



**ASIAN INFRASTRUCTURE
INVESTMENT BANK**

Sovereign-backed Financings: Results-based Financing

Approved Program Document

**P000885 Morocco: Climate Operation - Support to the Nationally Determined Contribution
Program**

Currency Equivalents

As at September 30, 2025

Currency Unit – Moroccan Dirham (MAD)

USD1.00 = MAD9.08

MAD1.00 = USD0.11

USD1.00 = EUR0.85

EUR1.00 = USD1.17

Fiscal Year

E.g., January 1 – December 31

Abbreviations

| | |
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| AIIB | Asian Infrastructure Investment Bank |
| ADA | Agricultural Development Agency |
| AFD | Agence française de développement |
| ANDZOA | National Agency for the Development of Oasis Areas and Argan Tree |
| ANEF | National Agency of Water and Forest |
| CNCCDB | National Commission on Climate Change and Biodiversity |
| CCDR | Country Climate and Development Report |
| CNSS | National Social Security Fund |
| DB | Directorate of Budget |
| DF | Directorate of Finance |
| DGM | General Directorate of Meteorology |
| DIAEA | Directorate of Irrigation and Agricultural Land Development |
| DLI | Disbursement-Linked Indicators |
| DLR | Disbursement-Linked Results |
| DRPE | Directorate of Research and Water Planning (Direction de la Recherche et de la Planification de l'Eau - DGH) |
| DSS | Directorate of Strategy and Statistics |
| ES | Environmental and Social |
| ESAP | Environmental and Social Action Plan |
| ESP | Environmental and Social Policy |
| ESSA | Environmental and Social Systems Assessment |
| ESTM | Environmental and Social Technical Manual |
| FM | Financial Management |
| FSA | Fiduciary System Assessment |
| GDP | Gross Domestic Product |
| GHG | Greenhouse Gas |
| GIZ | Gesellschaft für Internationale Zusammenarbeit |
| IGA | Inspectorate General of Agriculture and Water |
| IGE | Inspectorate General of Equipment and Water |
| INRA | National Institute for Agricultural Research |
| MDB | Multilateral Development Bank |
| M&E | Monitoring and Evaluation |
| MEE | Ministry of Equipment and Water (Ministère de l'Équipement et de l'Eau) |
| MEF | Ministry of Economic and Finance |
| MRV | Monitoring, Reporting and Verification |

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| MTEF | Medium-term Expenditure Framework |
| NDC | Nationally Determined Contribution |
| NRM | Non-Regional Member |
| OPIR | Operational Policy on International Relations |
| PAP | Program Action Plan |
| PBL | Policy-Based Lending |
| PFM | Public Finance Management |
| PforR | Program-for-Results |
| PIU | Program Implementation Unit |
| POM | Program Operation Manual |
| PPM | Project-affected People's Mechanism |
| RA | Results Area |
| RBF | Results-Based Financing |
| SC | Steering Committee |
| TA | Technical Assistance |
| TF | Trust Fund |

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1. RBF Program Executive Summary

Morocco Climate Operation - Support to the Nationally Determined Contribution Program (the Program) aims to support the implementation of Morocco's Nationally Determined Contribution (NDC) by scaling up actions that deliver dual benefits for climate mitigation and resilience of vulnerable ecosystems, while strengthening institutional coordination capacities. The proposed USD200 million Results-Based Financing (RBF) loan to the Kingdom of Morocco co-finance the World Bank's existing USD350 million Program-for-Results (PforR) scaling up Morocco's coordinated climate action through 2029.

Morocco, a lower-middle-income economy of 37 million people, faces increasing climate vulnerabilities including droughts, desertification, and water scarcity that threaten agricultural livelihoods and rural communities. The country has demonstrated strong commitment to climate action, targeting a 53% reduction in greenhouse gas emissions by 2035 while prioritizing nature-based adaptation solutions.

The Program supports Morocco's climate goals and aligns with the Bank's thematic priorities of Green Infrastructure and Technology-enabled Infrastructure. It finances an integrated climate response by expanding Morocco's climate observation network with new radars for early warning systems, rehabilitating low-carbon irrigation infrastructure (khetaras and seguias) to secure water in arid areas and restores climate-resilient vegetation for improved soil health and carbon sequestration. Complementary activities establish cooperative and value-added processing units to strengthen rural livelihoods, reduce greenhouse gas (GHG) emissions, and develop sustainable value chains in oasis and argan regions.

The Program complies with AIIB's Strategy on Financing Operations in Non-Regional Members by embedding clear mitigation impacts, such as carbon sequestration, GHG emission reductions, methane avoidance and energy efficiency improvements, within a broader framework of adaptation and resilience co-benefits.

By complementing the World Bank, AIIB value addition includes scaling up the scope of activities and strengthening the whole-of-government approach to climate action. The use of the RBF instrument leverages Morocco's strong institutional capacity, robust fiscal management, and proven track record in multi-sectoral program implementation.

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| Program No. | P000885 |
| Program Name | Morocco Climate Operation - Support to the Nationally Determined Contribution Program |
| AIIB Member | Morocco |
| Borrower | Kingdom of Morocco |
| Sector | Multi-sector |
| Subsector | Multi-subsector |
| Alignment with AIIB's thematic priorities | Green infrastructure; Technology-enabled Infrastructure |
| Program Objective | To support the implementation of Morocco's Nationally Determined Contribution (NDC) by scaling up actions that deliver dual benefits |

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| | for climate mitigation and resilience of targeted vulnerable ecosystems, while strengthening Morocco's institutional coordination capacities. |
| Program Description | <p>This Program is a co-financing operation with the World Bank's Program-for-Results (PforR) "Climate Operation – Support to the Nationally Determined Contribution (NDC)." The Program consists of two Result Areas (RAs):</p> <ul style="list-style-type: none"> - RA1: Strengthen Policy and Institutional Capacity in Green Public Finance Management, Green Finance, and Climate Data; - RA2: Enhance Resilience to Climate Change of Vulnerable People and Ecosystems. <p>The progress toward achievement of the World Bank PforR development objective and overall implementation progress have been rated "Satisfactory." As of June 2025, a total of USD102.25 million has been disbursed based on verified results. The World Bank is currently restructuring its PforR to scale up and broaden its scope, allowing for AIIB's co-financing and extending the closing date to 2029.</p> <p>AIIB's contribution will focus on the climate data of RA1 and the entire RA2:</p> <ul style="list-style-type: none"> - Under RA 1.2, The program will support the expansion of Morocco's climate information infrastructure by strengthening real-time meteorological observations, weather forecasting, data-driven mitigation planning and preparedness for weather-related disasters. - Under RA 2.2, the Program will strengthen the resilience of vulnerable oasis ecosystems and rural communities notably through nature-based solutions. These interventions deliver dual climate benefits—sequestering carbon and enhancing resilience—while supporting rural livelihoods, especially for women and youth. <p>The Results-Based Financing (RBF) Program complements the World Bank's efforts and aligns with national priorities set out in Morocco's NDC, the 2023 Finance Law and multi-year budget frameworks.</p> <p>The use of RBF ensures a strong strategic fit with AIIB's priorities and capitalizes on Morocco's proven capacity to plan and execute budget-linked reforms. The scope and implementation arrangements are the same with the World Bank's PforR, ensuring coherence and impact.</p> |
| Implementation Period | 01/01/2026 12/31/2029 |
| Expected Loan Closing Date | 12/31/2029 |

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| Proposed Amount of AIIB Financing (USDm) | USD200.00, equivalent EUR170.27 ¹ |
| Financing Plan | The total Program cost is estimated at USD1,000 million, with AIIB expected to contribute USD200 million. The World Bank, as the lead MDB financier, is providing USD350 million, while the remaining USD450 million will be covered by counterpart funding from Morocco. |
| ES Category (or AIIB equivalent, if using another MDB's ES Policy) | "Substantial" Risk as per World Bank's ESP, equivalent to Category B if AIIB's ESP were applicable. |
| ES Category Comments | The RBF Program will not finance activities that involve high environmental and social risks and impacts. |
| Risk (Low/Medium/High) | Medium |
| Conditions of Effectiveness | The Amended Co-financing Agreement has been executed on behalf of the Co-financier and the Borrower, the Program Co-lenders' Agreement has been executed on behalf of the Bank and the Co-financier, and all conditions precedent to its effectiveness (other than the effectiveness of this Loan Agreement) have been satisfied. |
| Key Covenants | <p>The Borrower shall, throughout Program implementation, maintain and cause to be maintained (a) the Program Steering Committee, consisting of representatives of implementing agencies, to be responsible for strategic oversight, guidance and regular reporting under the Program and (b) the Program Implementation Unit, staffed with adequate professional, fiduciary, administrative and technical personnel, with qualifications, experience and terms of reference acceptable to the Bank, to be responsible for the (i) coordination and monitoring of day-to-day Program implementation, including preparation of annual progress reports and financial statements and (ii) coordination among different implementing agencies, as further described in the Program Manual.</p> <p>The Borrower shall: (a) through the PIU, no later than 90 days after the Effective Date, or such later date as agreed by the Bank, adopt the Program Manual and (b) immediately thereafter, carry out the Program in accordance with the Program Manual.</p> <p>The Borrower shall implement the RBP Action Plan agreed with the Bank in a manner and substance satisfactory to the Bank.</p> |
| Retroactive Financing (Loan % and dates) | No |
| Policy Waivers Requested | No |
| Policy Assurance | The Vice President, Policy and Strategy, confirms an overall assurance that the proposed Bank Financing complies with the applicable Bank operational policies. |

¹ Per the Borrower's request during the Loan Negotiation, the disbursement currency of the Loan will be EUR.

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| Economic Capital (ECap) Consumption (USDm) | USD10.28 (5.14%) |
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| President | Liqun Jin |
| Chief Investment Officer | Konstantin Limitovski |
| Director General | Xiaohong Yang |
| Manager | Evren Dilekli |
| Team Leader | Nat Pinnoi, Senior Investment Officer |
| Back-up Team Leader | Manuel Cervero Bárcena, Investment Officer |
| Team Members | Alain Chhuor, Investment Officer Asma Bachikh, Investment Officer Suu Tran Quy, Social Development Specialist Vladimir Hecl, Senior Environment Specialist Jingrong He, Senior Procurement Specialist Shonell Robinson, Financial Management Specialist Issam Mokni, Senior Counsel Mengmeng He, Finance Officer Yuning Chen, Counsel Rong Shi, Economist (Applied Research) Eleni Petri, Specialist Pobploy Wattanakrai, Legal Associate Guoquan Jesse Ong, Finance Associate Charlene d'Almeida, Social Development Associate Jiaming Yu, Project Assistant |
| Credit Officer | Wei Zhang, Senior Credit Risk Officer |

2. Context

2.1 Country and Macroeconomic Overview: The Kingdom of Morocco, located in North Africa at the crossroads of Europe and sub-Saharan Africa, is a lower-middle-income economy with a population of approximately 37 million, a gross domestic product (GDP) of around USD150 billion (2024)² and income per capita of about USD4,400. Its diverse economy combines agriculture, manufacturing, mining, tourism and a growing renewable energy sector including the production of local clean technology such as batteries and electric vehicles. Over the past two decades, Morocco has implemented a broad reform agenda aimed at fostering macroeconomic stability, accelerating structural transformation and enhancing social inclusion—culminating in the adoption of a New Development Model in 2021, which articulates a long-term vision for sustainable and inclusive growth by 2035.

2.2 Morocco's economy has demonstrated resilience in the face of overlapping shocks, including the coronavirus disease (COVID-19) pandemic, the global energy crisis, recurring droughts and a major earthquake in 2023. This resilience is partially attributed to its strong institutional framework and robust countercyclical macroeconomic and social policies. Real GDP growth rebounded to 3.4% in 2023 driven by household consumption, public and private investment and solid export performance, particularly in automotive, aeronautics and phosphates. Inflation has declined significantly, enabling the central bank to begin easing monetary policy, while the fiscal deficit is narrowing progressively, targeted to reach 3% of GDP by 2026. Public debt remains stable at around 70% of GDP and financial sector risks are contained.³

2.3 Despite this positive momentum, structural constraints continue to hamper Morocco's long-term convergence potential and competitiveness. Labor productivity remains below global averages, with persistent informality, weak private investment and limited technological adoption. Youth unemployment is high and female labor force participation remains among the lowest globally. Additionally, Morocco relies heavily on imports for energy, food and many consumer goods, with energy imports covering 90% of its needs. A resource-dependent economy is more vulnerable to the increasing frequency and severity of extreme climate hazards. These issues are compounded by growing environmental pressures and the broader impacts of climate change.

2.4 Morocco's Climate Risks and Natural Capital: Morocco is highly vulnerable to the impacts of climate change, facing increasing threats from droughts, desertification, rising temperatures and extreme weather events such as floods and heatwaves. These challenges, exacerbated by ongoing environmental degradation, have significant implications for agriculture—a sector that contributes about 13% to the national GDP⁴ while the combined agriculture, forestry and fisheries sector accounts for 63% of employment in rural areas.⁵ Climate-induced pressures undermine productivity and competitiveness, particularly in rain-fed agriculture. These shocks also deepen social inequalities and threaten food security, especially for lower-income groups, women, youth and rural communities. As these populations face mounting economic and health

² World Bank Data. [GDP \(current US\\$\) - Morocco](#).

³ Organization for Economic Co-operation and Development (OECD). 2024. [OECD Economic Surveys: Morocco 2024](#).

⁴ World Bank Program Appraisal Document Morocco Climate Operation PAD5284.

⁵ Haut-Commissariat Au Plan. 2025. [La situation du marché du travail au deuxième trimestre de 2025](#).

risks, climate-induced migration could affect up to 1.9 million people—around 5.4% of Morocco's population—by 2050.

2.5 Morocco's biodiversity and unique ecosystems, which provide vital services supporting its economic development and climate mitigation and adaptation efforts, are under growing pressure. Coastal, forest, desert or mountainous regions, natural ecosystems deliver essential services such as carbon sequestration, water regulation and soil protection. However, deforestation, overgrazing and land degradation are increasingly threatening these ecosystems, weakening Morocco's resilience to the growing climate impacts and undermining its ability to meet its climate targets.

2.6 In particular, oases are essential to Morocco's environment, economy and culture—spanning 40% of the territory and contributing 6% of agricultural value—while acting as crucial ecological buffers against desertification. These ecosystems play a key role in climate action through their natural capacity to conserve water, restore degraded land and sequester carbon. However, climate change has put mounting pressure on oases, causing the loss of two-thirds of their area and reducing Morocco's palm tree population from 15 million to just over 6 million. Intensifying water scarcity and infrastructure gaps threaten food security, biodiversity and carbon sinks. In response, Morocco is scaling up its climate commitments to safeguard and restore these high-value ecosystems.

2.7 The Government of Morocco has demonstrated strong political commitment to climate action, adopting ambitious mitigation and adaptation measures grounded in key national strategies, including the National Sustainable Development Strategy for 2030, National Climate Plan for 2030, Long-Term Low-Emission Development Strategy and its Nationally Determined Contribution (NDC). These frameworks reflect a unified vision to build climate resilience and transition toward a low-carbon economy. Morocco's updated NDC raises its climate mitigation ambition, targeting a 53% reduction in greenhouse gas (GHG) emissions by 2035 (21.6% unconditionally), while adaptation remains a priority with nature-based solutions playing a central role in sectors such as water, agriculture, forestry and fragile ecosystems like oases.

2.8 Addressing Key Development Challenges – Program Contributions: Implementing Morocco's NDC and addressing the cross-cutting impacts of climate change require a whole-of-government approach to align sectoral efforts, optimize resources and strengthen climate resilience across all governance levels. While national strategies such as Plan Maroc Vert and Génération Green guide sectoral action, progress is constrained by institutional fragmentation, overlapping mandates and uncoordinated funding. Despite strong sector-specific programs in areas like energy, agriculture and irrigation, an integrated institutional framework is required to address Morocco's climate challenges at scale.

2.9 The World Bank's PforR aims to support the implementation of Morocco's NDC. By restructuring its ongoing parent program to scale up and broaden its scope, it creates the conditions for the effective participation of the Asian Infrastructure Investment Bank (AIIB). Through this co-financing, AIIB strengthens Morocco's institutional coordination, while delivering

climate co-benefits that combine resilience gains with concrete mitigation impacts such as GHG emission reductions, carbon sequestration, methane avoidance, energy efficiency improvements and the promotion of low-carbon practices.

3. Rationale

3.1 Aligning climate-sensitive policies with the budgetary process requires Morocco to adopt a government-coordinated response so it can address its climate and development gaps and accelerate progress toward its NDC targets. The government has aligned its budget with climate-sensitive economic and fiscal policies, embedding these into national budgeting processes. The transition from an annual budgeting cycle to a three-year medium-term expenditure framework (MTEF) marks significant progress in fiscal planning, enabling better prioritization of climate-sensitive investments. However, there are challenges to integrating long-term climate objectives into these cycles, including inter-ministerial coordination gaps, competing fiscal priorities and the need for a climate-responsive budget to track green expenditures effectively. Addressing these challenges requires not only institutional collaboration and finance mobilization but also coherence to bridge implementation gaps, scale proven solutions and catalyze a shift toward low-carbon, climate-resilient development.

3.2 To operationalize this alignment, Morocco leveraged multilateral support for coordinated action, the Morocco Climate Program for Results (PforR). Financed through a USD350 million loan from the International Bank for Reconstruction and Development (IBRD), this PforR was approved on June 9, 2023 and declared effective on Jan. 8, 2024. The World Bank structured the PforR underpinned by the strong analytical foundation provided in the Country Climate and Development Report (CCDR)⁶ on climate change impacts and challenges. Designed to support Morocco's coordinated efforts to achieve the NDC, the PforR aims to bridge the climate financing gap (estimated around 5.2% of GDP) over the short and medium term, catalyzing climate action efforts to deliver tangible results on the ground while contributing to structural changes in the long term to foster a paradigm shift.

3.3 AIIB is supporting Morocco by co-financing World Bank's PforR and scaling up climate activities through a dual focus on both mitigation and adaptation, while facilitating the adoption of Morocco's whole-of-government approach. AIIB's co-financing of the Morocco Climate Operation aligns with the government's climate strategy and complements the World Bank's ongoing efforts.

3.4 **The Strategic Fit of the Program with AIIB's Priorities.** This first Program in Morocco, the activities of which fall within the priorities outlined in Morocco's 2025 NDC, strongly aligns with AIIB's Green Infrastructure and Technology-enabled Infrastructure thematic priorities. It also complies with the Bank's Strategy on Financing Operations in Non-Regional Members by embedding clear mitigation impacts—including carbon sequestration, GHG emission reductions, methane avoidance and energy efficiency improvements—within a broader framework of adaptation and resilience co-benefits. In doing so, the Program also aligns with the Paris Agreement while supporting AIIB's climate finance target (paras. 3.7-3.8) and implementation of its Climate Action Plan.

3.5 The Program's strategic fit is also strongly supported by the use of Results-Based Financing (RBF), a mechanism that leverages AIIB's partnership with the World Bank, who developed the

⁶ World Bank. 2022. [Morocco Country Climate and Development Report](#).

Morocco Climate PforR. Given Morocco's track record in planning and executing its budget, this financing instrument is well-suited to its capacity and the successful implementation of the Program. The scope and boundaries of this Program will follow the framework established in the World Bank's PforR, ensuring continuity and coherence in the Program's objectives and outcomes.

3.6 The Program's interventions are integrated into Morocco's 2023 Finance Law and associated multi-year expenditure programs. These activities, deemed to have a satisfactory level of "readiness" for implementation from mid-2023 to mid-2028, avoid highly complex initiatives with significant social and environmental footprints, ensuring feasibility within the designated timeframe. By co-financing alongside the World Bank, AIIB optimizes the efficiency of its resources.

3.7 Paris Alignment and Climate Finance. The Paris Agreement alignment assessment was conducted in accordance with the Joint Multilateral Development Bank (MDB) Methodological Principles for Assessing Paris Agreement Alignment of New Operations – Policy-Based Lending (PBL), version 1.0, June 2023, as the most applicable framework for RBF operations. By definition, an operation needs to be aligned with both the mitigation and climate adaptation and resilience goals of the Paris Agreement to be considered "Paris-aligned." After undergoing the required assessment, the results confirm that the Program aligns with the climate mitigation and climate adaptation and resilience goals of the Paris Agreement (see Annex 5).

3.8 According to the 2023 Joint Report of MDBs' Climate Finance, RBF directly links the disbursement of funds to measurable results in a government-owned program. Proceeds used for activities included in the joint MDB methodology for tracking climate finance count as climate finance. The Program delivers strong dual climate benefits by integrating mitigation and adaptation across all supported activities (Chapter 4). The meteorological radar enhancement (DLR#5.4) supports renewable energy integration and more efficient energy resource management, while strengthening resilience through better early warning and water resource management. Rehabilitation of small traditional hydrological infrastructure such as *khetaras* and *seguías* (DLR#9.4-9.5) safeguards gravity-fed, low-carbon irrigation while enhancing drought resilience and protecting oasis ecosystems. The support to cooperatives and valorization units (DLR#8.2-8.3) promotes low-emission agricultural value chains and reduces post-harvest losses while creating resilient rural livelihoods. Climate-resilient plantations (DLR#8.4) contribute to long-term carbon sequestration, soil restoration and microclimate regulation, while ensuring food and fodder supply under drought conditions. The targeted research program on palm and argan trees (Intermediate Result Indicator) enhances biomass productivity, valorizes residues into biochar and biofertilizers and develops stress-tolerant genotypes that secure future resilience. Taken together, these reforms contribute to carbon removal, reduce emissions, safeguard ecosystems and enhance adaptive capacity in Morocco's most vulnerable regions. Thus, the Program contributes 100% of the total financing of USD200 million toward the Bank's climate finance target, accounting 100% (USD200 million) as climate mitigation and adaptation dual benefits.

3.9 Value Addition by AIIB. The value addition by AIIB lies primarily in reinforcing the climate mitigation goals of the Morocco's Government Climate Program, aligned with the Bank's Strategy on Financing Operations in Non-Regional Members and its climate action plan. The Program directly advances priorities identified in Morocco's NDC and is distinctive in AIIB's financing portfolio for its coordinated, enabling approach that addresses both mitigation and adaptation in a manner consistent with Morocco's own strategy. This approach ensures the generation of strong climate co-benefits, including clear direct and indirect mitigation impacts, indissociable from the adaptation measures integrated in the PforR program. Through upscaling the scope of activities, AIIB complements the support provided by the World Bank, expanding the PforR's overall reach and impacts. This extension facilitates a more comprehensive, whole-of-government approach to climate action across various sectors and stakeholders in Morocco. Furthermore, the use of the RBF instrument, well-suited to Morocco's needs and institutional capacities, leverages the government's strong track record in program execution, thereby ensuring the successful delivery of intended results.

3.10 Value Addition to AIIB. The value addition to AIIB lies in the opportunity to gain experience in policy and institutional assessment, as well as in designing reform measures. By collaborating with the World Bank, AIIB can gain transferable insights for replication across other projects, benefiting Morocco and other AIIB Members. Additionally, this Program enhances and diversifies AIIB's portfolio while deepening engagement with Morocco. Morocco's macroeconomic policy framework is sound (BB+ rating), positioning AIIB as a new partner in this important market and enabling the Bank to broaden its sovereign portfolio. The Program is fully aligned with AIIB's Green Infrastructure and Technology-enabled Infrastructure thematic priorities, contributing 100% toward dual climate benefits (mitigation and adaptation) and supporting the delivery of "Nature as Infrastructure" notably through nature-based solutions. Furthermore, the Program demonstrates strategic linkages with multiple AIIB sector strategies, including

- (a) The Water Sector Strategy through actions that promote the rehabilitation of small traditional hydrological systems and enhance sustainable water supply in scarce regions.
- (b) The Energy Sector strategy by supporting low-carbon irrigation practices and energy efficiency improvements through optimized climate data for water resources management.
- (c) The Digital Infrastructure Strategy through the modernization of climate monitoring and data systems, enabling real-time decision-making and technological advancements in infrastructure resilience.
- (d) The Health Sector Strategy indirectly improves water quality and reliability, contributing to reduce climate-related health risks and strengthen community well-being.

These aspects underscore the Program's comprehensive approach to addressing climate challenges while leveraging cross-sectoral added value.

3.11 Lessons Learned. AIIB has had the opportunity to draw valuable lessons from several World Bank co-financed PforR operations, including the Morocco Climate Program and the Jordan Inclusive, Transparent, and Climate-Responsive Investments Program for Results. First, strong government capacities play a critical role in ensuring the effectiveness of RBF. The RBF

mechanism hinges on a government's ability to manage and coordinate complex climate programs, track outcomes and ensure proper oversight. Second, strategic selectivity in supporting RBF programs is essential. As these programs often span multiple sectors and pillars, by focusing its involvement on aspects most directly aligned with its mandate and where it can add the most value, AIIB ensures that its resources are used efficiently, avoiding overextension across multiple areas or duplication of efforts. This targeted approach allows for deeper engagement in priority areas, ensuring that AIIB's contributions can stem from its core strengths and strategic goals. Moreover, AIIB has also gained valuable insights from its involvement in other programs related to water resource management (e.g., the Henan Flood Emergency Rehabilitation and Recovery Project and the West Bengal Major Irrigation and Flood Management Project) and from its knowledge, developed the "Nature as Infrastructure" concept, which will further guide AIIB's future operations in similar contexts.

4. Program Description

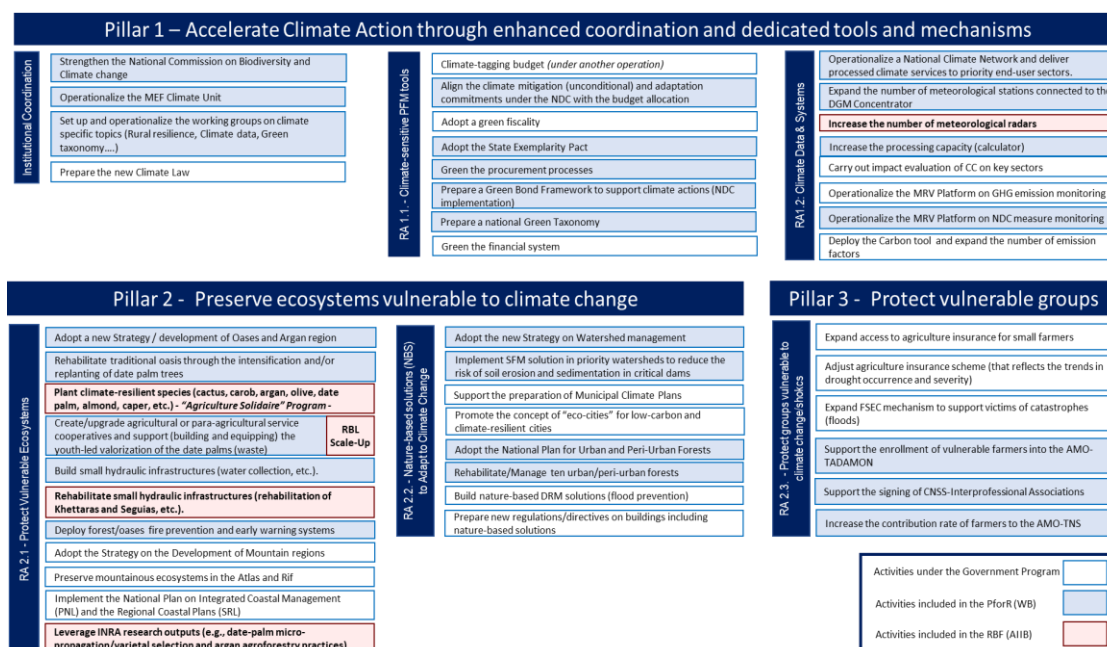
4.1 Program Objective. The objective of the Program is to support the implementation of Morocco's NDC by scaling up actions that deliver dual benefits for climate mitigation and resilience of targeted vulnerable ecosystems, while strengthening institutional coordination capacities.

4.2 Government Program. Morocco is progressively aligning its national budget with its NDC commitments by embedding climate-sensitive policies into its planning processes and shifting to a three-year MTEF to better prioritize climate investments. Recognizing that integration and implementation of its NDC requires coordinated government action, the government, guided by the World Bank's CCDD, undertook a prioritization exercise to identify a government program, defined as a focused subset of measures from the updated NDC.

4.3 This government program adopts a “whole-of-government” approach to address key institutional and policy barriers to climate action. Activities were selected based on their requirements for inter-ministerial coordination, their potential to enable systemic climate action and their focus on spatially targeted interventions for vulnerable people and ecosystems. The government program is structured around three pillars:

- Accelerate climate action through enhanced coordination and dedicated public policy tools (“institutional capital”).
- Preserve ecosystems vulnerable to climate change, through space-based approaches (“natural capital”).
- Protect groups vulnerable to climate change (“social capital”).

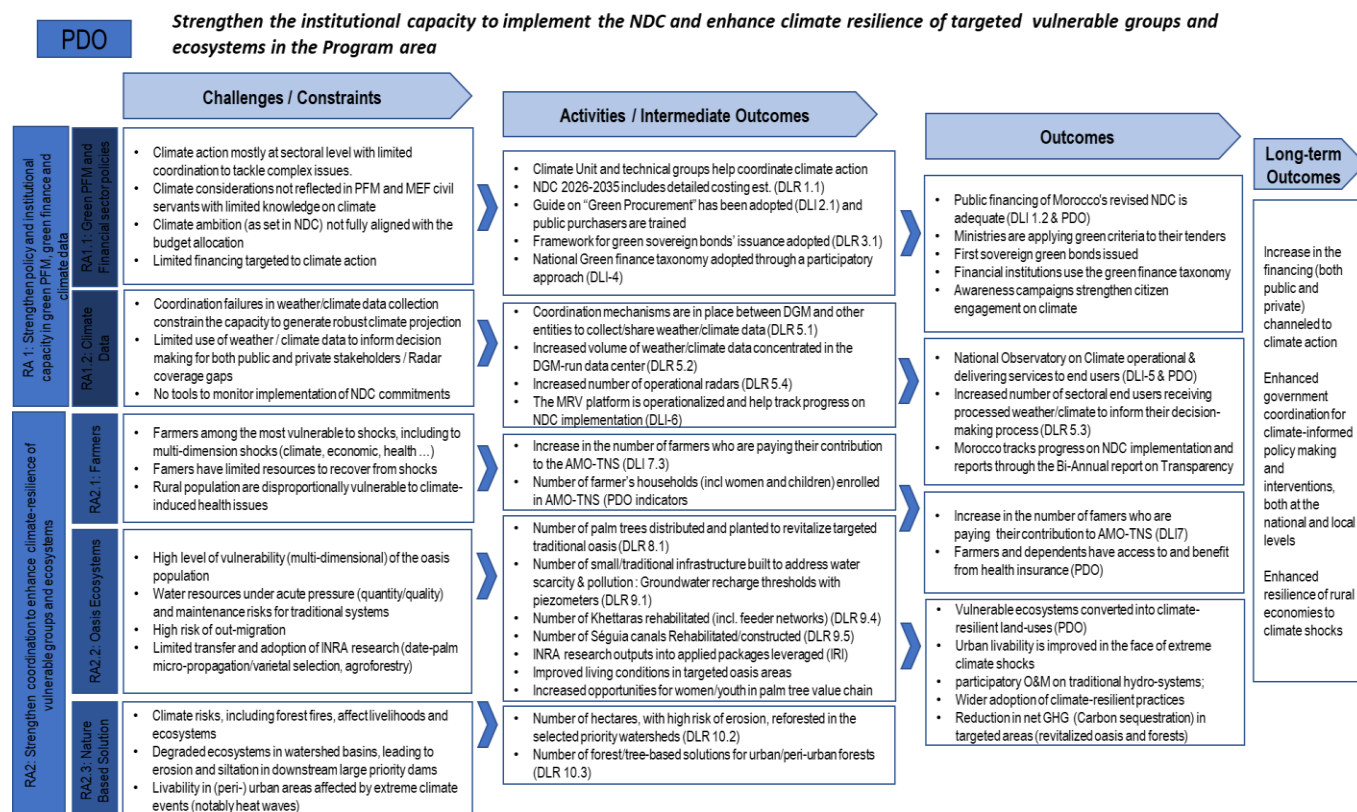
Figure 1. The Government Program and the PforR Operation Boundaries



Source: World Bank Program Document Appraisal / Morocco Climate Operation / Support to NDC (P178763)

4.4 World Bank PforR Program. The Climate Program for Results to support the Moroccan NDC was approved by the World Bank in June 2023 for USD350 million and was declared effective as of Jan. 8, 2024, with a closing date of June 30, 2028. The PforR's scope and boundaries were defined by filtering the government program according to fiscal, readiness, environmental and complementarity criteria. The PforR is organized around two Results Areas (RAs), both contributing to the operationalization of the CCDD principles. The RA1 supports the adoption of a “whole-of-government” approach to climate change by (a) greening the public finance tools and the financial sector, to increase both public and private financing for climate action and (b) strengthening the climate data systems to better integrate climate considerations into decision-making processes for public and private stakeholders while enhancing monitoring of the progress towards the implementation of climate commitments. The RA2 aims at enhancing “Climate Resilience for Vulnerable Groups and Ecosystems” and will also apply the “whole-of-government” approach by tackling key coordination failures to deliver tangible outcomes in terms of enhanced resilience to climate change/shocks. The PforR was evaluated as gender tagged by the World Bank and the co-financing would follow the same gender results chain. The progress toward achievement of the PforR development objective and overall implementation progress have been rated “Satisfactory.” As of June 2025, a total of USD102.25 million has been disbursed based on verified results. The World Bank is currently restructuring its PforR to scale up and broaden its scope, allowing for AIIB's co-financing and extending the closing date to 2029.

Figure 2. PforR Theory of Change



Source: World Bank Program Document Appraisal / Morocco Climate Operation / Support to NDC (P178763)

4.5 AIIB RBF Program. Through its USD200 million additional co-financing and RBF modality, AIIB will reinforce the PforR Climate Operation by scaling up Morocco's climate mitigation efforts and enhancing climate resilience in its vulnerable areas. To do so, the co-financing will increase the level of ambition under some existing activities as well as expand to new activities, focusing on RA1.2 Climate Data and RA2.2 Oasis Ecosystems. Concomitantly to the AIIB co-financing, a restructuring of the parent program is processed to (a) adjust the formulation of some of the Disbursement-Linked Indicators (DLIs)/Disbursement-Linked Results (DLRs) to broaden their scope and (b) reflect new developments, notably in the context of the Social Protection reform.

4.6 Program Boundaries. The Program development objective as well as the overall scope of AIIB RBF will remain the same as the PforR parent program, including its geographical scope and boundaries. The total government program financing is estimated to amount to USD1,000 million (Table 1), of which the World Bank loan (the parent PforR program) will finance USD350 million (35%) and AIIB will finance USD200 million (20%). Table 2 presents the parent program adjustments proposed through the AIIB co-financing and the restructuring.

Table 1. Indicative Program Cost and RBF Financing Plan

| Source | Financing Amount (USD million) | % of Total |
|--------------------------------|-----------------------------------|-------------|
| Government of Morocco | 450 | 45% |
| AIIB | 200 | 20% |
| World Bank | 350 | 35% |
| Total Program Financing | 1,000 | 100% |

Table 2. Indicative Disbursement-Linked Indicators and Results

| DLI/DLRs | AIIB/World Bank co-financing | World Bank sole financier | Program Adjustments | AIIB financing* (in USD million) |
|---|------------------------------|---------------------------|---------------------|-------------------------------------|
| RA 1: Strengthen Policy and Institutional Capacity in Green Public Finance Management (PFM), Green Finance and Climate Data. | | | | |
| RA 1.1: Mainstream climate considerations into public financial management and financial sector policies. | | | | |
| DLI 1 - Revised NDC commitments are costed and adequately budgeted. | | | | |
| <ul style="list-style-type: none"> DLR#1.1: The published revised NDC includes the list of measures with budget and schedule details as defined in the Program Operation Manual (POM). DLR#1.2: Public financing for measures (adaptation and unconditional mitigation) in the revised NDC is approved by the Government in the 3-year budget program as defined in the POM, for (a) FY 26, (b) FY27, (c) FY28. | | ✓ | N/A | |
| DLI 2 - Climate considerations are embedded into public procurement. | | | | |
| <ul style="list-style-type: none"> DLR#2.1: The green procurement guide has been adopted through a Ministerial Circular issued by the Minister of Ministry of Economic and Finance (MEF). DLR#2.2: A module has been integrated | | ✓ | N/A | |

| DLI/DLRs | AIIB/World Bank co-financing | World Bank sole financier | Program Adjustments | AIIB financing* (in USD million) |
|---|------------------------------|---------------------------|---|----------------------------------|
| <p>into the public procurement portal to tag contracts that include green provisions, as defined in the green procurement guide.</p> <ul style="list-style-type: none"> DLR#2.3: The Moroccan Observatory of Public Procurement has published a statistical report on green tenders. | | | | |
| DLI 3 - Tools are in place to issue Sovereign Green Bonds on international markets. | | | | |
| <ul style="list-style-type: none"> DLR#3.1: Framework for the issuance of sovereign green bonds adopted and published. DLR#3.2: A list of priority climate projects in the Program Area eligible under the Sovereign Green Bond Framework, has been identified. | | ✓ | N/A | |
| DLI 4 - A Green Finance Taxonomy is adopted. | | | | |
| <ul style="list-style-type: none"> DLR#4.1: A technical committee/working group to develop and adopt a governance framework for the preparation of the green finance taxonomy is established. DLR#4.2: The roadmap setting the principles and priorities guiding the preparation of the green finance taxonomy is approved by the technical committee/working group. DLR#4.3: The green finance taxonomy is adopted. | | ✓ | N/A | |
| RA 1.2: Strengthen the national climate data system. | | | | |
| DLI 5 - The National Climate Network is operational and delivers services to users. | | | | |
| <ul style="list-style-type: none"> DLR#5.1: Twenty-four (24) MoUs signed between the General Directorate of Meteorology (DGM) and other relevant entities managing the observation stations (scalable, baseline: 0 and end target: 24). | | ✓ | N/A | |
| <ul style="list-style-type: none"> DLR#5.2: Eight hundred fifty (850) observation stations connected to the data center managed by the DGM (scalable, baseline: 171 and end target: 850). | | ✓ | N/A | |
| <ul style="list-style-type: none"> DLR#5.3: Eight (8) end-users sectors receiving processed weather and climate data (scalable, baseline: 0 and end target: 8). | | ✓ | N/A | |
| <ul style="list-style-type: none"> DLR#5.4: Eight (8) DGM-managed radars are operational (baseline: 5 and end target: 13). | ✓ | | NEW – this new DLR would improve weather monitoring and early warning systems, increase the accuracy of meteorological assistance over large areas of Morocco by increasing the number of radars from a baseline of 5 | |

| DLI/DLRs | AIIB/World Bank co-financing | World Bank sole financier | Program Adjustments | AIIB financing* (in USD million) |
|---|------------------------------|---------------------------|---|----------------------------------|
| | | | (2024) to 13 by 2028-2029, giving priority to areas lacking radar coverage and presenting high meteorological risks. This adjustment is part of the DGM 2025 2030 reinforcement plan and strengthens downstream climate services for priority user sectors. | 64 |
| DLI 6 - The Monitoring, Reporting and Verification (MRV) platform on NDC implementation is operationalized. | | | | |
| <ul style="list-style-type: none"> DLR#6.1: Eight (8) sectors with adaptation measures in the Revised NDC included in the MRV platform on NDC implementation (scalable, baseline: 0 and end target: 8). DLR#6.2: Three (3) sectors with unconditional mitigation measures in the Revised NDC included in the MRV platform on NDC implementation. (scalable, baseline: 4 in 202682 and end target: 7). | | ✓ | N/A | |
| RA 2: Enhance Climate Resilience of Vulnerable Groups and Vulnerable Ecosystems. | | | | |
| RA 2.1: Strengthen Institutional Coordination to Reinforce the Resilience of Farmers to Health Risks, exacerbated by Climate Change. | | | | |
| DLI 7 - Farmers are effectively covered against health risks, notably climate-induced risks. | | | | |
| <ul style="list-style-type: none"> DLR#7.1: Five (5) conventions signed between the National Social Security Fund (CNSS) and the professional organizations (scalable, baseline: 0 and end target: 5). | | ✓ | RESTRUCTURED | |
| <ul style="list-style-type: none"> DLR#7.2: Convention between CNSS, Groupe Credit Agricole and Ministry of Agriculture, Maritime Fisheries, Rural Development and Water and Forests signed to include flexibility in the payment of farmers' contributions to the AMO-TNS. | | ✓ | RESTRUCTURED | |
| <ul style="list-style-type: none"> DLR#7.3: 80% of farmers in the Program Area effectively covered under the AMO-TNS (scalable, baseline: 2% and end target: 80%). | | ✓ | RESTRUCTURED | |
| RA 2.2: Promote an Integrated Approach to Enhance Climate Resilience of Vulnerable Ecosystems. | | | | |
| DLI 8 - Traditional oasis ecosystems are more resilient to climate change and generate economic opportunities for local population. | | | | |
| <ul style="list-style-type: none"> DLR#8.1: One million palm trees distributed and planted for the revitalization of traditional oasis in the Targeted Oasis Area (scalable, baseline: 0 and end target: 1 million). | | ✓ | N/A | |
| <ul style="list-style-type: none"> DLR#8.2: Ten (10) agricultural and/or para-agricultural service cooperatives created or upgraded in the targeted Oasis Areas and Argan Areas working in the | ✓ | | SCALED UP / RESTRUCTURED. The end target of the DLR would be increased from 10 to 20 | |

| DLI/DLRs | AIIB/World Bank co-financing | World Bank sole financier | Program Adjustments | AIIB financing* (in USD million) |
|---|------------------------------|---------------------------|---|----------------------------------|
| agricultural production systems (scalable, baseline: 0 and end target: 10). | | | cooperatives, expanding their support and broadening their scope in the Targeted Oasis Area and Argan Area working in the agricultural production systems (<i>note</i> : these service cooperatives are predominantly led by young people and women). The governance and implementation framework of the National Program on Solidarity Agriculture will be followed so that upgraded or created cooperatives receive structured accompaniment at regional and provincial levels. | 20 |
| <ul style="list-style-type: none"> DLR#8.3: Two (2) new agriculture products and by products valorization units built and equipped in Targeted Oasis Areas and Argan Areas (scalable, baseline: 0 and end target: 2). | ✓ | | SCALED UP/ RESTRUCTURED. The end target of the DLR would be increased from two to four valorization units (World Bank target: 2; AIIB target: 2. Furthermore, valorization units' scope would be broadened in the Targeted Oasis Area and Argan Area working in the agricultural production systems. To reflect circular-economy and climate outcomes, each unit would process both primary products and agricultural residues (e.g., fronds, pits) into higher-value outputs (feed, biochar, etc.), contributing to mitigation via avoided open burning and fossil-fuel substitution. | 25 |
| <ul style="list-style-type: none"> DLR#8.4: 5,500 hectares planted with species resistant to harsh climatic conditions, such as cactus, carob, argan, olive, almond, caper. (scalable, baseline: 0 and end target: 5,500). | ✓ | | NEW - This DLR would be added in support to integrated development approaches in benefit to local communities in vulnerable areas (through the National Program on Solidarity Agriculture which is included in the NDC). | 11 |
| DLI 9 - Water resources in targeted oases are protected and the living conditions of the populations are improved. | | | | |
| <ul style="list-style-type: none"> DLR#9.1: Twenty-two (22) water recharge thresholds built with piezometers (scalable, baseline: 0 and end target: 22). | | ✓ | N/A | |

| DLI/DLRs | AIIB/World Bank co-financing | World Bank sole financier | Program Adjustments | AIIB financing* (in USD million) |
|---|------------------------------|---------------------------|--|----------------------------------|
| <ul style="list-style-type: none"> DLR#9.2: Ten (10) water treatment projects implemented in the Targeted Oasis Area (scalable, baseline: 0 and end target: 10). | | ✓ | N/A | |
| <ul style="list-style-type: none"> DLR#9.3: Fifty (50) oasis schools in the targeted Oasis Area benefiting from environmental upgrades (scalable, baseline: 0 and end target: 50). | | ✓ | N/A | |
| <ul style="list-style-type: none"> DLR#9.4: Number of small traditional hydrological infrastructure (<i>khettaras</i>) in vulnerable ecosystems restored and operational (scalable, baseline: 0 and end target: 30 <i>khettaras</i> systems). | ✓ | | NEW – these DLRs would be added to cover the rehabilitation of traditional hydrological infrastructure (<i>Khettaras</i>) in support to sustainable water resource management in water-scarce areas, through the Directorate of Irrigation and Agricultural Land Development (DIAEA) and ADA. | 60 |
| <ul style="list-style-type: none"> DLR#9.5: Number of small traditional hydrological infrastructure (<i>seguías</i>) in vulnerable ecosystems restored (scalable, baseline 0, targets: <ul style="list-style-type: none"> - 100 Km of <i>Seguía</i> Canals (DIAEA) - 50 Km of <i>Seguía</i> Canals (ADA)) | ✓ | | NEW – these DLRs would be added to cover the rehabilitation of small traditional hydrological infrastructure (<i>Seguías</i>) in support to sustainable water resource management in water-scarce areas. | 20 |
| RA 2.3: Promote Coordination to deploy Nature-Based Solutions (NBS) to tackle climate vulnerabilities. | | | | |
| DLI 10 - Nature-based solutions are deployed to tackle climate vulnerabilities. | | | | |
| <ul style="list-style-type: none"> DLR#10.1: Four thousand and two hundred (4,200) hectares reforested in selected priority watersheds (scalable, end target: 4,200). DLR#10.2: Eleven (11) urban/ peri-urban forests ("green belt") managed (scalable, end target 10). | | ✓ | N/A | |

* AIIB financing figures are indicative and subject to change following the Program appraisal mission.

4.7 Systemic Approach. AIIB's climate RBF is structured around a set of planned, integrated activities that are expected to create a holistic climate resilience system once implemented. The operationalization of DGM-managed radars is planned to provide essential climate data for enhanced weather forecasting and warning (DLR#5.4). The planned restoration of small traditional hydrological infrastructure aims to improve water management and availability in water-scarce areas, supporting sustainable agriculture (DLR#9.4-9.5). This restored irrigation infrastructure will sustain new plantations by ensuring reliable water supply, enhancing soil moisture and supporting the growth of climate-resilient species across 5,500 hectares (ha),

including cactus, carob, argan, olive and almond (DLR#8.4). Efforts to create or upgrade 10 agricultural cooperatives will support farmer organization and collective action (DLR#8.2). The construction and equipping of two new agriculture products and by-products valorization units in the targeted oasis area and argan area will enhance local value addition (DLR#8.3). Additionally, targeted research programs on palm and argan trees are planned to improve cultivation techniques and resilience (Intermediate Result Indicator IRI#8.1). These interconnected planned activities, when executed together, are intended to build a dynamic system where enhanced climate knowledge, restored water infrastructure, resilient planting and sustainable agricultural enterprises jointly amplify climate resilience, agricultural productivity and livelihoods.

4.8 Climate Dual Benefits and Strategy on Financing Operations in NRM Alignment. The Program finances a targeted set of activities which, when combined, generate simultaneous and mutually reinforcing mitigation and adaptation benefits. Activities included in RA 2.2 will promote nature-based solutions such as large-scale perennial planting, applied research on climate-resilient species and soil restoration practices. DLRs 8.2, 8.3 and 8.4, in particular, will increase atmospheric carbon sequestration while improving water retention, soil health and biodiversity. Other new activities like rehabilitation of small traditional, low-carbon irrigation systems such as *khetaras* (DLRs 9.4 and 9.5) will secure water supply without fossil energy use reducing carbon footprint. Together, these measures integrate ecosystem-based approaches, including oasis and argan agroecosystem restoration and conservation agriculture, which deliver durable carbon removal and reduction at scale, locking carbon dioxide (CO₂) in biomass and soils.

4.9 RA 1.2: Strengthen the National Climate Data Systems. Morocco's resilience and low-carbon transition depend on high-quality, spatially comprehensive climate observation systems. Expanding the DGM radar network from 5 to 13 units will close critical coverage gaps (increasing national coverage from 30% to more than 60%) and integrate real-time weather intelligence into sectors driving both mitigation and adaptation. This enhanced digital infrastructure goes beyond early warnings; it will optimize low-carbon operations—such as renewable energy dispatch, efficient transport and sustainable water management—ensuring the investment meets NRM requirements by delivering tangible mitigation benefits alongside resilience gains.

- DLR#5.4: Eight (8) DGM-managed radars are operational (baseline: 5 and end target: 13).
 - (a) **Rationale:** Morocco is increasingly exposed to extreme weather events intensified by climate change, including record heatwaves, prolonged droughts, severe storms and flash floods. In 2024, Morocco experienced its hottest year on record, with temperatures rising 1.49°C above the 1991–2020 baseline. Accurate, high-resolution and near-real-time weather data are critical for both adaptation (reducing vulnerability) and mitigation (optimizing low-carbon systems). The current DGM-managed radar network comprises five operational radars, leaving significant coverage gaps, especially in the South, Southeast and Northeast zones—due to topography and infrastructure limitations. The NDC identifies meteorology as a priority sector for climate action, explicitly linking better climate observation systems to improved resilience and low-carbon planning.
 - (b) **Significance:** This activity will install and operationalize eight additional radars—using both Band C and Band X technologies—expanding the network from 5 to 13 units by

2029 in the following indicative locations:⁷ Casablanca, Marrakech, Mohammedia, Tetouan, Agadir, Larache, Khouribga and Ouarzazate. This expansion will strengthen the National Climate Network by increasing spatial coverage from 30% to at least 60% and improving data availability to 75% or more. The inclusion of Band X radars will help overcome the detection barriers created by mountainous terrain, providing better coverage in hazard-prone valleys. The enhanced system will deliver high-resolution tracking data to critical sectors, including water resource management, energy, transport, forestry, disaster risk management and development of urban meteorology. It will also enhance coordination between meteorological services and other climate-data stakeholders, enabling open and timely access to information for decision-making in both the public and private sectors.

- (c) **Mitigation Expected Outcomes:** By integrating advanced radar systems into planning and operations, substantial indirect reductions in GHG emissions can be realized across multiple sectors. For instance, enhanced short-term precipitation forecasts will enable more efficient hydropower scheduling, thereby decreasing reliance on fossil fuel backup generation. Similarly, improved weather intelligence will facilitate better integration of wind and solar power into the grid, minimizing curtailment and reducing the need for fossil-fueled peaking plants. In the transportation sector, the availability of real-time weather forecasts will support smarter traffic and public transit management, leading to alleviated congestion and lower fuel consumption. Moreover, improved monitoring capabilities will strengthen forest protection efforts, notably contributing to the prevention against forest fires. Finally, in agriculture, more precise harvest and transport scheduling will reduce spoilage and eliminate unnecessary freight trips, further driving emissions reductions. Together, these improvements create a cohesive approach to reducing GHG emissions through enhanced weather forecasting and monitoring technologies.
- (d) **Adaptation Expected Outcomes:** The expanded radar network will significantly strengthen Morocco's ability to anticipate and respond to climate hazards. By strengthening early warning systems, communities will receive more advance notice to prepare for floods, storms and droughts. Additionally, more accurate precipitation mapping will improve the management of water resources, including irrigation scheduling, groundwater recharge and dam operations. This system will also help protect critical infrastructure, such as transport, energy and health facilities from disruptions caused by severe weather. Furthermore, access to targeted, high-resolution weather data will support better decision-making in sectors like forestry, agriculture and fisheries, thereby increasing resilience and reducing vulnerability to extreme climate events.

4.10 RA 2.2: Promote an Integrated Approach to Enhance Climate Resilience of Oasis Ecosystems. This RA delivers a comprehensive package of interventions across the oasis and arid-zone agricultural landscape—linking cooperative development, post-harvest valorization, climate-resilient planting, targeted R&D and restoration of small traditional irrigation systems.

⁷ Indicative locations subject to operational changes.

These interventions will span Oasis Areas and Argan Areas. Together, these measures protect fragile agroecosystems from desertification and water scarcity while embedding low-carbon pathways. By preserving gravity-fed irrigation, reducing waste-related emissions, expanding perennial carbon sinks and promoting renewable energy-powered and resource-efficient practices, the Program secures the mitigation focus required under the Bank's NRM policy. In parallel, it builds adaptation capacity by stabilizing water supplies, diversifying rural incomes, safeguarding biodiversity and strengthening the resilience communities whose livelihood depend on oasis ecosystems.

- DLR#8.2: Ten (10) agricultural and/or para-agricultural service cooperatives created or upgraded in the targeted Oasis Areas and Argan Areas working in the agricultural production systems (scalable, baseline: 0 and end target: 10).
 - (a) **Rationale:** Oasis regions are among Morocco's most climate-vulnerable areas, facing water scarcity, soil degradation and biodiversity loss. The date palm and argan value chains are cornerstones of the oasis and argan region's economy, providing food, income and cultural heritage, yet both chains are constrained by low productivity, post-harvest losses and limited market access. Strengthening cooperatives within these value chains aligns with Morocco's Generation Green 2020–2030 strategy, which promotes climate-resilient agriculture and rural inclusion, particularly for youth and women.
 - (b) **Significance:** This DLR will establish or upgrade 10 agricultural and para-agricultural service cooperatives across targeted oasis and Argan Areas in the South, Southeast and Atlantic coastal regions, enabling them to provide farmers with a full range of technical, mechanization and irrigation services, including direct seeding to promote conservation agriculture. The cooperatives will facilitate the adoption of improved, low-carbon agricultural practices such as optimized irrigation scheduling, while also aggregating products and improving farmers' market position through collective negotiation. In doing so, they will enhance value addition within the agricultural production systems. Beyond production, the cooperatives will serve as training hubs, with a strong emphasis on building the skills of women and youth in climate-smart cultivation, post-harvest handling and waste valorization.
 - (c) **Mitigation Expected Outcomes:** The cooperative model will support the planting and maintenance of perennial and agroforestry species, sequestering carbon in both biomass and soils over the long term. Greater adoption of conservation agriculture will further reduce emissions by minimizing soil disturbance and improving carbon retention. Improved post-harvest waste management, particularly the controlled processing of palm residues, will avoid methane and CO₂ emissions from open burning, while the introduction of renewable energy-powered equipment and energy-efficient processing will cut fossil fuel use.
 - (d) **Adaptation Expected Outcomes:** By improving access to technical services, these cooperatives will increase the resilience of oasis and argan farming systems, enhancing irrigation efficiency, improving pest and disease control and diversifying income sources. Cooperative-led maintenance of irrigation infrastructure and the

promotion of drought-resilient cultivars will strengthen water resource management, reducing farmers' vulnerability to prolonged dry periods. Collective marketing, storage and processing facilities will help stabilize incomes and reduce post-harvest losses, while the active inclusion of women and youth will build household and community-level adaptive capacity.

- DLR#8.3: Two (2) new agriculture products and by products valorization units built and equipped in Targeted Oasis Areas and Argan Areas (scalable, baseline: 0 and end target: 2).
 - (a) **Rationale:** Oasis agriculture is central to the livelihoods of thousands of rural households in Morocco, with the date palm and argan as key species. However, both sectors suffer from high post-harvest losses, inefficient processing and underutilization of by-products. Large volumes of product waste—leaves, fronds, pits, argan fruit pulp and shells—are either left to decompose or openly burned, releasing CO₂ and methane and contributing to local air pollution. By creating modern valorization units with integrated processing technologies, Morocco can simultaneously address waste management, create local jobs, extend product shelf life and lower the sector's carbon footprint.
 - (b) **Significance:** This DLR will result in the construction and equipping of two fully operational agriculture products and by products valorization facilities in targeted oasis and argan areas. These units will process agriculture products into high-value food products for domestic and export markets and extract argan oil with maximal by-product valorization, while also converting agricultural residues into livestock feed, biochar and renewable bio-briquettes. This dual function not only improves product quality and market reach but also reduces dependence on fossil fuels and mitigates pressure on forest resources by offering sustainable energy alternatives.
 - (c) **Mitigation Expected Outcomes:** Controlled processing of date palm, argan and other trees species residues will prevent methane and CO₂ emissions that would otherwise result from open burning. The production of biochar and bio-briquettes will further reduce emissions by substituting for fuelwood, thereby lowering deforestation rates and associated carbon releases, while also decreasing fossil fuel consumption in local energy use.
 - (d) **Adaptation Expected Outcomes:** By improving processing capacity and product diversification, the valorization units will strengthen the resilience agricultural production systems in the targeted oasis area and argan areas, making it less vulnerable to both market fluctuations and climate-related disruptions. Farmers will benefit from additional revenue streams through the sale of by-products, reducing reliance on raw date sales and providing greater income stability in years of poor harvests. The systematic removal and use of waste will also lower fire risks in oasis environments, safeguarding both agricultural assets and rural communities.

- DLR#8.4: 5,500 hectares planted with species resistant to harsh climatic conditions, such as cactus, carob, argan, olive, almond, caper. (scalable, baseline: 0 and end target: 5,500 ha).
 - (a) **Rationale:** Morocco's arid and semi-arid regions, particularly oasis and argan zones, are highly vulnerable to climate change impacts, including prolonged droughts, soil erosion and desertification. Traditional monoculture cropping systems have limited capacity to withstand these stresses, threatening food security, rural livelihoods and ecosystem health. Nature-based solutions offer a sustainable pathway to counter these challenges by restoring and enhancing natural ecosystems that underpin agricultural productivity and community well-being. Expanding climate-resilient plantations directly addresses these vulnerabilities while generating substantial long-term carbon sequestration.
 - (b) **Significance:** The activity will establish 5,500 ha of plantations with drought-tolerant species such as cactus, carob, argan, olive, almond and caper. By restoring degraded lands and improving soil structure in Morocco's most climate-vulnerable territories, where oasis ecosystems and rural livelihoods are particularly exposed to water scarcity and desertification (South, Southeast and Atlantic Coast regions), the plantations will enhance ecosystem services, including water retention, soil stability and biodiversity conservation. They will also diversify local economies by producing fruits, oils and fodder, thereby reducing dependence on annual cropping systems that are more susceptible to climate shocks. By focusing on perennial, multi-purpose species, this initiative will create durable carbon sinks while reinforcing the socioeconomic foundations of vulnerable rural communities.
 - (c) **Mitigation Expected Outcomes:** The plantations will sequester carbon through the long-lived biomass of trees and shrubs and by increasing soil organic matter. The reduced need for frequent tillage and replanting will lower fossil fuel use in farming operations, while the provision of fodder will alleviate grazing pressure on natural ecosystems, avoiding further emissions from land degradation. In addition, the establishment of tree canopy cover will improve microclimates by reducing evapotranspiration, which can enhance agricultural productivity without reliance on emissions-intensive inputs.
 - (d) **Adaptation Expected Outcomes:** The diversification of cropping systems with drought-tolerant species will strengthen resilience to drought and irregular rainfall, while stabilizing soils, reducing erosion and improving water infiltration. These plantations will secure a steady supply of fodder and food products even in adverse climatic conditions, helping to stabilize rural incomes and protect communities from both climate and market shocks.
- IRI#8.1 (Intermediate Result Indicator): Targeted research programs on palm tree and argan tree.
 - (a) **Rationale:** Oasis and argan systems face persistent drought, land degradation and genetic erosion. Targeted R&D is needed to: (1) secure high-quality planting material,

(2) optimize water–soil–plant management under arid conditions, (3) conserve and use genetic diversity and (4) valorize organic by-products. This DLR consolidates applied research that directly underpins enhanced carbon sequestration, resilient planting, smarter water and soil management and low-waste value chains.

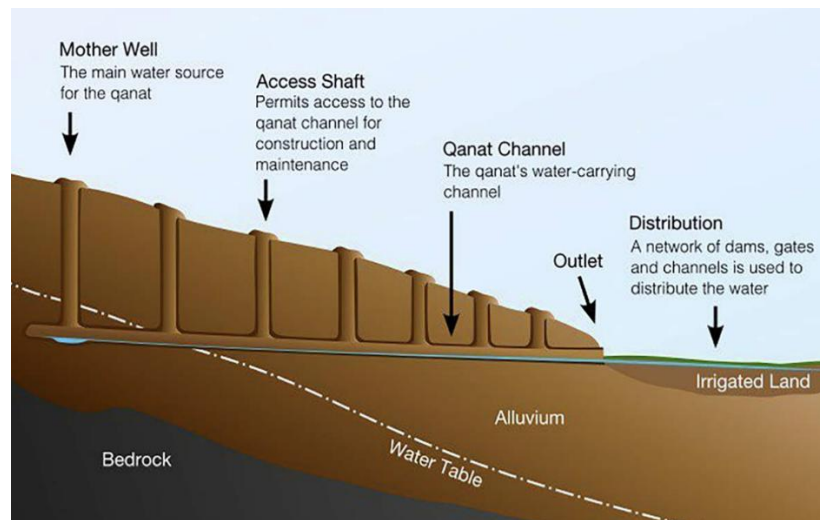
- (b) **Significance:** The Program focuses on two complementary research pillars. For argan, it will develop tools to assess carbon and biomass, conserve and improve genetic diversity through multi-site provenance trials and design water- and soil-saving techniques, such as rock-container mulching, wick beds and optimized planting pits, while identifying orchard management practices that improve tolerance to abiotic stress. For date palm, it will optimize in vitro propagation for 30 target genotypes, conserve priority germplasm, test organic amendments such as biochar from palm residues and biofertilizers and evaluate mulching systems to improve water efficiency and yields. By integrating advanced laboratory methods with on-farm trials, the Program will build the technical foundation necessary for scaling climate-smart and resource-efficient agricultural practices in Morocco’s oasis and argan landscapes.
 - (c) **Mitigation Expected Outcomes:** Research outputs will contribute to mitigation through the selection of high-performing, climate-adapted genotypes and improved establishment techniques that increase biomass accumulation and soil organic carbon stocks. By valorizing palm residues into biochar and mulches, the Program will prevent open burning, avoiding CO₂ and methane emissions. Improved orchard management and the use of organic fertilization will lower emissions intensity by increasing yield per unit of input while reducing reliance on fossil fuels and synthetic fertilizers. Water-efficient techniques, such as mulching and optimized delivery systems, will decrease the energy required for irrigation, further reducing indirect emissions.
 - (d) **Adaptation Expected Outcomes:** The adoption of drought- and salinity-tolerant genotypes will enhance the ability of plantations to survive and remain productive under increasing climate stress. Soil and water conservation measures, including mulching, wick beds and optimized planting pits, will improve moisture retention, reduce evaporation and stabilize soils, thereby increasing ecosystem resilience. Reliable in vitro propagation protocols and conserved germplasm collections will ensure a secure and consistent supply of quality planting material for restoration and expansion efforts. Ultimately, diversified and healthy plantations, supported by improved orchard management, will help stabilize farmer incomes and sustain livelihoods despite climatic variability.
- DLR#9.4-9.5: Number of traditional hydrological infrastructure in vulnerable ecosystems restored.
 - (a) **Rationale:** *Khettaras* and *seguias*, as Small and Medium-Scale Irrigation (SMSI) systems, play a pivotal socioeconomic role in Morocco due to their unique geographical position between mountains and plains, bridging large-scale irrigated areas and rainfed zones. Serving as natural buffers these systems reduce rural-urban disparities, support food production and sustain rural livelihoods. *Khettaras* are traditional gravity-fed groundwater capture systems that have sustained oasis agriculture for centuries

without energy input, making them inherently low-carbon and climate-resilient. *Seguias* are traditional open-channel irrigation canals that distribute water from *khettaras*, springs, or rivers to agricultural plots within oases. Many of both are now degraded due to erosion, collapses, sedimentation and insufficient maintenance, threatening the sustainability of agriculture and the sociocultural fabric of oasis communities. Coupled with recurrent droughts and erratic precipitation, this degradation has severely compromised water efficiency and agricultural productivity, threatening both the sustainability of oasis agriculture and the sociocultural fabric of local communities. Restoring these systems is essential to secure water supply, protect irrigated lands, boost agricultural yields and enhance community resilience to climate change.

- (b) **Significance:** The SMSI sector covers approximately 365,000 ha of permanent irrigation and sustains more than 100,000 smallholder farms, most of which are under 5 ha. Through this Program, rehabilitation works will target 30 *khettaras* and 150 kilometers of *seguias*, safeguarding critical water infrastructure in fragile rural, oasis and argan areas. This effort not only preserves a centuries-old irrigation heritage but also integrates modern efficiency measures to improve water management. By building on the traditional knowledge and long-standing practices of oasis communities in managing scarce natural resources, the Program will help strengthen resilience to desertification, enhance food security and support rural livelihoods and incomes in some of Morocco's most climate-vulnerable regions. Because *khettaras* operate through gravity-fed flows, their restoration will reinforce a low-energy, sustainable water management system in regions where scarcity is acute and reliance on energy-intensive pumping alternatives would increase costs and emissions.
- (c) **Mitigation Expected Outcomes:** The rehabilitation of small traditional hydraulic systems like *khettaras* and *seguias* is expected to deliver significant climate mitigation benefits by preserving oasis ecosystems, including palm groves, olive orchards and perennial plantations, which act as stable carbon sinks and reduce vegetation loss caused by water stress. A key mitigation outcome is the continued use of zero-emission, gravity-fed irrigation through *khettaras*, which eliminates GHG emissions commonly associated with diesel or electric pumping. This rehabilitation also improves irrigation efficiency and encourages regenerative farming practices such as cover cropping and minimum tillage, which increases soil organic carbon storage and promotes long-term carbon sequestration. Collectively, these integrated measures contribute substantially to Morocco's wider climate mitigation objectives by fostering sustainable, low-carbon agricultural water management.
- (d) **Adaptation Expected Outcomes:** Effective restoration of hydraulic systems contributes significantly to climate adaptation by improving water conveyance and storage, stabilizing supply during dry spells and safeguarding livelihoods dependent on agriculture. This restoration significantly boosts the resilience of oasis ecosystems by preserving palm groves, which play a vital role in protecting biodiversity, functioning as natural windbreaks and serving as barriers against desertification. Furthermore, the enhancement of water storage, flow regulation and aquifer recharge associated with these systems helps maintain stable water availability during critical growth stages,

reducing vulnerability to prolonged dry spells. By ensuring reliable water access, these efforts strengthen rural livelihoods, alleviate poverty and help mitigate climate-induced migration, thereby promoting socioeconomic stability in vulnerable communities. Additionally, fostering community participation and strengthening local water governance enhances adaptive management capacities, empowering communities to effectively respond to evolving climate challenges.

Figure 33. Kheffara System Diagram



4.11 Expenditure Framework. The total government program financing amount is about USD1,000 million, of which USD200 million (20%) will be financed by AIIB RBF Program (Table 3). The AIIB financing toward the Program will be made available based on the achievements of DLIs.

Table 3. Expenditure Framework

| DR | Ministry | Dept/Responsible Institution | Budget line | Total amount | | % |
|---|---------------------------------------|---|--|---------------|---------------|-----|
| | | | | (MAD million) | (USD million) | |
| DR 1 Whole of Government Approach - Public Finance | Ministry of Equipment and Water (MEE) | DGM | P414: Meteorology - <i>Parent Program - Climate PforR & AIIB Co-financing</i> | 410 | 44 | 3% |
| | SAD | DD | P501: Strengthening Environmental Governance and Mobilizing Stakeholders - <i>Parent Program - Climate PforR</i> | 250 | 27 | 2% |
| TOTAL DR 1 | | | | 660 | 71 | 6% |
| RM 2 Strengthening the resilience of vulnerable | MAPMDREF | Directorate for the Development of Production chains (DDFP) | Contract Programme 2023-2030 - Date Palms between the Government and the National Interprofessional Federation of Dates "Morocco-Dates" & P415 | 1,955 | 211 | 16% |

| DR | Ministry | Dept/Responsible Institution | Budget line | Total amount | | % |
|-----------------------|----------|--|---|---------------|---------------|------|
| | | | | (MAD million) | (USD million) | |
| groups and ecosystems | | | Oasis - <i>Parent Program - Climate PforR</i> | | | |
| | | DDFP / ADA | P415: Development of Production Chains - 30-Solidarity Agriculture - <i>AIIB Co-financing</i> | 273 | 30 | 2% |
| | | DIAEA | P418: Irrigation and development of agricultural areas - <i>AIIB Co-financing</i> | 1160 | 129 | 10% |
| | | ANDZOA | P419: Development of oasis areas and the argan tree (ANDZOA grant) - <i>Parent Program - Climate PforR</i> | 351 | 38 | 3% |
| | | INRA (Grant) | P416-Education, Training and Research-490-10-Support ActionsP416-Education, Training and Research-421-20-Upgrading of Central Structures - <i>AIIB Co-financing</i> | 144 | 16 | 1% |
| | | National Agency of Water and Forest (ANEF) (Grant) | P422: Forest Management and Development - <i>Parent Program - Climate PforR</i> | 1,105 | 118 | 9% |
| | MEE | DGH-Directorate of Research and Water Planning (DRPE) | P601: Water - <i>Parent Program - Climate PforR</i> | 1,030 | 111 | 9% |
| | MEF | CNSS (CAS FAPSCS - Fonds d'Appui à la Protection Sociale et à la Cohésion Sociale) | P197: Support for Social Policies, Sectoral Strategies and Structuring Projects - <i>Parent Program - Climate PforR</i> | 5,174 | 554 | 43% |
| TOTAL DR 2 | | | | 11,191 | 1,206 | 94% |
| TOTAL | | | | 11,851 | 1,277 | 100% |

4.12 The use of the RBF instrument is particularly well-suited to Morocco's institutional capacity and development priorities. Given the government's strong track record in planning and executing complex, multi-sectoral programs, the RBF model builds on this strength to ensure effective delivery. Anchored in the World Bank's existing PforR framework, the RBF Program maintains continuity in objectives and is fully aligned with Morocco's NDC, the 2023 Finance Law and related multi-year expenditure plans. The proposed RBF Program has therefore been designed to deepen the objectives emanating from the CCDD, to focus and accelerate the implementation of climate actions and measures in key sectors for Morocco's green development. This RBF co-

financing allows for a more integrated, whole-of-government approach to climate action, including context-specific interventions in vulnerable oasis ecosystems. At the same time, this mechanism will help strengthen national systems by operationalizing the MRV platform, improving climate data for decision-making and reinforcing fiduciary oversight. Finally, it will support the adoption of international environmental and social standards and build on lessons from previous successful RBF operations, such as the World Bank-supported Blue Economy PforR – P172926.

4.13 Disbursement Linked Indicators. The DLIs have been selected to monitor progress across the Program's key dimensions. The associated DLRs were defined based on the following considerations: (a) the DLIs incentivize progress toward the Program's objectives; (b) they are achievable within the Program period; (c) they are quantifiable, measurable and verifiable and (d) they fall within the Government's control. The DLIs reflect a balanced mix of process-oriented milestones and tangible results on the ground. Table 4 outlines the rationale for the selection of each proposed DLR.

Table 4. Disbursement Linked Indicators

| DLI/DLRs | AIIB/World Bank co-financing | World Bank sole financier | Rationale |
|---|------------------------------|---------------------------|--|
| RA 1: Strengthen Policy and Institutional Capacity in Green PFM, Green Finance and Climate Data. | | | |
| RA 1.2: Strengthen the national climate data system. | | | |
| DLI 5 - The National Climate Network is operational and delivers services to users. | | | |
| <ul style="list-style-type: none">DLR#5.1: Twenty-four (24) MoUs signed between the DGM and other relevant entities managing the observation stations (scalable, baseline: 0 and end target: 24). | | ✓ | Robust weather and climate information systems are essential for effective climate action. Recognizing this, the revised NDC identifies meteorology as a new priority. This DLI supports the establishment and operationalization of a National Climate Network to enhance the institutional framework for climate data. It aims to improve coordination among data-collecting entities, enhance the quality of climate information and promote data accessibility for key sectoral users, including agriculture, forestry, flood and drought management, energy or transport. |
| <ul style="list-style-type: none">DLR#5.2: Eight hundred fifty (850) observation stations connected to the data center managed by the DGM. | | ✓ | |
| <ul style="list-style-type: none">DLR#5.3: Eight (8) end-users sectors receiving processed weather and climate data (scalable, baseline: 0 and end target: 8). | | ✓ | |
| <ul style="list-style-type: none">DLR#5.4: Eight (8) DGM-managed radars are operational (baseline: 5 and end target: 13). | ✓ | | |
| DLI 6 - The MRV platform on NDC implementation is operationalized. | | | |

| DLI/DLRs | AiIB/World Bank co-financing | World Bank sole financier | Rationale |
|--|------------------------------|---------------------------|---|
| <ul style="list-style-type: none">DLR#6.1: Eight (8) sectors with adaptation measures in the Revised NDC included in the MRV platform on NDC implementation (scalable, baseline: 0 and end target: 8).DLR#6.2: Three (3) sectors with unconditional mitigation measures in the Revised NDC included in the MRV platform on NDC implementation. (scalable, baseline: 4 in 202682 and end target: 7). | | ✓ | N/A |
| RA 2: Enhance Climate Resilience of Vulnerable Groups and Vulnerable Ecosystems. | | | |
| RA 2.2: Promote an Integrated Approach to Enhance Climate Resilience of Vulnerable Ecosystems. | | | |
| DLI 8 - Traditional oasis ecosystems are more resilient to climate change and generate economic opportunities for local population. | | | |
| <ul style="list-style-type: none">DLR#8.1: one million palm trees distributed and planted for the revitalization of traditional oasis in the Targeted Oasis Area (scalable, baseline: 0 and end target: 1 million). | | ✓ | Moroccan Oasis and Argan Areas are fundamentally shaped by the management of water scarcity and seasonal variability. However, these ecosystems face increasing pressures, worsened by climate change, leading to their degradation and the impoverishment of local communities. In response, the Kingdom is implementing a program to build resilient oasis ecosystems, as outlined in the NDC. Much of the activities under this DLI will be carried out through a Contract-Programs between the Government and professional organizations. |
| <ul style="list-style-type: none">DLR#8.2: Ten (10) agricultural and/or para-agricultural service cooperatives created or upgraded in the targeted Oasis Areas and Argan Areas working in the agricultural production systems (scalable, baseline: 0 and end target: 10). | ✓ | | |
| <ul style="list-style-type: none">DLR#8.3: Two (2) new agriculture products and by products valorization units built and equipped in Targeted Oasis Areas and Argan Areas (scalable, baseline: 0 and end target: 2). | ✓ | | |
| <ul style="list-style-type: none">DLR#8.4: 5,500 hectares planted with species resistant to harsh climatic conditions, such as cactus, carob, argan, olive, date palm, almond, caper, etc. (scalable, baseline: 0 and end target: 5,500). | ✓ | | |
| DLI 9 - Water resources in targeted oases are protected and the living conditions of the populations are improved. | | | |
| <ul style="list-style-type: none">DLR#9.1: Twenty-two (22) water recharge thresholds built with piezometers. (scalable, baseline: 0 and end target: 22). | | ✓ | Morocco's oasis zones are delicate and vulnerable ecosystems, located along non-perennial rivers (Oueds) and shallow aquifers. In recent years, these ecosystems have significantly degraded due to a combination of natural and human-induced pressures, further intensified by climate change. Water scarcity, both in terms of quantity and quality, remains the central challenge for |
| <ul style="list-style-type: none">DLR#9.2: Ten (10) water treatment projects implemented in the Targeted Oasis Area. (scalable, baseline: 0 and end target: 10). | | ✓ | |
| <ul style="list-style-type: none">DLR#9.3: Fifty (50) oasis schools in the targeted Oasis Area benefiting from environmental upgrades. (scalable, baseline:0 and end target: 50). | | ✓ | |
| <ul style="list-style-type: none">DLR#9.4-9.5: Number of small traditional hydrological infrastructure in vulnerable | ✓ | | |

| DLI/DLRs | AIB/World Bank co-financing | World Bank sole financier | Rationale |
|----------------------|-----------------------------|---------------------------|---|
| ecosystems restored. | | | the oases. To combat climate-induced water shortages, the General Directorate of Water Resources has proposed a program aimed at preserving and restoring these environments. This includes enhancing rainwater collection, recharging groundwater, protecting <i>khettaras</i> , treating wastewater, reusing treated water and improving the environmental quality of rural schools. At the same time, the Ministry of Agriculture, Marine Fisheries, Rural Development, Water and Forests, through the DIAEA/ADA, has proposed a program to rehabilitate <i>khettaras</i> and <i>seguías</i> in oasis areas and argan groves to improve irrigation efficiency and promote the resilience of oasis systems to climate change. |

4.14 Expected Beneficiaries. The expected beneficiaries of the climate resilience and mitigation activities in Morocco span a wide array of sectors. Vulnerable rural communities, particularly women and youth, stand to gain from enhanced agricultural productivity, improved access to water resources and diversified income opportunities through programs like Agriculture Solidaire and the rehabilitation of *khettaras*. The activities planned under the Program will have a significant contribution in generating economic opportunities for rural women. These initiatives aim to improve food security, reduce poverty, slow rural-to-urban migration and enhance the competitiveness of local agriculture. Agricultural and environmental stakeholders, including farmers, beekeepers, and livestock producers, will benefit from improved irrigation systems, and sustainable practices that boost productivity, resilience and market competitiveness with women's participation supported throughout. The private sector, especially those involved in renewable energy and resource management, will gain from optimized energy use and emissions reduction, supported by meteorological radar data and climate-smart infrastructure planning. Government agencies at both local and national levels will strengthen their capacity for climate data monitoring, disaster preparedness and policy implementation, contributing to better climate governance. Researchers, scientists and international organizations will benefit from advanced data, scientific research and best practices that support climate adaptation and mitigation efforts across various ecosystems, including oases, argan forests and agricultural lands.

4.15 Expected Results. The Program Objective will be monitored mainly through the following results indicators, in line with the World Bank PforR's result monitoring framework. (Results indicators are subject to refinement during the Program Appraisal mission):

Table 5. Indicative Result Indicators

| DLI | Implementing Agency | Result Indicator |
|---|---------------------|---|
| DLI 5 - The National Climate Network is operational and delivers services to users. | DGM | DLR#5.4: Number of DGM-managed radars operational. |
| DLI 8 - Traditional oasis ecosystems are more resilient to climate change and generate economic opportunities for local population. | ADA | DLR#8.2: Number of agricultural and/or para-agricultural service cooperatives created or upgraded in the targeted Oasis Areas and Argan Areas working in the agricultural production systems. DLR#8.3: Number of new date palm valorization units built and equipped in the targeted Oasis Areas and Argan Areas working in the agricultural production systems. DLR#8.4: Number of hectares planted with species resistant to harsh climatic conditions, such as cactus, carob, argan, olive, date palm, almond, caper, etc. |
| DLI 9 - Water resources in targeted oases are protected and the living conditions of the populations are improved. | DIAEA, ADA | DLR#9.4-9.5: Number of small traditional hydrological infrastructure in vulnerable ecosystems restored. |

4.16 RBF Program Key Capacity Building and Institutional Strengthening Activities. As a co-financier of the World Bank PforR, AIIB will adhere to the same capacity-building framework established by the World Bank. This framework has been designed to support the effective implementation of the PforR's innovative features through a comprehensive package of technical assistance (TA) and institutional strengthening activities. The capacity-building program, developed by the World Bank in coordination with other partners, targets key areas such as institutional development, environmental and social (ES) management, monitoring and evaluation (M&E) and fiduciary systems. Training will be provided on ES risk identification, mitigation and monitoring for ES focal points, ES staff of PMU and all involved entities implementing the Program, in line with both national regulations and international good practices. The ES Technical Manual will be updated to detail the agreed measures to strengthen the areas of national regulations applicable to the Program as well as to guide the implementation and monitoring of the agreed measures, including community mobilization. Fiduciary capacity strengthening will focus on tracking implementation progress, resolving operational challenges and ensuring compliance with audit recommendations and the Program Action Plan (PAP). M&E capacities will be reinforced to better measure results and support adaptive management. To support these efforts, the World Bank has mobilized resources from various trust funds and worked with partners to ensure coordination and complementarity of support. AIIB's engagement in this joint framework will help ensure institutional readiness and contribute to the achievement of sustainable results.

Table 6. Summary of the Technical Assistance in Support to the Implementation of the Program

| RA | TA from the World Bank | TA (and type of support) from other partners |
|--------------------------------------|---|--|
| RA 1.1. – Green PFM and Finance | EFI TF on Green Procurement, Public Investment Management, Green Financing, and Environmental Fiscality (the latter is not covered through DLR in the Program) World Bank/TRE TA to support the preparation to the emission of Sovereign Green Bond JCAP TF on Green Finance Taxonomy Climate Support Facility (CSF) on Green Procurement and Climate Budget Tagging | Agence française de développement (AFD) on Green Budgetary Transition (budget, procurement, SOEs, Green Taxonomy and Green Bonds) Gesellschaft für Internationale Zusammenarbeit (GIZ) on climate-sensitive PFM (including NDC costing) |
| RA 1.2 – Climate Data | Korean Green Growth TF on Drought Observatory | |
| RA 2.1 – Health Insurance to farmers | Large engagement from World Bank in support to the overall reform of the Social Protection system | GIZ and EU on MRV Platform |
| RA 2.2 – Vulnerable Ecosystems | ProGreen TF on Oasis rehabilitation | FAO |
| RA 2.3 – NBS solutions | GFDRR TA on Dam's sedimentation management | AFD, GIZ, EU |

4.17 Specifically, the interventions under RAs 2.2 and 2.3 are complemented by a PROGREEN-financed small-scale Trust Fund. The PROGREEN Trust Fund project will deliver TA and capacity building to the entities involved in the Program and pilot innovative approaches to integrated management of oasis ecosystems, adjoining degraded forests and range lands. The PROGREEN project will finance activities that will develop and pilot innovative oasis landscapes protection. Restoration and conservation actions will then be adopted and scaled up in the selected areas and nationwide.

5. RBF Program Implementation

A. Results Monitoring and Evaluation

5.1 Results Monitoring and Evaluation. The Program builds on the existing M&E systems of each implementing entity, with streamlined reporting to the MEF upon activity completion and biannually through established channels. The MEF's PIU consolidates these inputs to track performance and implementation progress. The M&E framework reflects best practices from previous PforR operations in Morocco and is reinforced by independent verification agencies, whose reports will serve as key inputs for results tracking and DLI verification. The PIU coordinates monitoring across RAs, ensures data quality and submits to the World Bank and AIIB: (a) biannual progress reports, (b) a midterm review and (c) a final report to inform the Implementation Completion and Results Report.

B. Institutional and Implementation Arrangements

5.2 Implementation Period. The RBF Program is expected to be implemented from Jan. 1, 2026, to Dec. 31, 2029, in line with the PforR program timeline.

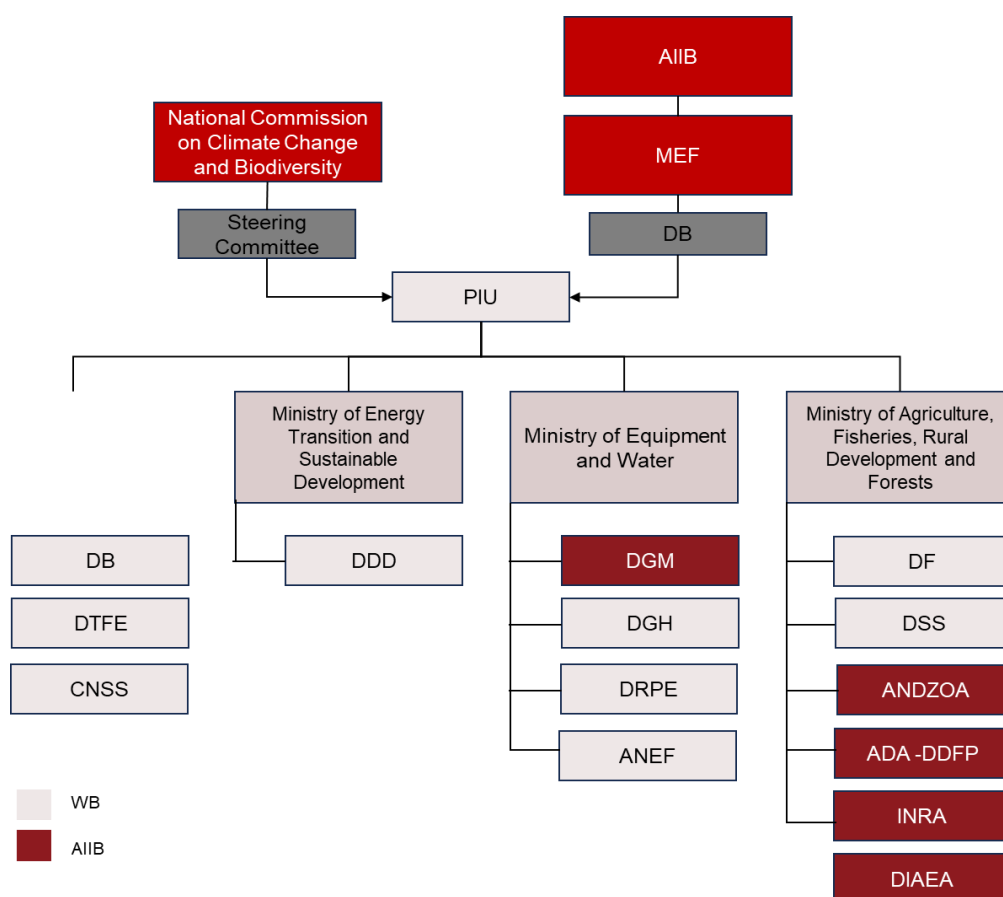
5.3 Institutional Architecture. The MEF is managing and coordinating the Program implementation. A Program Implementation Unit (PIU) was established under the Directorate of Budget (DB) located in the MEF, acting as the operational arm and coordination body of the Program activities with the Implementing Agencies, using technical committees/working groups to involve multiple institutions across various sectors and administrative levels with potential coordination risks. The PIU's role includes the oversight of technical, fiduciary and ES aspects. The MEF has long-standing and successful experience working with MDBs, with a proven convening power to mobilize government stakeholders towards multi-sectoral programs. The MEF, given its mandate, its capacity to coordinate the implementation of multi-sectoral programs and convening power among the line ministers, is best positioned to implement this Program. Moreover, the MEF and the relevant ministries involved have a long track record of implementing similar operations with World Bank and other development partners.

5.4 Collaborative Leadership. The successful implementation of the Program not only relies on the convening power of the MEF, but on multiple stakeholders with clear roles and accountability lines cemented in the solid national budget programming process. Given the multisectoral nature of the climate change risk, the MEF is coordinating with the Ministry of Energy Transition and Sustainable Development, the Ministry of Equipment and Water and the Ministry of Agriculture, Fisheries, Rural Development and Forests to implement the activities under RA1 and RA2. Specifically, for the Co-financing, the following implementing entities will be responsible for the different activities: (a) under RA 1.2 on Climate Data Systems, the DGM will lead the set-up of the National Climate Network under the Ministry of Water and Equipment and (b) under RA 2.2, the Ministry of Agriculture relies on the directorate of strategy and statistics (DSS) to oversee the different activities to be implemented by the National Agency for the Development of Oasis Areas and Argan trees (ANDZOA), the Agricultural Development Agency (ADA), the Directorate

of Irrigation and Agricultural Land Development (DIAEA) and the National Institute for Agricultural Research (INRA). The Implementing Agencies are responsible for financial management, procurement quality control and management, compliance with ES requirements and reporting. To strengthen the “Collaborative Leadership” approach, Technical Committees (or working groups) were established. These committees, composed of focal points from the different participating entities concerning thematic areas, will meet regularly, offer technical oversight for the implementation of the related program activity and provide a platform to exchange information/knowledge and share lessons on the thematic areas.

5.5 Institutional Climate Action Coordination. A Steering Committee (SC) was established for the PforR Program and is responsible for providing overall policy guidance to the PIU and facilitating coordination across sectors. The SC reports to the National Commission on Climate Change and Biodiversity (CNCCDB) on strategic issues related to the implementation of the Program. The CNCCDB was established in April 2020 to foster consultation and coordination among various government entities on their respective contributions to the International Convention on Climate Action and Biodiversity and ensure overall coherence. The CNCCDB also benefits from the lessons learned under the Program, particularly on the coordination mechanism to accelerate climate action.

Figure 4. Institutional Arrangement Proposed for the Program



5.6 The whole-of-government approach is considered the most effective approach to address the institutional complexity and the need for stronger coordination among government agencies involved, enhancing institutional inter-coordination and constant communication among stakeholders. Moreover, the significant geographic dispersion of the activities and the medium-to large-scale proposed investments require fostering consultation and coordination among government entities to strengthen climate action coherence, as recommended by the CCDR.

5.7 **Fiduciary.** The World Bank, as the lead co-financier, is responsible for appraising the implementing agencies' procurement and Financial Management (FM) systems. The PIU, established under the DB, along with some of the implementing agencies, has experience with World Bank-funded projects, particularly programs implemented through the PforR instrument. Institutionally, MEF is responsible for overall coordination, management and oversight of the Program, as well as the preparation of the Program consolidated financial statements. The participating ministries and entities are responsible for procurement and day-to-day FM responsibilities under the Program. The government's public finance and procurement legal regulatory framework, with incorporation of the PAP's mitigation measures, will be applicable to the Program implementation.

C. Disbursement Arrangements and Verification Protocol

5.8 **Disbursement Arrangements and Verification Protocols.** The disbursement under the Program is conducted throughout the implementation period based on the verification of achieved DLIs. Applications for withdrawal based on the amounts allocated to individual DLIs (as per associated DLRs) will be sent to the World Bank once it has notified the government in writing of its acceptance of the evidence of DLRs achievement and the amount of the eligible payment. Upon request of the Borrower, the Bank may disburse a portion of the proceeds of the Loan for an amount not to exceed in the aggregate 25% of the total Loan amount, i.e., EUR42,569,475, as an advance for DLRs not yet achieved so as to provide resources to facilitate their achievement. The total amount of expenditures incurred under the RBF may not exceed the total amount of expenditures incurred under this Program. Any such excess is refunded to the Bank prior to the AIIB RBF's loan closing date.

5.9 **AIIB's Implementation Support.** World Bank is the lead co-financier and will supervise the Program and serve as the focal point for the AIIB vis-à-vis the Borrower. A Co-Lenders' Agreement will detail the services to be provided by the World Bank.

6. Assessment Summary

A. Technical

6.1 Strategic Relevance. The World Bank PforR program, which AIIB is co-financing through this extended RBF, has been satisfactorily implemented since 2024, reflecting strong government ownership and effective cross-sectoral coordination. AIIB's financing builds on this momentum by strengthening climate data systems (RA 1.2) and scaling up interventions in agriculture, water and rural livelihoods (RA 2.2). Together, these activities advance Morocco's updated NDC and national climate strategies by embedding nature- and ecosystem-based solutions that deliver durable carbon removal in soils and biomass while reducing vulnerability to droughts, land degradation and climate shocks. By linking climate priorities with economic development, the Program supports sustainable growth and competitiveness, notably through green value chains and improved natural resource management, targeting rural and vulnerable populations, with a focus on women and youth.

6.2 Technical Soundness. The Program's design builds on a robust TA jointly conducted with national counterparts. It draws directly from Morocco's NDC and the World Bank CCDD priorities, targeting institutional gaps and enabling scalable, climate-smart solutions. RA 1.2 strengthens climate data and MRV to guide investment and policy. RA 2.2 translates strategy into impact, conducting mitigation and adaptation activities while advancing coordination at national and local levels through integrated, multi-actor solutions.

6.3 Institutional Capacity for Implementation and Sustainability. The MEF has a strong track record in multi-sectoral coordination, demonstrated by successful programs like the Blue Economy PforR and Morocco Public Sector Performance Ennaja PforR. The PIU at the MEF, supported by technical coordination through the Climate Unit and other committees, will handle day-to-day management, with the Steering Committee overseeing policy-level coordination. Given the multi-sectoral nature of climate change, the Program will require a "whole-of-government" approach, which may present coordination challenges. These will be mitigated by: (a) leveraging the experience of entities with World Bank PforR programs and addressing capacity gaps identified in the PAP; (b) providing comprehensive TA through the World Bank, AFD and GIZ and (c) establishing strong coordination mechanisms at both technical and policy levels to ensure effective implementation.

B. Economic Analysis

6.4 For the World Bank program, the economic analysis carried out by World Bank team shows an internal rate of return of 15% for local economic benefits and 24% for local benefits and global benefits of GHG removals from restoration of oases and watersheds. The activities covered include the RA2.2 – Enhance Climate Resilience of Vulnerable Ecosystems with focus on restoration and value addition of traditional oasis systems and RA2.3 - promote Nature-Based Solutions (NBS) to tackle climate vulnerabilities with a focus on the restoration of watersheds and management of urban and peri-urban forests.

6.5 For the cofinancing, AIIB activities were valued in line with AIIB cost-benefit analysis practices, core mandate and latest reports such as on investing in nature as infrastructure.⁸ A detailed cost–benefit analysis was carried out for interventions that entail capital expenditure and yield quantifiable economic returns. Three activities are considered in this analysis: (a) strengthening national climate data system through modernization of meteorological infrastructure (DLR#5.4) under RA 1; (b) oasis ecosystem restoration through tree planting (DLR#8.4) and (c) rehabilitation of small traditional irrigation systems (DLR#9.4) under RA2.2. The main economic benefit includes (a) avoided loss from disasters and gains in climate-sensitive sectors due to improved Early Warning System (EWS); (b) GHG removals and other ecosystem services (erosion control, regulation of water flow, fodder, etc.) provided by the trees planted and (c) agricultural production gain from irrigated lands.

6.6 The economic analysis shows a positive Net Present Value (NPV) of USD89.80 million, a BCR of 2.89 and a robust EIRR of 12.9% (20-year horizon, 6% discount rate). A sensitivity test was performed for: (a) 10% cost increase, (b) 10% benefit reduction and (c) combined cost increase and benefit reduction. In all cases, the EIRR remains above the 6% discount rate, confirming the Program’s economic viability. Annex 4 provides full methodological details.

C. Fiscal Sustainability

6.7 Morocco’s fiscal position remains broadly sustainable over the medium term, supported by prudent macroeconomic management and ongoing reforms to strengthen revenue mobilization and spending efficiency. The central government deficit improved to 4.1% of GDP in 2024,⁹ better than budgeted, and is projected to decline further to around 3% by 2027 (Annex 3). Public debt, currently at about 69% of GDP, is expected to gradually fall toward 66% by 2026 and remain on a downward path thereafter. Recent tax reforms have broadened the base and delivered stronger-than-expected revenues, while the reform of the Organic Budget Law will introduce a medium-term debt anchor to reinforce fiscal discipline. Structural reforms underway—such as state-owned enterprise restructuring, investment fund operationalization and green public financial management—are expected to enhance fiscal resilience and support long-term growth. Combined with robust foreign exchange reserves of about USD38 billion (covering five months of imports), resilient domestic demand and continued access to international financing, Morocco’s fiscal outlook is adequate to ensure the sustainability of the Program and safeguard the government’s ability to meet its obligations under the operation.

D. Fiduciary

6.8 The World Bank carried out a fiduciary systems assessment in accordance with its Policy, Directives and Guidance Notes for Program-for-Results Financing (PforR) which are broadly consistent with the Bank’s requirements for RBF operations. The purpose of the assessment was to ensure that the program financing would be managed with due attention to economy, efficiency,

⁸ AIIB. 2023. [Asian Infrastructure Finance 2023: Nature as Infrastructure](#).

⁹ IMF 2025 article iv consultation and third review Under the arrangement under the resilience and sustainability facility—press release; Staff report and statement by the executive Director for Morocco.

effectiveness, transparency and accountability. The assessment covered institutional arrangements, FM, procurement and governance systems across all implementing entities included in the PEF, including ADA, DDFP, ANDZOA, ANEF, CNSS, Ministry of Energy Transition and Sustainable Development (MTEDD), DGM, DRPE and the newly added INRA and DIAEA.

6.9 The assessment concluded that with the implementation of the proposed mitigating measures and actions included in the PAP, the Program's fiduciary management systems are broadly adequate and should provide reasonable assurance on the appropriate use of the Program funds and safeguarding of its assets.

6.10 **Performance and Risks.** The fiduciary performance of the World Bank's parent program remains satisfactory, as supported by a robust disbursement of USD102 million (29% of the loan amount) as of June 2025 and the full operationalization of the PIU. Most fiduciary actions under the parent program's PAP have been completed, while a few with "continuous" timelines remain in progress.

6.11 The overall fiduciary risk is rated as substantial, corresponding to AIIB's Medium risk rating. Key contributing factors include (a) the addition of INRA and DIAEA as a new implementing entity and the need for capacity building across several agencies (INRA, ANDZOA, DGM) requiring further capacity building in PforR operations; (b) the need to strengthen the internal audit function within INRA; (c) Potential delays in program implementation and in preparing consolidated financial reports (annual and semesterly) due to limited interagency coordination and inefficient fiduciary arrangements; (d) procurement-related complaints were handled as "Request for Information" without formal registration and timely handling and (e) agencies lack of practice and knowledge of the new national procurement decree.

6.12 The Legal and Institutional PFM framework is acceptable for the Program. The Moroccan public finance system is governed by a legal and regulatory framework in line with international standards. Public finances are subject to regular oversight from the Supreme Audit Institution (SAI) and other MEF control bodies (General Treasury of the Kingdom - TGR, Inspectorate General of Finance (IGF) - General Inspectorate of Finance and DEPP).

6.13 **Planning and Budgeting.** The budgeting system is anchored in the Public Finance Act framework further defined in the 2015 Organic Law No. 130-13 on Finance Laws, which introduced a three-year program-based budgeting, linking projects and actions to clear objectives with measurable indicators. The three-year budget program is updated annually through Budget Laws and complemented by a multi-year program supported by the MEF. It incorporates an annual performance plan, endorsed by Parliament, and an annual performance report that tracks results and executed budgets. Generally, the planning and budgeting of all central entities involved in the program follow a structured, timely and disciplined process, which is aligned with Morocco's PFM cycle and ensures that allocations remain within the available budget envelope.

6.14 The Program will be financed through the General State Budget, which adheres to the international Classification of the Functions of Government (COFOG). The program budget lines

are integrated in the government's multi-year program budget that enhances accountability, predictability and transparency over program transactions. The program budget for 2025 to 2027 clearly defines the funding sources and expenditure categories. Implementation of the AIIB-supported DLIs will be carried out by the MEE via DGM (P414) and by MAPMDREF through ADA-DDFP, DIAEA and INRA (P415, P416).

6.15 Budget Execution and Reporting. Annual performance budgeting programs for all implementing entities are published on the MEF website; however, the budget execution reports annexed to each Budget Law do not give a detailed view of each entity's commitments and payments. Overall, the Ministries and Entities involved in the Program have had acceptable performance in terms of budget commitments and execution in 2024-2025.

6.16 Budget Reporting. MEE, MEF and MAPMDREF monitor budget execution through the Integrated Expenditure Management System (Gestion Intégrée de la Dépense – GID), which also covers selected regional directorates and produces budget execution reports with variance analysis. Each implementing entity extracts data from GID and uses Excel to prepare financial reports on program activities, which the MEF's DB then consolidates. Financial reporting consists of semesterly budget execution reports, which strengthen the program's integrated financial reporting capacity.

6.17 The newly added implementing agencies include INRA and DIAEA. While both institutions have experience implementing World Bank-financed Investment Project Financing (IPF) operations, they currently lack experience in AIIB RBF or World Bank PforR operations. To address this, the World Bank will provide targeted capacity-building activities to help familiarize these entities with the requirements of such operations.

6.18 The primary risk to the Program's financial reporting lies in the potential variability and quality of consolidated reports due to the large number of implementing entities and the lack of a uniform reporting format. To address this, a standardized financial reporting template will be used to ensure timely preparation and consolidation of the Program's financial statements. This template will be incorporated into the Program's POM.

6.19 Internal Audit and Internal Control. The internal audit function across Morocco's ministries and public entities is well-established supported by procedural manuals, information systems, segregation of duties and risk mapping, with no significant issues noted by the World Bank assessments or recent internal audits. MEF, MAPMDREF and MEE maintain respective Inspectorates General (IGM) responsible for audits at central and regional levels. Similarly, the implementing entities maintain controls, including segregation of duties, verification of commitments and payments and FM systems. The IGF will conduct annual reviews alongside the Program's financial audit.

6.20 Program External Audit. In line with standard practice for MDB-financed operations, The MEF IGF will audit the consolidated financial statements, in accordance with the agreed Terms of Reference. Audit reports, together with detailed management letters, will be submitted to the

Bank within nine months of the borrower's fiscal year-end, and for program closure, within nine months of the closing date.

6.21 Disbursement Arrangements and Verification Protocols. Program expenditures will be pre-financed through the government's budgetary resources, aligned with the identified budget lines in the Program's expenditure framework. These budget lines will be reflected under the MEE (DGM) and MAPMDREF (ADA, ANDZOA, INRA and DIAEA). All Program payments will be made through the Treasury Single Account (TSA). AIIB will disburse funds to the government's TSA upon the achievement of DLRs. This follows the verification of these results by the Independent Verification Agents (IVA), which include the Inspectorate General of Agriculture and Water (IGA) and the Inspectorate General of Equipment and Water (IGE), and approval of the verified achievements and withdrawal application by the World Bank. The applicable disbursement method for this program will be solely reimbursement.

6.22 Procurement. The Program's procurement will be fully governed by Morocco's Law No. 12-94 on Public Procurement and the new Decree No. 2-22-431, effective September 2023, which provides detailed regulations for implementation. The system mandates the use of Chorus Pro Morocco (E-procurement) to enhance transparency, efficiency and accessibility; provide flexible procurement methods arrangements for meeting the fit-for-purpose objective and promote sustainable procurement and Value-for-Money (VfM) through rated criteria evaluation. Oversight is reinforced through the National Public Procurement Commission (CNCP), which handles compliance, professionalization and complaint resolution. The national procurement system is considered adequate to meet AIIB's Procurement Policy and Directive requirements on RBF.

6.23 Procurement Activities. Program procurement will cover mainly works (80%), followed by equipment, goods and services (19%) and consulting services (1%), together representing 39% of total Program expenditures. Activities include rehabilitation of small-scale hydraulic infrastructure, reforestation and anti-erosion works, agro-sylvo-pastoral investments and meteorological sub-stations. Consulting services will be limited to technical studies.

6.24 Procurement Oversight and Procurement-related Complaint Handling. While each entity conducts its own procurements, the General Treasury (TGR) oversees public procurement for the respective Ministry and its agencies through the network of "public accountants" sitting on evaluation panels and monitors the procurement process throughout both the local and national governments. In addition to TGR, the Court of Accounts (CoA) conducts post audits on procurement and issues reports identifying weaknesses or irregularities that are shared with the public. Procurement complaints handling is with the National Commission for Public Procurement (NCPP). It serves as the venue for bid complaints and to issue opinions on all aspects of procurement disputes. However, the World Bank's sample review found no procurement complaints reported in the past three years, as complaints were typically handled as "Requests for Information" without formal registration. This was flagged as a procurement risk and mitigation measures were proposed.

6.25 Governance. INPPLC (Instance Centrale de Prevention de la Corruption) oversees the prevention of corruption. It conducts awareness raising and information campaigns and has set up a database and a whistleblowing system to allow citizens to alert corruption cases. An appropriate protocol/arrangement to fight fraud and corruption under the program will be developed in the World Bank's Operational Program (POM). The implementing entities participating in the co-financing will execute the activities following the World Bank's "Guidelines on Preventing and Combating Fraud and Corruption in Program-for-Results Financing" (dated Feb. 1, 2012, revised July 10, 2015), emphasizing the Recipient's primary responsibility for prevention, coupled with the World Bank's fiduciary duty to ensure funds are used appropriately.

6.26 Exclusion of High-value Contracts. The Program excludes any activities that involve the procurement of high-value contracts with estimated values exceeding the following monetary amounts, as may be amended from time to time, that require mandatory review by the World Bank's Operational Procurement Review Committee (OPRC): (a) works, estimated to cost USD75,000,000 equivalent or more per contract; (b) goods, estimated to cost USD50,000,000 equivalent or more per contract; (c) non-consulting services, estimated to cost USD50,000,000 equivalent or more per contract or (d) consultants' services, estimated to cost USD20,000,000 equivalent or more per contract.

6.27 Procurement Capacity of Implementing Agencies. Most implementing entities have previous experience with World Bank-financed IPF or PforR projects, and all agencies underwent a Fiduciary System Assessment (FSA) by the World Bank. The fiduciary risk was assessed as substantial by the World Bank, which corresponds to Medium according to AIIB standards. The agencies' fiduciary performance ratings ranged from satisfactory to moderately satisfactory depending on the project. The overall capacity was considered adequate. Risks and mitigation measures related to capacity building are outlined in the PAP for implementation.

E. Environmental and Social Systems Assessment

6.28 The Program will be co-financed with the World Bank. An Environmental and Social Systems Assessment (ESSA) has been carried out in accordance with the World Bank's ES policy for PforR, including ES core principles. To support a harmonized approach to addressing the ES risks and impacts of the Program, and as permitted under AIIB's Environmental and Social Policy (ESP). AIIB has reviewed the World Bank's policy and procedures and is satisfied that: (a) it is consistent with AIIB's Article of Agreement and materially consistent with the provisions of AIIB's ESP, including the ES Exclusion List; and (b) the monitoring procedures that are in place are appropriate for the Program. This Program is classified as Category B according to AIIB's ESP (2024), because it covers a limited number of potential ES risks and impacts. In addition, the risks and impacts have been assessed as insignificant and can be successfully managed using Morocco's safeguards systems applied in the Program.

6.29 An Environmental and Social Systems Assessment (ESSA) for the PforR program was conducted by the World Bank in May 2023 to assess the adequacy of the ES systems applied in the Program. The ESSA analyzed the ES risks and impacts of the Program's activities, legal

framework, institutional capacity and operational systems for the Program planning, implementation and monitoring of the ES risks and impacts.

6.30 An updated ESSA was also conducted during July and August 2025 focusing on the newly added activities, the upscaled/restructured activities as well as the newly involved stakeholder (only one new agency involved in a newly added activity) to the World Bank parent program. An Addendum of the ESSA of the parent program was prepared. This Addendum indicates that the national ES management systems described in the parent ESSA continue to apply to the operation, covering both the existing program and the additional financing, including the relevant laws, regulations, standards and procedures. A PAP was also updated by the World Bank in consultations with communities and relevant stakeholders and included in the Addendum of the ESSA. AIIB's Program Team reviewed the ESSA and its Addendum and discussed and provided inputs for finalization of the Addendum of the ESSA together with the stakeholders and World Bank's ES Team. During the appraisal mission, the Program Team also discussed with the Program stakeholders the lessons learned from the early stages of implementation of this Program and the required ES actions to ensure the robustness of Morocco's ES systems applied in the RBF, adequate capacity of relevant agencies in planning, implementation and monitoring of the Program activities and the grievance redress mechanism (GRM) is in place and functional to receive, review and settle the complaints on implementation of the Program activities, if any. The Program Team is satisfied with the ES systems assessment and the finalized Addendum of the ESSA.

6.31 On the social aspects, the Program would improve the resilience of vulnerable groups and ecosystems to climate shocks that would help to protect farmers against climate risks such as droughts, floods and sandstorms, as the results would reduce poverty and economic losses. Meteorological services improved through the Program would enable better climate response preparations. Supports under the Program, especially the RA.2.2, would reduce soil erosion and improve water and air quality and water cycle regulation. The Program is designed to promote social inclusion and enhance the resilience of vulnerable groups against climate shocks. The Program would create green employment while it strengthens sustainable date cultivation in oases through creating and upgrading cooperatives. The initiatives aim to lower poverty levels and enhance livelihood pursuits and marginal group empowerment for inclusive development, which also ensures environmental sustainability.

6.32 The updated ESSA results show that the Program activities could also pose potential social risks and impacts. Rehabilitation of meteorological stations, as with any construction activities, could lead to risks related to working conditions and occupational health and safety. Additionally, social risks could also be associated with the potential exclusion of vulnerable groups and informal enterprises, SMEs—companies currently employed in the non-green sectors—for which the transition to the green economy could be too expensive or difficult to access.

6.33 Furthermore, the updated ESSA shows that potential social risk could arise from the implementation of RA 2.2 and RA 2.3 due to the potential exclusion of vulnerable groups from accessing natural resources, the impacts of labor influx and conflicts related to competing use of

scarce resources i.e., land and water. Particular to the newly included activities in the Program, potential risks could emerge from waste, chemicals, emissions and biodiversity linked to research activities on palm and argan trees as well as labor influx and occupational, health and safety issues related to the rehabilitation works of *khettaras* and *seguías*. Land acquisition impacts remain minimal as they mainly involve interventions in the public hydraulic domain or plantations on collective lands already mobilized within the framework of agricultural programs. Non-structuring activities (such as support to agricultural cooperatives, awareness-raising among water users, support for applied climate research in partnership with INRA and others) do not anticipate ES risks or impacts.

6.34 The assessed potential ES risks and impacts of the Program (parent program and newly included, upscales/restructured activities) are considered moderate and reversible. These risks and impacts have been well-documented and remain manageable within the framework of the existing national systems with the help of proper management measures, the technical design of the structures is monitored and responsible planning conducted during implementation.

6.35 Overall, Morocco's legal and policy framework is considered sufficient to address the identified ES risks that may arise during program implementation. The DIAEA will act as a new implementing agency responsible for the structural activities related to the rehabilitation of *khettaras* and *seguías*. Nonetheless, as assessed during the ESSA, the DIAEA has solid experience in ES management and implementation. The Environmental and Social Technical Manual (ESTM), which was prepared to align practices, enhance institutional capacity and maintain oversight of the Program's ES commitments, has been updated. The ESTM specifies the agreed measures to strengthen the areas of the existing ES systems applicable to the Program, the detailed guidance on implementation and monitoring of the agreed measures and the standard clauses to be included in bidding documents that must be prepared prior to the commencement of works whenever required by the applicable government's regulations. The ES management under the parent program is rated by World Bank in the updated ESSA as "Satisfactory" as the planned measures of the parent's PAP have either been achieved or are currently being implemented, reflecting the implementing agencies' performance and commitment to ES management. This demonstrates strong institutional ownership of the ES instruments by the implementing agencies and indicates that the parent program's ES performance is satisfactory and consistent with the initial commitments. Actions related to the establishment of a dedicated budget, the designation of ES focal points by all involved agencies, the appointment of an ES specialist within the PMU, as well as the implementation of the GRM, have been fully carried out.

6.36 Following the recommendations of the ESSA and ESSA Addendum, actions to strengthen the Program's ES systems, include (a) designation of ES focal points for entities joining the Program, (b) continue implementation of capacity building measures as envisaged in PAP and (c) updating the ESTM as a guiding tool to manage ES risks and impacts of the entire Program and establishing an ES reporting system. The ESTM incorporates the new and scaled up/restructured activities, whether structural (water infrastructure, climate-resilient plantations, expansion of the state climate network) or non-structural (applied research, local governance, awareness-raising).

6.37 Activities that the Bank determines are likely to have significant ES adverse impacts (Category A) and the activities that are in AIIB's ES Exclusion List (ESEL) are not eligible for financing under the RBF. In addition, as discussed and agreed with the relevant stakeholders, activities that will be implemented in protected areas or biodiversity areas as defined by national law and in critical natural habitats areas, activities that would adversely affect places of cultural significance and protected historical/archaeological assets (both natural and human-made) and activities that are non-compliant with national ES assessment process are excluded from the RBF Program.

6.38 Stakeholder consultations to inform the ESSA Addendum began during the early stages of preparation. Public consultations on the ESSA Addendum involved both Program stakeholders and affected parties. The ESSA Addendum includes the consultation minutes and a summary of how stakeholder comments have been addressed in the document.

6.39 Morocco has established grievance mechanisms at both institutional and constitutional levels, with multiple channels in place to support independence and accessibility, including at the local level. The Program will ensure these systems are inclusive, accepting anonymous grievances when related to activities supported by the Program.

6.40 The Program will be co-financed with the World Bank. AIIB has agreed that the World Bank's ES policies and procedures will apply to this Program. Pursuant to the agreement with the World Bank, the World Bank's independent accountability mechanism (IAM), the Inspection Panel, will handle submissions relating to ES issues under the Program. Consequently, in accordance with the Bank's Policy on Project-affected People's Mechanism (PPM), submissions to the PPM under this Program will not be eligible for consideration by the PPM.

6.41 The ESSA Addendum and a summary in the local language (Arabic) will be disclosed by the Program implementing agency on its website and the program public areas. AIIB will also disclose the documents prior to the final approval of the Program.

6.42 The Program builds on the existing M&E systems of each implementing entity, with streamlined reporting to the MEF upon activity completion and biannually, through established channels. The PIU coordinates monitoring across Results Areas, ensures data quality and submits to the World Bank and AIIB: (a) biannual progress reports, (b) a midterm review and (c) a final report to inform the Implementation Completion and Results Report. The World Bank is the lead co-financier and will supervise the Program and serve as the focal point for the AIIB vis-à-vis the Borrower.

6.43 **Gender.** Consultations have been conducted with direct stakeholders and other interested parties during the ESSA and its update on the potential gender impacts of the program activities, gender benefits, gender participation and inclusion and gender action plan. A range of gender-related activities have been identified for implementation by the relevant agencies. For example, ANEF will provide women-friendly extension services, install toilets in peri-urban forests and safeguard gender-specific non-timber resources. ADA will integrate measures addressing sexual

abuse and harassment into program activities, including the development of screening and prevention protocols (such as mandatory codes of conduct). In addition, a key indicator of the Program activities financed by AIIB includes the percentage of women and youth participating in service cooperatives created or upgraded in the date palm sector. The date palm sector is a vital industry for women, offering income opportunities, supporting household livelihoods and enabling engagement in processing, marketing and value-added activities. Furthermore, a Gender Action Plans is being prepared by ANEF and ANDZOA to manage gender impacts and ensure women's participation and benefits throughout program implementation.

F. Operational Policy on International Relations (OPIR)

6.44 The Program activities are carried out in the following surface and groundwater systems in the Draa, Ziz, Rheris, Guir and Maider river basins as well as aquifers including Errachidia, Figuig, Ain Beni Mathar and Tindouf, which are shared with Algeria and classify as International Waterways under the Operational Policy on International Relations (OPIR). In coordination with the WB, the Bank has carried out an assessment of potential impacts on the relevant International Waterways within the Program Boundary. The Bank has benefited from the information and similar assessment results shared by the WB as well as related documents shared by the government. The WB went through similar exercises during the parent program preparation and a recent updated assessment under the WB's Operations Policy 7.50 (OP 7.50), Projects on International Waterways. The WB's assessment confirmed that the Program would not adversely change the quantity or quality of water flows to other riparian and would not be adversely affected by the other riparian's possible water use. No further update is required for the proposed Program as the activities supported by this Program are also within the same scope as the original assessment. Therefore, the WB did not require a notification to the riparian country.

6.45 After an analysis based on review of related documents and discussions with the World Bank team, it can be concluded that the Program's hydrological footprint is minimal, localized and environmentally beneficial. Only minimal effects on the other riparian to water quantity, quality, or availability timing are expected. On the contrary, the Program enhances recharge, reduces pollution, and improves efficiency of water use within Moroccan territory. As a result, the notification requirement pursuant to Sub-section 3.3 (c) (i) of the OPIR, does not apply.

G. Risk Assessment

6.46 **The overall risk to the Program objectives is Medium.** Risk rating is informed by the aforementioned assessments. Substantial risks are associated with the macroeconomic situation, institutional capacity for implementation and sustainability, fiduciary, stakeholders and ES.

6.47 The macroeconomic risk of the Program is rated Medium due to several factors. Global market conditions, the recurring impact of climate change and frequent droughts are putting pressure on commodity prices, potentially hindering Morocco's post-COVID-19 economic recovery. These challenges may further reduce exports, tourism receipts and foreign direct investment, while inflationary pressures continue to erode household purchasing power and

consumption. Additionally, tightening monetary policies have increased domestic borrowing costs, which could strain the government's fiscal position and hinder efforts to control the rising debt-to-GDP ratio. The accumulated global debt may also trigger financial instability, affecting Morocco's ability to access external finance or raising the cost of financing. Despite these challenges, the government's New Development Model and reform agenda aim to improve Morocco's attractiveness for private investment, particularly in high-value-added sectors. The Climate Program plays a crucial role in addressing climate-related risks, both physical and transitional, and will enhance resilience to the impacts of climate change. The Program will also help mitigate the economic vulnerabilities caused by environmental stresses. To further strengthen its financial position, Morocco has secured a USD5 billion precautionary Flexible Credit Line from the International Monetary Fund (IMF), boosting its external financial buffers and helping mitigate residual macroeconomic risks.

6.48 The institutional capacity for implementation and sustainability risk is rated Medium. Climate change is inherently a multi-sectoral challenge that requires a "whole-of-government" approach, moving away from the traditional siloed sectoral strategies. As such, the Program will involve various institutions across different sectors, which may lead to coordination challenges. These risks will be mitigated through the following measures: (a) leverage the prior experience of many entities with World Bank PforR programs and address identified capacity gaps through targeted measures outlined in the PAP; (b) carry out a comprehensive TA program supported by the World Bank, AFD and GIZ to address capacity gaps and facilitate the adoption of innovative program features and (c) implement effective coordination mechanisms at both technical and policy levels, as identified during the preparation phase. The MEF, with its strong experience in multi-sectoral coordination (e.g., Blue Economy PforR and Morocco Public Sector Performance Ennajaa PforR), will leverage an innovative collaborative leadership approach to foster results-driven collaboration. The PIU at MEF, alongside coordination mechanisms at the technical level (e.g., the Climate Unit and other technical committees), will ensure daily management, while the Steering Committee will oversee policy-level coordination.

6.49 Fiduciary risk is rated Medium due to the involvement of multiple entities, some of which lack experience with the PforR instrument. Key risks include: (a) entities like ANDZOA and DGM needing capacity strengthening at both central and decentralized levels; (b) challenges with the new procurement decree;¹⁰ (c) inadequate procurement complaints handling; (d) lack of procurement performance reporting mechanisms; (e) absence of suspension and debarment checks of both World Bank and the AIIB debarment list; (f) delays in financial reporting and statements and (g) delays in implementation due to inefficient fiduciary coordination and financial consolidation. To mitigate these risks, the following measures will be implemented: (a) World Bank-led training for entities on fiduciary requirements; (b) capacity-building on the new procurement decree, including targeted training and updated bidding documents; (c) creation of a procurement complaints register; (d) semi-annual procurement performance reporting; (e) inclusion of eligibility checks for debarred or suspended entities on both the World Bank and AIIB

¹⁰ The government has recently adopted a new national public procurement decree (PPD) No2-22-431, the scope of which is now enlarged to include public entities besides ministries and local governments. The new decree includes several enhancements including the introduction of rated criteria, the most advantageous bid, the competitive dialogue, and the establishment of an observatory for public procurement.

debarment list in procurement documents; (f) fiduciary capacity-building for ADA, DSS, DIAEA and ANDZOA, with monitoring and evaluation systems for enhanced fiduciary implementation and (g) review of interim financial reports by the World Bank's FM team to ensure timely financial statements.

6.50 The Program's ES risks are rated Medium due to its innovative approach, institutional complexity, geographic dispersion, medium to large-scale investments and potential cumulative environmental and social impacts. The PAP details the agreed actions to strengthen the ES systems to assess and manage the ES risks and impacts of the Program. The PAP also outlines stakeholder engagement requirements. Morocco has strong grievance mechanisms at both institutional and constitutional levels, ensuring independence and accessibility, including at the local level. The Program will ensure these systems are inclusive, accepting anonymous grievances when related to activities supported by the Climate PforR and RBF Program. Agreed activities under the Program include addressing vulnerable groups, developing gender assessments and managing ecosystem services through improved compensation and livelihood restoration mechanisms for affected communities.

H. RBF Program Action Plan

Table 7. RBF Program Action Plan

| Action Description | DLI | Due Date | Responsible Party | Completion Measurement** |
|--|------------|-----------------|--------------------------|---|
| A PIU is set up at MEF/DB with adequate staffing, including one fulltime Environmental and Social specialist and Fiduciary Focal Points. | All | Completed | MEF | PIU and the Implementing Agencies are staffed (with adequate ES and Fiduciary personnel) and remains well-staffed throughout the Program implementation. |
| The Steering Committee is established. | All | Completed | MEF | The Steering Committee is composed of representatives of the entities and institutions participating in the implementation, monitoring and evaluation of the Program, responsible for strategic oversight and guidance under the Program. |

| Action Description | DLI | Due Date | Responsible Party | Completion Measurement** |
|--|------|------------------|-----------------------|--|
| A dedicated budget is earmarked for the implementation and monitoring of the ESSA. | All | Completed | Implementing agencies | Implementing agencies will make sure appropriate budget is allocated to ES actions included in the PAP throughout the implementation of the Program. |
| ES Focal Points are nominated by each Implementing Agency. | All | Completed | Implementing Agencies | ES Focal Points are nominated by each Implementing Agency and ensure coordination with the ES specialist in the PMU. |
| Capacity building on ES risk management of relevant stakeholders, including contractors. | All | Completed | MEF/ES Focal Point | The training module is prepared six months after effectiveness and is implemented continuously throughout the Program, as needed. |
| Preparation of the ES Technical Manual for the Program. | All | In Progress | ES Focal points | ES Technical Manual is developed and is acceptable to the Bank: it includes guidance on accidents/incidents notification, management of contractors, Stakeholder Engagement Plans for the respective Implementing Agencies and grievance mechanisms. |
| OP 7.50 Verification Protocol | DLI9 | Every six months | DRPE, and MEF | Semi-annual reports provided on water resources quality and piezometric level monitoring and analysis. |

| Action Description | DLI | Due Date | Responsible Party | Completion Measurement** |
|--|------|---------------|-------------------|---|
| | | | | Reports prepared by DRPE and the concerned Hydraulic Basin Agency. |
| The Mechanism for compensation and livelihood restoration of forest communities - as per decree order No. 1855-01 of March 21, 2002, and amended by Order No. 714-22 of March 2, 2022 - is strengthened by the ANEF. | NA | In Progress | ANEF | The "Mechanism" is consulted with local communities at least biannually, it is gender sensitive and site-specific. It includes M&E tools. It remains valid throughout the implementation period of the Program. |
| All Implementing Agencies maintain adequate budget planning. | NA | Completed | World Bank/PIU | Development of an annual Work Plan and Budgeted (AWPB) by Implementing Agencies to be transmitted to the PIU and the Bank for approval. |
| ANEF finalizes the preparation of its Gender Action Plan. | NA | Completed | ANEF | The Gender Action Plan is finalized and is acceptable to the Bank. It remains valid throughout the implementation period of the Program. |
| The ANDZOA prepares a Gender Action Assessment. | DLI8 | June 2026 | ANDZOA | The Gender Action Assessment is prepared and is acceptable to the Bank. It remains valid throughout the implementation period of the Program. |
| Electronic waste management is prepared as part of the Technical Manual. | DLI5 | December 2025 | DGM | The e-waste management modalities are included in the ES technical manual. |

| Action Description | DLI | Due Date | Responsible Party | Completion Measurement** |
|--|-----|------------|--------------------|--|
| Adequate fiduciary coordination mechanisms due to the inclusion of several entities from various ministries and central and regional entities in the program. | NA | Completed | PIU/IAS | (a) Establishment of a PIU at DB, supported by a dedicated fiduciary focal point and/or an FM officer, with enhanced fiduciary coordination with implementing entities (b) ADA, ANDZOA, DDFP, DSS, DIAEA,DPRE, ANEF established fiduciary focal points for fiduciary. |
| Support by the World Bank teams through training programs for entities with capacity challenges on fiduciary requirements under PforR, including strengthening fiduciary coordination arrangements at the national and decentralized levels under the Program. | All | Continuous | MEF/PIU | A capacity building training of implementing entities fiduciary staff and regular trainings refreshers throughout the Program's implementation period are delivered. |
| Delivery of fiduciary capacity building programs to ADA, ANDZOA and ANEF, and other IAs, at central and local levels and implementation of robust M&E MIS (modules in FM and Procurement). | All | Continuous | World Bank/PIU/IAs | Fiduciary capacity and coordination are strengthened for ADA, ANEF, DSS, DIAEA and ANZOA and all IEs, enabling production of acceptable bi-annual consolidated fiduciary reporting. |
| Review by the FM Bank team of semester interim financial reports (IFRs) and accounting conventions used to prepare those, to ensure timely expenditures and annual financial statements. | NA | Continuous | PIU/World Bank | Acceptable semester IFRs and annual audited financial statements prepared and submitted on time. |

| Action Description | DLI | Due Date | Responsible Party | Completion Measurement** |
|--|-----|------------|-------------------|---|
| Maintain a register of all procurement-related complaints and ensure that they are treated promptly. | All | Continuous | PIU/IAs | A register is designed by PIU with AIIB support – and disseminated to all central and regional entities involved in the program's implementation for mandatory use by them to track all procurement-related complaints. |
| Develop and implement a program to enhance capacity building on the new procurement decree. | All | Continuous | PIU | A capacity building program on the new procurement decree for procurement officers and other stakeholders is delivered. |
| Include in the bidding documents an eligibility check clause. | NA | Continuous | PIU/IAs | An eligibility check clause is included in bidding documents. Implementing agencies will ensure that any person or entity debarred or suspended by the Bank is not awarded the contract or otherwise allowed to participate in or benefit from the Program. |

Annex 1: Results Monitoring Framework¹

| Results Areas Supported by RBF Program | PO/Outcome Indicators (Key indicators to measure the achievement of each aspect of the PO statement) | Results Indicators (critical processes, outputs or intermediate outcomes indicators needed to achieve each aspect of the PO) | DLI # | Unit of Meas. | Baseline (2025) | End Target (2029) |
|--|---|---|-------|----------------------------|-----------------|-------------------|
| Results Area 1.2 | Climate data systems are strengthened | DLR 5.4 DGM-managed radars are operational. | DLI 5 | Number of radars | 5 | 13 |
| Results Area 2.2 | Climate resilience of vulnerable ecosystems is enhanced | DLR 8.2 Agricultural and/or para-agricultural service cooperatives are created or upgraded. | DLI 8 | Number of cooperatives | 0 | 10 |
| | | DLR 8.2 (disaggregated) Percentage of women and youth in service cooperatives created or upgraded. | DLI 8 | % | 0 | 50 |
| | | DLR 8.3 Agriculture products and by products valorization units in Targeted Oasis Area and argan Area are built and equipped. | DLI 8 | Number of units | 0 | 2 |
| | | DLR 8.4 Species resistant to harsh climatic conditions, such as cactus, carob, argan, olive, date palm, almond, caper, etc. are planted. | DLI 8 | Number of hectares | 0 | 5500 |
| | | IRI 8.1 Targeted research programs on palm trees and argan tree are conducted and disseminated. | DLI 8 | Number of research | 0 | 4 |
| | | DLR 9.4 <i>Khettaras</i> are rehabilitated. | DLI 9 | Number of <i>Khettaras</i> | 0 | 30 |
| | | DLR 9.5 <i>Seguias</i> are rehabilitated. | DLI 9 | Number of kms | 0 | 150 |

¹ Tentative - subject to confirmation during appraisal mission.

Indicator Description

| Indicator Name (#) | Description (Clear definition etc.) | Frequency | Data Source | Methodology for data collection | Responsibility for Data Collection | DLIs | |
|--------------------|---|-----------|-----------------------|---|------------------------------------|---|--------------------------------------|
| | | | | | | Responsibility for Data Verification | Scalability of Disbursement (Yes/No) |
| DLR 5.4 | Radars (Band C and X) observation equipment to improve the quantity and quality of spatial and temporal climate data. | Annually | Data provided by DGM | DGM Annual Activity Report | DGM | Inspectorate General of Equipment and Water (IGE), audit and control body under the MEE | Yes |
| DLR 8.2 | Agricultural and/or para-agricultural service cooperatives are created or upgraded. Percentage of women and youth in service cooperatives created or upgraded. | Annually | Data provided by ADA | Review of reports provided by ADA and membership lists of new and improved cooperatives | ADA | Inspectorate General of Agriculture (IGA), audit and control body under the Ministry of Agriculture | Yes |
| DLR 8.3 | Agriculture products and by products valorization units in Targeted Oasis Area and Argan Area are built and equipped. | Annually | Data provided by ADA | Review of reports provided by ADA | ADA | IGA | Yes |
| DLR 8.4 | Species resistant to harsh climatic conditions, such as cactus, carob, argan, olive, date palm, almond, caper, etc. are planted. | Annually | Data provided by ADA | Review of reports provided by ADA | ADA | IGA | Yes |
| IRI 8.5 | Targeted research programs on palm tree and argan tree are | Annually | Data provided by INRA | Review of reports provided by INRA | INRA | IGA | Yes |

| Indicator Name (#) | Description (Clear definition etc.) | Frequency | Data Source | Methodology for data collection | Responsibility for Data Collection | DLIs | |
|----------------------|---|-----------|---|--|------------------------------------|--------------------------------------|--------------------------------------|
| | | | | | | Responsibility for Data Verification | Scalability of Disbursement (Yes/No) |
| | conducted and disseminated. | | | | | | |
| DLR 9.4 / 9.5 | <i>Khettaras and Seguias</i> are rehabilitated. | Annually | Annual report of DIAEA and ADA with supporting data and written evidence of implementation. | A consolidated annual report of the activities undertaken by the DIAEA and ADA in the concerned oasis and argan areas. The report also includes the quality of implementation. | DIAEA and ADA | IGA | Yes |

Annex 2: Disbursement Linked Indicators, Disbursement Arrangements and Verification Protocols¹

Indicative Disbursement-Linked Indicator Matrix

| | Total Financing Allocated to DLI (in million USD) | As % of Total Financing Amount | DLI Baseline | Unit of Measure | Indicative timeline for DLI achievement | | | | |
|-------------------------------|--|---|-----------------|--|---|------------------------|------------------------|---------------------|---------------------|
| | | | | | Year or Period 1 | Year or Period 2 | Year or Period 3 | Year or Period 4 | Year or Period 5 |
| DLI 5 | | | | | | | | | |
| Allocated amount: | 64 | 32 | 5 | Number of radars | 16 | 16 | 16 | 16 | |
| DLI 8 | | | | | | | | | |
| Allocated amount: | 56 | 28 | 0 | Number of cooperativ e, valorization units, hectares, researches | 14 | 14 | 14 | 14 | |
| DLI 9 | | | | | | | | | |
| Allocated amount: | 80 | 40 | 0 | Number of <i>Khettaras</i> and Nb of kms of <i>Seguias</i> | 20 | 20 | 20 | 20 | |
| Total Financing Allocated: | 200 | 100 | | | 50 | 50 | 50 | 50 | |

¹ Tentative - subject to confirmation during appraisal mission.

DLI Verification Protocol Table

| # | DLI | Definition/ Description of achievement | Scalability of Disbursements (Yes/No) | Protocol to evaluate achievement of the DLI and data/result verification | | |
|---|---------|--|---|--|---|---|
| | | | | Data source/agency | Verification Entity | Procedure |
| 1 | DLR 5.4 | Radars (Band C and X) observation equipment to improve the quantity and quality of spatial and temporal climate data are operational. | Yes | Data provided by DGM | Inspectorate General of Equipment and Water (IGE), audit and control body under the MEE | The IGE will verify how many radars are connected to the DGM-managed data center by analyzing information provided by the DGM. |
| 2 | DLR 8.2 | Agricultural and/or para-agricultural service cooperatives are created or upgraded Percentage of women and youth in service cooperatives created or upgraded. | Yes | Data provided by ADA | Inspectorate General of Agriculture (IGA), audit and control body under the Ministry of Agriculture | The IGA will carry out a systematic documentary audit, reviewing the reports/notes provided by MAPMDREF (ADA). Annual summary note prepared by the ADA on the basis of data provided by the DRAs/ONCAs concerned, as of Dec. 31 of each year, specifying the number of service cooperatives created or upgraded as part of solidarity farming projects in the oasis areas and argan areas. The IGA will examine the reports/notes provided on the number of cooperatives created or upgraded in the oases working in the agricultural production systems and may make field visits to see the support actions and/or equipment provided to a sample of these cooperatives, in accordance with the provisions in the Program Operational Manual (POM). |
| 3 | DLR 8.3 | Agriculture products and by products | Yes | Data provided by ADA | IGA | Verification of the indicator will be based on the reports/notes provided by MAPMDREF (ADA). Annual summary note prepared by |

| # | DLI | Definition/ Description of achievement | Scalability of Disbursements (Yes/No) | Protocol to evaluate achievement of the DLI and data/result verification | | |
|---|---------------|--|---|--|------------------------|--|
| | | | | Data source/agency | Verification Entity | Procedure |
| | | valorization units in Targeted Oasis Area and Argan Area are built and equipped. | | | | ADA on the basis of data provided by the DRAs concerned, as of Dec. 31 of each year, specifying the number of recovery units built and equipped within the framework of solidarity agriculture projects in the oasis areas and argan areas. The IGA will examine the reports/notes provided on the number of recovery units built and equipped to level in the oases and argan areas working in the value chain of date palm and others agriculture products may make field visits (onsite) to see the implementation of recovery units, in accordance with the provisions in the POM. |
| 4 | DLR 8.4 | Species resistant to harsh climatic conditions, such as cactus, carob, argan, olive, date palm, almond, caper, etc. are planted. | Yes | Data provided by ADA | IGA | Verification of the indicator will be based on the reports/notes provided by MAPMDREF (ADA). |
| 5 | IRI 8.1 | Targeted research programs on palm tree and argan tree are conducted and disseminated. | Yes | Data provided by INRA | IGA | Verification of the indicator will be based on the reports/notes provided by INRA. |
| 6 | DLR 9.4 / 9.5 | <i>Khetaras</i> and <i>Seguias</i> are rehabilitated and operational. | Yes | Annual report of relevant DIAEA, and ADA with supporting data and | IGA | The IGA will combine (a) a documentary review of the documents attesting of the completion of the small infrastructure (CPS, Decomptes, Procès Verbaux de réception, reports of the end of work) shared by |

| # | DLI | Definition/ Description of achievement | Scalability of Disbursements (Yes/No) | Protocol to evaluate achievement of the DLI and data/result verification | | |
|---|-----|--|---|--|------------------------|---|
| | | | | Data source/agency | Verification Entity | Procedure |
| | | | | written evidence of implementation. | | DIAEA and ADA and (b) control field visits for quality control (sampling modalities for field visit control will be defined in the POM). |

Annex 3: Country Credit Fact Sheet

1. **Background.** Morocco is a lower-middle-income economy in North Africa with a population of around 37 million, and income per capita of around USD4,400. Over the past two decades Morocco has made significant progress in economic development, underpinned by a stable political environment, sound macroeconomic policies and a solid institutional framework.

2. Morocco's economy has traditionally been dependent on natural resources. The rainfed agriculture, accounting for more than 10% of gross domestic product (GDP) and around 30% of employment, remains dependent on weather and vulnerable to droughts: the severity of which has increased under climate change. Tourism receipts and remittances (both about 7% of GDP) are important additional income sources. At the same time, Morocco is dependent on imports of energy (delivering 90% of its energy needs), food and many consumer items.

3. Growth slowed in the 2010s, following the crisis in the Eurozone debt markets and the 2014-2015 slump in commodity prices: from around 5% each year during the 2000s to around 3% during 2015-2019. The legacy of the state-led development model, low competitiveness, relatively high unemployment, and pervasive skill mismatches have been a drag on growth.

4. In response to these challenges, the authorities have embarked on a decisive effort to strategically diversify the economy. They have been positioning Morocco as a trade hub between Europe and Africa and steering the economy into higher-value-added products. For example, they have managed to successfully plug Morocco into European value chains of the automotive, aeronautical and textile sectors. Thanks to this, exports from the manufacturing sector have grown, benefiting from a robust inflow of foreign direct investment (FDI). In April 2021, the government unveiled an ambitious program of broad-based reforms, the "New Development Model," aimed at modernizing economic management to make the economy more market-oriented, business friendly and competitive, helping to ensure that growth is more inclusive.

| Selected indicators | 2022 | 2023 | 2024* | 2025* | 2026* | 2027* | 2028* |
|--------------------------------|------|------|-------|-------|-------|-------|-------|
| GDP growth 1/ | 1.5 | 3.4 | 3.2 | 3.9 | 3.7 | 3.6 | 3.6 |
| Inflation (average) 1/ | 6.6 | 6.1 | 0.9 | 2.2 | 2.3 | 2.2 | 2.1 |
| Fiscal balance | -5.4 | -4.5 | -4.1 | -3.9 | -3.4 | -3.3 | -3.2 |
| Gross public debt | 71.5 | 69.5 | 70.0 | 68.9 | 67.7 | 66.8 | 66.2 |
| Current account | -3.6 | -0.6 | -1.5 | -2.0 | -2.2 | -2.6 | -2.9 |
| Total external debt | 46.9 | 50.2 | 47.8 | 49.2 | 50.0 | 50.9 | 50.2 |
| Central Bank reserves (USD bn) | 32.3 | 36.3 | 38.3 | 40.6 | - | - | - |
| Exchange rate (MAD/USD) 2/ | 10.4 | 9.9 | 10.1 | 9.0 | - | - | - |

Source: IMF April 2025 WEO and country report 25/087; in percent of GDP unless stated otherwise; * = projections;

Notes: 1/ percent change, year-on-year, average; 2/ data from the central bank as of Aug 13, 2025

5. **Recent Developments.** In recent years, Morocco has managed to withstand multiple negative external and domestic shocks, including the coronavirus disease (COVID-19) pandemic, geopolitical issues, global monetary tightening and droughts. This resilience is attributed to the strong institutional framework and robust countercyclical macroeconomic and social policies.

6. Growth was 3.2% in 2024, driven by a below-average agricultural harvest. Nevertheless, activity in the non-agricultural sector and domestic demand has remained robust. After the sharp

increase in prices throughout 2022, inflation continued to fall: from a peak of 10.1% in February 2023 to 0.4% in June 2025. The exchange rate peg (to a basket of 60% Euro and 40% USD, with a +/-5% tolerance band), helps control inflation and keep the exchange rate relatively stable.

7. Recent reforms to the tax system support the expansion of the tax base while lowering the tax burden. This led to tax revenues in 2024 being greater than previously expected, with the fiscal deficit on track to meet the 2024 budget target. The ongoing reform of the Organic Budget Law should also introduce a new fiscal rule based on a medium-term debt anchor. Meanwhile, progress in the operationalization of the sovereign wealth fund should aid financing opportunities for SMEs.

8. **Outlook and risks.** Growth is expected to increase to 3.9% in 2025, on the assumption that harvest conditions recover and the non-agricultural sector continues expanding. Inflation is expected to remain around the central bank's target of roughly 2% from 2025 onwards. Near-term risks include a potential slowdown in European markets and uncertainty over rainfall patterns.

9. In the medium run, growth is expected to return to potential, estimated at around 3.5%. These relatively subdued prospects reflect Morocco's structural weaknesses. The dual nature of the economy, climate-related vulnerabilities, relatively high unemployment (13.3%, according to the most recent data), and competitiveness challenges continue to pose obstacles to sustainable development and social stability. That said, the ongoing structural reforms, economic diversification and the push for more private and public investment, if successful, would offer a significant upside.

10. According to the IMF, Morocco's overall risk of sovereign stress is moderate, due to elevated public debt and gross financing needs. Nonetheless, public debt is deemed sustainable, with high probability. Debt is expected to decline slowly over the medium term to around 65% of GDP by 2030, alongside gradual fiscal consolidation. Contingent liabilities include guarantees on state enterprises' debt and subsidized credit schemes. Risks are somewhat mitigated by ample domestic funding sources, low FX portion of debt, long average maturities, authorities' commitment to improving the fiscal framework, solid FX reserves (covering five months of imports), and robust FDIs that finance the external deficit.

11. Morocco has access to a USD4.5 billion IMF FCL precautionary line, renewed in April 2025, which speaks to the recent high quality of economic policies. FCL conditions include: a sustainable external position, a capital account position dominated by private flows, track record of steady access to capital markets at favorable terms, a comfortable level of reserves, sound public finances, sustainable public debt position, low and stable inflation, sound monetary and exchange rate policy frameworks, sound financial system, effective financial sector supervision and data transparency and integrity.

12. Morocco has also been advancing on policy reforms on both mitigation and adaptation aspects. In April 2023, the IMF approved Morocco's access to the Resilience and Sustainability Facility (RSF) in the amount of approximately USD1.32 billion. The reform measures include such mechanisms as (a) a removal of exemption from fossil fuel tax on coal, bitumen, heavy fuel oil,

and base oils for all producers; (b) debt sustainability analysis inclusive of impacts of climate change; (c) a decree to promote groundwater preservation and (d) standards for the disclosure and reporting of climate-related financial risks, in accordance with guidance issued by the International Sustainability Standards Board (ISSB), was issued by the Central Bank of Morocco (Bank Al-Maghrib). This will help mitigate longer term risks from natural disasters and decarbonization. Significant investments have already been made in water infrastructure, while Morocco's abundant solar resources offer more opportunities in the renewable energy sector.

13. Morocco's current sovereign credit ratings are BB+/Ba1. This follows a downgrade in 2020-2021 by Fitch and S&P of their then BBB- rating due to a severe impact of the pandemic and the related perceived deterioration in fiscal strength. Subsequently, S&P revised the outlook to positive in March 2024, reflecting progress on structural reforms and fiscal consolidation. Fitch affirmed a stable outlook in October 2024, and Moody's in March 2025.

Annex 4: Economic Assessment

1. **AIIB Contribution/Value Addition.** The AIIB financing focuses on strengthening the climate resilience of vulnerable ecosystems and communities through a range of activities under RA2, complemented by one activity on climate data under RA1. For the purposes of economic appraisal, a cost–benefit analysis has been undertaken for those interventions that entail capital expenditure and yield quantifiable economic returns. In RBF, detailed cost for each activity is not available. Thus, the resources allocation for DLR 5.4, DLR 8.4 and DLR 9.4 is used as a proxy for costs. Activities that are essentially capacity building and research (such as targeted research programs on palm trees and argan trees), while essential for scaling, knowledge transfer, and long-term impact, their economic benefits are hard to quantify. Thus, these activities are not considered in this analysis. Based on these criteria, this analysis focuses on three activities. On RA1 (1) strengthen the national climate data system; under RA2: (2) oasis ecosystem restoration through climate-resilient tree planting and (3) rehabilitation of small traditional irrigation systems (*khettaras* and *seguias*).

2. **Improved Meteorological Services.** In RA1, the installation of new radars will improve meteorological services and enable deploying a modernized EWS (DLR 5.4) helping to reduce disaster losses related to climate (especially floods and droughts), reduce associated GHG emissions as well as increasing the production in climate-sensitive sectors (like agriculture) and optimizing renewable energy deployment and operations efficiency and thereby reducing reliance on thermal-based power plants. Based on a conservative benchmarking method (Hallegatte, 2012), well-functioning, modern EWS are estimated to reduce disaster-related asset damages by 0.003–0.017% of GDP. Secondly, adding value to weather-sensitive sectors, modern forecasts, translate into gains of approximately 0.025% of GDP. For this analysis, the actual benefits from the new radars and improved services are assumed to be only 20% of the potential.

Table A4.1 Potential Annual Benefits Attributed to Modernized Hydrometeorological Services

| Benefit | % GDP [min-max] |
|---|-----------------|
| Reduced disaster losses due to improved EWS | 0.003% - 0.017% |
| Increased productivity in weather-sensitive sector activities | 0.025% - 0.3% |

3. **Oasis Ecosystem Restoration:** The revegetation activity under DLR 8.4 plants 5,500 hectares (ha) of multipurpose species (cactus, carob, argan, olive, almond, caper, among others) adapted to Morocco's arid and semi-arid zones. The economic value arises from a combination of GHG reduction and other ecosystem services (such as erosion control, regulation of water flow, fodder etc). The carbon emission reduction is calculated based on latest study in Morocco, where a hectare of woodland/shrubland will reduce 0.9 ton of carbon emission.¹ The social cost price of carbon follows the midpoint estimates from AIIB's CBA guideline in 2023. Regarding other ecosystem services, the revegetation will also generate multiple benefits including limiting soil erosion, increasing water storage, regulating micro-climate and providing raw material/food etc. To estimate these benefits, the Ecosystem Service Valuation Database is used. It provides the

¹ Ghazi, H. et al. 2018. ["Mapping Regulating Services in Marrakesh Safi Region – Morocco."](#) *Journal of Arid Environments*, 159 (December 2018), pp. 54-65.

average of standardized values of ecosystem services for specific biomes based on 4,042 global studies. The value of woodland and shrubland is estimated to be Int\$769 /hectare/year at 2020 price levels (this number excludes the benefits derived from the local species planted such as cactus, carob, argan, olive, almond, caper, etc.). When calculating the economic benefit, the value is converted to the current value of USD (2025).

4. **Rehabilitation of Small Traditional Irrigation Systems:** Restoring *Khettaras* and *Seguia* Canals will improve water conveyance efficiency and raise water availability, leading to higher agricultural productivity. The intervention covers provinces where date palms is the major crop grown. To estimate the date production gain from irrigated lands, we used information provided in World Bank's economic analysis (from ANDZOA): the average data production of 2,500 kg per hectare and price of dates at MAD20 per kilogram (farm gate price). The total area of lands benefit from the rehabilitation is estimated to be 1,130.3 ha, as the intervention will restore 30 out of 105 *khettaras* covering 3,956 ha. A study in Morocco² suggest *khettaras* rehabilitation intervention could lead to around 20% of increase in irrigation water amount. This could translate to around 20% yield increase based on a review of literature.³ Thus a 20% yield increase with an annual 2% increase in date price is applied in the analysis. In calculating the net gain, the variable cost associated with higher production (temporary labor etc.) of MAD1.77 per kilogram is also deducted based on recent literature.⁴

5. **Summary.** The economic analysis of the cofinancing, derived from the activities included in the AIIB financing, results in a Net Present Value (NPV) of USD89.80 million with an internal rate of return (IRR) to 12.9%, and Present Value benefit-cost to 2.89. A full CBA can be found in Table A4.2, listing major benefits and cost items.

Table A4.2 Economic Benefits and Costs Flow (USD)

| Years | Capex | DLR 5.4: benefits from improved Hydromet services (MM USD) | DLR 8.4: Benefits from GHG saving (MM USD) | DLR 8.4: Other benefits from ecosystem services (MM USD) | DLR 9. 4 Agriculture production increased (MM USD) | Total Benefit | Net benefit |
|-------|-------|---|--|--|--|---------------|-------------|
| 2026 | 38.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -38.75 |
| 2027 | 38.75 | 0.00 | 0.00 | 0.00 | 2.75 | 2.75 | -36.00 |
| 2028 | 38.75 | 0.00 | 0.30 | 1.70 | 2.25 | 4.24 | -34.51 |
| 2029 | 38.75 | 0.00 | 0.61 | 3.39 | 4.49 | 8.50 | -30.25 |
| 2030 | 0.00 | 10.69 | 0.94 | 5.09 | 6.74 | 23.46 | 23.46 |
| 2031 | 0.00 | 11.07 | 0.95 | 5.09 | 6.74 | 23.85 | 23.85 |
| 2032 | 0.00 | 11.47 | 0.98 | 5.09 | 6.74 | 24.27 | 24.27 |
| 2033 | 0.00 | 11.88 | 1.00 | 5.09 | 6.74 | 24.70 | 24.70 |
| 2034 | 0.00 | 12.30 | 1.03 | 5.09 | 6.74 | 25.15 | 25.15 |
| 2035 | 0.00 | 12.74 | 1.05 | 5.09 | 6.74 | 25.62 | 25.62 |
| 2036 | 0.00 | 13.19 | 1.08 | 5.09 | 6.74 | 26.09 | 26.09 |
| 2037 | 0.00 | 13.66 | 1.10 | 5.09 | 6.74 | 26.59 | 26.59 |
| 2038 | 0.00 | 14.15 | 1.13 | 5.09 | 6.74 | 27.10 | 27.10 |

² Japan International Cooperation Agency. 2005. [The Development Study on Rural Community Development Project in Semi-arid East Atlas Regions With Khettara Rehabilitation in the Kingdom of Morocco: Manual for Khettara Water Use.](#)

³ Ghazzawy, H. S., Sobaih, A. E. E. and Mansour, H. A. 2022. "The Role of Micro-Irrigation Systems in Date Palm Production and Quality: Implications for Sustainable Investment." *Agriculture*, 12 (12).

⁴ Bakouri, Z. E. et al. 2021. "Estimation of the Production Cost of Date Fruits of Cultivar Majhoul (*Phoenix dactylifera* L.) and Evaluation of the Moroccan Competitiveness towards the Major Exporting Regions in the World." *Agricultural Sciences*, 12 (11).

| Years | Capex | DLR 5.4: benefits from improved Hydromet services (MM USD) | DLR 8.4: Benefits from GHG saving (MM USD) | DLR 8.4: Other benefits from ecosystem services (MM USD) | DLR 9. 4 Agriculture production increased (MM USD) | Total Benefit | Net benefit |
|-------|--------|---|--|--|--|---------------|-------------|
| 2039 | 0.00 | 14.65 | 1.15 | 5.09 | 6.74 | 27.63 | 27.63 |
| 2040 | 0.00 | 15.18 | 1.18 | 5.09 | 6.74 | 28.18 | 28.18 |
| 2041 | 0.00 | 15.72 | 1.20 | 5.09 | 6.74 | 28.74 | 28.74 |
| 2042 | 0.00 | 16.28 | 1.22 | 5.09 | 6.74 | 29.33 | 29.33 |
| 2043 | 0.00 | 16.86 | 1.25 | 5.09 | 6.74 | 29.93 | 29.93 |
| 2044 | 0.00 | 17.46 | 1.29 | 5.09 | 6.74 | 30.57 | 30.57 |
| 2045 | 0.00 | 18.08 | 1.29 | 5.09 | 6.74 | 31.19 | 31.19 |
| Total | 155.00 | 225.37 | 18.74 | 86.49 | 117.29 | 447.89 | 292.89 |

6. A sensitivity test was performed for: (a) 10% cost increase, (b) 10% benefit reduction and (c) combined cost increase and benefit reduction (Table A4.3). In all cases, the EIRR remains above the 6% discount rate, confirming the Program's economic viability.

Table A4.3 Sensitivity Analysis

| | Benefit -10% | Cost +10% | Cost +10% Benefit -10% |
|--------------------|---------------------|------------------|----------------------------------|
| EIRR | 11.4% | 11.5% | 10.0% |
| ENPV (USD million) | 67.39 | 76.37 | 53.97 |

Annex 5: Alignment with the Climate Goals of the Paris Agreement and Climate Finance Assessment

The Paris Agreement Alignment Assessment

The Paris Agreement alignment assessment was conducted in accordance with the Joint MDB Methodological Principles for Assessing Paris Agreement Alignment of New Operations – Policy-Based Lending (PBL), version 1.0, June 2023, as the most applicable framework for Results-Based Financing operations. By definition, an operation needs to be aligned with both the mitigation and climate adaptation and resilience goals of the Paris Agreement to be considered “Paris-aligned.” The following steps were followed with the corresponding assessment results provided below.

Step 1: Assessing Consistency of the Results-Based Financing (RBF) Program with the Country’s Priorities on Climate Change.

Yes, the Morocco Climate operation results areas RA1.2 and RA2.2 and activities related to DLR#5.4 (radar network expansion); DLR#8.2-8.5 (oasis ecosystem resilience); and DLR#9.4-9.5 (traditional irrigation rehabilitation) co-financed by AIIB support Morocco’s climate change priorities as outlined in the updated National Determined Contribution (NDC), Long Term Low-Carbon Strategy (LTS) and sectoral strategies. The Program contributes to GHG emission reductions through carbon sequestration via reforestation and sustainable agriculture, methane avoidance via date valorization, improved energy efficiency in irrigation and meteorological systems, and the promotion of low-carbon farming practices. At the same time, it strengthens adaptation by enhancing water security, strengthening early warning systems for extreme weather, restoring ecosystems, and improving rural resilience, particularly in vulnerable areas such as oases and argan forests.

Step 2: Assessing the BB1 and BB2 Alignment of the RBF Program.

Yes, the Morocco Climate operation results areas RA1.2 and RA2.2 and activities related to DLR#5.4 (radar network expansion); DLR#8.2-8.5 (oasis ecosystem resilience); and DLR#9.4-9.5 (traditional irrigation rehabilitation) co-financed by AIIB support Morocco’s climate change priorities as outlined in the updated National Determined Contribution (NDC), Long Term Low-Carbon Strategy (LTS) and sectoral strategies. The Program contributes to GHG emission reductions through carbon sequestration via reforestation and sustainable agriculture, methane avoidance via date valorization, improved energy efficiency in irrigation and meteorological systems, and the promotion of low-carbon farming practices. At the same time, it strengthens adaptation by enhancing water security, strengthening early warning systems for extreme weather, restoring ecosystems, and improving rural resilience.

Step 2-Mitigation Alignment – Criterion 1a: Does the RBF program consist of policy actions that support activities that actively contribute or do-no-harm to decarbonization pathways in line with the mitigation goals of the Paris Agreement in all circumstances? (i.e., ‘universally aligned activities’)?

Yes, the activities DLR#5.4; DLR#8.2-8.5; and DLR#9.4-9.5 contribute to decarbonization pathways in line with the mitigation goals of the Paris Agreement as stated in Morocco's NDC and LTS. They directly supports universally aligned activities¹ in Energy (renewable energy, energy efficiency), Agriculture, forestry, land use (reforestation, sustainable forest management, forest conservation, Low-GHG agriculture, climate-smart agriculture), Water (Water supply systems rehabilitation, water efficiency, gravity-based or renewable energy-powered irrigation systems), Research, development, and innovation, and Information and communications technology (ICT).

Step 2-Adaptation Alignment – Criterion 1a: Are risks from climate hazards likely to have an adverse effect on the development objective(s) of the RBF program's policy actions?

No, climate hazards are not expected to affect the development objective of the Program RA1.2 and RA2.2. Reinforcing the meteorological radar coverage and rehabilitation of Morocco's traditional irrigation system (DLR#5.4, DLR#9.4-9.5) are not likely to be affected by the climate hazards. The strengthening local agricultural value chains, which involves reforestation and local agro-production systems, could be subject to some risk from climate hazards, such as drought and extreme heat. However, these risks are explicitly addressed through the introduction of drought- and salinity-tolerant species, improved water-use efficiency, sustainable soil and land management practices, and diversification of farmer income sources. Morocco has also set several strategies and programs to mitigate these risks, aiming to enhance resilience, preparedness and response frameworks for extreme climate events.

The assessment's results confirm that the Program aligns with the climate mitigation and climate adaptation and resilience goals of the Paris Agreement, according to the Joint MDB Methodological Principles for Assessment of Paris Agreement Alignment of New Operations – Policy-Based Lending (PBL), version 1.0, June 2023.

Climate Finance

According to the 2023 Joint Report of Multilateral Development Banks (MDBs)' Climate Finance, results-based financing directly links the disbursement of funds to measurable results in a government-owned program. Proceeds used for activities included in the joint MDB methodology for tracking climate finance count as climate finance. The Program delivers strong dual climate benefits by integrating mitigation and adaptation across all supported activities (Chapter 4). The meteorological radar enhancement (DLR#5.4) supports renewable energy integration and more efficient energy resource management, while strengthening resilience through better early warning and water resource management. Rehabilitation of small traditional hydrological infrastructure such as *khetaras* and *seguias* (DLR#9.4-9.5) safeguards gravity-fed, low-carbon irrigation while enhancing drought resilience and protecting oasis ecosystems. The support to cooperatives and valorization units (DLR#8.2–8.3) promotes low-emission agricultural value chains and reduces post-harvest losses while creating resilient rural livelihoods. Climate-resilient plantations (DLR#8.4) contribute to long-term carbon sequestration, soil restoration, and

¹ Joint MDB Methodological Principles for Assessment of Paris Agreement Alignment of New operations – Direct Investment Lending - List of Activities Considered Universally Aligned with the Paris Agreement's Mitigation Goals or Not Aligned with the Mitigation Goals, Version 1.0, June 2023.

microclimate regulation, while ensuring food and fodder supply under drought conditions. In parallel, the targeted research program on palm and argan trees enhances biomass productivity, valorizes residues into biochar and biofertilizers, and develops stress-tolerant genotypes that secure future resilience. Taken together, these reforms reduce emissions, safeguard ecosystems, and enhance adaptive capacity in Morocco's most vulnerable regions. Thus, the Program contributes 100% of the total financing of USD200 million toward the Bank's climate finance target, accounting 100% (USD200 million) as climate mitigation and adaptation dual benefits.