion (2024), projected to reach USD 30.6 billion by 2032 [IOC]	~90% domestic consumption; ~10% export (largely to EU and Maghreb specialty markets) [ioc]

	climate/seasonal variability [algerie-eco.com]		
3-Rosemary-essential oil	Algeria possesses abundant wild and cultivated Rosemay resources. Rosemary essential oil is produced by SMEs and cooperatives-no available official national production statistics.	Rosemary essential oil market projected to grow by 2035, at a CAGR of 5.0% [wiseguy]	Algeria is one of the largest exporters of essential oils. In 2024, it exported $74.7k of essential oils, making it the 130th largest exporter. In 2023, main export destinations were France, Canada, Niger, Luxembourg and Poland [oec], growing export potential (Europe) [cbi]
4-Wool (greasy fleece, carpet and handicraft segments)	Algeria's wool production reached 35,270 tonnes in 2024 [FAOSTAT] Greasy wool production was 0.667% lower than the previous year in 2024; the historical high was 38,373 tonnes in 2016, indicating relatively stable but slightly declining recent production. [helgilibrary.com]	Global handicrafts market will grow at a 4.9% CAGR (2025–2030) [grand view research]	~85% domestic (carpets, handicrafts, Babar carpet region); ~15% export (raw wool to Turkey, EU).
5-Alfa grass / Esparto paper pulp, handicrafts, cellulose	Algeria: world's largest natural reserves (~4 million ha, HCDS). Production fallen from over 90,000 tonnes annually in the 1960s to negligible levels after 2012) [AF]. Alfa's ecological and socio-economic importance in Algeria's steppe zones and its role as a fiber resource [researcgate.net]. Regression of alfa-dominated steppe vegetation due to overgrazing and recurrent droughts [researchgate.net].	Products based on esparto handicrafts and community-based eco-tourism are expected to grow by approximately 5–8% annually over the medium term [grandviewreseach], European paper and board production decreased by 1.55 [cepi].	~70% domestic (handicrafts, informal use, some pulp); ~30% export (residual EU paper industry, niche handicrafts). Algeria's wool exports were expected to rise from USD 1.8 million in 2021 to around USD 2.4 million by 2026, with average annual growth of 4.4% since 2013 [reportlinker.com]
6-Peppermint—essential oil, dried herb	Peppermint cultivated in Algeria on a limited scale, primarily for medicinal, aromatic, and culinary uses. Algeria's peppermint market is characterized by reliance on imports to	Global peppermint oil market will grow from USD 265.0 million in 2026 to USD 448.5 million by 2034, at a 6.8% CAGR. [fortunebusinessinsights]	Commercial essential oil production remains small and fragmented, with domestic demand supplemented through imports, mainly from Egypt, India and Pakistan. [indexbox.io]

meet domestic demand [indexbox.io]

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Activity 3.1.2: Establish partnerships between producers and private sector

82. This activity aims to develop better structured partnerships between NWFP and livestock producers — including women's organizations — and other commercial actors along the value chain (off-takers, aggregators, anchor buyers) for the formalization of commercial agreements.

83. Commercial partnerships between producers and other commercial actors along the value chain function as a business-resilience mechanism. This activity will employ an expert to help connect value chain actors and craft agreements such as (i) pre-agreed off-take contracts at minimum prices and (ii) anchor-buyer commitments. This will result in a reduction in informal and short-term agreement towards formal, written, mid-term partnerships that can help with the needed commercial sustainability to helps manage natural resources more sustainably, unlock access to new technologies and help consolidate best practices such as traceability and certification standards that producers otherwise cannot achieve individually. Additional benefits of formal partnerships along the value chain led to price stability across drought years; demand for climate-resilient production; structural protection against climate change-driven disruption in the supply chain and more diversified commercial outcomes.

Activity 3.1.3: Provide legal and technical assistance for creation of micro-enterprises

84. This activity provides integrated legal and technical assistance for creating micro-enterprises producing, marketing, and certifying NWFPs and livestock products, with focus on rural women and youth. In close collaboration with MADRP, it covers legal assistance for enterprise registration, cooperative formation, and regulatory compliance, alongside technical assistance for production improvement, post-harvest handling, and certification alignment, with capacity building of local service providers for long-term sustainability. This activity will provide coaching from national and international legal and business experts to micro-entrepreneurs interested in formalizing their businesses. These coaching sessions will cover legal assistance for enterprise registration, cooperative formation, and regulatory compliance, alongside technical assistance for production improvement, post-harvest handling and certification alignment, with capacity building of local service providers for long-term sustainability (See section 6 of Feasibility Study – Annex 2).

85. Micro-enterprises are structured as climate-adaptive livelihood vehicles: diversified portfolios; flexible product mixes that can be reweighed in response to drought; certified operations that retain market access during climate shocks; cooperative structures that pool risk across multiple households. Climate-additional benefits: diversified household-income portfolios that reduce climate-vulnerability concentration; cooperative risk-pooling that buffers individual households against climate shocks; certified market access that survives climate-driven local market disruptions. Broader entrepreneurship and employment outcomes are derivative co-benefits.

Activity 3.1.4 Facilitate access to microcredit and subsidized finance

86. This activity facilitates beneficiary access to innovative financial products (microcredit, subsidized loans, guarantees, etc.) already available in the Algerian market by public banks (BADR, FGAR, CNMA, ANGEM, NESDA), with BADR having expressed its interest in collaborating with the project through a letter of intent, and private banks, thus aiming to address structural barriers around the lack of awareness about financial products by smallholder farmers, pastoralists, women and youth. This activity delivers a two-stream training package: (a) training aimed at farmer beneficiaries (women, youth, pastoralists and smallholders) providing financial literacy sessions, hands-on business-plan preparation and financial-record keeping workshops, coaching and matchmaking meetings with lenders; and (b) training for financial sector beneficiaries (local branch staff of participating public and private banks) on climate change impacts on the priority value chains and on the adaptation measures adopted and by producers to successfully cope and thrive commercially, and on the improved risk profile of beneficiary farmer groups, so the latter are recognized by the lenders as attractive and lower-risk investment opportunities. Letters of intent (loi) are not a *sine qua non* condition for the deployment of innovative financial products as these are already available on the market and qualified producers can already access them. Standard agricultural credit typically fails climate-vulnerable agro-pastoralists, who are not aware of the existing financial tools. This activity addresses that gap by informing producers via the training on how these financial tools work and on the conditions needed to access them. In addition, this activity also provides facilitation

support to ease access to financial services via match-making support provided by experts who will help match producers to the appropriate financial service and institution.

Activity 3.1.5: Provide wilaya-level technical assistance and equipment maintenance follow-up

87. This activity provides continuous, field-based technical support to Component 3 beneficiaries, including value-chain producers, cooperatives, livestock-module holders, hydroponic-unit operators, and solar-kit recipients—across the six target wilayas. Three national consultants will be deployed on a paired-wilaya basis (West, Centre, and East), each supporting two wilayas to ensure timely technical assistance, reinforce the application of training delivered under Activities 3.1.3 and 3.1.4, and oversee the operation and maintenance of equipment provided under Activities 3.1.1, 3.2.2, 3.2.3, and 3.2.5. Acting as the link between beneficiaries, the Wilaya Implementation Committees and the PMU, the consultants will monitor technology adoption, coordinate maintenance requests with the wilaya technician network and equipment suppliers, and feed implementation lessons, maintenance records, and beneficiary feedback into the project's digital M&E system and adaptive management framework (Annex 23).

Output 3.2 — Climate-Resilient Service Delivery and Access to Clean Energy Improved

88. This output will strengthen the climate resilience and livelihood diversification of rural and agro-pastoral households across the AGD through a complementary package of productive and energy access interventions. It encompasses establishing rustic fruit orchards, deploying small-scale livestock modules and hydroponic forage systems, promoting circular economy solutions for agricultural residues, and installing solar energy kits for isolated rural households. Together, these interventions will reduce dependence on degraded natural resources, diversify household income sources, lower greenhouse gas emissions, and improve the living conditions of the most vulnerable communities and women across the six project wilayas.

Activity 3.2.1 Provide rustic fruit cultivation for pastoral farms
Activity 3.2.2 Deploy small-scale livestock modules for rural households
Activity 3.2.3 Install hydroponic forage production systems
Activity 3.2.4 Provide circular economy solutions for date production & agro-processing residues
Activity 3.2.5 Deploy solar energy kits for rural households

Activity 3.2.1 Provide rustic fruit cultivation for pastoral farms

89. This activity will establish rustic fruit orchards across 5,974 hectares in six wilayas of the AGD: El Bayadh, Naâma, Djelfa, M'sila, Tébessa, and Khenchela. The orchards will feature drought-tolerant and climate-resilient species — including almond, olive, apricot, fig, pistachio, and caper — contributing to ecological restoration, desertification control, and sustainable livelihoods for pastoral farming households. This project also plans to promote agroforestry with a target of 6,000 hectares in the pilot municipalities of the targeted wilayas. The selected species have been chosen based on their drought-tolerant characteristics, high marketability, existing value-addition know-how amongst population, soil protection capacity, and native to the region (See Annex 2, Feasibility Study, section 6).

Activity 3.2.2 Deploy small-scale livestock modules for rural households

90. This activity will strengthen the climate resilience and income diversification of rural households by deploying off-ground and small-scale livestock systems that reduce pressure on natural rangelands, benefiting 5,334 rural households — primarily women — across the six targeted wilayas. The activity will also support the conservation and promotion of locally adapted indigenous breeds, aligning climate adaptation with biodiversity conservation objectives.

Activity 3.2.3: Install hydroponic forage production systems

91. This activity will strengthen the dietary balance and climate resilience of small and medium livestock farmers by reducing dependence on degraded rangelands through the introduction of hydroponic forage technology. A total of 240 hydroponic barley chambers (540 kg capacity each) will be installed across all six AGD wilayas — El Bayadh, Naâma, Djelfa, M'sila, Tébessa, and Khenchela — meeting the forage needs of an estimated 25,146 sheep equivalents and significantly reducing grazing pressure on rangelands and alfa grass areas. This system

represents an innovative solution for securing livestock feed, particularly in regions with limited water resources, reducing water consumption by 90%, and allowing for continuous production throughout the year, regardless of weather conditions. As for equipment maintenance, several Algeria based companies specialize in the manufacture of these production units providing services to many private and public-private, particularly in Saharan regions.

92. The 240 units planned under the project will allow for the production of the equivalent of 15,000 hectares of fodder crops. In close collaboration with MADRP and Wilaya agricultural directorates, in coordination with HCDS, INRAA, and farmer cooperatives, the main actions under this activity include the installation and commissioning of hydroponic barley chambers across the six project wilayas to provide reliable, year-round forage supply independent of rainfall variability; the introduction of 360 complementary rainfed barley cultivation on daya (flood plains) (5 ha) and 240 supplementary alfalfa cultivation (5 ha) benefiting 600 project leaders (small scale livestock herders) to further improve forage availability and dietary balance for livestock; and the delivery of beneficiary training and technical support on system operation and maintenance, facilitated by farmer cooperatives and supported by INRAA agronomic guidance, with HCDS monitoring rangeland recovery outcomes resulting from reduced grazing pressure (See Annex 2, Feasibility Study for further details).

Activity 3.2.4: Provide circular economy solutions for date production and agro-processing residues

93. This activity transforms agricultural residues into productive resources, promoting circular economy principles for income diversification and sustainability. Led by DGF and in close collaboration with MADRP and Wilaya agricultural directorates, in coordination with HCDS, farmer cooperatives, and INRAA, it establishes date processing and packaging facilities, converts palm grove residues into livestock feed supporting women's engagement in bio-based activities, and valorizes olive oil production residues for additional income streams across the project zones. This activity will acquire and install a date processing (Gharse) and packaging unit in El Bayadh as well as a biomass processing unit (for olive oil and palm grove residue). See Annex 2, Feasibility Study (page 91).

Activity 3.2.5: Deploy solar energy kits for isolated rural households

94. This activity will improve the living and subsistence conditions of the most isolated rural and agro-pastoral households by providing access to clean, non-GHG-emitting electricity through solar energy systems. A total of 190 solar energy kits will be installed across six wilayas — El Bayadh, Djelfa, Naâma, M'sila, Khenchela, and Tébessa — reducing dependence on fossil fuels and lowering household greenhouse gas emissions. This activity will allow nomadic populations to access energy sources that are better distributed across grazing areas, thus allowing herders to access needed energy while grazing across large distances. In addition, facilitated access to energy significantly reduces production loss, as energy allows for refrigeration and other value-addition possibilities to herder to transform and market their products.

95. The long-term adoption rate of project activities is assumed to be up to 80%. This is based on the demonstrated relevance and economic viability of the proposed interventions. Stakeholder consultations across the target wilayas during project preparation (Annex 7) identified the priority constraints facing pastoralists, farmers, and producer groups, ensuring that interventions respond to locally identified needs. The EFA confirms that the proposed livelihood and value chain investments generate positive financial returns, providing strong incentives for sustained adoption. Adoption assumptions are intervention-specific: government-led ecosystem restoration activities are expected to achieve full implementation through public investment, while livelihood and value chain interventions gradually increase from 50% to 80% over the implementation period to reflect progressive uptake of new practices, with more complex production systems applying more conservative initial assumptions. Continuous extension support, cooperative-based implementation, improved access to finance, and strengthened market linkages will further promote adoption.

96. Progress will be monitored against the Year 4 mid-term milestone (Annex 11, Section 3.2), with adaptive management measures applied as needed. The proposed implementation approach closely mirrors, World Bank's Ethiopia Sustainable Land Management Programme (SLMP), which integrated landscape restoration with climate-smart agriculture, livelihood diversification, community-based institutions, capacity building, and strengthened tenure security. Similar to the Algeria Green Dam project, this integrated approach combined ecosystem restoration with income-generating activities and continuous technical support, resulting in large-scale land restoration, improved livelihoods, and stronger incentives for the long-term adoption of sustainable land management practices.

B.4. Implementation arrangements (max. 1500 words, approximately 3 pages plus diagrams)

Project Implementation Structure

97. The project will be implemented over a period of seven years. FAO will serve as the Accredited Entity (AE), while the General Directorate of Forests (DGF) of the Ministry of Agriculture, Rural Development and Fisheries (MADRP) and FAO will both serve as Executing Entities (EEs).

Accredited Entity

98. FAO will serve as the Accredited Entity (AE) for the project. FAO will be responsible for overall management of the project, including: (i) administrative, financial and technical oversight and supervision throughout project implementation; (ii) ensuring funds are effectively managed to deliver results and achieve objectives; (iii) ensuring the quality of project monitoring, as well as the timeliness and quality of reporting to the GCF; and (iv) project closure and evaluation. FAO will ensure these responsibilities in accordance with the detailed provisions outlined in the Accreditation Master Agreement (AMA) between FAO and GCF. FAO role as AE will be attributed to the relevant offices and divisions in FAO Headquarters located in the Rome, Italy (HQ). To fulfil the AE functions, FAO will set up a dedicated Project Task Force (PTF) in line with FAO project cycle guidelines. The PTF will be composed of the Budget Holder (BH), the Lead Technical Officer (LTO), Funding Liaison Officer (FLO), HQ Technical Officer and other officers, as appropriate.

99. The PTF will remain independent from the Executing Entity functions performed by FAO Representation in Algeria (FAODZ) (see Project execution section below). In line with the GCF policy on fees adopted through GCF Board Decision B.19/09, the above-mentioned segregation of responsibilities within FAO will ensure that the Organization can independently and effectively perform the AE functions listed in the GCF General principles and indicative list of eligible costs covered under GCF fees and project management costs.

Executing Entities

100. FAO Algeria will act as the EE responsible for implementing GCF-funded project activities. The Government of Algeria, acting through the DGF of the Ministry of Agriculture, Rural Development and Fisheries (MADRP) the principal national authority responsible for the management, conservation, and development of forest resources in Algeria- will also act as EE, responsible for the implementation of activities funded through government co-financing resources and a portion of the GCF proceeds. It will also play a central role in coordinating field-level activities, liaising with regional and local administrations, and ensuring alignment with national forestry strategies, including the Green Dam Revival Programme.

101. The DGF operates under the Ministry of Agriculture, Rural Development and Fisheries and has decades of experience in implementing large-scale reforestation, forest protection, and land restoration programmes. The DGF has been the lead institution for the national Green Dam programme since its inception and oversees a network of regional and local forestry services (forest conservation) across all target wilayas. This institutional presence and technical capacity make DGF a well-positioned EE for the proposed project. In the recent past, DGF implemented extensive restoration and reforestation efforts under the National Reforestation Plan (2000–2020), covering a total of 831,061 hectares, including 502,366 hectares of forest plantations, 32,866 hectares of pastureland, and 295,830 hectares of hardy fruit tree plantations. Building on these achievements, the Program for the Restoration of Degraded Forest Landscapes facilitated the planting of 873,263 hectares between 2020 and the first half of 2026, comprising 534,608 hectares of forest plantations, 35,051 hectares of pastureland, and 303,604 hectares of hardy fruit tree plantations. This reflects DGF's commitment to restoring degraded ecosystems, enhancing land productivity, and strengthening climate resilience.

Table 3 - Responsibilities of Executing Entities at sub-activity level.

Activity	Sub-activity*	Executing Entity
Activity 1.1.1 Reform the 1975 Pastoral Code and the Local Land Governance Framework	1.1.1.1	FAO
	1.1.1.2	FAO
	1.1.1.3	FAO
Activity 1.1.2 Support the design of the foundations of a compensation mechanism for AFOLU within a framework of national carbon pricing	1.1.2.1	FAO
	1.1.2.2	FAO
	1.1.2.3	FAO
	1.1.2.4	FAO
	1.1.2.5	FAO
Activity 1.1.3 Establish voluntary carbon finance readiness for ecosystem restoration	1.1.3.1	FAO
Activity 1.1.4 Establishment of a multi-stakeholder climate governance platform dedicated to the green dam	1.1.4.1	DGF
	1.1.4.2	DGF
	1.1.4.3	DGF
Activity 1.2.1 Establish a climate and ecological observation network at the AGD territory level	1.2.1.1	FAO
	1.2.1.2	FAO
	1.2.1.3	FAO
	1.2.1.4	FAO
Activity 1.2.2 Install an agrometeorological station network	1.2.2.1	FAO
	1.2.2.2	FAO
Activity 1.2.3 Develop an integrated GIS for the management of agricultural drought and land degradation	1.2.3.1	FAO
	1.2.3.2	FAO
Activity 1.2.4 Develop a portfolio of baseline and feasibility studies for the sustainable management of resources	1.2.4.1	DGF
	1.2.4.2	DGF
	1.2.4.3	DGF
	1.2.4.4	DGF
	1.2.4.5	DGF
	1.2.4.6	DGF
	1.2.4.7	DGF
	1.2.4.8	DGF
	1.2.4.9	FAO
	1.2.4.10	FAO
	1.2.4.11	FAO
Activity 1.2.5: Build digital climate information and advisory services	1.2.5.1	DGF
	1.2.5.2	FAO
	1.2.5.3	FAO
	1.2.5.4	FAO
Activity 1.2.6 Design and implement targeted training and knowledge transfer programs in project areas	1.2.6.1	FAO
	1.2.6.2	FAO
	1.2.6.3	DGF
	1.2.6.4	FAO

	2.1.1.1	DGF
Activity 2.1.1 Rehabilitate and create nurseries for the production of climate-adapted plants	2.1.1.2	FAO
	2.1.1.3	DGF
	2.1.1.4	FAO
	2.1.2.1	FAO
Activity 2.1.2 Restore climate-resilient pastures through pastoral planting and sustainable grazing	2.1.2.2	DGF
	2.1.2.3	DGF
	2.1.2.4	FAO
	2.1.3.1	FAO
Activity 2.1.3 Reforestation and revegetation of forest heritage through community associations	2.1.3.2	FAO
	2.1.3.3	FAO
	2.1.3.4	FAO
Activity 2.1.4 Implementation of a dune stabilization program to combat sand encroachment and wind erosion	2.1.4.1	FAO
	2.1.4.2	FAO
	2.1.5.1	FAO
Activity 2.1.5 Strengthening forest health through silvicultural management and pest control	2.1.5.2	DGF
	2.1.5.3	DGF
	2.1.6.1	DGF
	2.1.6.2	DGF
Activity 2.1.6 Strengthen the forest fire management and protection infrastructure	2.1.6.3	DGF
	2.1.6.4	DGF
	2.1.6.5	DGF
Activity 2.1.7 Supervise the land and water restauration activities	2.1.7.1	FAO
	2.2.1.1	DGF
Activity 2.2.1: Rehabilitate agricultural access roads to improve rural connectivity	2.2.1.2	DGF
	2.2.1.3	DGF
	2.2.2.1	DGF
Activity 2.2.2 Land restoration through erosion control structures	2.2.2.2	DGF
	2.2.2.3	DGF
	2.2.3.1	DGF
	2.2.3.2	DGF
	2.2.3.3	DGF
	2.2.3.4	DGF
Activity 2.2.3 Mobilizing and storing water resources for agro-pastoral systems	2.2.3.5	DGF
	2.2.3.6	DGF
	2.2.3.7	DGF
	2.2.3.8	FAO
	2.2.3.9	DGF
	2.2.3.10	DGF
	2.2.4.1	DGF
Activity 2.2.4 Promote efficient irrigation and water distribution systems	2.2.4.2	DGF
	2.2.4.3	DGF
	3.1.1.1	FAO
	3.1.1.2	DGF
Activity 3.1.1: Develop six priority value chains	3.1.1.3	DGF
	3.1.1.4	FAO
	3.1.1.5	DGF

	3.1.1.6	DGF
	3.1.1.7	DGF
	3.1.1.8	DGF
	3.1.1.9	DGF
	3.1.1.10	DGF
	3.1.1.11	DGF
	3.1.1.12	FAO
Activity 3.1.2: Establish partnerships between producers and private sector	3.1.2.1	FAO
Activity 3.1.3: Provide legal and technical assistance for the creation of micro-enterprises	3.1.3.1	FAO
	3.1.3.2	FAO
Activity 3.1.4 Facilitate access to microcredit and subsidized finance	3.1.4.1	FAO
Activity 3.1.5 Provide wilaya-level technical assistance and equipment maintenance follow-up	3.1.5.1	FAO
	3.2.1.1	DGF
Activity 3.2.1 Provide rustic fruit cultivation for pastoral farms	3.2.1.2	DGF
	3.2.1.3	DGF
Activity 3.2.2 Deploy small-scale livestock modules for rural households	3.2.2.1	DGF
	3.2.2.2	DGF
	3.2.3.1	FAO
	3.2.3.2	FAO
Activity 3.2.3: Install hydroponic forage production systems	3.2.3.3	DGF
	3.2.3.4	DGF
	3.2.3.5	DGF
Activity 3.2.4: Provide circular economy solutions for date production and agro-processing residues	3.2.4.1	FAO
Activity 3.2.5: Deploy solar energy kits for isolated rural households	3.2.5.1	DGF
M&E and PMU activities		
	4.1.1.1	FAO
	4.1.1.2	FAO
	4.1.1.3	DGF
4.1.1 - Develop and deploy a digital monitoring and evaluation system and mechanism	4.1.1.4	DGF
	4.1.1.5	FAO
	4.1.1.6	FAO
	4.1.1.8	FAO
	4.2.1.1	FAO
	4.2.1.2	FAO
	4.2.1.4	FAO
	4.2.1.5	FAO
4.2.1 Staff the project management unit	4.2.1.6	FAO
	4.2.1.7	FAO
	4.2.1.8	FAO
	4.2.1.9	FAO
	4.2.1.10	FAO

	4.2.2.1	DGF
	4.2.2.2	DGF
	4.2.2.3	DGF
4.2.2 The project management unit's operational capacities are present and the project activities implemented.		
	4.2.2.8	FAO
	4.2.2.9	DGF
	4.2.2.10	FAO
	4.2.2.11	FAO
4.2.3 The equipment and intervention resources of the project's central unit are present.	4.2.3.2	FAO

*Note: See Section E.6 for sub-activity descriptions.

Nationally Designated Authority

102. The Ministry of Environment acts as the GCF's National Designated Authority (NDA) for Algeria. It will use its convening power to facilitate consultations at the national level, assist in knowledge exchange for scaling up project innovations and ensure coherence between the project and Algeria's Nationally Determined Contributions (NDCs) and national climate strategies.

National Governance and Green Dam Coordination Body

103. The project's governance builds on the institutional architecture established by the Government of Algeria for the Green Dam Revival Programme. At the apex, the Green Dam Coordination Body provides strategic oversight, supported by the Interministerial Commission which serves as the project's steering committee and ensures cross-sectoral coordination among all relevant ministries. The Ministry of Agriculture, Rural Development and Fisheries (MADRP), through its central directorates and the Direction of the Green Dam, provides institutional leadership, while the National Coordinator ensures operational coherence across all implementing agencies. Guidelines issued during ministerial and interministerial councils in 2021 and 2022 have directed the territorial walis to issue necessary directives to local committees in coordination with daïra heads and communal assembly presidents, ensuring that strategic guidance is translated into field-level action across the Green Dam area, including the six project wilayas.

Project Steering Committee (PSC)

104. An interministerial commission already operational at national level for the Green Dam Revival Programme will extend its prerogatives to this project. The PSC comprises representatives from DGF, the Ministry of Environment (MoE) (NDA), the Ministry of Finance, the Ministry of Foreign Affairs, FAO, civil society organizations (as observers), and representatives from target wilayas. The PSC will convene at least once a year to provide strategic guidance, review progress, approve annual work plans, and address implementation issues.

105. The PSC will provide overall strategic oversight and guidance to the project. Its mandate will include:

- providing overall strategic direction to project implementation;
- ensuring alignment with national policies, strategies, and climate priorities;
- reviewing project progress and addressing implementation bottlenecks raised by the PMU;
- reviewing and approving Annual Work Plans and Budgets;
- monitoring project risks and the effectiveness of mitigation measures;
- reviewing gender-disaggregated results and progress toward gender equity targets;
- reviewing annual implementation reports, including requests for budget revisions and extensions where applicable;
- providing recommendations for subsequent implementation phases and corrective actions;
- supporting timely mobilization and coordination of co-financing resources; and
- providing strategic oversight to technical advisory and coordination structures supporting project implementation.

Technical Partners

106. Several specialized institutions will contribute to project implementation, including the National Institute for Research on Forests (INRF), the National Agency for the Conservation of Nature (ANN), the High Commission for Steppe Development (HCDS), the Scientific and Technical Research Center on Arid Regions (CRSTRA), the Scientific and Technical Committee, BNEDER, universities with expertise in agroforestry and rangeland management, and local civil society organizations experienced in community mobilization. Their participation will be formalized through appropriate arrangements in accordance with FAO's applicable rules and procedures.

Project Management Unit (PMU)

107 A dedicated PMU will be established and hosted by FAO Country Office in Algeria. The PMU will be functional for the entire duration of the project. The PMU will coordinate directly with the NPIU - DGF's National Project Implementation Unit – and be responsible for the execution of day-to-day activities with participating regional and local governments and other stakeholders. The PMU will be led by a project-recruited National Project Coordinator (NPC). NPC will be responsible for overall project management and coordination with project stakeholders. The PMU will also include a finance officer, operation officer, Human resources & admin officer and procurement & contracting officer.

Local Implementation Arrangement

108. At the local level, Project Implementation Committees (PICs) will be established in each target wilaya, comprising local forestry services (conservation des forêts), HCDS, Wilaya agricultural directorates (DSA), municipal authorities, community representatives, and CSOs[31]. Consultations with targeted rural populations will be systematically held and focus groups will be established to guarantee implementation of project actions and ensure their sustainability. The local committees will ensure that national strategic guidelines are effectively translated into ground-level implementation across the six project wilayas.

[31] CSO, universities, and other national institutions will be procured when needed, however, these institutions will not be responsible for implementing activities or part thereof. Rather, their role will remain limited to providing technical and advisory support to the Executing Entities.

Implementation arrangements

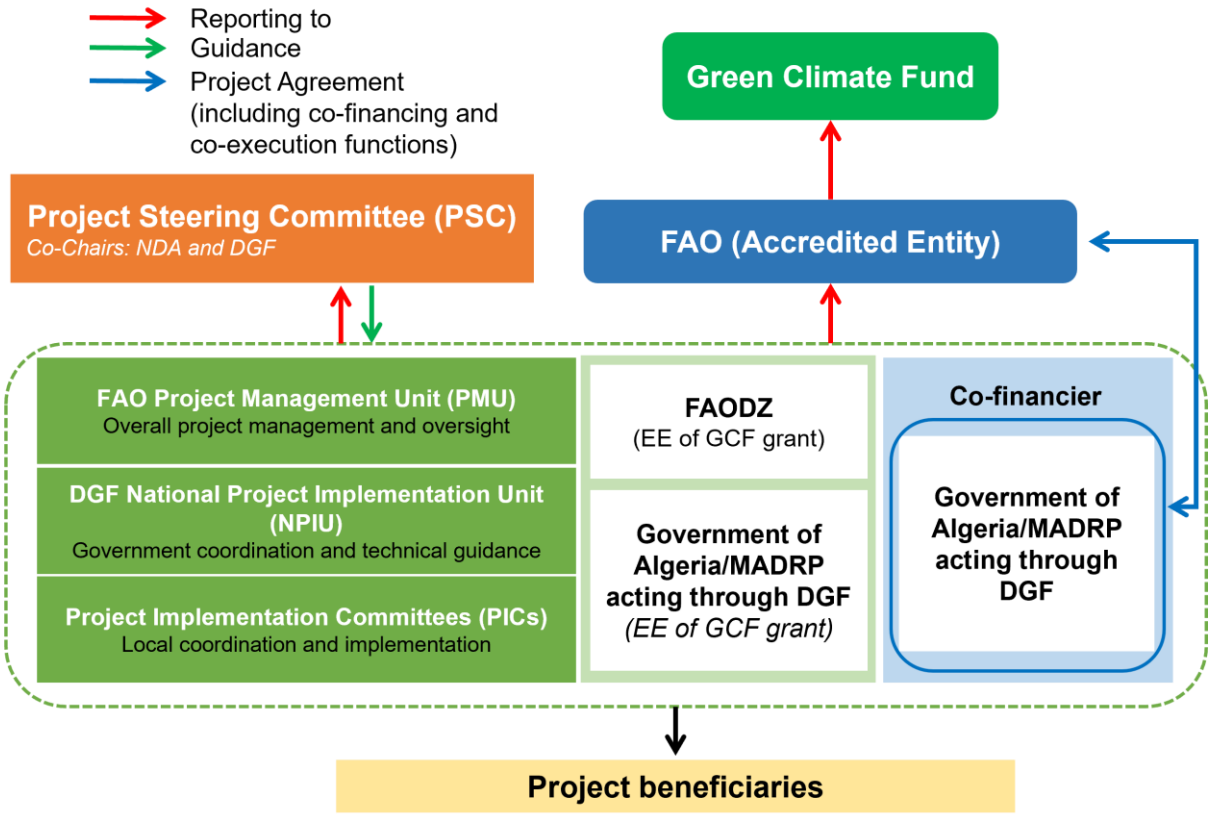


Figure 5: Implementation arrangements

Financial Flows and Legal Arrangements:

109. In line with the project implementation arrangements outlined above, GCF proceeds received by FAO in its capacity as Accredited Entity will flow to the Executing Entities, namely FAO Algeria (FAODZ) and DGF, for the implementation of project activities. The Project Agreement between FAO and the Government of Algeria, acting through MADRP include relevant clauses related to co-financing (and execution of the cofinancing) from the Government (Subsidiary Agreement). The GCF proceeds will not be utilized for transfers of cash or funds to beneficiaries.

110. GCF grant proceeds will be managed by FAO as the AE, in accordance with the AMA signed between FAO and GCF. FAO, in its capacity as AE, will retain overall fiduciary responsibility for the management and disbursement of GCF funds throughout the project cycle, in accordance with FAO's rules and procedures and GCF fiduciary standards.

111. For the GCF-funded activities directly implemented by FAO, GCF resources will be managed by FAO and will be used to make payments to service providers, technical partners and other contracted parties, in accordance with FAO's applicable rules and procedures. All financial transactions will be subject to FAO's internal controls, oversight mechanisms, and external audit requirements, and will be reported to the GCF in accordance with the AMA.

112. Government co-financing will be managed by DGF through its own systems and procedures, in accordance with the arrangements established in the Project Agreement referred to above. The financial management arrangements will be detailed in the project's financial management plan and will be subject to the applicable monitoring and reporting arrangements. The Government of Algeria, acting through the General Directorate of Forests of the Ministry of Agriculture, Rural Development and Fisheries, will provide co-financing as a grant to the project. The co-financier will be responsible for reporting to the AE on the execution of co-financed activities and

the disbursed and allocated co-financing amounts, in accordance with the applicable provisions of the AMA, the FAA between FAO and GCF, and the Project Agreement. The Government of Algeria, through DGF, will be responsible for executing and managing its co-financing funds through its national systems, with implementation coordinated through the NPIU the PMU, and overall strategic oversight provided by the PSC.

113. The USD 56.5 million Government of Algeria co-financing represents new earmarked expenditure approved by the Ministry of Finance and integrated into DGF's multi-year Pluriannual Action Plan (PAP). A financial-additionality monitoring protocol has been embedded: DGF's annual national budget allocations to AGD-related programmes will be tracked against the pre-project baseline, with the monitoring results reported in the project's Annual Performance Reports (APRs). This mechanism ensures that GCF financing is genuinely additional and that DGF cannot reallocate its existing budget away from GCF-covered activities over the project lifetime.

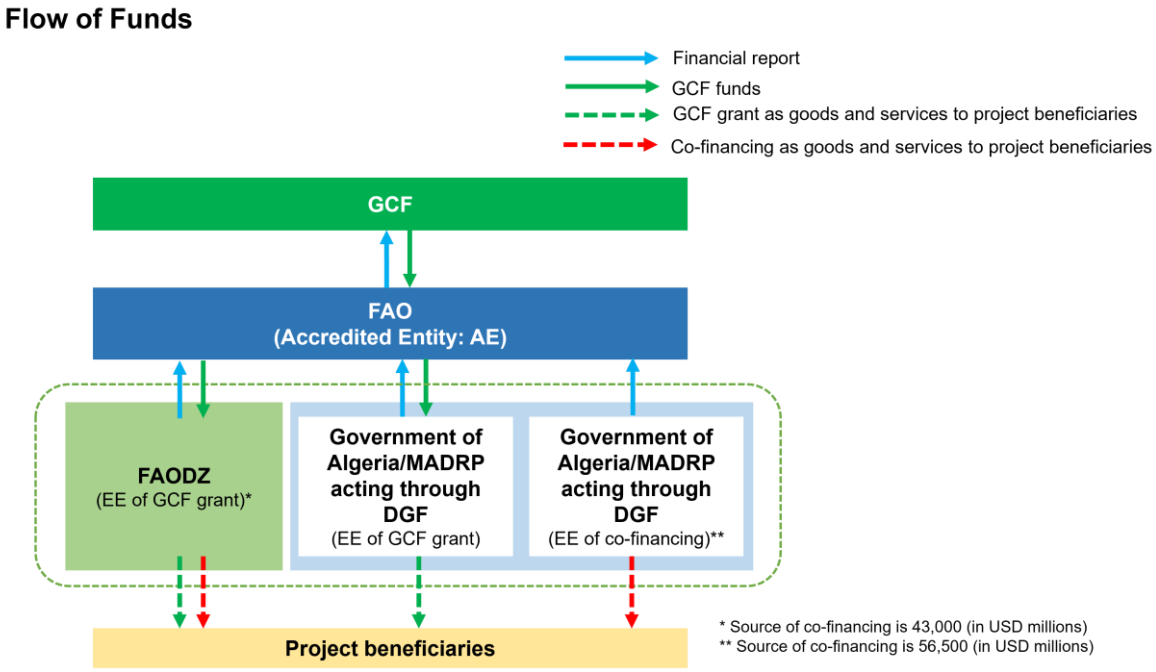


Figure 6: Flow of Funds

B.5. Justification for GCF funding request (max. 1000 words, approximately 2 pages)

114. The project is not financially viable on a commercial basis and would not proceed without GCF grant financing. The proposed investments—such as large-scale ecosystem restoration, climate information systems, and support to climate-resilient livelihoods—generate primarily public goods, including carbon sequestration, soil stabilization, watershed protection, and biodiversity conservation. These benefits do not produce direct and predictable revenue streams and therefore cannot attract private investment or sustain debt repayment. This assessment is confirmed by the project's financial and economic analysis (Annex 3), which shows that the Financial Internal Rate of Return (FIRR) is below the cost of capital and therefore insufficient to attract commercial investment, while the Economic Internal Rate of Return (EIRR) remains positive, reflecting the substantial public benefits generated by the project.

115. In addition, the target beneficiaries—pastoralists and smallholder farmers across the six project wilayas—face structural barriers to accessing finance. These include higher levels of poverty than national average, dependence on climate-sensitive livelihoods, lack of collateral, and limited knowledge of existing financial services. As a result, they are unable to absorb repayment obligations associated with commercial or concessional loans. At the same time, Algeria's domestic financial system does not offer suitable green finance instruments for long-term, landscape-scale restoration, such as climate adaptation credit lines or concessional lending windows for forestry and land restoration activities. While Algeria has demonstrated strong political commitment to climate action through its Nationally Determined Contribution and related strategies, public resources remain constrained by competing fiscal priorities and structural dependence on hydrocarbon revenues. This limits the government's ability to finance the full scale of investments required to restore degraded ecosystems and build climate resilience in vulnerable rural areas. As a result, key national programmes such as the Green Dam have historically suffered from underinvestment and have not been able to reverse ongoing land degradation trends.

116. Against this backdrop, GCF grant financing is required to overcome these financial, institutional, and market barriers and to enable the implementation of climate-resilient interventions on a scale. Grant financing is the minimum level of concessionality necessary, as the project does not generate sufficient financial returns to justify the use of reimbursable instruments, and alternative financing sources are either unavailable or unsuitable. The selection of a grant instrument is fully aligned with the nature of the proposed activities. The project components—focused on institutional strengthening, ecosystem restoration, and climate-resilient livelihood development—are predominantly composed of public investments and capacity-building measures that deliver long-term social and environmental benefits but do not generate direct financial returns. Applying loans or other reimbursable instruments to such activities would not be viable and would risk excluding the most vulnerable populations from participation.

117. GCF financing plays a critical catalytic role by absorbing the upfront risks associated with introducing innovative approaches, including climate-adapted land management practices, voluntary carbon market engagement, and new institutional coordination mechanisms. By de-risking these first-mover investments, the project establishes the technical, institutional, and financial foundations required for replication and scaling across the broader Green Dam landscape. This catalytic effect is essential to achieving a paradigm shift toward climate-resilient, low-emission land use systems in Algeria. Algeria has not yet registered AFOLU carbon projects under any international standard, which represents both a national gap and a strategic opportunity for the AGD project to serve as a national demonstration case. Activities 1.1.2 and 1.1.3 are designed to establish the regulatory architecture, MRV systems, and benefit-sharing mechanisms required for credible carbon credit issuance.

118. The Algerian Green Dam project meets the criteria for GCF grant funding under the Concessionality Framework (2019) and the GCF Policy on Co-financing, as follows:

- Counterfactual scenario: Without GCF support, the Government of Algeria would continue funding anti-desertification activities through national budgets, but these resources would not be sufficient to implement the integrated approach required to address the underlying causes of land degradation. The experience of the Green Dam programme over the past 55 years shows that largely sector-based public investment has delivered only partial and temporary results. The most likely business-as-usual scenario would therefore be continued fragmented interventions, without the proposed reforms to pastoral governance, AFOLU compensation, climate-resilient forage systems, value chains, and climate-adapted finance. The BAU scenario would also leave key structural barriers unresolved, including unsustainable grazing pressure and limited access to opportunities for women, youth, transhumant herders, and landless agro-pastoralists. These indicative estimates will be validated and updated through the certified DGF baseline established at project inception and reported through the APR from Year 4 onward.

- Financial gap: The project addresses public-good outcomes — rangeland restoration, carbon sequestration, biodiversity, climate resilience — that have long payback periods and limited immediate cash flow. Commercial or concessional debt instruments are not viable financing modalities for these activities, given the absence of bankable revenue streams in the early years and the social, not commercial, nature of the principal benefits. Because Algeria's fiscal space is constrained by its dependence on hydrocarbon revenues (accounting for approximately 90% of export earnings and 40% of government budget revenues), the USD 56.5 million committed by the Government of Algeria represents the maximum level of co-financing that can reasonably be mobilized. The additional USD 43 million in grant financing required to implement the full project cannot be accommodated within the national budget without diverting resources from other national priorities. Consequently, this incremental investment would not be available under the business-as-usual (BAU) scenario.

- Minimum concessionality: The GCF grant of USD 43 million represents 43% of the total USD 99.5 million project cost, with the Government of Algeria contributing the majority share of USD 56.5 million (57%). This leverage ratio reflects strong country ownership and minimizes the concessional envelope to what is strictly necessary for the project to proceed. No element of the grant finances activities with commercial returns.

119. The GCF grant under Component 3 finances two categories of expenditure: (a) enabling public-good services — private-sector partnership brokering (Activity 3.1.2), legal and technical assistance for cooperative and micro-enterprise formation (Activity 3.1.3), and microcredit-access facilitation for climate-adapted financial products designed with BADR / CNMA / ANGEM / NASDA / FGAR (Activity 3.1.4),on the ground technical assistance (Activity 3.1.5) and (b) productive-asset transfers to structurally credit-excluded vulnerable beneficiaries — cooperative processing equipment for the six value chains under Activity 3.1.1), beekeeping modules under Activity 3.2.2, hydroponic chambers and alfalfa units under Activity 3.2.3, date-processing units under Activity 3.2.4, and solar kits under Activity 3.2.5.

120. The Government of Algeria co-financing (USD 56.5 million, 57%) anchors the long-horizon land-based plantations of Activities 3.1.1 (opuntia, olive, alfa artisanal units, peppermint cultivation) and 3.2.1 (rustic fruit orchards, agroforestry, windbreaks) and the small poultry and field-barley modules — the components with the longest payback and the strongest public-good character. Consistent with the GCF Concessionality Framework (2019), the grant is directed to (i) non-revenue public-good services and (ii) asset transfers to vulnerable beneficiaries (women, youth, transhumant herders, landless agro-pastoralists) whose exclusion from Algeria's commercial credit market — evidenced by the absence of collateral, drought-sensitive incomes, and the incompatibility of standard BADR/CNMA loan products with agro-pastoral seasonality — means these assets could not otherwise be financed.

GCF Additionality

121. GCF additionality is material in addressing structural market, regulatory, and institutional insufficiencies in Algeria's Green Dam landscape that the DGF business-as-usual baseline has not resolved across 55 years of restoration effort (Green dam launched in 1970). The GCF grant unlocks four transformations that would not otherwise occur — and that are causally linked to GCF concessional financing, because the underlying assets are non-revenue-generating public goods with long-time horizons that cannot be financed through national budget lines or non-concessional debt:

- Structural reform of the Pastoral Code and introduction of Algeria's first formalized pastoral-concession regime — converting open-access Arch lands (currently overstocked at 10× sustainable carrying capacity: 0.78 ha/sheep against a sustainable 8 ha/sheep) into negotiated, science-based concessions with rotational grazing;
- Establishment of a domestic AFOLU carbon-offset mechanism aligned with Algeria's NDC, together with a Verra/Gold Standard-aligned MRV foundation (EarthMap, OpenForis, SEPAL, FAO NEXT, TAPE, KoboToolBox) that opens voluntary carbon-finance access for the first time;
- Integration of vulnerable rural communities — women, youth, transhumant herders and landless agro-pastoralists into formalized, certified value chains (opuntia, olive, rosemary, wool, alfa, peppermint) backed by existing tailored financial available via BADR, which has expressed its interest in collaborating through a letter of intent, but also FGAR/CNMA/ANCC and private banks;
- Climate-resilient, low-emission restoration replacing the historical Aleppo-pine monoculture (~68% of historic plantings) with native multi-species mixes (T*amarix, Calligonum, Retama, Atriplex, Opuntia*) and locking in 1,838,910, tCO_2eq of cumulative sequestration over 20 years (Annex 22) — quantified as the incremental difference vs the DGF business-as-usual scenario.

122. Without GCF (DGF baseline continues) — Continued open-access grazing on Arch lands at 10× carrying capacity, rainfall↓16% and +2.9 °C warming by 2080–2100 (SSP2-4.5) · 2021 drought already affected 68% of AGD, cereal yields ↓30–40% over two decades, trajectory continuing, 1975 Pastoral Code unenforced, no domestic AFOLU offset mechanism, no MRV foundation, voluntary carbon-market access blocked, women excluded from rangeland and forest tenure, standard BADR/CNMA credit products incompatible with drought-driven seasonal income, climate-mismatched restoration plantings with high failure rates, lifetime GHG sequestration limited and unverifiable.

123. With GCF Support — Pastoral-concession system established with rotational grazing and science-based stocking rates modernized Pastoral Code enforceable as a national framework, domestic AFOLU offset mechanism operational, voluntary carbon-finance readiness with full MRV foundation, 1,838,910 tCO_2eq mitigation over 20 years (Annex 22), 17,770 households with diversified, climate-resilient livelihoods, 5,334 women-led HH with priority access to solar kits, livestock modules and certified value chains, six certified NWFP value chains anchored by private-sector off-take Letters of intent (loi), climate-adapted microcredit with group-based lending for women's cooperatives and youth-led micro-enterprises, 941,670 indirect beneficiaries through farmer-to-farmer learning networks. The four transformations described above map to the three transformational additionality pillars below as follows: Pillar 1 (climate-resilient, low-emission restoration at scale) corresponds to transformation (iv); Pillar 2 (system strengthening — public goods) corresponds to transformations (i) and (ii); and Pillar 3 (targeting high-risk, underserved groups) corresponds to transformation (iii). The two frameworks are therefore complementary — the four transformations describe what changes are, and the three pillars describe how GCF concessional financing delivers those changes on a scale.

124. GCF's three transformational additionality pillars:

- Climate-resilient, low-emission restoration at scale: Native multi-species mixes replacing Aleppo-pine monoculture across 28,491 ha steppe rangelands and 4,466 ha forests under management; 3,150 ha dune fixation (biological and mechanic); 1,500 ha and 29,000 m^3 soil-and-water conservation; 478 km climate-resilient agricultural (313 km) and rural (165 km) tracks; diversified water infrastructure sized

below ANRH safe-yield thresholds (22 boreholes, 14 CEDs, 8 new and 5 rehabilitated ponds, 1 hill reservoir, 2 pastoral wells and one water point); 5,974 ha rustic fruit orchards,6,000 ha agroforestry, 3,600 ha of olive plantation, 10 ha of peppermint, 1,200 ha opuntia etc.

- System strengthening (public goods): Modernized Pastoral Code and pastoral-concession registry; domestic AFOLU carbon-offset mechanism (Activity 1.1.2); voluntary carbon-finance readiness with MRV foundation (1.1.3); climate and ecological observatory (1.2.1); six IoT agrometeorological stations (1.2.3); integrated GIS for drought and land-degradation (1.2.4); digital climate advisory services and AI forecasting (1.2.6); multi-stakeholder climate governance platform (1.1.4). Strengthens the national institutional architecture (DGF, ANCC, MADRP, ANRH, ONM, CNTS, HCDS, INRAA, BNEDER, CRSTRA, USTHB, ASAL).
- Targeting high-risk, underserved groups: Women: women's collective concessions on the six NWFP value chains; ≥30% representation in governance and WUAs; Climate Wise Women network; priority allocation of 190 solar kits, small-scale livestock modules and 80 supported micro-enterprises. Youth: priority registration for micro-enterprises; commune-level concession committee seats. Transhumant herders and landless agro-pastoralists: legally recognized concession tenure for the first time. Climate-adapted microcredit via BADR/FGAR/CNMA/ANCC with group-based lending products (Activity 3.1.4).

125. Each of the transformations above is causally dependent on GCF concessional financing: (a) the reform-and-concession framework requires multi-year inter-ministerial technical assistance and policy investment that no Algerian budget line currently funds; (b) the AFOLU/MRV/voluntary-carbon architecture has no domestic revenue model until carbon revenues materialize post-validation; (c) inclusion of women, youth, transhumant herders and landless agro-pastoralists require upfront subsidy of tenure, certification and finance products that conventional commercial finance will not underwrite; and (d) the incremental GHG impact attributable to GCF financing. These outcomes are not achievable through national resources or non-concessional finance alone.

Co-financing additionality:

126. The USD 56.5 million Government of Algeria co-financing represents new earmarked expenditure approved by the Ministry of Finance and integrated into DGF's multi-year Pluriannual Action Plan (PAP) — it is not a reallocation of existing baseline spending. To prevent any displacement of baseline DGF financing, a financial-additionality monitoring protocol has been embedded under DGF's annual national budget allocations to AGD-related programmes, which will be tracked against the pre-project baseline, with the monitoring results reported in the project's Annual Performance Reports (APRs). This mechanism confirms that GCF financing is genuinely additional, and that DGF cannot reallocate its existing budget away from GCF-covered activities over the project's lifetime.

127. The project will use a financial additionality monitoring protocol to ensure that GCF funding adds to, rather than replaces, existing government investment. As the project starts, DGF and the Ministry of Finance will jointly establish the baseline budget for AGD activities, broken down by budget line. This baseline will be recorded in the Project Inception Report and first APR. DGF budget execution will then be monitored annually against the baseline, in real terms and USD using the Bank of Algeria exchange rate. A reduction of more than 10% will trigger a corrective action plan for review by the Project Steering Committee. Compliance will be monitored quarterly by the PMU M&E Unit and verified annually by the Ministry of Finance, with the results reported to the GCF.

B.6. Exit strategy (max. 500 words, approximately 1 page)

128. The project's exit strategy is embedded in its design, ensuring that results, institutional capacities, and restored ecosystems are sustained beyond the seven-year implementation period. Each component creates a self-reinforcing system that the Government of Algeria, acting through the General Directorate of Forests (DGF) of the Ministry of Agriculture, Rural Development and Fisheries (MADRP), can maintain and scale up using existing institutional mandates and budgetary allocations. The organization of the forestry administration at the decentralized level is as follows: 59 forest conservation offices (in each wilaya) and 210 forest districts responsible for the management and protection of the heritage within a defined territory. The forestry administration has a total of over 13,700 employees, with territorial services representing 87%. This distribution of staff demonstrates a high concentration at the decentralized level and confirms the operational and territorial nature of the forestry sector. Nationally, the budget for silvicultural work is USD 1.6 million (equivalent 3,640 ha). Regarding the Algerian Green Dam program, the forestry administration has a structured organization for managing investment programs dedicated to the rehabilitation, expansion, and development of the ADG area. Across the 13 wilayas of the ADG, the budget is USD 32.4 million annual budget dedicated to personnel and USD 1.6 million operating budget.

129. Under Component 1, the climate information systems, early warning mechanisms, and upgraded governance framework for the Green Dam will be fully integrated into the operational infrastructure of the DGF and national meteorological services. The National Climate Committee will continue as the strategic oversight mechanism for

climate-informed land management across the steppe zones. Staff trained in climate risk assessment, carbon MRV, and adaptive forest management will remain within the public service, retaining institutional knowledge. Training curricula will be incorporated into national agricultural extension programs, ensuring capacity building continues through successive cohorts of professionals. The six stations will complement satellite-derived data via SEPAL, and existing ONM stations in the region. A network-densification plan is supported by ONM commitments to expand coverage based on validated project performance.

130. Under Component 2, ecosystem restoration investments, including climate-adapted reforestation, assisted natural regeneration, and sustainable land management across the six target wilayas, are designed to produce self-sustaining ecological outcomes. Species selection and planting techniques have been tailored to local agro-ecological conditions to maximize survival rates and reduce long-term maintenance costs. The DGF will assume full responsibility for monitoring and maintenance of restored areas using its existing field staff and budget. Landscape restoration plans will be integrated into commune-level and wilaya-level development plans, ensuring local authorities allocate resources for continued stewardship. Community-based natural resource management committees will provide a durable structure for participatory monitoring and conflict resolution over land and water resources.

Regulatory contingency for Pastoral Code reform:

131. If adoption of the amended Pastoral Code by the National People's Assembly (APN) is delayed beyond Year 7, grazing activities in the 12 pilot communes will continue under the interim legal framework established in Year 2, as described in Section F.1 (Risk Factor 1). This framework will include an inter-ministerial decree under Law 10-03, supported by DGF–MADRP circulars under the existing 1975 Pastoral Code. Concessions issued under the interim framework will include a transition clause allowing them to automatically shift to the reformed legal regime once the amended Code enters into force. DGF, in consultation with FAO, will report annually to the Project Steering Committee and GCF on the status of the interim arrangements until the reform is adopted. Component 2 and Component 3 activities will continue without interruption, as they are supported by the existing legal framework (Laws 10-03, 90-25, 08-16 and 23-21, and wali decrees), supplemented where necessary by the interim decrees and DGF–MADRP circulars.

132. Under Component 3, sustainability is ensured through a combination of diversified income generation, sustainable financing, and market integration that collectively reduce dependence on external support and climate-sensitive activities. By developing six priority climate-resilient value chains, deploying small-scale livestock modules and hydroponic forage systems, and promoting circular economy solutions, the component establishes economically viable livelihood pathways that can endure beyond the project period. Access to sustainable financing mechanisms provides communities with durable, market-based financial flows, while linkages to private sector markets create long-term commercial outlets for agro-pastoral products. Carbon revenues generated under this component are administered post-project by the DGF-hosted National AFOLU Carbon Revenue Fund under Ministry of Environment oversight — the benefit-sharing framework designed under Activity 1.1.2 — with approximately 92–95% of credit revenue distributed to carbon-rights holders (landholders, pastoral concessionaires and women's cooperatives), of which at least 30% is contractually earmarked for reinvestment in ecosystem restoration under the collaborative territorial management agreements of Activity 1.1.4.1, and the residual 5–8% funds the mechanism's MRV, registry and verification operations. The mechanism assumes a voluntary-market AFOLU price band of USD 8–15/tCO_2eq, applied to an average annual sequestration of approximately 92,000 tCO_2eq/yr (i.e., 1,838,910 tCO_2eq / 20 years, per Annex 22), the resulting annual revenue at full materialization is:

Scenario	Annual credit volume	Annual revenue at USD 8/ tCO_2eq	Annual revenue at USD 15/ tCO_2eq
100% credit materialization	92,000 tCO2eq	USD 736,000	USD 1,380,000
50% credit materialization	46,000 tCO2eq	USD 368,000	USD 690,000

Note: EFA calculations have used average figures (12$/ tCO_2eq).

133. Value-chain sustainability strategy: The Component 3 value chains are sustained beyond Year 7 through a five -pillar strategy that converts GCF concessional financing into durable, market-carried revenue streams. (1) Each of the six climate-resilient value chains (opuntia, olive, rosemary, wool, alfa and peppermint) is underpinned by anchor off-takers via letters of intent with commercial buyers setting pre-agreed minimum prices, minimum annual volumes and quality specifications for 7,818 beneficiary households, providing predictable farm-gate demand independent of grant flows. Letters of intent (loi) are expected to be signed by end of year 2. (2) The

facilitation to access finance is sustained through awareness raising training for beneficiaries and financial institutions, and matchmaking with lenders. BADR has already expressed its interest in collaborating through a letter of intent, while similar letters of intent (loi) with other participating financial institutions are expected by the end of Year 1. However, these letters of intent (loi) are not precondition for access to finance, as financial tools already exist in the Algerian market. (3) Cooperative-level revenue mechanisms anchor recurrent O&M costs: forage-sale revenue sustains the 240 hydroponic units under Activity 3.2.3, and cooperative processing margins from cold-press oil mills, cooperative drying and packing, and essential-oil extraction sustain the NWFP value chains. (4) From Year 4 onwards, domestic AFOLU carbon revenue, generated through the compensation mechanism designed under Activity 1.1.2 and administered by the DGF secretariat under the Ministry of Environment, provides Component 1 tail-financing for the observatory, MRV infrastructure, HCDS stocking-rate assessments and cooperative benefit-sharing. (5) The six-value-chain M&E dashboard, hosted on the digital M&E platform and handed over to MADRP-DGF at closure, continues market-signal monitoring (prices, volumes, off-taker delivery, FI loan-book performance, cooperative revenues) after Year 7, enabling MADRP, wilaya-level authorities and cooperatives to adapt to market shocks without further external support. Together, these five pillars ensure the value chains are carried by markets, financial institutions and national institutions rather than by residual GCF or Government of Algeria subsidy.

134. The Government of Algeria's co-financing of USD 56.5 million, representing 57 percent of the total project cost, demonstrates strong national ownership and commitment to scaling up restoration efforts under the Green Dam programme. While Algeria's fiscal constraints limit its ability to finance the full scale of investments required for landscape restoration and climate resilience without concessional support, the project has been designed to avoid creating parallel structures or imposing recurrent costs beyond the Government's capacity to sustain within existing DGF operational and monitoring budgets. Instead, it strengthens and expands existing institutional systems and capacities. Lessons learned will be documented and disseminated through national knowledge platforms, enabling replication across the full 1,500-kilometre extent of the Green Dam. Civil society organizations, local communities, and academic institutions engaged during implementation will continue as partners in monitoring and adaptive management, ensuring broad-based ownership of project outcomes. Annual operation and maintenance costs for the six agrometeorological stations, the GIS/observatory, the MRV system, and the functions absorbed from the PMU will be quantified during project inception, incorporated into the DGF's PAP monitoring and evaluation budget line, and reflected in the first APR and subsequent updates to the project exit strategy.

135. The Exit Strategy ensures post-project autonomy through institutional ownership and market-driven continuity through: (i) Ownership: all project assets and GIS tools are fully integrated into the DGF and embedded in national budget lines, with operations and maintenance responsibilities formally assumed by national systems. (ii) Start and continuation of financial transactions between beneficiaries and financial sector.

C. FINANCING INFORMATION

C.1. Total financing

(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)	Total amount	Currency
	43,000,000	**USD ($)**

GCF financial instrument	Amount	Tenor	Grace period	Pricing
(i) Senior loans	Enter amount	Enter years	Enter years	Enter %
(ii) Subordinated loans	Enter amount	Enter years	Enter years	Enter %
(iii) Equity	Enter amount			Enter % equity return
(iv) Guarantees	Enter amount			
(v) Reimbursable grants	Enter amount			
(vi) Grants	**43 million USD**			
(vii) Results-based payments	Enter amount			

(b) Co-financing information	Total amount	Currency
	56.5	**million USD ($)**

Name of institution	Enter amount	Amount	Currency	Tenor & grace	Pricing	Seniority
Ministry of Agriculture, Rural development and Fisheries	**Grant**	**54,003,521**	**USD ($)**	Enter years Enter years	Enter% Enter%	Options
	In kind	**2,496,479**	**USD ($)**	Enter years Enter years		
Total		**56,500,000**	**USD ($)**	Enter years Enter years	Enter%	Options

(c) Total financing (c) = (a)+(b)	Amount	Currency
	99,500,000	**USD ($)**

(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)

In kind contributions from DGF referring to Component 2: Restoration of degraded agro-sylvo-pastoral landscapes, land suitability, biodiversity and carbon sequestration.

In kind contributions from DGF referring to Component 3: Improving the climate resilience of smallholder's farmers through land management and value chains of climate-resilient non-wood forests and livestock

C.2. Financing by component

Please provide an estimate of the total cost per component and output as outlined in section B.3. above and disaggregate by source of financing. More than one co-financing institution can fund a single component or output. Provide the summarised cost estimates in the table below and the detailed budget plan as annex 4.

Component	Output	Indicative cost USD ($)	GCF financing		Co-financing		
			Amount USD ($)	Financial Instrument	Amount USD ($)	Financial Instrument	Name of Institutions
Component 1: improving the regulatory framework and	**1.1**	**472,643**	472,643	Grants	0.0	NA	NA

environment conducive to climate change resilient land management	**1.2**	**2,461,593**	2,461,593	Grants	0.0	NA	NA
Component 2: Ecosystem restoration and climate-resilient land management	**2.1**	**28,860,924**	22,033,931	Grants	6,826,993	In-Cash	DGF
	2.2	**18,793,795**	59,109	Grants	18,734,686	In-Cash	DGF
Component 3: Climate-resilient livelihoods, value chains and sustainable finance	**3.1**	**11,341,647**	4,240,941	Grants	7,100,706	In-Cash	DGF
	3.2	**30,799,750**	9,458,614	Grants	21,341,136	In-Cash	DGF
Monitoring and Evaluation	**4.1**	**1,834,652**	1,834,652		0	NA	NA
Project management unit	**4.2**	**4,409,997**	1,913,518	Grants	2,496,479	In-Kind	DGF
Contingency		**525,000**	525,000	Grants			
Indicative total cost (USD)		**99,500,000**	**43,000,000**		**56,500,000**		

C.3 Capacity building and technology development/transfer (max. 250 words, approximately 0.5 page)

C.3.1 Does GCF funding finance capacity building activities?	Yes ☒ No ☐
C.3.2. Does GCF funding finance technology development/transfer?	Yes ☒ No ☐

165,032 people will benefit from direct capacity building activities. Furthermore, 149,497 Farmers, agro-pastoralists & breeders from other 89 communes, will benefit from knowledge transfer.
The activities which contain capacity building dimensions are:
Activity 1.1.2 Support the design of the foundations of a compensation mechanism for AFOLU within a framework of national carbon pricing
Activity 1.1.3 Establish voluntary carbon finance readiness for ecosystem restoration
Activity 1.1.4 Establish a multi-stakeholder climate governance platform dedicated to the Green Dam
Activity 1.2.1 Establish a climate and ecological observation network at AGD territory level
Activity 1.2.2 Install an agrometeorological station network
Activity 1.2.3 Develop GIS for agriculture drought & land degradation
Activity 1.2.4 Develop a portfolio of baseline and feasibility studies for sustainable resource management
Activity 1.2.5 Build digital climate information and advisory services
Activity 1.2.6 Design and deliver targeted training and knowledge transfer programs to project areas
Activity 2.1.1 Rehabilitate and create nurseries for climate-adapted seedling production
Activity 2.1.2 Implement a program for climate-resilient rangeland management
Activity 2.2.4 Promote efficient irrigation and water distribution systems
Activity 3.1.3: Provide legal and technical assistance for creation of micro-enterprises
Activity 3.2.3: Install hydroponic forage production systems
Activity 3.2.4: Provide circular economy solutions for date production and agro-processing residues

D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

This section refers to the performance of the project/programme against the investment criteria as set out in the GCF's Initial Investment Framework.

D.1. Impact potential (max. 500 words, approximately 1 page)

The project will contribute to the following GCF Mitigation and Adaptation Results Areas:

Mitigation Impact

MRA4.0 – Forestry and Land Use

136. The project will generate an estimated cumulative reduction of 1,838,910 tCO_2eq over its lifetime (20 years) through four complementary pillars: (i) low-emission, climate-resilient rangeland restoration, including pastoral plantations and rotational grazing to promote natural regeneration; (ii) reforestation and agroforestry expansion to increase above- and below-ground carbon stocks; (iii) deployment of solar energy kits to substitute fossil fuel-based energy sources at household level; and (iv) improved livestock feeding practices to reduce enteric methane emissions. Additional mitigation outcomes will accrue from reduced fire-related forest loss and enhanced soil organic carbon. Detailed calculations are provided in Annex 22, consistent with Section E.3 of the GCF Core Indicators Report.

Climate additionality vs DGF baseline (mitigation):

137. The mitigation activities that are genuinely additional are: (i) the pastoral-concession system and rotational grazing framework (Algeria's first formalized system); (ii) the domestic AFOLU offset mechanism; (iii) the MRV foundation enabling voluntary carbon market access; (iv) the integration of women's collective concessions with the six NWFP value chains; (v) the rangeland-soil sequestration interventions, which DGF has not historically targeted; (vi) the climate-information systems and decision-support tools. The incremental GHG impact attributable to GCF financing has been quantified in Annex 22 as the difference between with-project and baseline (DGF business-as-usual) scenarios.

Adaptation Impact

ARA1.0 – Most Vulnerable People and Communities

138. The project will directly benefit 142,433 people (87,432 men and 55,001 women) across six wilayas (El Bayadh, Naâma, M'Sila, Djelfa, Tébessa and Khenchela) at USD 291 GCF investment per direct beneficiary. Direct beneficiaries include households receiving climate adaptation support, institutional staff benefiting capacity building, and community members engaged in ecosystem restoration and water mobilization programmes.

An additional 941,670 indirect beneficiaries (507,607 men and 434,063) across the 101 target communes will benefit from project spillovers, including improved ecosystem services and infrastructure within the 12 pilot communes, as well as the dissemination of climate resilient practices, climate information and knowledge through extension services, farmer-to farmer learning networks and other knowledge sharing mechanisms across the six target wilayas. Further details on the estimation methodology and measures to avoid double counting are provided in Annex23. Overall, the GCF investment per beneficiary (total) will be USD 38.

ARA2.0 – Health, Well-being, Food and Water Security

139. An estimated 35,810 people (28,648 men and 7,162 women) will adopt diversified climate-resilient livelihood options through six priority value chains — Opuntia, olive, rosemary, wool, alfa grass, and peppermint — selected for their resilience to arid conditions and income-generation potential. Small-scale poultry and beekeeping units will provide supplementary income for the most vulnerable households. The project will progressively consolidate these value chains and strengthen private sector and cooperative participation to ensure sustainability beyond the project's lifetime.

ARA4.0 – Ecosystems and Ecosystem Services

140. The project will place 59,320 hectares under improved low-emission and climate-resilient management through three interconnected intervention areas:

- Steppe zone restoration: pastoral plantation rehabilitation, assisted natural regeneration, alfa grass aquifer maintenance, and dune fixation;
- Forest rehabilitation: reforestation, alignment planting, green strips, silvicultural works, anti-parasitic treatment, and forest management planning; and

Perennial crop establishment: olive, opuntia, and climate-hardy fruit plantations to diversify land use and restore degraded lands.

141. Beyond site-level interventions, enabling activities under Result 1 will create systemic conditions for scalable impact, including:(i) improved regulatory frameworks and incentives for climate-resilient resource management; (ii) enhanced land use planning through geospatial analytical tools; and (iii) strengthened coordination and technical capacity of adaptation stakeholders. These investments will collectively contribute to conserving Algeria's steppe zone (32 million hectares) where pastoralism remains an ancestral livelihood and a critical dimension of national climate resilience.

Climate additionality vs DGF baseline (adaptation):

142. The additional adaptation interventions to the DGF business-as-usual baseline are: (i) integrated science-based climate-information architecture — climate-and-ecological observatory, six IoT agrometeorological stations, integrated GIS for drought and land-degradation, and the digital climate advisory— none of which exist under the DGF baseline; (ii) the pastoral-concession system with science-based rotational grazing and stocking rates, adapting rangeland use to climate driven carrying-capacity constraints; (iii) the climate-matched native multi-species restoration mix replacing the historical Aleppo-pine monoculture that has shown high failure under intensifying heat and drought stress; (iv) the diversified, climate-stress-tested water-infrastructure portfolio paired with Water Users Associations and conditional permit-renewals — replacing the unmonitored, single-source abstraction that prevails under the baseline; (v) the six certified climate-resilient NWFP value chains, reducing reliance on rainfed cereals whose yields have already fallen over two decades; (vi) climate-adapted microcredit with climate-indexed repayment schedules and group-based lending for women's cooperatives and youth-led micro-enterprises; (vii) solar-powered hydroponic forage systems, adapting livestock systems to projected drought-driven fodder deficits; (viii) the climate-resilient agricultural and rural tracks designed for intensifying flash floods and rainfall variability (ix) DFCI fire-management infrastructure and silvicultural treatment, adapting forest systems to climate-attributable wildfire intensification; and (x) the explicit inclusion of women, youth, transhumant herders and landless agro pastoralists in tenure, finance and decision-making.

Structured Impact Pathway — hazard, exposure, vulnerability, risk reduction:

143. In line with decision B.33/12 Annex VI), the tables below operationalize the GCF impact-potential principles of identification and response by mapping, for each adaptation outcome, the principal climate-related hazards to the exposed systems and groups, the vulnerability factors that translate exposure into risk, and the project mechanisms — with explicit activity references — that reduce risk. The IPCC AR6 risk framework is applied (Risk = f(Hazard, Exposure, Vulnerability)). The evidence based on hazards, exposure and vulnerability is drawn from the Feasibility Study (Annex 2).

Outcome 1 — Enabling Governance and Climate Information: structured impact pathway

Hazard	**Exposure**	**Vulnerability**	**Risk reduction (project mechanism)**
Drought — recurring; intensifying (2021 drought affected 68% of AGD); −16% rainfall by 2080-2100 (SSP2-4.5)	Pastoral communities across 12 pilot communes; 60-70% of HH livestock-dependent; six target wilayas	No real-time agro-climatic data; weak inter-ministerial coordination across 17 institutions / 7 ministries; absent decision-support tools; 1975 Pastoral Code not enforced	Climate and ecological observatory (Activity 1.2.1); six agrometeorological stations (1.2.3); integrated GIS for drought / land-degradation (1.2.4); digital climate advisory services+ AI forecasting (1.2.6); multi-stakeholder climate governance platform with ≥30% women's representation (1.1.4); modernized Pastoral Code (1.1.1)
Extreme heat — +2.9°C by 2080-2100; intensifying heatwaves and evapotranspiration	Rangelands (*Stipa tenacissima, Lygeum spartum*); livestock (thermal stress); soil organic matter	Absence of heat-adaptive management framework; no scientific stocking rates or seasonal grazing rotations; no decision support for adaptive management	Science-based stocking rates and rotational grazing under Pastoral Code reform (1.1.1); evidence-based decisions enabled by observatory + GIS (1.2.1, 1.2.4); targeted training (1.2.7)

Wildfire risk — climate-attributable increase in fire frequency and intensity	Forest cover (12,524 ha under management); pastoral settlements; infrastructure; livestock	No structured early warning; weak coordination with Direction de la Protection Civile; absence of dedicated wildfire alert protocols	Wildfire alert protocols from agrometeorological + GIS systems (1.2.3, 1.2.4); training of emergency responders and community fire teams (1.2.7); coordination platform (1.1.4)
Information barriers — fragmented climate data; no national MRV for AFOLU; no domestic carbon-pricing framework	Algeria's NDC AFOLU commitments; restoration investments lacking verification; restoration scaling deferred	No AFOLU MRV foundation; no Verra/Gold-Standard methodology validated for steppe context; no carbon-rights legal framework	Domestic AFOLU offset mechanism (1.1.2); voluntary carbon finance readiness with MRV foundation — EarthMap/OpenForis/SEPAL/FAO NEXT/TAPE/KoboToolBox (1.1.3); legal clarification of carbon rights and Benefit Sharing Agreements

Outcome 2 — Climate-Resilient, Low-Emission Restoration and Sustainable Land Management: structured impact pathway

Hazard	**Exposure**	**Vulnerability**	**Risk reduction (project mechanism)**
Drought + declining rainfall + rising evapotranspiration	Steppe rangelands (28,491 ha); forests (6,266ha under management; 1,800 ha actively treated); pastoral plantings (Opuntia 1,092 ha)	Open-access pastoral regimes on Arch lands; overstocking (0.78 ha/sheep against sustainable 8 ha/sheep — 10× the carrying capacity); species mismatch from historical Aleppo pine monoculture; weak post-establishment maintenance	Pastoral concession system + science-based stocking rates + rotational grazing (Activities 1.1.1, 2.1.2); native species mix — *Tamarix, Calligonum, Retama, Atriplex, Opuntia* (2.1.2, 2.1.3); 5-year enclosure protection (2.1.3); g'del deferred grazing (2.1.2)
Wind erosion + flash floods (intensifying flash-flood frequency in wadi systems under SSP2-4.5 and SSP5-8.5)	Soil cover; settlements; agricultural land; wadi-bed users	Bare or thinly vegetated surfaces (>50% vegetation cover loss since 1970s); inadequate soil-water conservation structures; soil losses 150-300 t/ha/year in cleared steppes	Dune fixation 3,150 ha with mechanical and biological methods (2.1.4); soil and water conservation structures across 1,500 ha (2.2.2); windbreak strips and erosion-resistant alignment of rural tracks (2.2.1); native vegetation cover restoration
Wildfires — climate-attributable forest fires of increasing frequency and intensity	Forest stands (Tébessa, Khenchela, M'sila, Djelfa); 12,524 ha under silvicultural management; settlements; infrastructure	Inadequate DFCI infrastructure; unconsolidated forest land tenure; no firebreaks / water points / boundary markers; pine mealybug pressure intensifying under heat stress	Forest fire management and protection (2.1.6); DFCI infrastructure — firebreaks, water points, access routes; 9,760 km of boundary markers consolidating forest tenure; silvicultural management and IPM across 12,524 ha (2.1.5)
Water-supply emergencies — declining recharge; groundwater depletion; intensifying	Pastoral and agro-pastoral households cut off during drought; livestock; restoration sites	No buffering against drought; over-abstraction from existing wells; unmonitored aquifer status; concentration risk on single supply type	Diversified water-infrastructure portfolio sized below ANRH safe-yield thresholds — 22 boreholes, 1 hill reservoir, 14 CEDs, 8 new ponds, 5 rehabilitated ponds, 2 pastoral wells and one water point pond (2.2.3); climate-stress testing

drought episodes			under SSP2-4.5 and SSP5-8.5; metering + WUAs with 30% female membership + conditional permit renewals
Agricultural-track impassability under flash flood / intensifying rainfall variability	Emergency-response routes; restoration supply chains; market access; drought-relief logistics	Degraded track network; absence of climate-resilient design (drainage, all-weather surfacing, erosion-resistant alignment)	478 km of climate-resilient agricultural (313 km) and rural (165 km) tracks across five wilayas (2.2.1); designed for intensified rainfall and flash-flood events; priority on emergency-access segments

Outcome 3 — Climate-Resilient Livelihoods, Value Chains, and Sustainable Finance: structured impact pathway

Hazard	**Exposure**	**Vulnerability**	**Risk reduction (project mechanism)**
Drought-driven income shocks — recurring; 2021 drought affected 68% of Green Dam	60-70% of HH livestock-dependent; >90% rainfed cereal farmers; 5,334 women-led HH	Single-product income streams; cereal yields already down 30-40% over two decades; no climate-indexed credit; standard agricultural credit (BADR) incompatible with drought-driven income; women excluded from finance and tenure	Six diversified climate-resilient value chains — opuntia, olive, rosemary, wool, alfa, peppermint (3.1.1); climate-adapted microcredit via BADR/FGAR/CNMA/ANCC with seasonal-income-aligned repayment, climate-indexed products, and group-based lending for women's cooperatives (3.1.4); women's collective concessions on the six value chains; Climate Wise Women network
Fodder deficits during drought — dry-season fodder collapse	Livestock (especially small ruminants); household food security; transhumant communities	Dependence on degraded rangelands (already operating 10× carrying capacity); no off-rangeland fodder; no climate-adaptive feed sources	240 hydroponic forage chambers (8 m², 540 kg/day, solar-powered) across six wilayas — meeting 25,146 sheep-equivalent needs (3.2.3); rangeland restoration (2.1.2); small-scale livestock modules for 5,334 HH (3.2.2)
Climate-driven market volatility — NWFP local market disruption during droughts; distress sales	Smallholder NWFP producers and processors; women's collective income; transhumant herders	Informal / uncertified producers; no off-take agreements; no traceability; weak market linkages	Certification — organic, Global G.A.P., Fair Trade (3.1.1); producer-private sector Letters of intent (loi) with pre-agreed off-take and minimum prices (by end of Y2) (3.1.2); micro-enterprise legal/technical assistance for registration and certification (3.1.3); aggregation platforms and digital marketplaces
Energy / electricity unreliability — exacerbated by drought-driven supply disruptions	Isolated agro-pastoral households (priority for women-headed); rural subsistence operations	Fossil-fuel dependence; no resilient energy source; capital-cost barriers to solar adoption	190 solar energy kits across six wilayas with priority allocation to women-headed households (3.2.5); circular economy interventions valorizing agricultural by-products (3.2.4)

Income concentration in climate-sensitive activities — rainfed cereals and livestock	5,334 women-led HH; smallholder cereal-and-livestock households across six wilayas	No alternative income; gender norms restricting women's access to tenure and finance; weak entrepreneurship infrastructure	Six certified value chains (3.1.1); 80 micro-enterprises supported (3.1.3); 5,974 ha rustic fruit orchards + 6,000 ha agroforestry (3.2.1); climate-adapted microcredit (3.1.4); women's collective concessions

D.2. Paradigm shift potential (max. 500 words, approximately 1 page)

144. The project will catalyze a fundamental paradigm shift in how Algeria manages its steppe and forest ecosystems — transitioning from a state-led, single-species conservation model with limited community inclusion to an integrated, multi-stakeholder, climate-resilient landscape management approach. Currently, smallholder farmers and pastoralists use rangelands unsustainably, accelerating desertification and increasing vulnerability to climate impacts, while the government has traditionally viewed pastoral communities as threats rather than partners in sustainable land management. The project will reverse this paradigm by incentivizing behavioral change, introducing sustainable land management practices, strengthening land tenure governance, and repositioning pastoralists as custodians of natural resources.

145. Innovation: The project introduces several transformative innovations. First, the establishment of pastoral concessions — for the first time in Algeria — will formalize rules of occupation and exploitation of rehabilitated rangelands, individualize responsibility and encourage breeders to conserve and sustainably manage grazing areas. Second, the shift from intensive monoculture reforestation (Aleppo pine) to a multi-species participatory approach using endemic species (holm oak, Atlas pistachio, juniper) will enhance long-term ecosystem resilience. Third, the project pioneers a multi-sectoral institutional model involving 15 institutions across seven ministries, replacing Algeria's traditional single-ministry project management and enabling cross-sectoral coordination. Fourth, the exploration of sustainable finance mechanisms and the development of NWFP value chains will create market-based income alternatives for agro-pastoralists, reducing dependence on state subsidies and ensuring financial sustainability.

146. Unlike previous Green Dam interventions, which were primarily based on state-led restoration activities, the proposed project combines ecosystem restoration with governance reform, community-based pastoral management, climate information services, sustainably unlike previous Green Dam interventions, which were primarily based on state-led restoration activities, the proposed project combines ecosystem restoration with governance reform, community-based pastoral management, climate information services, sustainable value chains, and private-sector engagement within an integrated landscape approach. By strengthening local stewardship through pastoral concessions, aligning restoration with livelihood incentives, and reinforcing institutional coordination and climate-finance readiness, the project addresses the structural drivers of land degradation and creates conditions for sustained behavioural and institutional change beyond the project lifetime value chains, and private-sector engagement within an integrated landscape approach.

147. Potential for scaling up and replication: The project area is deliberately small yet representative of Algeria's steppe zone, enabling systematic replication across the broader 32-million-hectare steppe territory. The enabling environment created through capacity building, regulatory reform, and fiscal incentive restructuring (Outcome 1), combined with demonstrated sustainable land management practices (Outcome 2) and market-based value chain solutions (Outcome 3), will provide a tested blueprint for national scale-up. Lessons learned will be shared with other Great Green Wall countries through existing networks, including the Pan-African Agency of the Great Green Wall, NGARA, and AFR100.

148. Contribution to an enabling environment: The project will strengthen the enabling conditions for climate-resilient steppe and forest management by: (i) reforming the Pastoral Code and the local land governance framework; (ii) establishing a cross-sectoral development framework with medium and long-term climate objectives; (iii) building governance capacities of relevant public administrations; and (iv) introducing public policy evaluation mechanisms to ensure adaptive management. The formalization of NWFP and livestock value chains will improve market access for smallholder farmers, creating sustainable income-generation pathways that outlast the project.

149. Contribution to the regulatory framework and policies: The project will support the reorganization of fiscal incentives, the development of new regulations on land governance, land access and land use, and dialogue on land use policies leading to institutional reforms that mainstream climate-resilient natural resource management into national planning.

150. Knowledge sharing and learning: The project will generate and disseminate comprehensive lessons on climate-resilient landscape management through inter-sectoral and inter-regional mechanisms. Results will be shared across Algeria and with Great Green Wall partner countries using established platforms, including the National Agency for Scientific and Technical Research and FAO KHIBRA Platform, ensuring that knowledge contributes to evidence-based policymaking and accelerates the adoption of proven practices beyond the project boundaries. The project will contribute to Algeria's transition from a centralized state model to a participatory, market-oriented natural resource governance model, consistent with the country's economic diversification strategy and its NDC commitments — fundamentally transforming how rural communities, government, and the private sector collaborate to build climate resilience across Algeria's most vulnerable landscapes.

151**.** Farmers' and Pastoralists' Behavioural Change**:** The project's design explicitly targets behavioural change among farmers and pastoralists through a combination of incentives (access to finance, fiscal incentives under Activity 1.1.1), capacity development (Activity 1.2.7 and the Climate Wise Women network), and the formal recognition of pastoralists and rural women as stewards of natural resources. At present, smallholder farmers and pastoralists rely on unsustainable rangeland practices that accelerate land degradation and increase vulnerability to climate change. Prevailing policy approaches have tended to frame pastoral communities as drivers of degradation rather than partners in sustainable land management. The project transforms this paradigm by promoting behavioural change through targeted incentives, scaling up climate-adaptive practices, strengthening land tenure governance under Activity 1.1.1, and repositioning pastoralists and farmers as custodians of natural resources. This shift is reinforced by the Climate Wise Women network, tailored financial products (Activity 3.1.4), — collectively creating the economic, social, and institutional incentives required for durable behavioural transformation.

152. In particular, the project will adopt the Farmer Field School (FFS) approach, implemented directly in the field with local communities (under Activity 1.2.6: Design and deliver targeted training and knowledge transfer programmes), through Sub-activity 1.2.6.2, which mobilizes a specialized training structure to reach project leaders across 60 sessions. Staff from the Directorate General of Forests and other ministerial departments will be trained as facilitators. As the pioneer of FFS, the FAO has demonstrated that this method leads to stronger adoption of new practices and more sustainable behavioral change. The FFS methodology will be deployed across all field activities of Components 2 and 3: nurseries (Activity 2.1.1), rangeland restoration (Activity 2.1.2), reforestation (Activity 2.1.3), the six climate-resilient value chains (Activity 3.1.1), micro-enterprises (Activity 3.1.3), rustic-fruit orchards (Activity 3.2.1), small poultry and beekeeping modules (Activity 3.2.2), and hydroponic forage systems (Activity 3.2.3). In addition, the project will finance demonstration days and workshops (Sub-activity 1.2.6.3) to promote proven techniques and practices. Dedicated FFS sessions will also be designed for women, ensuring their active participation and empowerment within the program.

153. Private Sector Engagement and Investment: The Algerian Green Dam project recognizes that smallholders and rural SMEs across the steppe have limited opportunities to access formal credit due to the perceived and real risks associated with lending to smallholder producers and the six priority value chains (opuntia, olive, rosemary, wool, alfa, peppermint). Individuals and SMEs often lack the documentation needed to open bank accounts or access credit and lack collateral or other mechanisms to guarantee loans — a constraint particularly acute for women, youth and transhumant herders. The project will reduce these barriers by strengthening the capacity of financial institutions and of farmers, cooperatives and rural enterprises to access finance. BADR has expressed its interest in collaborating with the project through a letter of intent. Concretely, the project delivers a two-stream training package: (a) training aimed at farmer beneficiaries (women, youth, pastoralists, and smallholders, rural enterprises) providing financial literacy sessions, hands-on business-plan preparation and financial-record keeping workshops, coaching and matchmaking meetings with lenders; and (b) training for financial sector beneficiaries (local branch staff of participating public and private banks) on climate change impacts and adaptation measures, and on the improved risk profile of beneficiary farmer groups, so the latter are recognized by the lenders as attractive and lower-risk investment opportunities (See Activity 3.1.4).

154. In turn, the formal private sector — processors, exporters, aggregators and traders — can access funds from financers interested in financing the six value chains, given their growing positioning in domestic, regional and international cosmetic, pharmaceutical, agro-food and personal-care markets. Domestic and international investors have expressed interest in engaging in Algerian natural-resource and agribusiness sectors, including in opuntia-based food and cosmetic products, rosemary and peppermint essential oils, wool-based handicrafts and textile inputs, and certified olive products. Additionally, the project will help lay the groundwork for Algerian private companies and cooperatives to attract private financing — through certification of the six value chains (organic, Global G.A.P., Fair

Trade), strengthened market standards, traceability systems, easier access to equipment via private rental markets, and the carbon-rights framework that converts ecosystem services into bankable assets at a later stage.

155. To operationalize engagement, a Private Sector Engagement Unit (PSEU) will be set up within the PMU, advised by a quarterly Private Sector Advisory Committee of anchor processors, exporters, financial institutions, and industry associations. An inception-stage landscape assessment across the six value chains will map off-takers, SME transformers, and commercially ready producer organizations, with letters of intention expected to be signed with anchor firms by end of year 2. Market linkages will be consolidated throughout contract-farming schemes connecting the 7,818 beneficiary households to anchor off-takers under pre-agreed minimum prices, supported by co-financed aggregation platforms and technical assistance to meet private sector quality and volume requirements (see Annex 2: Feasibility Study).

156. Regulatory contingency for implementation: Should the adoption of the amended Pastoral Code and the associated incentive schemes for Activity 2.1.2 (climate-resilient rangeland management) and Component 3 (climate-resilient value chains and livelihoods) be delayed, project implementation will continue under the existing legal and regulatory framework. This includes the provisions governing the State's private land domain in the project area, Law 10-03 of 15 August 2010 on the exploitation of agricultural land, Law 90-25 of 18 November 1990 on land heritage, Law 08-16 of 3 August 2008 on agricultural orientation, and Law 23-21 of 23 December 2023 on forests and forest resources, which also covers esparto grasslands and other steppe pastoral areas. These legal instruments provide an adequate basis for implementing the pastoral concession model across the 12 pilot communes and supporting the six climate-resilient value chains under Component 3, ensuring continuity of project activities regardless of the parliamentary timetable. This contingency complements the sub-activity sequencing, Year 2 trigger, and Annex 5 de-coupling arrangements described in Section F.1 (Risk Factor 1).

D.3. Sustainable development (max. 500 words, approximately 1 page)

157. The project will generate significant sustainable development benefits aligned with the Sustainable Development Goals. These benefits will be achieved through climate-resilient natural resource management, sustainable livelihood diversification, inclusive economic development, and equitable access to productive resources and opportunities. Through strategic collaboration with public institutions, private-sector partners, and local communities, as described in Part B.4, and the project will strengthen household resilience. promote inclusive economic growth, and advance gender equality across the six target wilayas, as follows:

Enhanced Climate Change benefits (SDG 13):

158. The project will strengthen climate resilience by enhancing the adaptive capacity of vulnerable ecosystems, institutions, and rural communities to increase climate variability and extreme weather events. Through climate-resilient landscape restoration, science-based climate information services, strengthened governance, climate-smart production systems, and risk-informed decision-making, the project will reduce vulnerability to drought, land degradation, and water scarcity while supporting long-term adaptation planning. These interventions will increase the resilience of livelihoods and ecosystems, contributing directly to SDG 13 (Climate Action).

Enhanced Gender Equality Co-benefits (SDG 5):

159. The project integrates gender equality across all components by addressing structural barriers that limit women's access to land, finance, productive assets, and decision-making. Through mandatory representation in climate governance platforms, collective concessions for non-wood forest product (NWFP) value chains, climate-adapted financial products, and targeted capacity development, the project will strengthen women's leadership, economic empowerment, and participation in climate-resilient natural resource management. Priority access to productive assets, support for women-led enterprises, and equitable benefit-sharing arrangements—including future carbon revenues—will further enhance women's livelihoods and resilience. A gender-responsive monitoring and evaluation system will track progress through sex-disaggregated indicators and ensure accountability, contributing directly to SDG 5 (Gender Equality).

Enhanced Social Inclusion Co-benefits (SDGs 10):

160. The project will strengthen social inclusion by improving equitable access to land, finance, productive assets, and decision-making for groups most vulnerable to climate change, including women, youth, transhumant herders, and landless agro-pastoralists. Through the formalized pastoral concession system, collective concessions for non-wood forest product (NWFP) value chains, and climate-adapted financial products, the project will enhance tenure security,

expand access to productive resources, and reduce barriers to finance for underserved groups. Inclusive governance mechanisms, including multi-stakeholder platforms, Water Users Associations, and the integration of traditional ecological knowledge into climate advisory services—will ensure meaningful participation in climate-resilient natural resource management. Transparent benefit-sharing arrangements and targeted support for women-headed households, youth-led enterprises, and vulnerable pastoral communities will strengthen livelihoods, enhance social cohesion, and reduce conflicts over natural resources. These interventions contribute directly to SDG 10 (Reduced Inequalities).

D.4. Needs of recipient (max. 500 words, approximately 1 page)

Vulnerability of the country and beneficiary groups:

161. Due to its geographical position and climatic characteristics, Algeria is highly vulnerable to climate change. Recurring and intensifying droughts have accelerated desertification across more than 50 million hectares, with nearly 17 million hectares of steppe classified as “sensitive” to “very sensitive,” including 55% of the project area in the Algerian Green Dam (AGD) zone. The six targeted wilayas — El Bayadh, Naâma, M’Sila, Djelfa, Tébessa, and Khenchela — are home to 57% of Algeria’s nomadic population, whose livelihoods depend almost entirely on climate-sensitive natural resources. These wilayas have arid to semi-arid environments with below-average poverty, health, and education indicators.

162. The unemployment rate across the six wilayas stands at 15.4%, significantly above the national average of 11.4%, leaving communities with fewer resources to cope with climate shocks. Access to water in the AGD (16,1 m³/inhabitant/year) is critically below the national average (55 m³/inhabitant/year) and far beneath the World Bank’s water scarcity threshold of 1,000 m³/inhabitant/year, making these communities particularly vulnerable to water stress. Rural women face compounded vulnerability due to limited access to agricultural land, employment, and productive assets. Negative rainfall trends continue to reduce agricultural production, and biodiversity, with associated impacts on human health across agro-silvo-pastoral landscapes.

Economic and social development level:

163. Uneven demographic trends across the AGD wilayas reveal that central and western steppe regions (Djelfa, M’Sila, Naâma) experienced considerable population growth between 2008 and 2020, driven by relatively greater employment opportunities and access to basic infrastructure. However, compared to the national average, all AGD wilayas offer fewer employment opportunities to their working-age populations. Agriculture — which accounts for approximately one third of total employment — remains highly vulnerable to increased rainfall variability and prolonged drought. Access to healthcare and basic infrastructure is critically constrained, particularly in rural areas where health facilities and medical supervision are concentrated in the daïras centers (subdivision of wilaya). The pace of sustainable job creation remains slow despite decades of policies, exacerbating the socio-economic vulnerability of pastoral and smallholder farming communities.

Absence of alternative sources of financing:

164. Algeria is classified as an upper -middle-income country with public debt reaching 48.1% of GDP in 32 The COVID-19 pandemic precipitated a sharp fall in oil prices and a 4.9% contraction of the national economy due to its dependence on hydrocarbon exports. Budgetary constraints from significant investments in basic services and infrastructure have severely limited resources available for climate change adaptation. External donor investments in agriculture and natural resource management in Algeria have been extremely limited over the past two decades. The demand for GCF grant resources is further justified by the fact that targeted beneficiaries have extremely limited access to credit and lack sufficient assets to service loans, making concessional financing essential to address the identified climate adaptation needs.

Need for strengthening institutions and implementation capacity:

165. Local government institutions, which have long operated within a centralized state-economy model, require substantial capacity building to effectively support small-scale producers and implement public-private partnerships for degraded land restoration linked to the valorization of pastoral and NWFP products. The project will strengthen institutional capacities of regional governments and the 15 institutions across seven ministries to work inter-sectorally,

32 World Bank. (2026). Algeria — Macro Poverty Outlook, April 2026. World Bank Group, Washington, D.C. Available at: https://thedocs.worldbank.org/en/doc/65cf93926fdb3ea23b72f277fc249a72-0500042021/related/mpo-dza.pdf

enabling the transition from a single-ministry management approach to an integrated, participatory, multi-stakeholder governance model capable of sustaining climate-resilient natural resource management beyond the project's lifetime.

D.5. Country ownership (max. 500 words, approximately 1 page)

166. The project is closely aligned with Algeria's national climate priorities, directly contributing to three of the four adaptation objectives of Algeria's Nationally Determined Contribution (NDC): strengthening ecosystem resilience, combating land degradation and desertification, and mainstreaming climate change into agriculture and broader sectoral strategies. It further supports Algeria's national target of achieving 7–22% reduction in GHG emissions by 2030, while advancing the NDC's identification of the Green Dam revitalization as a flagship national priority for halting desertification and restoring vegetation cover across the semi-arid steppe.

167. The project equally supports the National Climate Plan (PNC, 2019), whose key adaptation measures include strengthening the institutional and regulatory framework, building human and institutional capacities, and developing regional climate change adaptation plans. It is further aligned with the National Sustainable Development Plan 2020-2035, the National Action Plan for the Environment and Sustainable Development (PNAEDD), and the PAN-MCPD Algeria Action Plan 2016–2030, ensuring coherence across Algeria's overarching environmental and development planning frameworks. Algeria's role as an initiator country of the UN Decade on Ecosystem Restoration 2021–2030 and its commitment under the AFR100 programme to restore one million hectares of degraded land by 2030 reflect strong national political will to address land degradation at scale. The project directly advances these commitments, contributing measurable progress toward both global restoration targets and Algeria's nationally defined climate adaptation goals.

168. The project's efforts in planting trees, improving rangelands, and changing from single-species pine forests to diverse native ecosystems help Algeria meet its goal of restoring 1,245,000 hectares of damaged land. It specifically targets the important steppe areas of El Bayadh, Naâma, and Djelfa, which align with the NDC's priorities for managing land and water sustainably, planting trees, and protecting watersheds. It supports the National Adaptation Plan under the UNCCD through participatory land-use planning and institutional strengthening and addresses critical implementation gaps in Algeria's Land Degradation Neutrality targets-particularly the National Reforestation Plan, where only 1,256 km² of a 4,750 km² target has been achieved, and the management of 20,000 km² of steppe rangelands by 2030. The project also advances the National Biodiversity Strategy objectives on ecosystem restoration, native species conservation, and community co-management of restored areas, while its governance platform addresses the institutional fragmentation that has constrained Algeria's capacity to meet these commitments.

169. The project directly reinforces Algeria's commitments under the Great Green Wall Initiative (GGI). As a founding member, Algeria has positioned the Green Dam as its national flagship contribution to this pan-African effort to combat desertification, restore degraded landscapes, and build climate resilience across the Sahara–Sahel corridor. The project also supports cross-regional knowledge exchange through collaboration with GCF SURAGGWA project, strengthening synergies between complementary restoration initiatives. It further contributes to Algeria's engagement with the Middle East Green Initiative (MGI), advancing large-scale ecosystem restoration, carbon sequestration, and climate-resilient land management across the MENA region. Furthermore, Algeria has endorsed the FAO ReInvest NENA Programme, which aims to scale up ecosystem restoration through blended finance to support resilient agrifood systems and climate adaptation. This project will serve as a model for other countries under this initiative.

170. This FP was developed with the support of Algeria's Ministry of Environment (MoE), the country's National Designated Authority (NDA) before GCF. MoE provides broad strategic oversight of GCF activities in Algeria and ensures that the country's priorities for low-emission and climate-resilient development are communicated. MoE reviewed and validated the concept note which preceded this FP through a dedicated working session with the Environment Committee in 2018 and has been actively engaged throughout all phases of project preparation.
Extensive stakeholder consultations have been conducted since 2018, involving FAO, DGF, the Ministry of Foreign Affairs, MoE, and local authorities across multiple field missions, national workshops, and validation sessions to validate the project activities. Civil society organizations, women's groups, and vulnerable pastoral communities have been engaged throughout the design process, and a comprehensive stakeholder engagement plan for the implementation period is presented in Annex 7.

171. Post-Project Ownership Architecture: Post-project ownership is anchored through three reinforcing mechanisms: (i) full institutional absorption of project systems and infrastructure into the DGF and national budget lines (PAP); (ii)

Risk-Sharing Facility transitioned to national development banks for continued credit access; and (iii) community-based NRM committees and certified DGF technical agents ensuring durable technical and governance continuity. Independent post-project evaluations at year 5 and year 10 will track long-term sustainability of outcomes.

172. Consultations conducted across the six target wilayas through national workshops, wilaya-level technical sessions, women-only focus groups, community meetings and field missions, produced eight substantive design changes embedded in the FP: (i) a formalized pastoral concession regime with rotational grazing, responding to pastoral-community concerns over open-access Arch land use; (ii) selection of the six certified NWFP value chains (opuntia, olive, rosemary, wool, alfa, peppermint) validated by women's groups as most viable for women's cooperatives; (iii) ≥30 % women's representation as a binding rule in the climate governance platform and Water Users Associations; (iv) the Climate Wise Women network and dedicated advisory channel, co-designed in women-only focus groups to overcome literacy and language barriers; (v) priority allocation to 5,334 women-headed HH on solar kits, livestock modules and 50 % of supported micro-enterprises; (vi) inclusion of transhumant herders and landless agro-pastoralists in commune-level concession committees; (vii) climate-adapted microcredit with seasonal-income repayment schedules aligned with pastoral income cycles where standard BADR terms fail; and (viii) a native multi-species restoration mix (*Tamarix, Calligonum, Retama, Atriplex, Opuntia*) replacing the Aleppo-pine monoculture, drawn from community knowledge. Full records, grievances and responses are maintained in Annex 7.

D.6. Efficiency and effectiveness (max`. 500 words, approximately 1 page)

Effectiveness and efficiency of the Algeria Green Dam Project

173. Ecosystem restoration and climate-resilient land management are among the priority areas identified by Algeria in its Updated Nationally Determined Contribution (NDC, 2021), which commits the country to restoring 1.245 million hectares of degraded land by 2030 and strengthening climate adaptation across the agro-sylvo-pastoral sector. Coherently, the Government of Algeria has committed USD 56.5 million – 57% of total project cost – in co-financing earmarked directly to project activities across six target wilayas. These contributions are essential to ensuring the additionality of GCF investments, including: the introduction of Algeria's first formalized pastoral-concession regime under a reformed Pastoral Code; the establishment of a domestic AFOLU carbon-offset mechanism; the integration of women, youth, and transhumant herders into certified climate-resilient value chains; and the replacement of historical Aleppo-pine monocultures (~68% of historic plantings) with native multi-species mixes – locking in 1,838,910 tCO_2eq of cumulative mitigation over 20 years.

174. The project will promote a more efficient and effective approach to dryland ecosystem restoration, value chain development, and climate mitigation across the Green Dam Zone. Private sector participation is stimulated through six certified NWFP value chains (opuntia, olive, rosemary, wool, alfa, peppermint) backed by private-sector off-take Letters of intent (loi) (Expected to be signed by end of Y2), and through a voluntary carbon-market readiness infrastructure (EarthMap, OpenForis, SEPAL, FAO NEXT, TAPE, KoboToolBox) that opens concessional carbon-finance access for the first time in Algeria.

175. The project's economic and financial benefits have been estimated through fifteen financial models organized into three analytical clusters, relating to: (1) ecosystem restoration and rural infrastructure – afforestation, reforestation, road rehabilitation, rangeland restoration, and water harvesting (Cluster A, Models 1–5); (2) NWFP value chains – olive, peach, rosemary, mint, opuntia seed oil, and alfa forage (Cluster B, Models 6–11); and (3) rural livelihood diversification – small poultry units beekeeping, sheep livestock, and wool garment and carpet enterprises (Cluster C, Models 12–15). A detailed analysis is available in Annex 3. On the financial side, all fifteen models demonstrate efficiency in delivering climate adaptation and livelihood benefits. WP IRRs range from 36% to 278% and WP BCRs from 1.24 to 32.46.

176. Individual model performance confirms strong efficiency gains. Poultry (100% women production) records the highest With-Project IRR (278%, reflecting rapid capital recovery through low initial investment and short 8-week production cycles. Beekeeping (Model 13) delivers a WP BCR of 3.56, and the wool garment & carpet enterprise (Model 15) captures downstream value addition with a WP BCR of 6.26. These results confirm the strong financial attractiveness of the proposed livelihood and value chain investments.

177. On the economic side, both the With-Project and Incremental analyses confirm the project's economic viability. At the aggregate level, accounting for all relevant economic and ecosystem benefits (including the valuation of carbon sequestration at USD 12/tCO_2eq, watershed hydrological services, avoided desertification costs, and shadow wage premiums on rural employment – all detailed in Annex 3), the Project achieves a 20-year Economic IRR of 17%

(exceeding the 6% social discount rate by 11 percentage points), an Economic NPV of USD 109 million (AD 15.31 billion), and an Economic Benefit-Cost Ratio of 1.74 – meaning Algeria's national economy receives USD 1.74 in social value for every dollar of total project cost. The incremental economic analysis further confirms the Project's additionality, with an EIRR of 12% and a positive Economic NPV of AD 8.21 billion (USD 59 million). At the financial level, the Project achieves a 20-year Financial IRR of 16%, a Financial NPV of USD 44.15 million (AD 6.18 billion), and a Financial BCR of 1.37.

Economic and Financial Analysis

178. In addition to the With-Project economic analysis, an incremental economic analysis (With-Project minus Without-Project) was undertaken to demonstrate the project's additionality. The incremental analysis yields an Economic IRR of 12%, exceeding the 6% economic discount rate, with a positive Economic NPV of AD 8.21 billion (USD 59 million), confirming that the Project generates substantial net economic benefits beyond the baseline scenario.

179. The project maintains a positive stream of aggregate economic and financial returns under comprehensive sensitivity analysis across six tested scenarios (Annex 3), including output price declines (−20%), input cost increases (+20%), a combined adverse scenario (cost +10% and benefits −10%), and one-year benefit delays — all applied on a baseline that already embeds RCP 4.5 climate impact through the 0.75%/yr compound yield reduction.

Economic Profitability

180. The economic analysis captures the full societal value of the project, including non-market benefits: carbon sequestration valued at a conservative social value of USD 12/tCO_2eq, using the World Bank Shadow Price of Carbon as the international reference benchmark, together with watershed hydrological services, avoided desertification costs, and shadow wage premiums on rural employment. The Economic Internal Rate of Return (EIRR) is 17%. The economic Net Present Value is USD 109 million (AD 15.31 billion at 140 DZD/USD) and the economic Benefit-Cost Ratio (BCR) is 1.74 – meaning Algeria's national economy receives USD 1.74 in social value for every dollar of total project cost. When the CO_2 sequestration benefits (valued at USD 12/tCO_2eq) are included in the with-project economic analysis, the EIRR rises to 18%, the ENPV to AD 16.9 billion (USD 121 million), and the BCR to 1.82.

Table 4: Economic Profitability of the Project

Metric	**Year 07**	**Year 10**	**Year 20**
EIRR (Sorting)	<0%	-1%	17%
NPV (USD)	-65.455.175	-20.912.933	109,000,000

Financial Profitability

181. The Financial Internal Rate of Return (FIRR) is 16.3%, exceeding the 10% financial discount rate by 6 percentage points. The financial Net Present Value over the 20-year analytical horizon is USD 44 million (AD 6.18billion at 140 DZD/USD), and the financial Benefit-Cost Ratio is 1.37, meaning every dollar invested returns USD 1.37 in discounted net benefits to project beneficiaries.

Table 5: Financial Profitability of the Project

Metric	**Year 07**	**Year 10**	**Year 20**
FIRR (Sorting)	<0%	-1%	16%
NPV (USD)	-60.332.960	-36.703.621	44,000,000

182. The project demonstrates strong value for money by using concessional GCF resources only where they are most needed. The USD 43 million GCF grant (43.2% of the total project cost of USD 99.5 million) finances investments that produce significant climate resilience, ecosystem restoration, and public environmental benefits but cannot be justified on commercial returns alone. By overcoming these financing barriers, the grant catalyzes USD 56.5 million in

Government co-financing and enables investments that would otherwise not occur. With 1,084,103 direct and indirect beneficiaries, the GCF contribution represents an investment of approximately USD 40 per beneficiary**.**

Funding and Financial Sustainability:

183. Financial sustainability is built into the project design through four reinforcing mechanisms: (i) national budget absorption – all assets and O&M costs are integrated into the DGF and embedded into Algeria's Annual Performance Plans, backed by the Government's USD 56.5 million co-financing (57% of total cost); (ii) market-driven value chain revenues: the six priority value chains (opuntia, olive, rosemary, wool, alfa, peppermint) generate commercial income covering ongoing producer costs, with a +20% household income increase projected; and (iii) institutional and community continuity through certified DGF technical agents, the Climate Wise Women network, and community-based natural resources management committees (local-level governance bodies established at the commune or wilaya level), ensuring that participatory governance and stewardship of natural resources continue long after GCF financing ends. Independent post-project evaluations at Year 5 and Year 10 will verify the durability of these mechanisms, confirming that the project establishes the foundations for long-term, self-sustaining climate resilience rather than creating aid dependency. The Project achieves a mitigation cost-efficiency of approximately USD 23/tCO_2eq of GCF grant financing (USD 54/tCO_2eq at total project cost) against a 20-year cumulative sequestration of 1,838,910 tCO_2eq, well below the World Bank shadow carbon price (USD 51–93/tCO_2eq).

GCF additionality

184. The proposed concessional financing level for the project is justifiable based on the ongoing need for highly concessional financing in the country. This grant financial support will help Algeria address its development needs and contribute to achieving more sustainable economic growth. Various factors, including budgetary, macroeconomic, and internal government organization aspects, contribute to this need for grant financing. After 55 years of DGF-led restoration without resolving structural failures, GCF concessional financing unlocks four irreversible transformations across Algeria's Green Dam landscape — all involving non-revenue public goods with long time horizons that neither national budgets nor commercial debt can finance:

- Pastoral reform — Algeria's first pastoral-concession regime replaces open-access Arch lands (currently grazed at 10× carrying capacity) with science-based rotational agreements under a modernized Pastoral Code.
- Carbon market access — A domestic AFOLU offset mechanism and a full Verra/Gold Standard-aligned MRV platform (EarthMap, OpenForis, SEPAL, TAPE) open voluntary carbon finance for the first time.
- Inclusive value chain integration — Women, youth, herders and landless agro-pastoralists enter six certified NWFP chains (opuntia, olive, rosemary, wool, alfa, peppermint), backed by climate-adapted microcredit through BADR/FGAR/CNMA/ANCC.
- Climate-resilient restoration — Native multi-species mixes replace historical Aleppo-pine monocultures, locking in 1,838,910 tCO_2eq over 20 years (incremental vs. DGF baseline).

185. Without GCF: overgrazing continues at 10× capacity, the 1975 Pastoral Code remains unenforced, carbon markets remain inaccessible, women remain excluded from tenure, and climate-mismatched plantings continue failing under projected −16% rainfall and +2.9°C warming by 2080–2100. With GCF: 17,770 households with diversified livelihoods, 5,334 women-led households with priority asset access, 941,670 indirect beneficiaries, and a self-sustaining national framework for carbon finance and pastoral governance.

Innovation and Best Practices

186. The project (Outputs 2.1, 2.4) draws directly on the restoration approach successfully implemented under the FAO-EU-ACP Action Against Desertification (AAD) project in Great Green Wall countries, particularly, Burkina Faso and Niger. Since 2016, AAD has restored over 160,000 hectares across the GGW–Sahel landscape- including more than 28,000 ha of degraded lands in Burkina Faso and 16,000 ha in Niger- establishing the largest field-validated evidence base for at-scale agro-sylvo-pastoral restoration in semi-arid Africa. The AAD method delivers an average survival rate of 60% for direct seeding of native woody and grass fodder species, and for planting out of nursery seedlings on mechanized-ploughing prepared lands. This performance is grounded in three operational principles — now codified in AAD field protocols and adopted as standard practice across the Great Green Wall initiative:
- Right species — well-adapted, climate-resilient native woody and grass fodder species, sourced from quality, locally certified seed stock;

- Right place — deep mechanized land and soil preparation that breaks crust layers, enhances infiltration, and creates rooting depth in degraded soils;
- Right time — seeding and out-planting timed to the onset of the rainy season to maximize rainwater harvesting and first-season root establishment.

187. The AAD approach to large-scale agro-sylvo-pastoral land restoration is adopted by the whole Great Green Wall initiative in the Sahel and will be applied in the GCF-funded SURAGGWA programme (FP268). The design of the Algeria Green Dam FP responds to comparable semi-arid agro-ecological conditions on the northern fringe of the Sahara; the same large-scale restoration logic — native multi-species mixes (*Tamarix, Calligonum, Retama, Atriplex, Opuntia*), site-matched land preparation, and rain-onset planting calendars — is fit-for-purpose and embedded in the design of Activities 2.1.2 (rangeland restoration), 2.1.3 (Opuntia plantations and 5-year enclosure protection), 2.1.4 (biological dune fixation), 2.1.5 (silvicultural management) and 2.1.6 (forest-fire management and DFCI infrastructure). Implementation will adhere to the 2015 FAO Global Guidelines for the Restoration of Degraded Landscapes and Forests, ensuring methodological alignment with the wider AAD / SURAGGWA evidence base and with FAO's institutional restoration knowledge architecture.

188. This FP is going to employ the FAO Market Analysis and Development (MA&D) methodology to help communities select Non-Wood Forest Products (NWFPs) and livestock products. Synergies will be established with other following ongoing projects:

- GEF Pine Forest Project and IFAD (FIDA) Halfah project in El Bayadh.
- GEF Cork Oak and GEF Biban Mountain Range projects regarding circular economy and natural resource valorization.
- Lessons learned from the GAMS project in Sudan (Gums for Adaptation and Mitigation), approved by the GCF in November 2020.

E. LOGICAL FRAMEWORK

E.1. Project/Programme Focus

☒ Reduced emissions (mitigation)

☒ Increased resilience (adaptation)

E.2. GCF Impact level: Paradigm shift potential (max 600 words, approximately 1-2 pages)

Assessment Dimension	Current state (baseline)		Potential target scenario (Description)	How the project will contribute (Description)
	Description	Rating		
Scale	There is currently limited adoption of climate-resilient adaptation practices across Algeria's Green Dam landscape, with sustainable agro-pastoral management approaches neither systematically implemented nor mainstreamed into local land-use planning, investment frameworks, or institutional decision-making processes.	Medium	By project completion, a comprehensive enabling architecture for scalable climate-resilient ecosystem management could be operational across six wilayas, with potential for extension to all 13 Green Dm wilayas.	The project establishes three critical drivers for scaling-up: **Innovations:** The project introduces and scales climate-resilient solutions across highly vulnerable steppe and dry forest zones, including Algeria's first formalized rotational grazing system (Activity 2.1.2), AI-driven climate forecasting and digital advisory services (Activity 1.2.6), hydroponic forage production systems reducing rangeland pressure (Activity 3.2.3), a domestic AFOLU carbon pricing mechanism and voluntary carbon market access (Activities 1.1.2 and 1.1.3), and an integrated GIS and agrometeorological network for evidence-based land-use planning (Activities 1.2.3 and 1.2.4). **Leadership:** The project supports adoption of climate-resilient agro-pastoral management across a wide range of stakeholders, including wilaya authorities, pastoralist associations, women's cooperatives, extension services, financial institutions, and national policymakers, through the National AGD Advisory Committee, six Wilaya

				Climate Adaptation Committees (Activity 1.1.4), and structured training and knowledge transfer programs (Activity 1.2.7), enabling replication at all institutional levels. **Incentives and accountability:** The reformed Pastoral Code linking land-use concessions to sustainable management obligations (Activity 1.1.1), fiscal incentives for climate-resilient practices, carbon finance revenue-sharing mechanisms for local communities (Activity 1.1.3), and climate-adapted microcredit and subsidized finance (Activity 3.1.4) provide tangible economic incentives for long-term adoption of proposed technologies at farm and community levels, while transparent governance frameworks and digital monitoring systems (Activity 1.2.2) strengthen accountability across the project zones.
Replicability	Climate-resilient agro-pastoral technologies have been tested in Algeria's steppe regions but remain localized and not institutionally integrated into institutional land management frameworks.	Medium	By project completion, a comprehensive enabling architecture for replicable tested technologies is operational across six wilayas, with demonstrated potential for replication across all 13 Green Dam wilayas and analogous dryland regions nationally.	The project will contribute to replicability through: **Output 1.1 — Governance and Finance Frameworks:** The modernized pastoral governance framework, AFOLU carbon pricing mechanism, and voluntary carbon market instruments are designed as nationally replicable policy tools, while the multi-stakeholder governance platform provides an institutional model transferable to 89 remaining communes and regional Sahel/Maghreb context. **Output 1.2 — Climate Information and Capacity:** Interoperable digital climate information systems and Training of Trainers programs build a technical and human capacity base that can be replicated through existing wilaya directorates and extension networks. **Outputs 2.1 and 2.2 — Ecosystem and Infrastructure Restoration:** Ecosystem restoration

				models, community-managed nurseries, and water mobilization infrastructure demonstrate proven approaches replicable across comparable rangeland, forest, and dune landscapes. **Outputs 3.1 and 3.2 — Livelihoods and Economic Frameworks:** Climate-resilient value chain partnerships, climate-informed financial instruments, and livelihood diversification models — including women-led cooperatives and hydroponic forage systems — establish replicable economic frameworks transferable to additional communes, wilayas, and value chains. The digital monitoring and evaluation system captures lessons learned in support of future replication across Algeria and analogous dryland regions.
Sustainability	Long-term sustainability of climate-resilient land management across Algeria's Green Dam landscape remains constrained by limited access to innovative finance, weak market linkages, absent decision-support systems for climate investment, nascent carbon accounting and MRV capacity, and insufficient training and extension reach to sustain behavioral change beyond individual project interventions.	Medium	Project sustainability is ensured through reinforcing institutional, financial, ecological, and social mechanisms — including reformed regulations embedded in national governance, , self-sustaining producer partnerships and cooperatives, permanent capacity-building through Training of Trainers and field schools, self-sustaining restored ecosystems, and climate information systems integrated into national infrastructure beyond project financing.	The project ensures sustainability through: **Outcome 1—Institutionalization focus:** Reformed regulations and MRV frameworks embedded in national legislation generating self-sustaining revenue; governance committees institutionalized within existing structures; climate information systems integrated into ONM, ASAL, and CRSTRA operational mandates for sustained ownership. **Outcome 2 — Self-Sustaining Ecosystem Restoration:** Restored rangelands, forests, dunes, and managed forests ecologically self-sustaining once established; community-managed nurseries providing permanent seedling supply; rotational grazing system embedding sustainable management into legal obligation; water and fire prevention infrastructure delivering permanent capacity improvements. **Outcome 3 — Sustained Livelihoods and Financial Independence:** Value chain skills, certifications, and producer-private sector partnerships persisting beyond project support;

				micro-enterprises operating independently; climate-informed financial instruments embedded in BADR, ANGEM, and NASDA offerings; productive assets — including orchards, livestock modules, and solar kits — delivering permanent household benefits. **Cross-Cutting Mechanisms:** Permanent cadre of trained extension agents; institutional memory through digital M&E and GIS platforms; structurally embedded gender equality through governance representation and targeted livelihood interventions.

E.3. GCF Outcome level: Reduced emissions and increased resilience (IRMF core indicators 1-4, quantitative indicators)

GCF Result Area	IRMF Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions / Note
				Mid-term	Final[33]	
ARA1 Most vulnerable people and communities	Core 2: Direct and indirect beneficiaries reached	Yearly progress reports and final evaluation Progress reports from interventions and the constant monitoring	0 Total 0 direct 0 indirect 0 male 0 female	**487,846 people (267,767 men; 220,078 women)** **Direct: 64,094 (39,344 men; 24,750 women)** **Indirect: 423,751 (228,423 men; 195,328)**	**1,084,103 people (595,039 men; 489,064 women)** **Direct: 142,433 (87.432 men; 55,001 women)** **Indirect: 941,670 (507,607 men; 434,063 women)**	Direct beneficiaries for ARA1 include households receiving climate adaptation support, institutional staff benefiting capacity building, and community members engaged in ecosystem restoration and water mobilization programmes. Indirect beneficiaries for ARA1 include farmers, agro-pastoralists, and breeders from the **89** remaining communes, who will access climate-relevant knowledge through farmer-to-farmer learning networks. Populations in the **12** pilot communes will also benefit from restored steppe and forest ecosystem services.

[33] The final target means the target at the end of project/programme implementation period. However, for core indicator 1 (GHG emission reduction), please also provide the target value at the end of the total lifespan period which is defined as the maximum number of years over which the impacts of the investment are expected to be effective.

	Supplementary 2.1: Beneficiaries (female/male) adopting improved and/or new climate-resilient livelihood options	Yearly progress reports and final evaluation Progress reports from interventions and the constant monitoring	0 Total 0 direct 0 indirect 0 male 0 female	**17,905 people (14,324 men; 3,581 women)** adopting improved and/or new climate-resilient livelihoods (20% women)	**35,810 people (28,648 men; 7,162 women**) adopting improved and/or new climate-resilient livelihoods (20% women)	**Assumptions**: all active population in the targeted areas/ institutional staff have access to the climate adaptation activities- Market conditions for priority value chain products remain favorable. **Notes**: Active population corresponds to ages between 15-59 of both sexes- Gender split for direct and indirect beneficiaries is according to the 2008 census data and women account for around 45% tal beneficiaries.
ARA4. Ecosystems and ecosystems services	Core 4: Hectares of natural resources brought under improved low-emission and/or climate resilient management practice	Baseline, Mid-term and final surveys/GIS maps (hectares under ecosystem restoration)	0	33,329 hectares under restoration or improved management	59,320 hectares under restoration or improved management	**Assumptions:** Relevant activities are not delayed and implemented on time-Effective cross-sectoral coordination and partnerships exist. Absence of major natural disasters including forest fires-The government of Algeria gives all clearances and approvals for roads rehabilitation. **Note**: El Bayadh's existing track network was assessed as adequate during the inception-stage technical mission and is therefore not included Absence of major natural disasters including forest fires.
	Supplementary 4.1: Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal marine areas brought under resoration and/or improved ecosystems	Yearly progress reports and final evaluation progress reports	0	**215 km of agricultural and rural tracks across five wilayas rehabilitated**	**478 km of agricultural (313 km) and rural (165 km) tracks across five wilayas rehabilitated**	

MRA4 Forestry and land use	Core 1: GHG emissions reduced, avoided or removed/sequestered	Yearly progress reports and final evaluation Survey of project beneficiaries (NEXT Carbon Assessment Tool)	0	**- 188,611tCO2e CO2eq** reduced, avoided or eliminated/sequestered	**- 540,355 t CO2eq** reduced, avoided or eliminated/sequestered	-Improved land use management activities start in project implementation year 2**. The lifetime target (20 years) is - 1,838,910 tCO2eq (see Annex 22).**

E.4. GCF Outcome level: Enabling environment (IRMF core indicators 5-8 as applicable)

Core Indicator	Baseline context (description)	Rating for current state (baseline)	Target scenario (description)	How the project will contribute	Coverage
Core Indicator 5: Degree to which GCF investments contribute to strengthening institutional and regulatory frameworks for low emission climate-resilient development pathways in a country-driven manner	No direct investment toward bankable climate adaptation interventions across the AGD.	low	-Improved regulatory environment - Fiscal incentives for adopting sustainable practices	The project will reform the Pastoral Code and create pastoral concession agreements linking land-use rights to sustainable management obligations. It will develop incentives for sustainable practices, while facilitating climate-adapted microcredit with flexible repayment	National level (one country)
Core indicator 8: Degree to which GCF investments contribute to effective knowledge generation and learning processes, and use of good practices, methodologies and standards	Limited and fragmented knowledge productions and dissemination, with no integrated platforms for systematically capturing, sharing, and scaling lessons learned and best practices among institutions, extension	low	Lessons learned and best practices in climate-resilient agro-pastoral management are systematically captured, advancing the transition toward climate-resilient	The project will create a digital M&E platform and GIS portal. organize in-depth training sessions and facilitate knowledge exchange through workshops and online platforms, to support the rapid adoption of climate-resilient and high-value practices and technologies.	National level (one country)

	services, and farming and pastoral communities.		livelihoods across the GD landscape.		
Core Indicator 6: Degree to which GCF investments contribute to technology deployment, dissemination, development or transfer and innovation	-Low adoption of climate-resilient technologies; limited R&D capacity and infrastructure -No integrated national decision-support system for climate-resilient agriculture investment -Fragmented climate services	low	Farmers access and apply tailored climate advisory services to reduce losses and improve productivity and climate technologies deployed at scale	The project will deploy a digital climate advisory system, AI-based forecasting tools, and six agrometeorological stations and GIS-based land-use planning tools across Green Dam	National level (one country)
Core indicator 7: Degree to which GCF Investments contribute to market development/transformation at the sectoral, local, or national level	-Smallholder farmers and local value chain actors-particularly women -have limited access to high-value markets and support from public and private sector partners. -Financial support mechanisms dedicated to agro-pastoral communities remain insufficient, with no adapted financial products, weak market linkages, and structural barriers to credit access.	low	Smallholder farmers and value chain actors — particularly women — benefit from developed climate-resilient value chains, strategic private sector partnerships, and accessible climate adapted financial products that strengthen their market access, incomes, and adaptive capacity.	The project will develop 6 priority climate-resilient value chains (Activity 3.1.1). It will establish producer–private sector partnerships and collective action mechanisms (Activity 3.1.2), provide legal and technical assistance for micro-enterprise creation, certification & market access (Activity 3.1.3), design climate-informed microcredit with flexible repayment and group-based lending for women's cooperatives (Activity 3.1.4) and provide on ground technical assistance to ensure the durability of investments.	National level (one country)

E.5. Project/programme specific indicators (project outcomes and output)						
Project results (outcomes/ outputs)	**Project specific Indicator**	**Means of Verification (MoV)**	**Baseline**	**Target**		**Assumptions / Note**
				Mid-term (Year 4)	**Final (Year 7)**	

Outcome 1: Enhanced Enabling Environment for Climate Resilient Ecosystem Management	Percentage of target communes (and wilaya-level institutions) demonstrate a functional enabling environment for climate-resilient ecosystem management.	Project reports, government publications, legal documents	0% of 12 communes	6 of 12 communes (50%)	Remaining 6 communes- in total 11-12 communes (≥90%)	Stakeholders engage constructively in the Green Dam multi-stakeholder governance platform.
Use of climate information in named operational decisions (Activities 1.21,1.26)	Number of drought-triggered grazing calendar adjustments issued by DGF wilaya offices and pastoral concession committees.	DGF wilaya office decisions, concession-committee minutes Digital M&E Platform	0% of eligible concessions	≥60% of eligible concessions	≥85% of eligible concessions	Timely operation of climate-information systems
Output 1.1: Regulatory, financial & institutional framework for climate-resilient ecosystem management strengthened	Number of regulatory and financial frameworks submitted and adopted	Project reports, government publications, legal documents	0 (no. of frameworks adopted)	1 framework revised	2 revised frameworks adopted	Government counterparts maintain political commitment to regulatory reform
Output 1.2: Science-based climate information systems established and operational	Number of climate information systems, digital platforms, and knowledge products	Project reports	0 (no. of science-based climate information systems established)	30% targets	100% targets	Timely equipment procurement; institutional commitment; sufficient internet connectivity for digital platform operation in remote areas

	operational across the AGD					
Outcome 2: Climate- resilient, low- emission restoration and sustainable land management of agro-sylvo-pastoral ecosystems	Hectares of degraded agro-sylvo-pastoral landscapes restored, or improved	Field surveys; annual progress reports; independent mid-term and final evaluations	0	33,329 hectares under restoration or improved management	59,320 hectares under restoration or improved management	Restoration interventions are effective and supported by local stakeholders
Functionality of access tracks during climate-related events (Activity 2.2.1)	Post-event track functionality (% of rehabilitated tracks passable within 72 hours of a declared climate event (heavy rain, flash flood or wildfire alert)	Monitoring reports; performance assessment Digital M&E platform	~30%	≥70%	≥90%	Implementation of access tracks (478 Km) maintained on time.
Output 2.1: Pastoral and forest & heritage restored-climate-resilient and low emission	Hectares under ecosystem restoration	Nursery production records; planting completion reports; GIS platform spatial monitoring outputs; forest health assessment reports	0 hectares of climate-resilient restored pastoral and forest heritage	17,144 hectares (30% targeted)	59,320 hectares (100% targeted)	Nursery rehabilitation and construction completed on schedule; community groups engaged in long-term nursery management
Output 2.2: Agricultural & water systems restored-climate-resilient and low-emission	Kilometers of agricultural and rural tracks rehabilitated	Monitoring reports; performance assessments; beneficiary records	0 km of rehabilitated rural tracks	Total= 150 km (100 km agricultural tracks + 50 km rural tracks)	Total= 478 km (313 km agricultural tracks + 165 km rural tracks)	Implementation maintained on time; community consultations priorities sites effectively

Outcome 3: Enhanced resilience and Income Diversification of local livelihoods	Percentage of target households demonstrating enhanced climate resilience and diversified livelihoods	Beneficiary records; household and surveys	≤15% of HH currently meeting both criteria- most depend on a single rainfed/livestock source and sell productive assets under drought stress	≥35% of households adopting improved and/or new climate-resilient livelihood options	≥55% of HH adopting improved and/or new climate-resilient livelihood options	six certified value chains operational; climate variability within SSP2-4.5 forecast envelope; climate-information
Reduced climate-related income vulnerability through value chains (Activities 3.1.1, 3.1.2, 3.13)	Percentage of beneficiary households retaining ≥70% of their prior-year real income in a wilaya declared under drought or fire emergency	Value chain development records; number of agreements	~20%	≥50%	≥75%	Private sector partners engage constructively in partnerships
Output 3.1: Access to climate-adaptive finance & technical support strengthened	Number of climate-resilient value chains certified and operational; number of micro-enterprises certified; number of households accessing climate-adapted financial products, number of producers	Value chain development reports; micro-enterprise registration records; financial institution disbursement records; training completion records	0 climate-resilient certified value-chains	4 of 6 climate-resilient value chains certified and operational, ≥ 40 microenterprises certified (50% women led), ≥ 5000 HH (≥ 40% women-headed) accessing climate-adapted financial products ≥9,000	6 of 6 climate-resilient value chains certified and operational, ≥ 80 microenterprises certified (≥50% women led), ≥10,000 HH (≥50% women-headed) accessing	Private sector partners engage constructively in partnerships; financial institutions adopt climate-adapted product designs; women's cooperatives meet group-based lending eligibility criteria

	trained in climate-resilient production and finance.			producers (≥40% women) trained	climate-adapted financial products, ≥17,770 producers (≥40% women) trained	
Output 3.2: Climate-resilient service delivery & clean energy access improved	Hectares of rustic fruit orchards established; number of livestock modules and number of hydroponic forage systems deployed; number of solar energy kits installed	Monitoring reports; beneficiary records	0 hectares of fruit orchards established	≥2,500 hectares of fruit orchards established, ≥ ≥2,500 livestock modules deployed (≥60% to women-headed), ≥120 hydroponic forage systems deployed, ≥95 solar energy kits installed (≥ 60% to women-headed)	5,974 of hectares of fruit orchards established, ≥5,334 livestock modules deployed (≥60% to women-headed), 240 hydroponic forage systems deployed, 190 solar energy kits installed (≥60% to women-headed)	Certified nursery-grown varieties available on schedule; women beneficiaries participate when modules are designed; procurement and logistics proceed without delays
Project/programme co-benefit indicators						
Co-benefit 1: Enhanced Gender equality	Percentage of women's participation in governance bodies; women-headed households	Sex-disaggregated beneficiary records; governance committee membership records; GAP progress reports	10%	30%; 2,700 HH (~50%)	≥35%; 5,334 HH (100%)	Gender Specialist full time in PMU maintains oversight throughout project period; CWW agents effectively mobilize women beneficiaries

	receiving priority asset allocation,					
Co-benefit 2: Enhanced social inclusion	Number of vulnerable and marginalized households- landless pastoralists, subsistence smallholders- receiving livelihood support, with improved access to project services such as clean energy, water)	Beneficiary household records, Solar kit and water infrastructure distribution records; DGF wilaya service delivery reports	TBC in the inception phase	3,000 HHs	8,000 HHs	No social conflicts over land use, water access, or benefit-sharing undermine the inclusion of marginalized groups in project activities.

E.6. Project/programme activities and deliverables

Activities	Description	Sub-activities	Deliverables
Activity 1.1.1 Reform the 1975 Pastoral Code and the Local Land Governance Framework	This activity aims to modernize Algeria's pastoral land management framework, introducing the country's first concession system with science-based stocking rates and grazing rotations across 12 communes, reforming fiscal policy to incentivize sustainable practices, removing trade barriers, and establishing a national rotational grazing framework	Sub-activity 1.1.1.1 Propose an amendment to the 1975 Pastoral Code to draft the implementation regulations for the amended pastoral code Sub-activity 1.1.1.2 Propose a reorganization and adaptation of investment incentives in the Green Dam zone Sub-activity 1.1.1.3 Organize information and consultation with the various stakeholders	- Amended Pastoral Code with implementation regulations submitted for adoption -Investment incentive reform proposal for the Green Dam zone validated by relevant ministries -Stakeholder consultation reports with attendance records and consolidated recommendations
Activity 1.1.2 Support the design of the foundations of a compensation	This activity aims to design the foundations of a domestic carbon offset mechanism for the AFOLU sector within Algeria's emerging carbon pricing framework, establishing the	Sub-activity 1.1.2.1 Design the foundations of a national carbon credit offsetting mechanism for the AFOLU sector.	-National foundations for AFOLU carbon credit offsetting mechanism designed. -A policy framework for forest and soil carbon offsets and regulatory instruments

mechanism for AFOLU within a framework of national carbon pricing	policy and regulatory foundations for forest and soil carbon credit issuance, to meet NDC commitments and strengthen CBAM compliance.	Sub-activity 1.1.2.2 Develop a policy framework for forest and soil carbon offsets and regulatory instruments for carbon credit issuance and benefit sharing. Sub-activity 1.1.2.3 Embed carbon pricing knowledge into national curricula. Sub-activity 1.1.2.4 Ensure NDC alignment. Sub-activity 1.1.2.5 Establish science-based stocking rate assessments for priority rangeland zones.	for carbon credit issuance and benefit sharing developed. -Carbon pricing knowledge embedded into national curricula. -NDC alignment is ensured. -Science-based stocking rate assessments for priority rangeland zones established.
Activity 1.1.3 Establish voluntary carbon finance readiness for ecosystem restoration	The aim of this activity is to establish the methodological readiness required to channel long-term voluntary carbon finance into ecosystem restoration.	Sub-activity 1.1.3.1 Quantify sequestration potential and validate high-integrity restoration-credit methodologies; train national institutions and exchange knowledge with GCF-FAO SURAGGWA Programme.	-A validated methodological readiness for long-term voluntary carbon-finance
Activity 1.1.4 Establish a Multi-Stakeholder Climate Governance Platform dedicated to the GD	This activity aims to establish an inclusive climate governance platform at national and wilaya levels to strengthen cross-sectoral coordination, stakeholder participation, and evidence-based decision-making across the Green Dam landscape through formalized advisory committees, participatory land-use planning, and transparent benefit-sharing governance frameworks	Sub-activity 1.1.4.1 Develop collaborative territorial management agreements (framework for consultation and intervention by local communities) Sub-activity 1.1.4.2 Establish partnership agreements with an exclusive media outlet Sub-activity 1.1.4.3 Establish partnership agreements with telephone operators	-Territorial management agreements signed with local communities defining consultation frameworks and intervention protocols -Partnership agreement executed with designated media outlet for project communication and outreach
Activity 1.2.1 Establish a climate & ecological observation network at AGD level	This activity aims to establish a national climate and ecological observatory in Djelfa as the central hub for data integration, analysis, and forecasting across the Green Dam landscape, enabling long-term biophysical monitoring, AI-based early warning, and	Sub-activity 1.2.1.1 Establish an observatory for ecological, climate and socio-economic monitoring Sub-activity 1.2.1.2 Establishment of 4 permanent scientific stations for long-term in situ biophysical monitoring,	- Ecological, climate, and socio-economic monitoring observatory established and operational in Djelfa - Four permanent scientific stations installed and collecting biophysical data on climate, soils, flora, and fauna

	evidence-based decision-making through a coordinated research network fully interoperable with national climate and GIS systems.	enabling the collection of data on climate, soils, flora, and fauna	
Activity 1.2.2 Install an agrometeorological station network	This activity aims to deploy six automatic IoT-enabled agrometeorological stations- one per wilaya across the AGD to generate real-time agro-climatic data for drought monitoring, wildfire early warning, climate risk management, and resilient land-use planning, fully integrated with national meteorological systems and the project's digital platforms.	Sub-activity 1.2.2.1 Procure and install six automatic IoT-enabled agrometeorological stations across the six project wilayas Sub-activity 1.2.2.2 Conduct professional training and workshops	-Six automatic IoT-enabled agrometeorological stations installed, calibrated, and transmitting real-time data across the six wilayas -Professional training and workshops delivered to institutional staff with completion records
Activity 1.2.3 Develop GIS for agriculture drought & land degradation	This activity aims to establish an integrated GIS platform to support climate-informed land-use planning and drought and land degradation management across the steppe regions	Sub-activity 1.2.3.1 Develop and deploy a GIS at the level of the GD project with an extension to the 6 wilayas of the project Sub-activity 1.2.3.2 Provide GIS equipment for the directorate in charge of the GD project, with an extension to the 6 wilayas of the project	-GIS platform developed, deployed, and operational at the Green Dam project level with extension across the six wilayas -GIS equipment procured and installed at the Green Dam directorate and six wilaya offices
Activity 1.2.4 Develop a portfolio of feasibility studies for sustainable resource management	This activity aims to design and implement a portfolio of targeted baseline and feasibility studies across six thematic areas to strengthen AGD knowledge, address gaps in knowledge capitalization, and support evidence-based, climate-resilient resource management decisions disseminated through the project's digital and governance platforms.	Sub-activity 1.2.4.1 Establish pastoral units at the level pf the 6 wilayas of the project Sub-activity 1.2.4.2 Promote agroforestry in the development areas at the level of 6 wilayas of the project Sub-activity 1.2.4.3 Create 6 ecotourism circuits Sub-activity 1.2.4.4 Conduct a classification study for protected areas Sub-activity 1.2.4.5 Conduct a study on agroecological infrastructures at the level of the 6 wilayas	-Pastoral units established and operational across the six project wilayas -Agroforestry promoted in development areas across the six wilayas with implementation reports -Six ecotourism circuits designed and established with route maps and visitor management plans -Classification study for protected areas completed with site assessments and designation recommendations Agroecological infrastructure study completed across the six wilayas with intervention recommendations

		Sub-activity 1.2.4.6 Conduct a study on the impact of sand encroachment Sub-activity 1.2.4.7 Conduct a study on ground water recharge Sub-activity 1.2.4.8 and Sub-activity 1.2.4.9 treated wastewater and sludge reuse studies for rangeland rehabilitation and agricultural production Sub-activity 1.2.4.10 and Sub-activity 1.2.4.11 Conduct a study on the exploitation and valorization of alfa products, including market reach and identification of stakeholders using a supply chain approach	-Sand encroachment impact assessment completed with prioritized mitigation measures and treated wastewater reuse feasibility for rangeland rehabilitation -Groundwater recharge study completed with site suitability maps and infrastructure recommendations -Alfa product valorization study completed with supply chain analysis, market reach assessment, and stakeholder mapping
Activity 1.2.5 Build digital climate information & advisory services	This activity aims to establish an integrated, gender-responsive digital climate advisory system that provides farmers, livestock breeders, and land managers across six wilayas with real-time, actionable climate information through multi-hazard early warning, tailored advisory products, mobile applications, and AI-based forecasting services, fully interoperable with national climate systems for long-term scalability.	Sub-activity 1.2.6.1 Strengthening the human capacities of extension agents, focal points, farmers and private service providers through structured formal learning. Sub-activity 1.2.5.2 Organize exchange workshops for the benefit of 101 municipalities in the 6 wilayas Sub-activity 1.2.5.3 Design and deliver a Mobile app (Android-first, with offline mode) — bilingual Arabic and Tamazight; visualizes forecasts, maps, alerts, and personalized advisories Sub-activity 1.2.5.4 Organize coordination/communication seminars for the benefit of 6 wilayas	- Exchange workshops delivered across 101 municipalities in the six wilayas with attendance records and outcomes reports -Coordination and communication seminars delivered across the six wilayas with participant records and action points. - A mobile app designed and delivered. - Capacity- building workshops for institutional stakeholders designed and delivered

Activity 1.2.6 Design and deliver targeted training & knowledge transfer programs to project areas	This activity aims to build human capacity across extension agents, regional focal points, farmers, and private service providers through structured training and knowledge transfer programmes covering climate risk management, project digital tools, climate-smart practices, drought and pasture restoration, with targeted delivery for women and youth.	Sub-activity 1.2.6.1 Develop a training structure for the wilayas implementation committees. Sub-activity 1.2.6.2 Develop a training structure for project leaders 60 sessions Sub-activity 1.2.6.3 Organize training workshops for project leaders Sub-activity 1.2.6.4 Organize training workshops for institutional stakeholders	- Training structure developed and delivered for wilaya implementation committees -Training structure developed for project leaders with 60 sessions delivered -Training workshops organized and delivered for project leaders with completion records -Training workshops delivered for institutional stakeholders with attendance records and competency assessments
Activity 2.1.1 Rehabilitate & create nurseries for climate-adapted seedling production	This activity aims to rehabilitate existing nurseries and establish three new permanent nurseries in Khenchela, Djelfa, and El Bayadh to produce approximately 12,7 million climate-adapted seedlings over seven years, managed by women-led community groups using strict provenance protocols and INRF -validated growing standards, to support ecosystem restoration across 22,658 hectares.	Sub-activity 2.1.1.1 Construction of fodder nursery in El Bayadh Sub-activity 2.1.1.2 Equipment of a fodder nursery in El Bayadh Sub-activity 2.1.1.3 Construction of 3 vitro plant production units Sub-activity 2.1.1.4 Equipment of 3 vitro plant production units	-Fodder nursery constructed and operational in El Bayadh -Three vitro plant production units constructed and operational -Existing nurseries rehabilitated with upgraded infrastructure and equipment
Activity 2.1.2 Implement a program for climate-resilient rangeland management	This activity aims to deliver a comprehensive rangeland management programme across 12 communes covering 28,491hectares, integrating pastoral planting, Opuntia plantations, deferred grazing, and forage seed collection to restore degraded rangelands, increase productivity, and operationalize Algeria's first formalized rotational grazing system based on traditional g'del practices, while generating significant mitigation co-benefits.	Sub-activity 2.1.2.1 Conduct pastoral planting across 3,780 ha, using climate-adapted fodder species. Sub-activity 2.1.2.2 Establish Opuntia plantations across 1,092 hectares Sub-activity 2.1.2.3 Implement deferred grazing and enclosure measures (23,619 ha) Sub-activity 2.1.2.4 Operationalize forage seed collection sites 30 ha)	- Pastoral planting completed (3,780 ha) using climate-adapted fodder species with survival monitoring reports -Opuntia plantations established with productivity and rangeland stabilization assessments (1,092 ha) -Deferred grazing and enclosure measures implemented (23,619 ha) with vegetation recovery monitoring records -Forage seed collection sites operational (30ha) with seed inventory and distribution protocols

Activity 2.1.3 Reforest & revegetate forest heritage through a participatory approach	This activity aims to consolidate and expand forest cover across1,145 hectares through reforestation, replanting of underperforming stands across 1,333 hectares, maintenance of reforested areas, and establishment of green belts and roadside plantations, using diverse native species and community-based restoration through farmer cooperative mobilization, with monitoring linked to the GIS platform.	Sub-activity 2.1.3.1 Conduct reforestation across 1,145 ha, using diverse native species adapted to climate conditions Sub-activity 2.1.3.2 Replant underperforming forest stands across 1,333 hectares, with three- to five-year enclosure protection (repopulation) Sub-activity 2.1.3.3 Row trees plantation Sub-activity 2.1.3.4 Establish green strips plantations across 6 wilayas (1,735 ha)	- Reforestation completed across 1,145 ha, using diverse native species with survival rate monitoring reports -Underperforming forest stands replanted across 1,333 hectares, with enclosure protection measures installed and verified - Plantation of alignment trees -1,735 ha green strip plantations established across six wilayas with species composition records
Activity 2.1.4 Implement a dune fixation program	This activity aims to implement a dune stabilization programme across 3,150 hectares in four wilayas combining mechanical barriers, drought-resistant species planting, and organic stabilization materials, with community-based engagement prioritizing women and youth employment and formally established dune management groups linked to livelihood incentives.	Sub-activity 2.1.4.1 Apply biological barriers for dune stabilization (50 ha) Sub-activity 2.1.4.2 Apply mixed stabilization materials for dune fixation (3,100 ha)	- Biological barriers completed across 50 ha) with site-level completion reports for each wilaya -Mixed fixation completed and stabilization effectiveness monitoring records (3,100 ha)
Activity 2.1.5 Strengthen forest health & pest control	This activity aims to improve forest health, resilience, and productivity across 2.688 hectares through silvicultural management and Integrated Pest Management, transitioning vulnerable Aleppo pine monocultures toward diversified, climate-resilient mixed forests through thinning, pruning, gap-filling replanting, and systematic forest health monitoring.	Sub-activity 2.1.5.1 Maintain newly reforested stands Sub-activity 2.1.5.2 Conduct silvicultural interventions including thinning, pruning, sanitary felling, and gap-filling replanting Sub-activity 2.1.5.3 Implement Integrated Pest Management treatments for priority pests and disease threats across affected forest stands	- Maintenance of new plantation - Silvicultural interventions completed across targeted forest stands -Integrated Pest management treatments applied across affected forest stands
Activity 2.1.6 Strengthen forest fire management	This activity aims to strengthen wildfire prevention and response capacity across four wilayas through reinforcement of DFCI	Sub-activity 2.1.6.1 Construct of a lookout post across priority forest zones	- Watchtowers reinforced and constructed across priority forest zones

	infrastructure including watchtowers and access routes, and consolidation of forest land tenure through 9,760 boundary markers, safeguarding forest cover against increasing climate-related wildfire frequency and intensity	Sub-activity 2.1.6.2 Lookout post layout for wildfire suppression Sub-activity 2.1.6.3 Improve forest access routes to strengthen emergency response and fire suppression logistics Sub-activity 2.1.6.4 Forest track opening Sub-activity 2.1.6.5 Install boundary markers to consolidate forest land tenure and demarcation	- Watchtower rehabilitated for wildfire suppression -Forest access routes improved for emergency response and fire suppression -Boundary markers installed for forest land tenure and demarcation
Activity 2.1.7 Supervise the land and water restauration activities	This activity will enable the chief technical advisor to provide senior expertise to the project management team for the implementation of land and water restoration activities.	Sub-activity 2.1.7.1 Provision of expertise to the PMU on implementation of land and water restoration activities	Appropriate design and implementation of land and water restoration activities.
Activity 2.2.1 Rehabilitate agricultural access tracks	This activity rehabilitates 478 km of climate-resilient agricultural and rural tracks across five wilayas to improve year-round accessibility for rural communities, strengthen transport links to markets and essential services, enhance logistics for land restoration activities, and facilitate emergency access for fire suppression across remote steppe areas. addressing three stressors: (i) wildfire frequency/severity requiring rapid emergency access; (ii) drought-induced food/fodder/water emergencies requiring relief logistics; (iii) climate-related disruption to restoration supply chains.	Sub-activity 2.2.1.1 Open agricultural (313 km) tracks Sub-activity 2.2.1.2 Open arural tracks (165km) Sub-activity 2.2.1.3 Develop rural tracks	-Agricultural tracks opened -Rural tracks opened -Rural tracks developed
Activity 2.2.2 Implement soil & water conservation structures & practices	This activity aims to address accelerating soil degradation and declining water retention through the construction of hydraulic and erosion-control infrastructure, across 1500 ha, guided by participatory site assessments with local pastoral associations and smallholders to	Sub-activity 2.2.2.1 Construct mechanical stabilization for riverbanks across 1500 Ha Sub-activity 2.2.2.2 Conduct biological consolidation of soil and water conservation	-Mechanical stabilization constructed across 1500 Ha, for riverbanks -Biological consolidation of soil and water conservation completed -Soil and water conservation works completed

	capture runoff, enhance infiltration, and support native planting survival.	Sub-activity 2.2.2.3 Conduct soil and water conservation work	
Activity 2.2.3 Mobilize & store water resources for climate-resilient agro-sylvo-pastoral systems	This activity aims to strengthen water security across six wilayas through the construction of new water infrastructure — including 22 boreholes, 3 pastoral wells,13 water ponds, and 14 CEDs (traditional rainwater collector)— rehabilitation of existing water infrastructure, and piloting of treated wastewater reuse for rangeland rehabilitation, with priority sites selected through joint vulnerability mapping and community consultations.	Sub-activity 2.2.3.1 Drilling work for -200-meter depth Sub-activity 2.2.3.2 Drilling, equipment, watering pond shelters Sub-activity 2.2.3.3 Construct a hillside reservoir Sub-activity 2.2.3.4 Construct a traditional water mobilization system CED (traditional water channels) Sub-activity 2.2.3.5 Development of CEDs (traditional water channels) Sub-activity 2.2.3.6 Construct a water feature Sub-activity 2.2.3.7 Pond landscaping Sub-activity 2.2.3.8 Construction of a dike Sub-activity 2.2.3.9 Develop a water point Sub-activity 2.2.3.10 Rehabilitate pastoral wells	- Drilling works completed for 200-meter depth -Hillside reservoir constructed -Traditional water storage system (CED) constructed -Pond landscaping constructed - Diversion dike constructed -Water point developed -Pastoral wells rehabilitated
Activity 2.2.4 Promote efficient irrigation & water distribution systems	This activity aims to improve water use efficiency through the installation of drip irrigation across 70 hectares, 10 sprinkler installation systems, and construction of 9,000 linear meters of irrigation canals, expanding cultivated areas and enhancing yields in marginalized High Plateaus communities	Sub-activity 2.2.4.1 Install drip irrigation systems across 70 hectares for efficient localized water delivery Sub-activity 2.2.4.2 Construction of seguia (traditional water canal) Sub-activity 2.2.4.3 Install sprinkler irrigation system	-Drip irrigation systems installed and operational -Sprinkler irrigation system installed and operational ac -9,000 linear meters of irrigation canals constructed with completion certificates and flow capacity verification - Sprinkler irrigation system installed

Activity 3.1.1 Develop Six priority climate-resilient value chains	This activity aims to develop six climate-resilient value chains — prickly pear, olive, rosemary, wool, alfa grass, and peppermint— targeting small and medium farmers, primarily women, through gender-sensitive market analysis, geographical indications, quality certifications, market linkages, by-product processing, and inclusive capacity-building using FAO's MA&D methodology.	Sub-activity 3.1.1.1 Establish 60 opuntia oil extraction units Sub-activity 3.1.1.2 Plantation of 1200 ha of opuntia Sub-activity 3.1.1.3 Oil tree planting covering 3600 ha Sub-activity 3.1.1.4 Establish 24 olive oil mills Sub-activity 3.1.1.5 Establish 12 units of extraction of essential oils from rosemary Sub-activity 3.1.1.6 Establish sales outlets for rosemary extracts Sub-activity 3.1.1.7 install 20 wool looms Sub-activity 3.1.1.8 Establish outlets for wool products Sub-activity 3.1.1.9 Establish 120 artisanal units Sub-activity 3.1.1.10 Establish 12 sales outlets for artisanal products Sub-activity 3.1.1.11 Establish a unit for processing peppermint (10 ha). Sub-activity 3.1.1.12 Install equipment processing for peppermint including drying shed	- 60 opuntia oil extraction units established -1,200 ha of opuntia planted -Oil tree planting completed covering 3,600 ha -24 olive oil mills established -12 essential oil extraction units for rosemary established -Sales outlets for rosemary extracts established -20 wool looms installed -Outlets for wool products established -120 artisanal units established -12 sales outlets for artisanal products established -Peppermint processing unit established (10 ha). -Peppermint processing equipment including drying shed installed
Activity 3.1.2 Establish partnerships between producers and private sector	This activity aims to develop structured partnerships between NWFP and livestock producer associations — including women's organizations — and private companies through contractualization and commercial agreements, collective action mechanisms, and financial institution engagement to strengthen market access and improve access to finance for value chain actors.	Sub-activity 3.1.2.1 Engage private enterprises and negotiate formal partnership agreements with NWFP and livestock producer associations	- Formal partnership agreements signed between private enterprises and NWFP and livestock producer associations

Activity 3.1.3 Provide legal and technical assistance for creation of micro-enterprises	This activity aims to provide integrated legal and technical assistance for creating micro-enterprises producing, marketing, and certifying NWFPs and livestock products, with focus on rural women and youth, covering enterprise registration, cooperative formation, production improvement, post-harvest handling, and certification, with capacity building of local service providers for long-term sustainability.	Sub-activity 3.1.3.1 Deliver technical and legal assistance for micro-enterprise registration, cooperative formation, and regulatory compliance through international expertise Sub-activity 3.1.3.2 National expertise to support sub-activity 3.1.3.1	-Technical and legal assistance program delivered for micro-enterprises
Activity 3.1.4 Facilitate access to microcredit and subsidized finance	This activity aims to facilitate beneficiary access to innovative financial products (microcredit, subsidized loans, guarantees) available in the Algerian market through public and private banks through delivering a two-stream training package: (a) for farmer beneficiaries; financial literacy, business-plan preparation, financial-record keeping, coaching and matchmaking with lenders; and (b) for local branch staff of public and private banks training on climate change impacts and adaptation measures and on improved risk profile of beneficiary farmer groups.	Sub-activity 3.1.4.1 Help the project's beneficiaries to access microcredit facilities through loans and incentives granted by BADR, NASDA and ANGEM	-Financial literacy training for beneficiaries delivered with sex- and age-disaggregated participation and completion records -Training on climate change impacts and mitigation measures for financial institutions delivered
Activity 3.1.5 Provide wilaya-level technical assistance and equipment maintenance follow-up	This activity will support the implementation of on-the-ground investments, providing the selected beneficiaries of Component 3: Climate-Resilient Livelihoods, Value Chains and Sustainable Finance with procured equipment. Each consultant will cover two wilayas, respectively in the West, Center and East, ensuring the availability of maintenance, following up on technical training and linking	Sub-activity 3.1.5.1 Support the implementation of on-the-ground investments and linkage with VC beneficiaries in the project area and under the supervision of the PMU	-Timely identification and selection of beneficiaries. - Equipment and training provided synchronously.

	VC beneficiaries with the local committee and the PMU.		
Activity 3.2.1 Provide rustic fruit cultivation for pastoral farms	This activity aims to establish drought-hardy fruit tree cultivation across 5,974 hectares and promote agroforestry practices on 2.143 ha across six wilayas, using certified nursery-grown varieties calibrated to irrigation availability, integrating orchard establishment with ecosystem restoration and livelihood diversification to improve soil cover and household income for pastoral farming communities.	Sub-activity 3.2.1.1 Establish drought-hardy fruit tree orchards Sub-activity 3.2.1.2 Promotion of agroforestry in MEV (mise en valeur) areas Sub-activity 3.2.1.3 Establish wind break plantation	- Drought-hardy fruit tree orchards established across 5,974 ha. -Agroforestry promoted in MEV (mise en valeur) areas -Windbreak plantation established
Activity 3.2.2 Deploy small-scale livestock modules for rural households	This activity aims to deploy off-ground and small-scale livestock systems — including free-range poultry and beekeeping modules — primarily targeting women, to diversify household income, reduce rangeland pressure, and conserve indigenous sheep and goat breeds through improved husbandry and linkages to climate-resilient value chains.	Sub-activity 3.2.2.1 Deploy small poultry farming modules across six wilayas primarily targeting women beneficiaries (120 units) Sub-activity 3.2.2.2 Deploy beekeeping modules (120 units) contributing to pollination services and income diversification	- 120 small poultry farming modules deployed across six wilayas with sex-disaggregated beneficiary records -120 Beekeeping modules deployed with production monitoring services assessment reports
Activity 3.2.3 Install hydroponic forage production systems	This activity aims to strengthen the forage balance and climate resilience of livestock farmers by installing 240 hydroponic barley chambers across six wilayas meeting the forage needs of an estimated 25,146 sheep equivalents, complemented by 360 field-based barley cultivation sites and 240 alfalfa production units, reducing dependence on degraded rangelands and alfa grass areas through year-round, water-efficient soil-independent fodder production.	Sub-activity 3.2.3.1 Install 240 hydroponic fodder production units across six wilayas Sub-activity 3.2.3.2 Acquisition of equipment for a hydroponic fodder production unit Sub-activity 3.2.3.3 Cultivation of barley on a floodplain (unit 5 ha) Sub-activity 3.2.3.4 Establish 240 alfalfa production units (5 ha each) across the six wilayas with priority to 12 pilot municipalities	-240 hydroponic barley chambers installed and operational across six wilayas with production yield, water efficiency, and forage output monitoring-360 field-based barley cultivation sites established on floodplains with area coverage and forage production records -240 alfalfa production units established across six wilayas

		Sub-activity 3.3.3.5 Irrigation system for alfalfa production	
Activity 3.2.4 Provide circular economy solutions for date production & agro-processing residues	This activity aims to transform agricultural residues into productive resources by establishing date processing and packaging facilities, converting palm grove residues into livestock feed, and valorizing olive oil production residues, promoting circular economy principles for income diversification and sustainability with a focus on women's engagement in bio-based activities.	Sub-activity 3.2.4.1 Date processing and packaging unit (Gharse) and oasis grove waste processing unit	-Date processing and packaging facilities constructed, equipped, and operational with production output records -Palm grove residue-to-livestock feed conversion system operational with production volumes and women beneficiary participation records -Olive oil residue valorization program operational with identified products and income generation records -Training program delivered on circular economy techniques
Activity 3.2.5 Deploy solar energy kits for rural households	This activity aims to provide clean, renewable electricity through 190 solar energy systems to the most isolated rural and agro-pastoral households across six wilayas, with priority allocation to women-headed households, reducing fossil fuel dependence and greenhouse gas emissions while improving living conditions and productive capacity.	Sub-activity 3.2.5.1 Install 190 solar energy kits	- 190 solar energy kits installed across six wilayas with geo-referenced beneficiary records

E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)

189. In its role as Accredited Entity, FAO will oversee project implementation under the Accreditation Master Agreement with GCF, bearing overall responsibility for timely and standards-compliant reporting. The M&E system is detailed in Annex 11 (Monitoring, Evaluation and Learning Plan) and is fully aligned with Algeria's NDC adaptation objectives, the National Climate Plan, the National Sustainable Development Plan 2020–2035, the Land Degradation Neutrality (LDN) targets under the UNCCD, and the National Biodiversity Strategy. As per the GCF Monitoring and Accountability Framework, FAO will deliver an Inception Report, Annual Performance Reports (APRs), semi-annual and annual Financial and Co-financing Reports, a Project Completion Report, and independent Interim Year 4, Q1) and Final (Year 7, Q3) Evaluations conducted by the FAO Office of Evaluation (OED) — aligned with GCF Evaluation Policy, Standards and Operational Procedures, applying mixed quantitative and participatory methods including beneficiary surveys, case studies, and focus groups.

190. Project monitoring will be led by the M&E unit supported by international and national M&E specialists, information and knowledge management specialists, and a gender and inclusion specialist. Monitoring data will flow through the digital M&E system, developed under activity 1.2.2- a centralized monitoring information system- linked to the results framework, with customized physical and financial dashboards, a dedicated gender dashboard to track the GAP, and spatial

visualization tools integrating geospatial and remote sensing data. Surveys will be conducted at baseline (Year 1), midline (Year 4), and endline (Year 7) using stratified random sampling across intervention and comparison areas.

191. Strategic oversight is provided by the Project Steering Committee (PSC), and FAO HQ technical units. National implementation stakeholders include DGF and the Water Resources Directorate. Operational coordination is led by the PMU/ National Project Coordinator. Technical accuracy is validated by component specialists; gender disaggregated data is overseen by the gender specialist; lessons are packaged into knowledge products, by the knowledge management specialist; and financial-technical coherence is ensured by the Administrative and Finance Officer. Implementation follows the Annual Work Plan and Budget, subject to Budget Holder approval by FAO as AE.

192. The project will actively contribute to learning and knowledge exchange under the ReInvest NENA initiative, the Middle East Green Initiative, and the Scaling up Resilience in Africa's Great Green Wall programme (SURAGGWA) - supporting cross-country learning, scaling-up, and regional dialogue on climate-resilient land restoration. In compliance with the requirements in FAO's Accreditation Master Agreement with the GCF, the FAO Office of Evaluation (the Accredited Entity independent evaluation office) will be responsible for the independent evaluation of this project. This evaluation shall be conducted in accordance with the GCF Monitoring and Accountability Framework (MAF) and the requirements outlined in the GCF Evaluation Policy, Evaluation Standards, and Evaluation Operational Procedures and Guidelines. To this end, the evaluation will include multiple components, such as assessments of implementation. The overall evaluation will, inter alia, study the effectiveness, efficiency, and timeliness of project implementation; analyze partnership arrangements; identify issues requiring decisions and remedial actions; and, through the interim evaluation report, may propose mid-course corrections or needed adjustments to the implementation strategy. The final evaluation report will focus on project results and the degree to which expected long-term results have been achieved and may be sustained. It may also identify future actions needed to sustain results and disseminate replicable good practices and key issues faced during project implementation. The evaluation budget includes all evaluation costs, such as inception phase, evaluation design, data collection activities, analysis, report writing, quality assurance, and dissemination. FAO will communicate the results of this evaluation to the GCF Secretariat (Please refer to Annex 11 for the full M&E Plan).

F. RISK ASSESSMENT AND MANAGEMENT

F.1. Risk factors and mitigations measures (max. 3 pages)

Selected Risk Factor 1

Delays or weak effectiveness in institutional coordination and policy reform

Category	Probability	Impact
Governance	Medium	Medium

Description

193. The project depends heavily on intersectoral coordination across MADRP, DGF, HCDS, water authorities, research institutions, local communes, wilayas, and the project steering structures. The implementation relies on FAO and DGF/MADRP, the national coordinating body for combating desertification and reviving the Green Dam, local committees, wilaya services, and commune-level arrangements. Because Component 1 includes pastoral code reform, local land governance reform, climate observatories, and digital systems, delays in inter-ministerial coordination, approvals, or operationalization could slow implementation across all components and reduce the project's ability to deliver timely downstream investments and enabling conditions.

194. The amendment of the Pastoral Code requires a government-led legal and parliamentary process outside FAO's direct control. The expected project-supported pathway is:

- Completion of the technical and legal diagnostic and preparation of the draft amendment during the second half of Year 1;
- Stakeholder consultations and consolidation of comments during the second half of Year 1; inter-ministerial legal and technical validation by the end of Year 1;
- Government clearance and submission of the draft amendment for parliamentary consideration during Year 2
- Targeted adoption and promulgation by the end of Year 2.

195. These milestones are planning targets and will be monitored through the annual workplan and risk register, recognizing that the timing of parliamentary consideration and adoption remains under the authority of the Government of Algeria.

Mitigation Measure(s)

196. The project will mitigate this risk through a layered implementation architecture already defined in the FP. DGF/MADRP as national executing lead, the National Coordination Body for combating desertification and reviving the Green Dam as the intersectoral anchor, an Interministerial/National Steering Committee for high-level oversight, and a Scientific and Technical Committee/Scientific Council for technical validation and adaptive improvement. These bodies will be operationalized during inception with approved terms of reference, annual meeting calendars, decision-escalation procedures, and clear designation of lead institutions for each Component 1 reform and system-building activity.

197. Risk of reform delays should be reduced by sequencing the policy package around the project's own technical building blocks: Activity 1.1.1 on pastoral code and local land governance reform will be informed by Activity 1.2.5 baseline and feasibility studies, including forest management, biodiversity inventories, land degradation assessment, groundwater recharge potential, protected area feasibility, and treated wastewater reuse studies. The same applies to AFOLU compensation design, carbon accounting, and MRV system arrangements under Activities 1.1.2 and 1.1.3. To maintain implementation momentum, the PMU will assign technical focal points for each reform stream and integrate safeguards, procurement, and monitoring tasks into annual workplans. The ESMF already requires a dedicated safeguard function comprising one ESS Specialist, one gender/SEAH focal point, one stakeholder engagement and GRM focal point, and site-level safeguard focal persons in wilaya teams; these roles should be mobilized from the start so that consultations, screening, and disclosure do not become bottlenecks to Component 1 rollout.

198. Should the adoption of the amended Pastoral Code and the associated incentive schemes for Activity 2.1.2 and Component 3 face unforeseen delays, the incentive scheme will be implemented under the legislative and regulatory provisions currently in force, including decrees issued by the walis. The walis have authority over the State's private domain, particularly in pastoral zones, and may issue decrees establishing deferred grazing. Law No. 10-03 of 15

August 2010 on the exploitation of agricultural land, Law No. 90-25 of 18 November 1990 on land heritage, Law No. 08-16 of 3 August 2008 on agricultural orientation, and Law No. 23-21 of 23 December 2023 on forests and forest resources—which also applies to alfa grass cover and lands suitable for alfa grass, considered an integral and essential part of steppe pastoral areas—will further help mitigate Risk Factor 1. These provisions will ensure that Activity 2.1.2, covering 28,491 ha of rangeland restoration across 12 communes with the associated rotational-grazing incentive scheme, as well as Component 3 sub-activities—including six climate-resilient value chains, micro-enterprises, climate-adapted microcredit, rustic-fruit orchards, livestock modules, hydroponic forage, and solar kits—can proceed on the basis of the existing legal framework.

199. The risk of delay in adoption of the amended Pastoral Code beyond the project period, has a medium impact nevertheless, activities remain unaffected by any delay in APN adoption of the amended Pastoral Code, as they proceed under the existing legal framework (Laws 10-03, 90-25, 08-16, 23-21 and wali decrees) supplemented by the interim inter-ministerial decree and DGF-MADRP circulars).

Selected Risk Factor 2

Resistance from local stakeholders due to fear of land loss, exclusion, or misunderstanding of project objectives

Category	Probability	Impact
Technical and operational	Medium	Medium

Description

200. Consultations recorded fears among breeders, farmers, investors, and concessionaires, especially concerning possible expropriation of land used by them for reforestation purposes. They also showed that some participants initially perceived the project mainly as a forest planting programme and did not fully understand the territorial route of the Green Dam or why some localities were not included. These perceptions create a delivery risk: if communities associate restoration activities with loss of access, exclusion, or top-down land conversion, uptake, participation, and social acceptance could weaken.

Mitigation Measure(s)

201. Mitigation will be in place with an early, commune-level communication campaign linked to Activity 1.1.4, the Multi-Stakeholder Climate Governance Platform, so that ministries, pastoral associations, women's organizations, civil society, local users, and wilaya actors receive the same message on project objectives, eligibility, and limits. This communication should explicitly clarify that the project applies ESMF screening, uses land and user verification, avoids involuntary land acquisition, and manages temporary access restrictions through consultation, agreements, and the GRM rather than through expropriation.

202. Before any field intervention involving restoration, assisted fencing, tracks, or water infrastructure, wilaya teams and local committees will be subject to documented user verification and consultation, as foreseen in the ESMF roles for local committees and communes. These actors are specifically tasked with participation in land/user verification, consultation, conflict prevention, and local monitoring. The PMU stakeholder engagement/GRM focal point should maintain consultation records, disclosure logs, grievance registers, and close-out tracking, while commune-level meetings should be used to explain why specific sites and localities are selected and what benefit-sharing arrangements apply. To make this operational, the project should deploy the simple field tools already identified in the ESMF, including screening forms, consultation logs, grievance registers, monthly checklists, biodiversity quick-screens, and water abstraction checklists, before mobilizing contractors or service providers in sensitive sites.

Selected Risk Factor 3

Climate variability and drought reduce the performance of restoration and water-related investments

Category	Probability	Impact
Technical and operational	Medium	Medium

Description

203. The project is being implemented in a steppe and dry forest context already characterized by declining rainfall, rising temperatures, pressure on groundwater recharge, and recurrent drought. Several core investments are climate-

sensitive by design: nurseries, reforestation, revegetation, rangeland restoration, fruit cultivation, hydroponic fodder systems, boreholes, wells, ponds, and irrigation improvements.

204. If drought intensifies during implementation, seedling survival, pasture recovery, water availability, and adoption of livelihood measures may all fall below target, undermining outcome achievement.

Mitigation Measure(s)

205. The main mitigation is to use the project's own climate-information architecture as an implementation management tool, not only as an output. Activity 1.2.1 will establish a climate and ecological observation network; Activity 1.2.3 will deploy automatic agrometeorological stations across the six wilayas; Activity 1.2.4 will develop GIS tools for agricultural drought and land degradation management; and Activity 1.2.6 will build digital climate information and advisory systems for farmers and pastoralists. These systems should directly inform annual restoration calendars, site prioritization, species selection, planting windows, and contingency decisions when drought indicators worsen.

206. For Component 2, all nursery, reforestation, revegetation, rangeland rehabilitation, fruit cultivation, and dune fixation activities should be tied to climate-adapted planting material produced through Activity 2.1.1 and to locally appropriate restoration packages under Activities 2.1.2 to 2.1.4. Site selection should be based on the feasibility and baseline studies under Activity 1.2.5, especially land degradation, biodiversity, and groundwater recharge analyses, so that highly climate-exposed or low-survival sites are not prioritized prematurely. The project should also build climate risk response into routine monitoring, using the ESMF's risk-based monitoring system to trigger remedial actions such as replanting, adjustment of grazing-rest periods, modification of species mix, temporary reduction in water demand, or rescheduling of works following drought alerts.

Selected Risk Factor 4

Low adoption of climate-resilient practices, technologies, and livelihood packages by intended beneficiaries

Category	Probability	Impact
Technical and operational	Low	Medium

Description

207. The project assumes that farmers, pastoralists, women-led groups, and rural households will adopt climate-resilient value chains, efficient irrigation, hydroponic fodder, restoration-compatible grazing systems, solar kits, and enterprise support measures. If uptake is weak because of limited understanding, affordability concerns, risk aversion, or mismatch between technical packages and local realities, the project may deliver assets and training without achieving expected adaptation outcomes.

Mitigation Measure(s)

208. Adoption risk will be addressed through the project's own service package rather than stand-alone asset delivery. Activity 1.2.7 will deliver training and knowledge transfer programmes for extension agents, farmers, herders, and institutions on climate-resilient land management, digital tools, and climate risk management. These trainings will be linked directly to the rollout of Activities 3.2.1 to 3.2.5, including rustic fruit cultivation, livestock modules, hydroponic forage systems, circular-economy solutions, and solar kits, so that households receive practical support before and after receiving equipment or productive inputs. Component 3 uptake will also be reinforced through market and enterprise measures already built into the project.

209. The six-priority climate-resilient value chains under Activity 3.1.1, private-sector partnerships under Activity 3.1.2, legal and technical assistance for micro-enterprises under Activity 3.1.3, facilitate access to microcredit and subsidized finance under Activity 3.1.4 will be used to ensure knowledge on existing tailored financial tools, already available in the market, are widely shared amongst beneficiaries and the access to finance is increased amongst smallholder farmers, women, and youth. In practice, this means sequencing extension, business support, and access to finance together in the same target zones and beneficiary cohorts. To reduce dropout and non-use, wilaya teams will monitor actual use of technologies after delivery, not just distribution numbers, through the digital M&E platform under Activity 1.2.2.

210. The project will apply differentiated adoption strategies based on the specific barriers faced by each beneficiary group. During inception, DGF and FAO will identify constraints related to affordability, mobility, tenure, literacy, technical capacity and market access, and will adapt the support packages accordingly.

211. Women and women-headed households will receive targeted access to productive assets, collective concessions, adapted finance, financial literacy and training delivered at accessible times and locations.

212. Youth will benefit from entrepreneurship support, apprenticeships, business coaching and adapted financing. Transhumant pastoralists will be reached through mobile extension services and training aligned with seasonal grazing calendars, while landless agro-pastoralists will access collective or group-based arrangements without formal land ownership being the sole eligibility criterion. Low-literacy and remote beneficiaries will receive information through practical demonstrations, pictorial materials, local radio, voice messages and in-person extension.

Selected Risk Factor 5

Procurement, fiduciary, and contractor management weaknesses delay implementation or damage credibility

Category	Probability	Impact
Technical and operational	Medium	Medium

Description

213. The project includes a wide range of civil works, equipment supply, technical studies, digital systems, livelihood packages, and specialized service delivery. This creates exposure to procurement delays, weak contractor performance, cost escalation, and fiduciary irregularities. Given the number of implementing actors and the technical diversity of interventions, this is a genuine risk to delivery pace and stakeholder confidence.

214. Implementation may also be delayed by lengthy procurement processes, limited availability of suitably qualified consultants, unsuccessful tenders or delays in replacing underperforming consultants.

Mitigation Measure(s)

215. Mitigation should focus on embedding implementation controls into the PMU and procurement system from the start. The ESMF (annex 6) explicitly requires integration of safeguard clauses into procurement documents, bills of quantities, technical specifications, and supervision of contracts. This should be expanded into a project-wide procurement readiness package that includes pre-cleared technical specifications for common works and supplies, contractor ESMP requirements, OHS obligations, code of conduct provisions, incident reporting formats, and performance-based supervision arrangements. Contractor risk should be managed through tiered oversight: contractors and service providers should prepare contractor documentation and agreements, OHS plans, workforce records, and incident logs; wilaya implementation teams should carry out site verification and supervision, and FAO should provide quality assurance and periodic review.

216. A detailed procurement plan will be prepared and updated annually, with priority consultancy packages initiated sufficiently in advance of the related activities. Terms of reference, evaluation criteria and cost estimates will be prepared early, supported by market assessment and realistic recruitment timelines. Where permitted, FAO consultant rosters, framework agreements and qualified national and international expertise will be used to widen competition and reduce recruitment delays.

217. Consultant contracts will include clear deliverables, performance milestones and provisions for timely replacement. Where a procurement process is unsuccessful or a consultant becomes unavailable or underperforms, the PMU will activate accelerated re-tendering, recruit an alternative expert or firm, or temporarily mobilize FAO technical expertise to avoid interruption of critical activities. These layers should be used systematically, with monthly field reports, quarterly safeguard controls, and rapid corrective action where contractor performance is weak.

Selected Risk Factor 6: Money laundering and countering the financing of terrorism

Category	Probability	Impact
M/FT	Low	Low
Reputational	Low	Low
Prohibited practices	Low	Low
Sanctions	Low	Low

Description
218. The project could be negatively affected by a combination of financial and governance-related issues that could severely undermine its integrity and success. The project's financial transactions, particularly those involving third-party contractors, are potentially vulnerable to money laundering or the financing of terrorism, where project funds could be diverted to illicit activities. There is also a risk of fraud, corruption, abuse, or conflicts of interest among staff, contractors or beneficiaries, which could include the misuse of funds, inflated procurement costs, or retaliation against whistleblowers. Any such incident could cause severe reputational damage to the project and its service providers eroding public trust and jeopardizing the long-term sustainability of the initiative. These risks, though individually of low probability, have the potential for interconnected impact if they occur, and could significantly undermine the goals of the project.
Mitigation Measure (s)
219. FAO has consistently complied with the principles of Anti-money Laundering and Countering the Financing of Terrorism Policy and applied its own rules in order to comply with the objectives of the Policy on Prohibited Practices, as per Clause 9.03 of the current Accreditation Master Agreement (AMA) and will continue complying with such obligation for the Funded Activity in alignment with the Funded Activities Agreement to be executed between FAO and the GCF. The proposed Project foresees that FAO and the DGF act each as an Executing Entity for the implementation of the Project as described in the Funding Proposal. FAO, in its capacity of Accredited Entity of the Funding Proposal, confirms that a capacity assessment for DGF has been conducted and that it is satisfied with the results of the assessment. 220. The Project will be executed in full compliance with the following policies and procedures regarding AML/CFT (KYC), as also confirmed in the current AMA and assessed in the re-accreditation decision (B.37/18). These policies and procedures apply to all FAO personnel and all contractual arrangements between FAO and, service providers suppliers or other third parties for administrative, technical or operational purposes. In addition, FAO will include in the Project agreement to be signed with DGF clauses related to AML/CFT, providing, inter alia, that: 221. The Government shall comply and require all persons and entities engaged in its activities under the Project to comply, with all internal anti-money laundering, counter-terrorism financing laws, rules, and regulations; The Government confirms it has obtained sufficient undertakings from all persons and entities involved in its activities under the Project that they shall not engage in any prohibited practices; the Government undertakes and confirm that it shall comply with the substantive objectives of the GCF's Policy on Prohibited Practices; 222. Consistent with numerous United Nations Security Council resolutions adopted under Chapter VII of the UN Charter, the Government and FAO are firmly committed to the international fight against terrorism and, in particular, against the financing of terrorism. It is the policy of the Government and FAO to seek to ensure that none of their funds are used, directly or indirectly, to provide support to individuals or entities: i) associated with terrorism, as included in the list maintained by the Security Council Committee established pursuant to its Resolutions 1267 (1999), 1989 (2011) and 2253 (2015); or ii) that are the subject of sanctions or other enforcement measures promulgated by the United Nations Security Council. This provision must be included in all agreements that may be concluded with third parties for the implementation of activities under the Project. 223. During project implementation FAO, as AE, will ensure close monitoring and supervision through its Office of Climate Change, Biodiversity and Environment (OCB), with support from the Regional Office for the Near East and North Africa (RNE) and its Representation in Algeria (FAODZ) to ensure that the activities are implemented in full compliance with the signed project agreement, as well as the FAA and AMA. 224. To further strengthen integrity and fiduciary oversight during implementation, FAO will apply financial reporting requirements, procurement oversight, periodic supervision missions, spot checks, applied also to DGF's financing flows, in accordance with its policies and procedures. These measures will be complemented by grievance and whistleblower mechanisms, as well as the application of FAO's policies on fraud, corruption and prohibited practices throughout project implementation, to support the prevention, detection and timely resolution of integrity-related risks. 225. FAO is committed to identifying, mitigating and addressing fraud, corruption and other Prohibited Practices. If wrongdoing by a Third Party involved in FAO operations is established, FAO has in place a mechanism to impose the most appropriate sanction(s) or corrective and rehabilitative measure(s) in accordance with the FAO Sanctions

Procedures. Any Third Party that is proven to have engaged in unethical, corrupt or fraudulent activities may be debarred and deemed ineligible to conduct business relations with FAO, among other possible sanctions.

226. Debarred vendors will be classified as Ineligible Vendors and included on the UN Ineligibility List shared with other UN agencies through the UN Global Marketplace. If wrongdoing is established, FAO will inform GCF and, as necessary, discuss possible approaches with regard to any funds that may have been misappropriated or otherwise affected.

Selected Risk Factor 6a: Conflict of Interest

Category	Probability	Impact
Conflict of Interest	Medium (inherent)/Low (Residual)	Medium (inherent)/Low (residual)

Description

227. Potential conflicts of interest may arise in procurement processes, contractor and supplier selection, beneficiary targeting, and implementation decision-making involving multiple executing entities, contractors, and private-sector partners.

Mitigation Measure (s):

228. The project will apply FAO's Policy on Prohibited Practices, Standards of Conduct, procurement and financial controls, segregation of duties, disclosure requirements, sanctions procedures, and whistleblower mechanisms. All project personnel, service providers, suppliers, and third parties will be subject to applicable contractual obligations and due diligence requirements. FAO (AE) will provide oversight, supervision, and monitoring throughout project implementation.

Selected Risk Factor 6b: Fraud and corruption in DGF-executed financing flows

Category	Probability	Impact
Fiduciary and integrity risk	Medium (inherent)/Low (Residual)	Medium (inherent)/Low (residual)

Description

229. The project involves decentralized restoration, infrastructure, equipment and service contracts across six wilayas. DGF (one of the EEs) will execute part of the GCF-financed activities and will manage the Government of Algeria's co-financing. This creates inherent exposure to fraud, bribery, collusion, conflicts of interest, inflated invoices, manipulation of procurement processes, false reporting, diversion of equipment or materials and misuse of project or co-financing resources.

Mitigation Measure (s):

230. The project will apply FAO's Policy on Prohibited Practices, Standards of Conduct, procurement and financial controls, segregation of duties, disclosure requirements, sanctions procedures, and whistleblower mechanisms. All project personnel, service providers, suppliers, and third parties will be subject to applicable contractual obligations and due diligence requirements. FAO (AE) will provide oversight, supervision, and monitoring throughout project implementation. The project will benefit from Algeria's strengthened national transparency and anti-corruption framework, including the National Strategy for Transparency, Prevention and the Fight against Corruption 2023–2027, launched in July 2023 and implemented under the leadership of the High Authority for Transparency, Prevention and the Fight against Corruption—HATPLC. The strategy provides a national framework for strengthening integrity, institutional controls, accountability and the capacities of law-enforcement and oversight bodies.

Selected Risk Factor 7: Government co-financing delays or displacement of baseline DGF financing

Category	Probability	Impact
Governance	Medium	Medium

Description

231. The Government of Algeria's USD 56.5 million co-financing represents 57% of the total project cost and is essential for project implementation. Delays in the mobilization of Government co-financing, or the displacement of baseline DGF financing to substitute rather than complement GCF resources, could delay implementation and undermine the project's financial additionality.

Mitigation Measure(s)

232. The Government of Algeria's USD 56.5 million co-financing, representing 57% of the total project cost, demonstrates strong national ownership and commitment to implementation. Project investments are embedded within existing institutional arrangements led by the DGF, reducing the likelihood of co-financing shortfalls or institutional disengagement (Paras. 25, 130).

233. The project establishes a financial additionality protocol under which the FY2023–2025 DGF expenditure baseline will be established at project inception, and annual Government expenditures will be monitored against that baseline. Any significant decline will trigger corrective management measures through the project's governance arrangements to safeguard financial additionality (Paras. 122–123).

234. Financial oversight will be reinforced through the project's existing governance architecture, including DGF, the National AGD Advisory Committee, the six Wilaya Climate Adaptation Committees, the digital monitoring platform, and annual implementation reporting, allowing early identification of implementation or financing bottlenecks and coordinated corrective action (Paras. 40–50).

Selected Risk Factor 8: Post-project financial sustainability

Category	Probability	Impact
Technical and operational	Medium	Medium

Description

235. Following project completion, there is a risk that project-supported systems, infrastructure, and climate-resilient value chains may not be sustained without continued institutional ownership, adequate financing, and private-sector engagement. This could reduce the long-term sustainability of project benefits.

Mitigation Measure(s)

236. Annual operation and maintenance (O&M) costs for the six agrometeorological stations, GIS/Observatory, MRV system and absorbed PMU functions will be quantified during project inception, incorporated into the DGF's Pluriannual Action Plan (PAP) M&E budget line, and monitored through the Annual Performance Reports (APRs) and Exit Plan, ensuring continued financing after project completion (Para. 130).

237. The project has been designed to avoid creating parallel institutional structures or recurrent costs beyond the Government's fiscal capacity, instead strengthening and expanding existing DGF operational systems and institutional capacities to ensure long-term sustainability (Para. 130).

238. Long-term sustainability will be further reinforced through structural policy reforms, including the revised Pastoral Code, pastoral concession framework, climate governance platform and carbon market readiness measures, together with strengthened institutional capacities within DGF and partner institutions, allowing key project functions to continue beyond the GCF financing period (Paras. 35–50).

239. Financial sustainability at the beneficiary level will be supported through six climate-resilient value chains, strengthened producer–private sector partnerships, access to climate-informed financial products and microcredit, and diversified livelihood opportunities that create sustained economic incentives for continued ecosystem restoration and climate-resilient land management (Paras. 29, 75–84).

240. Commercial pillar: The project will strengthen private-sector engagement by facilitating commercial partnerships between producer organizations and anchor buyers across the priority climate-resilient value chains, improving market access and supporting long-term commercial sustainability. Letters of intent from anchor buyers will be provided for each priority value chain by the end of Year 2. (Paras. 25, 29, 75–84).

G. CF POLICIES AND STANDARDS

G.1. Environmental and social risk assessment (max. 750 words, approximately 1.5 pages)

241. The Algeria Green Dam Climate Resilience Project has been designed in full alignment with GCF safeguard requirements, the FAO Framework for Environmental and Social Management (FESM), and IFC Performance Standards. Based on FAO ESS screening, the project is classified as Moderate Risk (Category B), reflecting that anticipated impacts are generally site-specific, limited in scale, reversible, and manageable through appropriate mitigation measures and adaptive management approaches.

242. ESMF provides a comprehensive, systematic structure for identifying, assessing, and managing risks across all project components and activities. It establishes clear processes for screening, risk categorization, preparation of project related Environmental and Social Management Plan (ESMP), stakeholder engagement, grievance redress, and monitoring. Exclusion criteria are defined to prevent the financing of high-risk or non-compliant activities. The ESMF is intentionally designed as a living document, to be continuously refined through field-level feedback and adaptive learning over the course of implementation.

243. The project operates within a fragile agro-sylvo-pastoral ecosystem characterized by degraded landscapes, high desertification sensitivity, shallow and erosion-prone soils, and scarce and unevenly distributed water resources. Restoration activities — including reforestation, rangeland rehabilitation, dune stabilization, and water infrastructure development — may cause localized habitat disturbance, soil erosion, or unintended changes in species composition if not properly managed. To address these risks, the project adopts an ecosystem-based, climate-resilient approach to land management, prioritizing the use of native and locally adapted species, avoidance of ecologically sensitive areas, and assisted natural regeneration where feasible. Environmental screening procedures will be applied to all sub-projects to ensure that activities are ecologically compatible and do not result in unintended degradation of biodiversity or ecosystem services.

244. The project is expected to deliver substantial positive environmental and social benefits through restoration of degraded agro-sylvo-pastoral landscapes, improved climate resilience of rural households, stronger climate information services, and more inclusive livelihood opportunities. At the same time, the screening confirms that several FAO environmental and social standards are triggered, notably in relation to biodiversity, water resources, labor, community health and safety, gender equality, land and resource access, vulnerable pastoral groups, and cultural heritage. These risks are going to be addressed through the ESMF, project related ESMP, the Stakeholder Engagement Plan, the Gender Action Plan, land tenure due diligence consistent with VGGT principles, contractor obligations, and the project grievance redress mechanism.

Table 5: Triggered FAO FESM standards and key mitigation measures

FAO ESS	Triggered	Brief mitigation measures
ESS1 – Biodiversity conservation and sustainable management of natural resources	Yes	Screening and application of exclusion criteria will be undertaken prior to activity implementation. Site selection will avoid environmentally sensitive areas and will be guided by biodiversity considerations. Restoration activities will promote the use of climate-adapted, native or ecologically appropriate species.
ESS2 – Resource efficiency and pollution prevention and management	Yes	The ESMF and ESMP will include measures to promote efficient use of water and other natural resources, as well as provisions for waste management, pollution prevention, and control. Integrated Pest Management approaches will be applied where relevant. Water abstraction activities will be subject to screening, technical assessment and monitoring to avoid unsustainable use of water resources and associated environmental impacts.
ESS3 – Climate change and disaster risk reduction	Yes	Project activities will be designed using climate-informed approaches to strengthen resilience to drought, land degradation and other climate-related risks. Observation systems, agrometeorological

		information, GIS-based tools and drought monitoring data will support planning, site selection and implementation.
ESS4 – Decent work	Yes	Labour management and occupational health and safety measures will be integrated into the project ESMP. Contractors will be required to prepare and implement occupational health and safety plans, maintain workforce records, and ensure compliance with national labour requirements and FAO standards.
ESS5 – Community health, safety and security	Yes	Community health and safety measures will be applied, particularly in relation to small works, water infrastructure, and field-level activities. Contractors will implement ESMP provisions to manage risks to nearby communities. Project supervision will monitor compliance with community safety requirements. Incident reporting procedures and grievance arrangements will be in place to address community concerns in a timely manner.
ESS6 – Gender equality and prevention of gender-based violence	Yes	A Gender Action Plan will guide gender-responsive implementation, including targeting, participation and monitoring. Dedicated gender and SEA/SH focal points will support prevention, response and referral arrangements. Measures will be put in place to facilitate safe and inclusive participation of women and vulnerable groups, and the GRM will include procedures for handling gender-related complaints in a confidential and survivor-centred manner.
ESS7 – Land tenure, displacement and resettlement	Yes	The project will not finance involuntary land acquisition or physical resettlement. Activities involving land or natural resource access will be based on participatory consultation, verification of land and user rights, and negotiated access arrangements where needed. Relevant measures will be reflected in ESMP, the SEP and the GRM to address risks related to land use, tenure, access restrictions and potential disputes.
ESS8 – Indigenous Peoples	Yes	Screening and consultation measures will be applied to ensure that vulnerable pastoral groups and traditional resource users are appropriately identified and included in project processes. The project will promote inclusive participation in planning and implementation and will ensure that culturally appropriate consultation, feedback and grievance procedures are available to affected groups throughout the project cycle.
ESS9 – Cultural heritage	Yes	Screening will be undertaken before the start of work to identify any potential cultural heritage concerns. Chance-finds procedures will be included in ESMP and contractor obligations, requiring immediate stop-work, site protection and notification of relevant authorities if cultural or archaeological resources are encountered during implementation.

245. Pest management is an additional environmental concern, particularly in relation to forestry operations, nursery development, and agricultural activities. The project will implement an Integrated Pest Management (IPM) approach, prioritizing preventive, biological, and mechanical methods while strictly limiting chemical inputs to controlled and justified cases. The ESMP requirements will enforce safe handling, storage, and application procedures, supplemented by targeted training and the provision of personal protective equipment to workers.

246. Water resource management represents another critical dimension, given the region's chronic water scarcity. Project interventions — including boreholes, water storage systems, and irrigation improvements — risk increasing

pressure on already limited resources. The ESMF therefore requires several assessments of water availability, adoption of sustainable abstraction practices, and ongoing monitoring of water use to prevent overexploitation, contamination, and potential conflicts over access among different user groups.

247. On the social side, land tenure and access to natural resources are among the most significant risks. The project area is characterized by overlapping land-use systems involving farmers, pastoralists, and forest users, with ongoing transitions from mobile to more sedentary pastoral systems. These dynamics heighten the risk of conflicts over land and resource use, particularly as restoration activities may alter established land management practices.

248. To manage these risks, the project applies principles consistent with the Voluntary Guidelines on the Responsible Governance of Tenure (VGGT), including the identification of all legitimate land and resource users — including those with customary and seasonal rights — and the establishment of participatory, transparent access arrangements. Farmer-pastoralist interactions will be managed through inclusive consultation processes, land-use mapping, and locally agreed resource-use mechanisms. A land tenure strategy will be developed through Activity 1.1.1.4 (Establishment of Multi-Stakeholders Climate Governance Platform Dedicated to the Green Dam based on the finding of the Inception Phase).

249. Where temporary restrictions on access to grazing areas are required within restoration sites, the project will prioritize adaptive and negotiated solutions, such as rotational grazing, seasonal access arrangements, and monitored use systems. Any restrictions will be time-bound, ecologically justified, and defined in close consultation with affected stakeholders, with appropriate mitigation measures provided where livelihoods may be temporarily affected.

250. Nursery development – a key element of the restoration strategy — presents specific risks related to land use, water demand, species selection, and labour conditions. These will be managed through careful site selection, verification of land tenure status, sustainable resource management practices, and strict application of occupational health and safety standards.

251. Regarding sexual exploitation, abuse and sexual harassment (SEAH), the project will apply a zero-tolerance approach. The PMU will designate a gender/SEAH focal point responsible for prevention, awareness raising, referral pathways, and monitoring. All contractors, service providers, and project personnel will be bound by codes of conduct and trained on SEA/SH prevention and response. Also, the project GRM will include confidential, survivor-centred channels for receiving and managing SEAH-related complaints safely, including referral options adapted to local access constraints.

252**.** Gender inequality is recognized as a structural feature of the project context and is addressed as a cross-cutting priority throughout all stages of design and implementation. Women play a central role in agro-pastoral livelihoods but face significant constraints in access to land, finance, technology, and decision-making processes. The ESMF integrates gender considerations into all project stages, ensuring inclusive participation, equitable access to benefits, and systematic monitoring of gender-differentiated impacts, further supported by a dedicated Gender Action Plan.

253. Stakeholders' engagement is a core pillar of the project's safeguard approach. Continuous and inclusive consultation will be maintained throughout the project lifecycle, with particular attention to vulnerable groups including women, pastoralists, and marginalized communities. A functional and accessible Grievance Redress Mechanism (GRM) has been established to address complaints and resolve conflicts in a timely, transparent, and culturally appropriate manner.

254. Taken together, the project's environmental and social risk management system ensures that all identified risks are systematically addressed through preventive, mitigative, and adaptive measures. By integrating biodiversity conservation, sustainable resource use, gender inclusion, and conflict-sensitive approaches into its design and implementation, the project aims to deliver durable, climate-resilient outcomes while safeguarding both environmental integrity and social equity across the target landscapes.

G.2. Gender assessment and action plan (max. 500 words, approximately 1 page)

255.. Algeria has integrated gender equality commitments into its constitution and national development frameworks. However, the translation of these formal commitments into tangible outcomes for rural populations remains an ongoing challenge, constrained by institutional, social, and geographic barriers. In the agro-pastoral sector, women are actively engaged in livestock rearing, non-wood forest product collection, and subsistence crop production; yet, they have limited access to land, agricultural inputs, advisory services, formal credit, and limited control over incomes. Women's land rights are formally recognized, but their effective exercise is constrained by customary practices and tenure realities. The impacts of climate change, including drought, desertification and rangeland degradation across the Green Dam landscape exacerbate these pre-existing gender inequalities.

256.. A comprehensive Gender Assessment was conducted through a household survey across all six project wilayas, community consultation workshops with dedicated women's sessions, analysis of national statistics, and a desk review of gender and climate literature relevant to North African dryland contexts. Consultations confirmed strong interest among rural women in Green Dam restoration activities, particularly where these generate direct livelihood benefits. Key inputs shaped the design of the Climate Wise Women (CWW) network, the selection of six priority value chains, and the targeting criteria for livestock and off-soil production modules.

257. The project's Gender Action Plan aims at reducing inequalities and removing identified barriers by mainstreaming gender equality across all three project outcomes. Implementation will be led by a full-time Gender Specialist within the PMU, supported by 13 CWW agents embedded in DSA structures across all 13 Green Dam wilayas, holding a dual mandate: delivering climate adaptation awareness to women through oral, visual, and low-literacy formats; and identifying and mobilizing eligible women beneficiaries for all activities.

258. Under Outcome 1, women risk exclusion from governance and consultation processes due to social norms. The project will enforce binding 30% minimum women's representation in all Wilaya Climate Adaptation Committees (Activity 1.1.4), conduct a gender assessment of climate information delivery, and set quotas for women extension agents under Training of Trainers programmes, and establishes and deploys the Climate Wise Women (CWW) network with a dual mandate of climate awareness and women's mobilization (Activity 1.2.7).

259. Under Outcome 2, traditional norms can restrict women's participation in land restoration and water management. The GAP addresses this by integrating women into community nursery management (Activity 2.1.1), integrating women into community-based reforestation and agroforestry (Activity 2.1.3) linked to livelihood incentives, and ensuring women's participation in irrigation decision-making (Activity 2.2.3). Under Outcome 3, gender-blind value chain development and credit constraints can limit women's benefits. The GAP addresses these through gender-sensitive value chain analysis using FAO's MA&D methodology for six priority climate-resilient products (Activity 3.1.1), engagement of financial institutions to develop adapted products including group-based lending for women's cooperatives (Activity 3.1.4), off-soil livestock modules accessible without land tenure (Activity 3.2.2), hydroponic forage systems (Activity 3.2.3), and priority solar energy allocation to women-headed households (Activity 3.2.5).

260. The GAP includes concrete participation, and benefit targets are enforced through binding quotas: 30% women in governance; 60% in livestock modules; 50% in micro-enterprise support. 100% of indicators are sex-disaggregated from Year 1 via a gender dashboard in the M&E system (Activity 1.2.2), with non-compliant reporting subject to corrective action. The dedicated GAP budget is USD 40,000 for CWW deployment; all remaining activities are mainstreamed into project budgets (please see Annex 8).

G.3. Financial management and procurement (max. 500 words, approximately 1 page)

261. Financial management and control and procurement processes will be implemented as per FAO rules and regulations which were certified as acceptable to the GCF through the FAO accreditation process. FAO has deployed an Oracle-based ERP system, the "Global Resources Management System" (GRMS), to its worldwide offices, which provides all FAO employees, in all locations globally, with travel, human resources, procurement and finance functionalities.

262. Using GRMS improves the flow of financial information, supports financial monitoring and reporting, ensures transparency and visibility, and internal control. FAO maintains a chart of accounts which is used by the whole organization and that allows for a separation of income and expenditure by donor and project and provides a standardized coding structure that enables data to be recorded, classified and summarized to facilitate internal

management and external reporting requirements. Procurement and Letters of Agreement Services are managed by a dedicated FAO unit, which provides policy and support to ensure that the Organization procures goods, works and services based on “Best Value for Money” principles as embodied in Manual Section 502 and for Letters of Agreement under Manual Section 507.

263. As mentioned in Section C.4, FAO as the Accredited Entity of the GCF will have overall responsibility for quality assurance and oversight of the DGF which will act as executing entity of a portion of the GCF proceeds and shall assume fiduciary responsibility in accordance with FAO standards and procedures. FAO will be responsible for the financial execution of GCF funds according to FAO rules and regulations. All disbursements to national executing entities will be governed by the project agreement, with financial reporting obligations, expenditure verification requirements, and compliance thresholds defined in accordance with FAO’s risk-based approach to partner management.

264. During implementation, FAO will provide oversight and quality assurance in accordance with its policies and procedures. This will include supervision missions to the six project wilayas, spot checks on the executing entity expenditures and procurement actions, technical reviews of deliverables, and participation at Project Steering Committee meetings and Wilaya-level coordination sessions. The PMU, hosted within FAO Algeria (FAODZ), will maintain day-to-day project management, supported by the digital monitoring and evaluation system (Activity 1.2.2) which provides real-time financial and physical progress tracking across all project components. The project will be audited internally by FAO’s Office of the Inspector General and externally by the External Auditor appointed in accordance with FAO’s Financial Regulations.

G.4. Disclosure of funding proposal

☒ No confidential information: The accredited entity confirms that the funding proposal, including its annexes, may be disclosed in full by the GCF, as no information is being provided in confidence.

☐ With confidential information: The accredited entity declares that the funding proposal, including its annexes, may not be disclosed in full by the GCF, as certain information is being provided in confidence. Accordingly, the accredited entity is providing the Secretariat the following two copies of the funding proposal, including all annexes:

- Full copy for internal use of the GCF in which the confidential portions are marked accordingly, together with an explanatory note regarding the said portions and the corresponding reason for confidentiality under the accredited entity’s disclosure policy, and
- redacted copy for disclosure on the GCF website.

The funding proposal can only be processed upon receipt of the two copies above, if containing confidential information.

H. ANNEXES

H.1. Mandatory annexes

☒	Annex 1	NDA no-objection letter(s) **(template provided)**
☒	Annex 2	Feasibility study - and a market study, if applicable
☒	Annex 3	Economic and/or financial analyses in spreadsheet format
☒	Annex 4	Detailed budget plan **(template provided)**
☒	Annex 5	Implementation timetable including key project/programme milestones **(template provided)**
☒	Annex 6	E&S document corresponding to the E&S category (A, B or C; or I1, I2 or I3): **(ESS disclosure form provided)** ☐ Environmental and Social Impact Assessment (ESIA) or ☐ Environmental and Social Management Plan (ESMP) or ☐ Environmental and Social Management System (ESMS) ☐ Others (please specify – e.g. Resettlement Action Plan, Resettlement Policy Framework, Indigenous People's Plan, Land Acquisition Plan, etc.)
☒	Annex 7	Summary of consultations and stakeholder engagement plan
☒	Annex 8	Gender assessment and project/programme-level action plan **(template provided)**
☒	Annex 9	Legal due diligence (regulation, taxation and insurance)
☒	Annex 10	Procurement plan **(template provided)**
☒	Annex 11	Monitoring and evaluation plan **(template provided)**
☒	Annex 12	AE fee request **(template provided)**
☒	Annex 13	Co-financing commitment letter, if applicable **(template provided)**
☒	Annex 14	Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule

H.2. Other annexes as applicable

☒	Annex 15	Evidence of internal approval **(template provided)**
☒	Annex 16	Map(s) indicating the location of proposed interventions
☐	Annex 17	Multi-country project/programme information **(template provided)**
☐	Annex 18	Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
☐	Annex 19	Procedures for controlling procurement by third parties or executing entities undertaking projects financed by the entity
☒	Annex 20	First level AML/CFT (KYC) assessment
☐	Annex 21	Operations manual (Operations and maintenance)
☒	Annex 22	Assessment of GHG emission reductions and their monitoring and reporting (for mitigation and cross cutting-projects)[34]
☒	Annex 23	Other references

** Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.*

[34] Annex 22 is mandatory for mitigation and cross-cutting projects.