

AFRICAN DEVELOPMENT BANK



MOROCCO

NATIONAL IRRIGATION WATER SAVING PROGRAMME SUPPORT PROJECT (PAPNEEI)

PROJECT COMPLETION REPORT

(PCR)

RGDN

July 2018

Translated Document

PROJECT COMPLETION REPORT (PCR) FOR PUBLIC SECTOR OPERATIONS



AFRICAN DEVELOPMENT
BANK GROUP

I. Basic data

A Report data

Report date	Date of report:	April 2018	
	Mission date	From : 20 January 2018	To : 20 February 2018

B Responsible Bank staff

Positions	At approval	At completion
Regional Director	N. LOBE	M. EL AZIZI
Country Manager	M. F. MATONDO	L. MOKKADEM
Sector Director	A. ABOU SABAA	M. FREGENE
Sector Manager	C. OJUKWU	M. TOLBA
Task Manager	MAROUKI Rafaa	KHIATI Driss
Alternate Task Manager	KHIATI Driss	MAROUKI Rafaa
PCR Team Leader		KHIATI Driss
PCR Team Members		BEN ABDELLAH Majid, Consultant

C Project data

Project name: 2		
Project code: P-MA-AAC-014	Financing instrument number : Loan n° 2000130005280	
Project type : Investment project	Sector : Agriculture	
Country : Morocco	Environmental categorization (1-3) : 2	
Processing milestones – Bank approved financing only (add/delete rows depending on the number of financing sources)	Key Events (Bank approved financing only)	Disbursement and closing dates (Bank approved financing only)
Financing source/ Instrument 1: ADB Loan : EUR 53 590 000	Financing source/ Instrument 1: ADB loan: EUR 53 590 000	Financing source/ Instrument 1: ADB loan : EUR 53 590 000
Date approved: 14/12/ 2009	Cancelled amounts: EUR 5 593 639.01	Original disbursement deadline: 6 years
Date signed: 04/03/2010	Supplementary financing: 0	Original closing date: 31/12/2015
Date of entry into force:02/07/2010	Restructuring : March 2013	Revised disbursement deadline:6.9 years
Date effective for 1 st disbursement: 01/02/2011	Extensions : 23 months after 2 extensions (31/12/2016 then at 30/11/2017)	Revised closing date: 30/11/2017
Date of actual 1 st disbursement :01/02/2011		

Financing source (Euro):	Disbursed amount (amount, Euro) :	Percentage disbursed (%):	Undisbursed amount (Euro) :	Percentage undisbursed (%):
ADB loan : 53 590 000	47 996 361	89.56	5 593 639.01	10.4
Government : 14 990 000	14 990 000	100	0	0
TOTAL : 68 580 000	62 986 361	91.84	5 593 639.01	8.16
Financing Source (Euro) :	Committed amount (Euros) :	Percentage committed (%):	Uncommitted amount (Euro) :	Uncommitted percentage (%):
ADB Loan : 53 590 000	41 778 825	78	11 811 175	22
Government : 14 990 000:	14 990 000	100	0	0
TOTAL	56 768 825	83	11 811 175	17
Co-financiers and other external partners: Non				
Executing and implementing agency (ies): Regional Agricultural Development Authority of Tadla, Doukkala, and Loukkos ; Directorate of Irrigation and Agricultural Space Development (DIAEA)				

D Management review and comments

Report reviewed by	Name	Date reviewed	Comments
Country Manager	Leila MOKKADEM		
Sector Manager	Mohamed TOLBA		
Regional Director (as chair of country team)	Mohamed EL AZIZI		
Sector Director	Martin FREGENE		

II Project performance assessment

A Relevance

1. Relevance of project development objective

Rating*	Narrative assessment (max 250 words)
4	<p>(i) Morocco is a highly water-stressed country, and it is necessary that its increasingly scarce water resources be managed as efficiently and as economically as possible, to cope with the high-energy costs involved in their mobilization. A judicious and sustainable use of <i>irrigation water</i> is imperative. Irrigation water accounts for more than 80% of mobilized water resources, with losses often exceeding 50% of the quantity of water drawn. The project will support the nationwide development of the National Water Saving Programme, whose aim is to convert 550,000 hectares of conventionally irrigated scheme (via sprinkler and gravity) into localized irrigation.</p> <p>(ii) The project consists of modernizing water infrastructure (external supply networks, pumping stations, metering, etc.) to adapt them to the requirements of localized irrigation as well as support for the enhancement of the value of water and the development of irrigated areas. At design, the project area covered an overall surface of approximately 20,000 ha with 5,853 farms, representing a target population of nearly 30,000 inhabitants.</p>

(iii) The project is consistent with the second pillar of the Bank’s Assistance Strategy for Morocco for 2007-2011 on the “*Development and upgrading of economic and business infrastructure*”. It is in line with Government priorities in terms of agricultural policy and water resources management, particularly the Green Morocco Plan strategy (2008-2021) and the National Water Strategy (2009-2030). It will align on these strategies throughout its execution.

2. Relevance of project design

Rating*	Narrative assessment (max 250 words)
3	<p>The project underwent technical, economic, environmental and social impact studies. Its beneficiaries were consulted and involved in its design phase to make them take ownership of the proposed technologies. A Bank mission assessed the relevance and impacts of the project’s planned activities. The logical framework defined the objectives, outcomes, outputs, activities, performance indicators, targets and potential project risks.</p> <p>Most of the studies needed for PAPNEEI-1 implementation were available. They were completed at the start of project activities. The project area covered four Regional Agricultural Development Authorities or ORMVAs (Loukkos, Tadla, Doukkala and Moulouya). However, the Moulouya area was abandoned because of lack of interest by potential beneficiaries and the absence of background studies. At the end of the mid-term review, the project was restructured and part of the funds earmarked for the Moulouya ORMVA was allocated to two new Loukkos sectors. As such, the project implementation schedule was extended by 23 months to make room for the completion of new activities.</p> <p>The selected executing agencies (ORMVA) have significant technical and organizational capacity for project implementation, supplemented by the use of technical assistance for works supervision and monitoring, especially to provide support to producers.</p> <p>Thus, the project design was clearly relevant. It helped to control implementation costs and to adopt optimal and appropriate technical solutions for the farmers. However, the internal equipment of plots (with localized irrigation facilities) at the expense of the beneficiaries (with Agricultural Development Fund financing) was not conducted simultaneously with the installation of external facilities. Hence, there was a slippage in the agricultural development of plots and the enhancement of the value of water. This weakness was resolved long before the completion of external facilities through the establishment of a mechanism for internal equipment involving farmers and their association.</p>

3. Lessons learned related to relevance

Key issues	Lessons learned	Target audience
1. Make the volume of activities consistent with the project's implementation timeframe	<p>The key factors for the project's success stem from:</p> <ul style="list-style-type: none"> (i) Adequate consideration of the conditions and difficulties of coordinating and implementing PAPNEEI-1 on the ground; (ii) Building the capacity of executing agencies in procurement rules, particularly through training and information; (iii) Conducting activities prior to the internal equipment of plots in parallel with external facilities, with full involvement of Agricultural Water Users' Associations (AUEA) and ORMVAs; and (iv) Extension of project duration by 23 months not because of not coping with the volume of activities but due to a necessity dictated by the introduction of new areas of intervention in the Loukkos sectors. 	Bank/Government/DIAEA
2. Meet producers' expectations and needs	<p>The adoption of a participatory and partnership approach that would better meet the expectations and needs of producers. This will be through :</p> <ul style="list-style-type: none"> • Setting up internal facilities on plots within the deadlines; • A strong mobilization for the preparation of preliminary technical and administrative dossiers for financing the internal equipment of plots using the resources of the Agricultural Development Fund (FDA); and • Involving the operation's AUEAs and collaborating with them to organize the launching of communication and awareness campaigns for producers, to win them over. 	Government/ORMVA/FDA/ONCA/AUEA
3. Ensure quality at entry and during project execution	<ul style="list-style-type: none"> • Ensure that the preliminary technical and economic studies are available before the start of the project; • Ensure that executing agencies are familiar with the Bank's procurement rules and procedures; • Ensure that beneficiaries are involved from the design stage to take ownership of the project; • Ensure the operationalisation of FDA's financing and support mechanism to producers to undertake internal equipment and water valuation activities on the plots. 	Bank/DIAEA/ORMVA

1. Progress towards attainment of the project's development objective (project purpose)**Comments**

The purpose of this project is to rationalize the utilization and valuation of irrigation water. In the long term, it also seeks to improve the living conditions of the beneficiary population through sustainable water resource management and improvement of production conditions in the PAPNEEI area. To achieve these objectives, the project is focused on three components:

Component 1: Modernization of Irrigation Water Infrastructure, which consists in *converting* previous sprinkled areas into localized collective irrigation (IL) areas followed by support actions such as the technical monitoring of works; the establishment of irrigation warning systems; the conduct of pilot experiments in participatory management of over-tapped aquifers, and implementation the area's ESMP (ORMVA). In this regard, the objective is to ensure the supply of irrigation water on demand to 20,000 ha of land developed through the drip irrigation system in the three water basins - Oum Rbia, Moulouya and Loukkos.

Component 2: Support for Irrigation Water Development, which involves supporting the project beneficiary farmers to better develop the infrastructure put in place, by promoting high value-added crops and facilitating the marketing of produce as part of the aggregation process. To this end, the activities envisaged include support for aggregation, provision of improved farming and irrigation techniques to farmers, and advisory support for downstream processing and marketing.

Component 3: Project Coordination and Capacity Building of PAPNEEI (DIAEA, ORMVA and ADA) partners, as well as non-governmental actors involved (AUEA, OPA, etc.). This component also aims at externalizing water services, notably by setting up a project information system and another system on the use of water resources by each authority (monitoring/evaluation, integrated management).

On completion, it was noted that the project's outcomes had been achieved, except in the Moulouya Basin where project activities were all abandoned and the funds reallocated to two new irrigation sectors under the Loukkos ORMVA. Achievements in terms of network modernization, improvement of irrigation water service and productivity are the key progress factors vis-à-vis the objective. This progress may be summarized in three key points: (i) improvement of irrigation service quality by the introduction of on-demand irrigation and irrigation network efficiency, with the reduction of losses from 50% to about 10%; (ii) the intensified cropping rate has increased from below 100% to 120% (Tadla and Loukkos) and 140% (Doukkala), and high value-added crops, including market gardening crops, have been developed in the different production basins to better enhance the value of water; and (iii) building of technical capacity and revitalisation of farmers and their professional organizations (AUEA). There is no doubt that these outcomes will help to achieve the project objectives and ultimate goal, i.e. improving the income and living conditions of farmers.

2. Outcome reporting4

Outcome indicators (as per RLF; add more rows as needed)	Baseline value (Year) (A)	Most recent value (B)	End target (C) (expected value at project completion)	Progress towards target (% realized) [(B-A)/(C-A)]	Narrative assessment (indicative max length: 50 words per outcome)	Core Sector Indicator(Yes/No)
Project's DO: Improvement of the living conditions of rural dwellers through a more sustainable management of water resources and improving productivity in irrigated areas.						
Indicator 1: Average income/ha in project areas doubled.		145% or an average income of MAD 32 000/ha	200%	72.5%	The project helped to double productivity in Loukkos, particularly high value-added crops (HVA): strawberry, potato and blueberry. The average income increased from MAD 22 390/ha to MAD 40 780/ha. In Tadla, farm income increased by 45% on average, thanks to conversion to localized irrigation. In Doukkala, income increased due to production value (multiplied by 3 to 4) with the growing of HVA crops, the increase in ICT and yields.	Yes
Indicator 2: The IP deficit in the project area reduced by 25% in 2022		10%	25%	40%	The rehabilitation of the irrigation network contributed to the improvement of water transport efficiency (90%), thereby making it possible to reduce by more than 10% the shortage in water supply to irrigation schemes.	Yes
Indicator 3: The average additional production value of m3 consumed per area increased by 25% in 2017.		180% The additional development is around MAD 7/m3	25%	720%	The value of irrigation water (per m ³) increased from MAD 3/m ³ to MAD 10/m ³ /ha in Doukkala with localized irrigation. This trend ranges from MAD 5/m ³ to MAD 15/m ³ in Loukkos and from MAD 4/m ³ to MAD 9/m ³ in Tadla.	Yes

Rating* (see IPR methodology)	Narrative assessment
4	<p>The project helped to achieve the set objectives in terms of schemes equipped with localized irrigation and developed. Indicators on improving the value of m3 of water consumed and farmers' income took off handsomely after the commencement of project works. In this regard, technical assistance for farmers' training and support was mobilized with a slight delay pending the completion of infrastructure. Nevertheless various trainings, trips and exchange visits in the areas already converted were conducted (Souss, Haouz, Tadla). Farmers were also organized and demonstration test of the new irrigation and production techniques undertaken. With the support of technical assistance, farmers undertook to diversify and intensify their production system, improve their yield by adopting better farming practices and organize themselves to market their products. These interventions led to an improvement in the average yields of the main crops in the project areas by around 30%. Furthermore, this resulted in the reduction of water consumption and the optimization of input. Average income per farm improved by an average 45%.</p> <p>Moreover, the improvement in yields can exceed 50% for certain crops such as fodder (silage corn, alfalfa) and vegetable crops (red fruits, potatoes, melons). Thus, the project's objectives to double income and improve the living conditions of farmers would be largely achieved, given the ongoing momentum among beneficiary farmers. It should be noted that the <i>development period goes beyond the duration of project implementation</i>.</p> <p>Discussions with farmers, technical assistance staff and ORMVAs highlight the fact that these achievements were decisive for the progress made on the ground with regard to improving farming practices, warning and irrigation water management, soil conservation (fertigation¹, amending, etc.) and increase in agricultural productivity by some farmers, particularly in the Loukkos and Doukkala schemes. Furthermore, the revitalization of the AUEA, the organization of farmers into production, enhancement and marketing cooperatives will guarantee the expected improvement of beneficiary farmers' income.</p>

¹ Application of soluble fertilization elements in water through the drip irrigation system

3. Output reporting

Output indicators (as specified in the RLF; add more rows as needed)	Most recent value (A)	End target(B) (expected value at project completion)	Progress towards target (% realized) (A/B)	Narrative assessment (indicative max length: 50 words per output)	Core Sector Indicator(Yes/No)
Component 1: Modernization of water irrigation infrastructure					
Output 1:Modernization of irrigation infrastructure completed	Studies finalized and development works carried out by the ORMVAs in the three basins concerned	Finalization of studies and completion of development works by the ORMVAs in the Oum R'bia and Loukkos basins	100%	<p>All the outputs related to the modernization of collective irrigation infrastructure were achieved and are functional despite the delay observed in the scheduling. These mainly concerned :</p> <ul style="list-style-type: none"> ▪ The replacement and renewal of irrigation water supply and distribution pipes over 165.69 km (52.5 km in Tadla, 90 km in Doukkala and 23.19 km in the Loukkos) ▪ The supply and installation of modernization equipment for 9 filtration stations (Arraja, Z3, Sidi Bennour and the A, B1, B2, C, E1 subsectors and E2 of R'mel) ▪ The modernization of 7 pumping stations (Sidi Bennour and A, B1, B2, C, E1 subsectors and E2 of R'mel) ▪ The supply and installation of cap sockets and outlets (civil engineering and equipment of more than 8 000 units). 	Yes
Output 2:Surface area served by localized irrigation equipment	17 181 ha (Doukkala, 3 336 ha; Tadla, 2 860 ha; and Loukkos, 10 985 ha)	17 300 ha	99%	With the abandonment of the project in the Moulouya Basin, the related sectors were replaced by two new areas under ORMVA. This reduced the area reconverted to localized irrigation from the initially targeted 20 000 ha to 17 181 ha.	Yes

Output indicators (as specified in the RLF; add more rows as needed)	Most recent value (A)	End target(B) (expected value at project completion)	Progress towards target (% realized) (A/B)	Narrative assessment (indicative max length: 50 words per output)	Core Sector Indicator(Yes/No)
Output 3: irrigation warning systems are set up and functional	Agro-meteorological stations, computer hardware; and irrigation warning equipment have been procured	Procurement by ORMVA of agro-meteorological stations, computer hardware and irrigation warning equipment and performance monitoring of localized irrigation equipment.	100%	The supply, installation and commissioning of fixed automatic agro-meteorological stations in the different areas were carried out. They are functional and managed at each of the three ORMVAs.	Yes
Component 2: Enhancement of the areas developed for localized irrigation					
Output 1: Farmers in the irrigated areas are trained in improved high value-added farming techniques and localized irrigation management	649 farmers benefited from TA capacity building, development support and demonstration test activities at ORMVA level	600 farmers trained through training sessions and provided support for the internal equipment of their plots	108%	All the ORMVAs solicited and implemented a TA to help organize and support farmers to accelerate the pace outfitting their plots with localized irrigation equipment or sensitize them through training on the laying of irrigation ² pipes.	Yes
Output 2: Increased crop area Output Output2: showcasing	The areas of high value-added crops, such as vegetable crops	Area enhanced by high value-added crops will increase by 25%	40%	Increase in the area covered by high-value-added crops is taking place on par with the equipment of farms with internal facilities for localized irrigation. This being the case, and given the improved income that this is	Yes

² These trainings sessions were organized mainly for farmers as part of technical assistance. However, the programme was abandoned at the Doukkala scheme. The few training courses that are taught in this section concern demonstration test of localized irrigation of vineyards (Zemamra) and technical trips to Agadir and Meknès.

Output indicators (as specified in the RLF; add more rows as needed)	Most recent value (A)	End target(B) (expected value at project completion)	Progress towards target (% realized) (A/B)	Narrative assessment (indicative max length: 50 words per output)	Core Sector Indicator(Yes/No)
the value of irrigation water	(potato, strawberry, blueberry) and fodder crops (maize, etc.) increased by around 2,000 ha with the project, representing a 10% rise.	(5,000 ha of high value added crops)		bringing to farmers, the target outcomes will be achieved at the end of this equipment process.	
Output 3: Increase in average yields of major crops	Yields of major crops have by an average of 30%	Increase in average yields by 40%	75%	<p>Yields cannot be accurately determined because of the gap between project implementation duration and the development timeframe. Nevertheless, the following trend in yields illustrates the current increases in drip irrigation areas :</p> <ul style="list-style-type: none"> • Potato (30 t/ha to 45 t/ha) • Melon (35 t/ha to 40 t/ha) • Sugar beet (60 t/ha to 80 t/ha) • Silage corn (40 t/ha to 70 t/ha) 	Yes
Output 4: Number of aggregation projects implemented	14 aggregation projects identified, with 5 in Tadla, 5 in	20 projects, including 5 at least per authority in 2016	70%	14 aggregation projects prepared and currently in the different in the care of different authorities tapped into the momentum created by the project, within the framework of project prospects to organize farmers and develop aggregation projects. The project are	Yes

Output indicators (as specified in the RLF; add more rows as needed)	Most recent value (A)	End target(B) (expected value at project completion)	Progress towards target (% realized) (A/B)	Narrative assessment (indicative max length: 50 words per output)	Core Sector Indicator(Yes/No)
	Loukkos and 4 in Doukkala			mainly in the following chains: milk, maize, cereals, olive, tomato and vegetable crops (potatoes and red fruits). However, project initiatives in this regard should be strengthened since the institutional arrangements for the aggregation instruments are under review.	
Component 3: Institutional capacity building of stakeholders involved					
Output 1: Build the capacity of AUEAs and sensitize them on the participative management of irrigation infrastructure	The capacity of all 9 AUEAs concerned by the conversion project was built in terms of localized irrigation management, organization and interface between the Authority and the farmers.	9 AUEAs, 2 of which in Doukkala, 1 in Tadla and 6 in Loukkos	100%	The training planned for AUEAs to improve their organization and performance were conducted through technical assistance recruited by ORMVA as per project objectives.	Yes
Output 2: Train staff (managers and technicians) of project executing organs	About 60 managers and technicians from various Authorities were	60 ORMVA managers and technicians	100%	The Authorities entrusted the capacity building of their managers and technicians to TA. The activities mainly comprised: <ul style="list-style-type: none"> ▪ Organizing 2 to 3 day training sessions each on different topics. ORMVAD managers were not able 	Yes

Output indicators (as specified in the RLF; add more rows as needed)	Most recent value (A)	End target(B) (expected value at project completion)	Progress towards target (% realized) (A/B)	Narrative assessment (indicative max length: 50 words per output)	Core Sector Indicator(Yes/No)
	actually trained on the topics relating to the design and management of collective localized irrigation projects and agricultural value chains			<p>to go through the entire training programme (due to the cancellation of the TA procurement process since the deadline for its completion deadline exceeded the last disbursement deadline).</p> <ul style="list-style-type: none"> ▪ The organization of a technical and exchange trip in Morocco 	
Output 3: A functional computerized project monitoring and evaluation system	Computer applications for monitoring/evaluation and financial monitoring became project-wide	Procurement of IT hardware and implementation of the monitoring/evaluation system.	100%	IT applications have been set up and are functional, whether for project monitoring/evaluation or financial management. They allowed for better monitoring and reporting of project activities.	Yes
Rating*(see IPR methodology)	Narrative assessment				
4	<p>The different project components have achieved their objectives in terms of planned project outputs. An analysis of project progress and achievements reveals as follows:</p> <p>Updating of original logical framework indicators: The duration and level of achievement of the outcomes of the logical framework indicators underwent a mid-term review to take into account changes in project implementation. Therefore, it was deemed necessary to extend the target deadline for achieving the project's outcome indicators by 23 months. In addition, the indicator</p>				

Output indicators (as specified in the RLF; add more rows as needed)	Most recent value (A)	End target(B) (expected value at project completion)	Progress towards target (% realized) (A/B)	Narrative assessment (indicative max length: 50 words per output)	Core Sector Indicator(Yes/No)
				<p>"At least 20% of IP areas under aggregation contracts" was dropped at the MTR due to the slow trend of aggregation-related activities (review of the regulatory framework).</p> <p>Modernization of irrigation infrastructure: All installation or rehabilitation works on pumping stations, filtration stations, laying of connecting pipes and irrigation terminals, as well as works control laboratory the services are 100% complete. These investments led to two major outcomes: (i) improvement of the efficiency of irrigation water transport and distribution from 50% to over 80%; and (ii) improvement of the quality of irrigation water service provided farmers, by switching to on-demand irrigation: this achievement has led to more than 20% reduction in water supply claims.</p> <p>Strengthening farmers' capacity and support for development of irrigation water: In terms of development, the cropping intensification rate increased from 100% to 120% (Tadla and Loukkos) and 140% (Doukkala), so too high value-added crops, especially market gardening produce, at the level of the various production basins. This paved the way for a greater enhancement of water value. The project also helped to improve technical capacity and revitalized farmers and their professional organizations (AUEA). Based on surveys, over 600 farmers benefited from capacity building in the technical management of irrigation and crops, through training and guided visits to pilot farms and other irrigated areas.</p> <p>Coordination and capacity building. Under Component 3, over 90% of projected interventions were implemented. These particularly concern water and soil analyses to characterize the baseline situation and monitor the environmental parameters at scheme level, procurement equipment and IT solutions for water supply network management, as well as organise exchange visits by staff of the Authorities.</p>	

4. Development Objective Rating (DO)³

DO rating (derived from updated IPR)*	Narrative assessment(indicative max length: 250 words)
4	<p>The rating of the development objective requires a combined rating of project performance in terms of expected outcomes and outputs. Therefore, it entails evaluating the project's achievements and benefits using quantitative and qualitative data collected from the executing agencies, beneficiaries and field observations.</p> <p>The combined results of these data sources point to significant progress towards achieving the project's development objective, as discussed in Section B.2. Generally, project quantitative outputs were achieved overall, in light of the high implementation rate of over 97%. This performance is partly the result of the validity of the assumptions underpinning the achievement of the project's DO as set out in the logical framework. These include the stability of the project's macro-economic framework, the pursuance of the PMV agricultural development strategy and Government's commitment to reforms in the irrigation sector, among others.</p> <p>The rulebook carried out the irrigation system reconversion works. These developments are highly appreciated by the beneficiaries and have led to an improvement of water services and farmers' income. The project's outcomes are numerous. These include improvement of irrigation water efficiency; increase in the scheme for high value-added crops and farm productivity; increase in labour and inputs; and improved farm income. However, to achieve the project's DO, the multiplication and sustainability of outcomes depend on pursuing agricultural development and managing the equipment set up in the areas, particularly with the full involvement of AUEAs.</p>

5. Beneficiaries (add rows as needed)

Actual(A)	Planned(B)	Progress towards target (% realized) (A/B)	% of women	Category (e.g. farmers, students)
4,890 farmers directly affected by project activities	5 853	84%	6%-11%	Farmers
9 AUEA	9 AUEA	100%	6%	AUEA
ORMVA managers and technicians benefited from several trainings and exchange trips on various topics related to localized irrigation	60	100%	12%	Managers and technicians from the Authorities

6. Unanticipated or additional outcomes (add rows as needed)

Description	Type (e.g. gender, climate change, social, other)	Positive or negative	Impact on project (High, Medium, Low)
<p>Creation of direct and indirect jobs. It is estimated that more than a thousand jobs were created during the work execution phase, and approximately 1237 additional permanent jobs/year will be created during the operation and area development phase.</p>	Socio-economic	Positive	Average
<p>Increase in the rental value of land The supply of irrigation water to agricultural plots in the areas, their equipment with a localized irrigation system and the securing of the products they produce have made the rental value of agricultural lands in the project areas to double (from MAD 6 000 to MAD 12 000 /year in the Loukkos area).</p>	Economic	Positive	Average
<p>Creation of cooperatives. The improvement of farmers' production and the training/sensitization of farmers on the roles, constitution and management of OPAs have spurred a momentum in the region. Thus, farmers in the Loukkos have organized themselves into two potato-marketing cooperatives.</p>	Socio-economic	Positive	Major
<p>Qualification of enterprises. The project has made it possible to identify 900 new qualified companies with the human and financial resources to carry out the installation of localized irrigation equipment on plots.</p>	Economic	Positive	Major

7. Lessons learned related to effectiveness

Key issues (max 5, add rows as needed)	Lessons learned	Target audience
1 Framework for monitoring and evaluating outcomes, and support for institutional arrangements	<ul style="list-style-type: none"> It is important to put in place appropriate monitoring and evaluation mechanisms for project outcomes and impact, in addition to those fostering the systematic monitoring of its physical and financial performance. Such data should be included regularly in the progress reports. To ensure that such a mechanism is in place with data collection mechanisms, it is essential to include them from the project design phase. 	1.Bank/Executing agency
2. Ensuring project quality at entry	<ul style="list-style-type: none"> Identify activities through a participatory approach with the involvement of beneficiaries in the definition of needs at the grassroots. Have all the project implementation studies before the Bank commits to financing. Ensure ownership of project activities by the beneficiaries. 	Bank/Executing agency

C Efficiency

1. Timeliness

Planned project duration – years (A) (as per PAR)	Actual implementation time – years (B) (from effectiveness for 1st disb.)	Ratio of planned and actual implementation time (A/B)	Rating*
6 years (72 months)	6.9 years (83 months)	0.87	2
Compte-rendu (longueur maximale indicative : 250 mots)			
<p>Project implementation was planned for a period of 5 (five) years. However, the actual implementation time was 6.9 years, exceeding by 1.9 years, from its date of effectiveness up to the date of last disbursement (30 November 2017). The extension of the project execution timeframe was due to various technical and administrative difficulties. These difficulties were mainly: (i) the unavailability and/or lack of certain studies prior to PAPNEEI in certain areas; (ii) insufficient mastery of Bank's procurement procedures by the project team; (iii) the long delay in the procurement process and the lengthy time taken for land development because of land occupation and the need to ensure continuity of the irrigation water distribution service; and (iv) insufficient structuring of the expenditure validation process by the public structures in charge and/or in support of the project. There were also difficulties of winning farmers over in some areas that were more or less addressed, following AUEA involvement. The other difficulties concerned companies having to work at a time when farmers were engaged in their farming activities.</p> <p>Since agricultural land in the areas is cultivated and irrigated in parallel with the setting up of external facilities, this last situation forced the Authorities to stop the distribution of irrigation water for</p>			

3 days, 2 to 3 times per month, to facilitate work on the network. These works and irrigation, in fits and starts, resulted in the discontent of some farmers and the lengthening of work duration.

These difficulties also led to significant discrepancies between the project's projected deadlines compared to the actual implementation deadlines, estimated at 23 months and which could have been higher without the restructuring carried out following the 2013 PMR. Moreover, this is the reason for the extension granted to the project in 2015 to allow major works to be completed. It is worth noting that at the end of the extension, the execution of certain PAPNEEI activities (new areas at Lukkos) was still incomplete, hence the new extension of the project until November 2017.

2. Resource use efficiency

Median % physical implementation of RLF outputs financed by all financiers (A) (see II.B.3)	Commitment rate (%) (B) (See table 1.C – Total commitment rate of all financiers)	Ratio of the median percentage physical implementation and commitment rate (A/B)	Rating*
90 %	78 %	115.4%	3

Narrative assessment (indicative max length: 250 words)

The key project outputs related to the project's components have been achieved, as indicated in Section B. The outcomes obtained show that the project's objectives and goal, which consist of improving the income and living conditions of the beneficiary population, will be achieved. Progress data shows that the project has achieved 90% of its outputs, with a commitment rate of 78%. This project's good financial performance is partly due to the acceleration of its achievements; savings on contract amounts signed and project restructuring. The physical achievement rate of (97%) and the resource utilization rate (78%) show that project execution performance was good, notably with controlled costs and well-used resources. In addition, savings were made on loan resources (restructuring of activities and better competition with gains on contract amounts signed).

3. Cost Benefit Analysis

Economic Rate of Return (at appraisal)	Updated Economic Rate of Return (at completion)	Rating*
16.3 %	15.4 %	3

Narrative assessment (indicative max length: 250 words)

The project's key target outputs, particularly the modernization of collective irrigation infrastructure, were achieved. This will contribute to the reduction of network water losses and energy cost. Benefits from PAPNEEI emanate from the development of high value-added crops and agricultural intensification that add value to irrigation water.

Furthermore, farmers' thematic training on irrigation and production techniques will further improve their productivity. Moreover, the constitution and reinforcement of OPAs in the project areas will contribute to improve the sale of farmers' products at more profitable prices. Similarly, the individualization of water supply and the new billing system will help to improve the water recovery rate. In future, a water market could develop as irrigation water quotas can be traded between producers.

However, it should be noted that all the farmers have been installing internal irrigation equipment on their plots that is not synchronized with the external facilities of the areas. Although the internal equipment of plots is the responsibility of the farmers, significant efforts are being made within the project framework, with a committed momentum within the ORMVAs, TA support and AUEA involvement to rapidly absorb this slippage: lists of the beneficiary farmers have been drawn up; plots and their subdivisions have been identified and verified; the administrative, technical and financial dossiers of the beneficiaries have been drawn up and submitted to FDA for approval within the framework of conversion into a collective localized irrigation (IL), followed by the selection of companies to start work.

As a result, nearly 50% of the total area served and targeted by the project has been equipped. At the level of equipped plots, the cropping intensification rate has risen from less than 100% to 120% (Tadla and Loukkos) and from 80% to 140% (Doukkala), with an increase of 15% to 20% in high value-added crops. Some crops such as groundnuts in Loukkos and alfalfa in Doukkala have even been irrigated using the "drip" technique instead of the sprinkler/gravel method, hence a positive impact of PAPNEEI-1. In terms of employment, the number of working days has increased significantly as a result of the intensification of production systems, from 50 man-months/year/ha (extensive) to 150-250 man-months/year/ha.

In light of these outcomes, it is clear that the project is producing many economic gains for the beneficiaries. However, the discrepancy between the external facilities and those internal to the plot, the need to build farmers' capacity (sine qua nom for stepping up productivity and marketing), the extension of project duration by almost 2 years, and the relative reduction of the dimension of the area concerned compared to design (17 181 ha against the 20 000 ha expected) are all factors that have led to a slight decrease in its ERR.

Based on conservative assumptions, the completion estimates show that the project's ERR has dropped to 15.4 percent from 16.3 percent at design time. Even if the estimated ERR is lower than the project's ERR at design time by only 0.9 points, it remains high and well above the opportunity cost of capital, estimated at 10%. The project's net present value (NPV) is largely positive (MAD 496 million) and the cost-benefit ratio is 2.47). The sensitivity analysis shows that a 10% increase in costs, a 10% decrease in project benefits, or a simultaneous increase in costs and a decrease in benefits yield positive NPVs and an ERR higher than the opportunity cost of capital, and a cost-benefit ratio above 1. The project's profitability level is thus satisfactory. The project could also achieve a 17.5% profitability level on completion of the equipment of all the plots, as well as their development.

4. Implementation Progress (IP)⁴

IP Rating (derived from updated IPR) *	
3	<p>All loan agreement clauses and commitments were fulfilled. The project also complied with audit requirements and obtained audit reports with no reservations during its implementation. The project was also the subject of an ESMP in keeping with Morocco's and the Bank's regulatory requirements whose measures were moderately implemented. The Bank's recommendations following the PMR and the supervision missions, however, led to an improvement in the implementation of the ESMP with the active involvement of local stakeholders, notably the AUEA, in terms of managing project's activities, installing the warning and decision support system for irrigation, and training farmers on the environmental management of plots.</p> <p><i>Project systems and procedures (procurement, financial management, and monitoring and evaluation):</i> The project has an efficient procurement and control system in line with Bank procedures. The accounting records are sound. Procedural weaknesses noted at ORMVA level at project start-up were gradually corrected with the Bank's assistance. The project's financial management is deemed satisfactory.</p> <p>The project's monitoring and evaluation system worked and allowed for the regular production of progress reports. It also enabled the generation of data from the monitoring mechanism to correctly track the project's physical and financial implementation rate.</p> <p><i>Project implementation (disbursement, budget commitments, counterpart financing and co-financing):</i> Compared to the overall project cost, the amounts committed correspond to 83%. This relatively high rate is due to the commitment of the entire counterpart funding. Under the terms of the project, the amounts committed on the ADB loan amounted to 78%.</p> <p><i>Monitoring/evaluation framework.</i> The parameters for monitoring project outcome indicators were clearly defined at appraisal and integrated into the project outcome measures framework. Moreover, they were updated with the PMR to take project progress into account.</p>

5. Lessons learned related to efficiency

Key issues (max 5, add rows as needed)	Lessons learned	Target audience
1. Availability of pre-project studies	<ul style="list-style-type: none"> It is recommended to ensure that the preliminary studies as well as beneficiary consultation and support beneficiaries are carried out during studies, or at least undertaken at an advanced stage and before the launching of project activities. 	1. Government & ORMVA
2 Thorough evaluation of the project implementation schedule	<ul style="list-style-type: none"> Special attention is needed when preparing the project implementation schedule, taking into account the project complexity and the risk of delays in critical activities to be implemented, especially at start-up and involving raising beneficiary awareness. 	2. Bank, Government, and ORMVA
3. Evaluation of the capacity of the actors in charge of project implementation and taking into account of Bank's procurement rules and procedures	<ul style="list-style-type: none"> The difficulties encountered by PAPNEEI were partly due to poor understanding of Bank rules and procedures by regional executing agencies. Therefore, it is important to evaluate and build the capacity of these agencies at the start of the project in order to familiarize them with the Bank's rules or to opt, as early as possible, for national regulations. The organization of a sustained training of the different actors at project inception is an effective way to improve the capacity of these actors, mainly in procurement. 	2. Bank, Government, and ORMVA

D Sustainability

1. Financial sustainability

Rating*	Narrative assessment (indicative max length: 250 words)
3	<p>Financial sustainability is ensured by ORMVAs capacity to take charge of the operation and maintenance of the facilities put in place through State budget allocations to ORMVAs and the billing of irrigation water.</p> <p>ORMVAs have the expertise (more than 30 years) to guarantee the sustainability of the development carried out by the project. The pricing of water supplied to farmers is also aimed at ensuring the sustainable coverage of the cost of water service. Moreover, the fact that farmers will have additional and substantial income will enable them to have no difficulties to pay their water bills and bear the maintenance costs of the localized irrigation facilities installed on their plots. The project has taken the necessary steps with the AUEAs to complete the localized irrigation equipment of all the plots from the next agricultural season.</p>

	<p>The project’s financial sustainability will also depend on the pace of equipment of farmers with localized irrigation systems, and agricultural development of the schemes. Accordingly, small farmers’ limited access to bank credit and the limited financial capacity of AUEAs have been offset by the simplification of procedures for collective internal equipment projects. Thus, farmers can receive FDA grants for the up to 100% internal equipment of their properties through collective projects spearheaded by the OPA (AUEA, Associations, etc.). The major constraints are due to the predominance of micro-properties and joint-ownership operations that do not provide sufficient tenure security for access to bank financing. Consequently, the Government has taken legal measures to regularize the status of these plots, one of which is the Agricultural Cooperatives Act supported by the Bank in the context of budget support to the PMV.</p>
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2. Institutional sustainability and strengthening of capacity

Rating*	Narrative assessment (indicative max length: 250 words)
3	<p>One of PAPNEEI’s major achievements is building the capacity of the institutional actors (ORMVA, DIAEA), the beneficiary farmers and their AUEAs. This approach will enable these trained actors to master irrigation development management parameters and assist producers in the development of irrigation water on their lands.</p> <p>Similarly, the design of the FDA reinforcement plan, the domiciliation of the project within the ORMVAs, the establishment of a project performance computerized monitoring system with the necessary training, and the active involvement of key institutions (DIAEA, ADA, ONCA, etc.) constitute a guarantee of the project’s institutional sustainability.</p> <p>Regarding human resources, skills exist at the different ORMVAs but retirements, the low rate of replacement with new recruits, and the assignment of ORMVA extension workers to ONCA are challenges for project sustainability, although the use of technical assistance (TA) has helped to meet these challenges. The Authorities, with the contribution of TA and the AUEA, supported the producers for the internal equipment, notably by assembling their technical and administrative files and ensuring legal rehabilitation. A DIAEA/ORMVA/ONCA tripartite agreement should be established to deploy ONCA advisors to provide advice and support to farmers on irrigation and agricultural development. The signing of this agreement has been adopted as a disbursement measure in the PADIDFA PBO approved by the Bank on 15 May 2018. A notable effort has been made by the project to revitalize the AUEAs in terms of capacity building (training, information, exchange of experiences, etc.) and involve them in project implementation. It should be noted that thanks to PAPNEEI, the AUEAs are taking part for the first time in a large water project with much more important roles. However, the AUEAs’ limited resources and capacity could jeopardize their sustainability, even if, thanks to PAPNEEI, they would have gained legitimacy and representativeness. As the case may be, there is a need to support them materially in order to improve their capacity to intervene in irrigation schemes (PIs).</p>

3. Ownership and sustainability of partnerships

Rating*	Narrative assessment (indicative max length: 250 words)
3	<p>The project's internal managerial structure, involving several stakeholders, was respected. The partnership between the DIAEA, the ORMVAs, the farmers' groups (AUEAs), TA and the private sector was crucial for the implementation of PAPNEEI. Permanent consultations conducted by the Project Management with these institutions as well as with the Bank, made it possible to arouse the enthusiasm of the various stakeholders in PAPNEEI, notably the AUEAs and the farmers. Discussion and sharing of responsibilities between the DIAEA (technical support) and the ORMVAs (management, planning and implementation) were well conducted, despite coordination challenges and compartmentalization of entities. Nevertheless, the ORMVAs' financial autonomy did not allow for the establishment of performance contracts between the DIAEA and the ORMVAs as the Bank expected. Institutional arrangements under the project made it possible to obtain a considerable ownership (of the project) and develop partnerships between the different PAPNEEI structures, which is an important element for project sustainability.</p>

4. Environmental and Social Sustainability

Rating*	Narrative assessment (indicative max length: 250 words)
2	<p>The Environmental and Social Management Plan (ESMP) implemented for the project is classified as "Category 2". The project's environmental monitoring, which was the responsibility of the Environmental Offices of the different ORMVAs, was moderately carried out. Several ESMP activities have emerged in this context, namely environmental monitoring of water and soil (salinity, etc.), waste management associated with irrigation activities, procurement of weather stations (irrigation warning), training of farmers on the efficient use of pesticides and phytosanitary protection measures, and inclusion of environmental aspects in contracts. Thus, environmental clauses were compulsorily included in the clauses of Bidding Documents (BDs) and other contracts signed by the project.</p> <p>Environment offices have to be strengthened in terms of resources to carry out adequate environmental monitoring. These offices are under-resourced and not sufficiently empowered to implement the ESMP and conduct adequate project environmental monitoring. In particular, this concerns the planning of environmental activities, laboratory analyses, quarterly reporting, monitoring and awareness raising, and addressing the needs of vulnerable groups.</p>

5. Lessons learned related to sustainability

Key issues (max 5, add rows as needed)	Lessons learned	Target audience
1. How can the sustainability of internal facilities be ensured, given the existing land constraints and limited financial capacity of farmers?	<ul style="list-style-type: none"> • Consolidate mechanisms for simplifying procedures for obtaining financing from the FDA for collective internal equipment projects and reinforce these financial resource allocations; • Set up financing facilities for beneficiary farmers in partner Banks such as <i>Crédit Agricole</i> • Avoid the fragmentation of the plots of project beneficiaries by prohibiting the division of water intake 	Government, DIAEA, ORMVA, AUEA, Bank

	and metering equipment per plot equipped, and introducing of a power of attorney for the transfer of the right to use plots in joint ownership.	
2. How can the level of project ownership by local actors (and regional/local institutions) be ensured?	<ul style="list-style-type: none"> • Consolidate the technical, financial and managerial capacity of the beneficiary farmers as well as their organizations to better enhance the value of irrigation water. • Work towards greater synergy and complementarities between PAPNEEI and the other projects currently being implemented in the Authorities' operating areas in order to capitalize on the experiences gained. • Adoption of a participatory and partnership intervention approach. 	Government, DIAEA, ORMVA, AUEA, Bank.
3. How can the implementation and achievement of the project's socio-environmental objectives be strengthened?	<ul style="list-style-type: none"> • Further strengthen the implementation of the PAPNEEI ESMP, which is part of a comprehensive programme to save irrigation water and conserve water resources. • Develop a holistic approach related to PNEEI as a whole, especially as a large part of the programme's mitigation and environmental monitoring measures is to be implemented during the network's operational phase. 	Government, Bank
4. How can the sustainability of the infrastructure set up and the equipment installed be ensured?	<ul style="list-style-type: none"> • Assign qualified personnel to operations related to the operation and maintenance of irrigation infrastructure. • Allocate the financial resources necessary for equipment maintenance and operation. • Associate and build the capacity of the AUEAs, which must play a key role in the management and utilization of irrigated areas, in particular the resolution of disputes among producers. 	

A Relevance

1. Bank performance

Rating*	Narrative assessment by the Borrower on the Bank's performance, as well as any other aspects of the project (both quantitative and qualitative). See guidance note on issues to cover. (indicative max length: 250 words)
4	<p>The Bank's supervision missions were fielded regularly (twice a year) as stipulated in the project's institutional arrangements. These missions were very useful for sound project implementation as they made it possible for Bank experts and officials to acquire a better understanding of project activities, ensure better monitoring, and share their experiences and lessons drawn from other projects with project implementers, responding adequately to requests. Appropriate recommendations for structuring the project were made following the PMR.</p> <p>As a financing agency, AfDB played a very important role in project design and implementation. In addition to supporting and validating the project preparation phase, the Bank ensured a rigorous monitoring of throughout the implementation phase. Thus, the Bank reviewed all documents submitted by the Executing Agency (requests for non-objection notices for procurement, disbursement requests, project audit reports, as well as supporting documents for financial expenditures) on time. Its experts regularly conducted monitoring/supervision missions to ascertain implementation performance and contribute to the improvement of processes. The project outcomes are the result of this rigorous and very close monitoring, with multiple reminders to the executing agency.</p>

Comments to be inserted by the Bank on its own performance (both quantitative and qualitative). See guidance note on issues to cover. (indicative max length: 250 words)

The Bank supported project implementation by providing the necessary backing. Its performance is deemed satisfactory, given the following activities :

- i) Prevention and resolution of project problems: During supervision missions, the Bank held discussions with Government authorities, examined the shortlist of problems confronting project implementation and always made recommendations to overcome the constraints;
- ii) Bank supervision: The Bank conducted regular supervision missions, often with a multidisciplinary team and the necessary expertise. Bank supervision always resulted in constructive recommendations for improving the effectiveness of project action. The Bank strengthened its support to the project in procurement, disbursement and financial management.

Key issues (related to Bank performance, max 5, add rows as needed)

Lessons learned

How can decisive solutions to technical problems be provided during project implementation?

Include in the Bank team or as consultant, in charge of project monitoring, specialists in the project's key activities.

What steps need to be taken to improve the project's implementation performance?	<ul style="list-style-type: none"> • Widely disseminate Bank administrative and financial procedures; <ul style="list-style-type: none"> ◦ Organize training/further training sessions in project management (monitoring and evaluation system, cost management, deadline management, quality organization, time management, cost-benefit analysis, etc.).
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2. Borrower performance

Rating*	Narrative assessment on the Borrower performance to be inserted by the Bank (both quantitative and qualitative, depending on available information). See guidance note.(indicative max length: 250 words)
3	<p>Two committees were created to oversee PAPNEEI: the National Coordination Committee (CNC) chaired by MAPM, and the Regional Coordination Committees (CRC) with their Regional Project Management Teams (ERGP) at the ORMVAs level.</p> <p>Despite the challenges posed by the project design and the implementation of its operations spread over three distinct basins, the Government and the CNC supported PAPNEEI by ensuring compliance with the conditions set out in the loan agreement, the continuation of the FDA and irrigation sector, and by building the capacity of ORMVAs through the recruitment or secondment of additional personnel to PAPNEEI when needed. In addition, all Government actors worked to ensure the success of the Bank's various supervision and evaluation missions.</p> <p>The CRC and the ERGPs implemented the recommendations made by the Bank's various monitoring and supervision missions with a view to improving project performance. The implementation of the computerized project performance monitoring system (contracts, physical and financial implementation, etc.) and the capacity-building efforts for ORMVA staff responsible for project activities contributed to reducing capacity constraints, thereby making it possible for the project to focus on its core activities. Regular exchanges between the Bank and PAPNEEI coordinators helped to address the different problems and challenges encountered by the project during the implementation phase.</p> <p>The ORMVAs, as the executing agency, saw to the entire procurement process, the monitoring of project execution and the commissioning of equipment procured under the project. To ensure the execution and control of works to set up the equipment, the ORMVAs, with DIAEA support, worked with qualified contractors with sufficient capacity to install localized irrigation equipment, as well as with quality control laboratories.</p> <p>At the technical level, the ORMVAs regularly monitored the implementation of different project activities and coordinated the interventions of the different actors, especially for counselling/support to farmers with the help of technical assistance. Furthermore, they actively contributed to the preparation of the project's progress reports.</p> <p>As concerns financing, the Ministry mobilized its counterpart contribution on time. Despite some procurement constraints at the start of the project, the financial management</p>

	<p>system of the Executing Agency was deemed satisfactory by the Bank for the following reasons : (i) the formal appointment of a project coordinator as stipulated in the loan agreement; (ii) the high disbursement rate during the project implementation period; (iii) the timely submission of project audit reports accepted by the Bank without any special reservations; and (vi) the responsiveness to Bank recommendations following the supervision and audit mission reports.</p>
Key issues (related to Borrower performance, max 5, add rows as needed)	Lessons learned
<p>1. How can the building of the project's infrastructure be optimally planned?</p>	<ul style="list-style-type: none"> • Programme the infrastructure works, which are the project's main activities, from the very first years of the project, in order to reduce impact in case of delay. Appropriate measures should also be taken to complete them within a reasonable timeframe.
<p>2. What measures can be taken to limit delays in the goods and services procurement process?</p>	<ul style="list-style-type: none"> • From the very start of the project, build the capacity of members of the PAPNEEI management/executing agencies on Bank rules for the procurement of goods and services. In this regard, it is necessary to assess the capacity of the actors concerned to know their limits and plan the necessary mitigation measures from the project design and activity-planning phase. • Cautiously allocate an exclusive period for the preparation of procurement procedures for the procurement of goods and services even before work commencement.

3. Performance of other stakeholders

Rating*	Narrative assessment on the performance of other stakeholders, including co-financiers, contractors and service providers. See guidance note on issues to cover. (indicative max length: 250 words)
3	<p>Other stakeholders include: (i) service providers, particularly contractors and engineering consultants; (ii) the AUEAs; (iii) private structures for which the project aimed to develop the production basins under the public-private partnership framework (aggregation). Stakeholder performance is deemed satisfactory overall.</p> <p>The quality of the companies and technical assistance (TA) recruited for the execution of works, conducting controls and providing support to the ORMVAs, as well as to the AUEAs, accounts largely for the high project execution rate. TA missions were conducted under the best conditions and achieved satisfactory quality levels, thanks to experience drawn from other similar projects. The AUEAs helped in project implementation by facilitating contacts with the farmers concerned and organizing them around collective plot equipment projects.</p> <p>Companies or suppliers of equipment recruited through international competitive bidding, performed well and ensured that they provided the work and services quality as required. Despite delays in paying some companies, they were able to carry out their work plan as planned, thereby demonstrating their financial capacity and expertise. Thus, no major incident that may have hindered the successful completion of project works or the supply of equipment was noted.</p> <p>The project's annual audit reports were submitted by the IGF on time and accepted by the Bank.</p>

Key issues (related to performance of other stakeholders, max 5, add rows as needed)	Lessons learned (max 5)	Target audience (for lessons learned)
1. How can good collaboration be maintained between the various project stakeholders?	<ul style="list-style-type: none"> • Encourage good working relations between project teams (DIAEA, ORMVA) by clarifying roles and appointing key project staff; • Ensure the drawing up of contractual terms that safeguard the interests of beneficiaries; • Define and apply contract clauses for service providers, contractors, TA and consulting firms, to ensure the achievement of project objectives. 	Bank/ DIAEA/AT/BE/ ORMVA
2. How can the performance of the project's key actors (stakeholders) be sustained?	<ul style="list-style-type: none"> • Ensure the involvement of beneficiaries and their ownership of the project at all stages of the project; • Continue to ensure the continuous capacity building of PAPNEEI stakeholders (farmers, AUEA, ORMVA staff, agricultural advisers, etc.), to guarantee a concerted and sustainable management of infrastructure. 	Bank/ DIAE/ ORMVA
3. How can the performance of other project stakeholders and providers be improved?	<ul style="list-style-type: none"> • Choose quality partners during the preparation and execution phase of studies and works, through the definition of criteria based on expertise and performance; • Develop effective and adapted tools to achieve expected outcomes; • Reduce delays in the payment of companies. 	Executing Agency/ DIAE,

1. Key lessons learned

Key issues (max 5, add rows as needed)	Key lessons learned	Target audience
1. How should project planning take into account the project context?	<ul style="list-style-type: none"> Take into account in project planning: (i) the difficulties of operating simultaneously in three ORMVAs with different contexts and execution capacity; (ii) the knowledge of Bank rules and procedures by local executing agents; and (iii) the risks of possible delays in implementing the project's critical activities, particularly at the start of the project as regards the beneficiaries. 	Bank/ DIAEA/ ORMVA
2. How can financial resources be mobilized to finance collective irrigation schemes on the plot?	<ul style="list-style-type: none"> Set up the necessary funds for internal improvements to the plot, particularly those of FDA; <p>Improve farmers' access to financing by reducing transaction costs for access to loans, at attractive rates.</p>	Government/ ORMVA/
3. How can the managerial capacity of local actors in charge of project implementation be strengthened?	<ul style="list-style-type: none"> Ensure the continuity of agricultural extension and training, visits, awareness raising, exchange trips and studies for the benefit of producers, and establish mechanisms for sharing experiences between the various actors involved in project management (Authorities, AUEAs, OPA, ONCA, etc.). 	Bank/ORMVA/ AUEA/ONCA

Key recommendations

Key issues	Key recommendation	Responsibility
1. How can the financial sustainability of the project be guaranteed?	<ul style="list-style-type: none"> Implement coherent action, combining Government financial support, the collection of water bills, securing of FDA and involvement of <i>Crédit Agricole</i> (to guarantee loans to small producers at affordable rates); Address basic needs through the involvement of beneficiaries and their associations in the design, management and operation of the irrigated schemes developed; Provide support to farmers in terms of production and produce marketing in order to develop sustainable agricultural value chains. Ensure the availability of financial and human resources for ORMVAs for IP maintenance and operation. 	Government/ DIAEA/ ORMVA/ ONCA Bank

<p>2 How can project ownership by beneficiaries and local structures be strengthened?</p>	<ul style="list-style-type: none"> • Continue to build the technical and managerial capacity of beneficiaries (farmers, AUEA, OPA, etc.) and involve them more in activities related to the management of project achievements, following a participatory and sustainable partnership approach. 	<p>Government/ ORMVA/ AUEA</p>
<p>3. How can AUEAs remain effective and sustainable?</p>	<ul style="list-style-type: none"> • Associate the AUEAs in project design and implementation, the settlement of land disputes, the identification and awareness-raising of farmers on matters relating to internal equipment; • Involve AUEAs in the tripartite agreement to enable them to collaborate with ONCA to facilitate farmers' counselling, provide warning to localized irrigation, prepare after-sales service contracts with equipment resellers and private counsel, and manage water-related disputes ; • Put in place appropriate financing resources with a view to further empowering AUEAs and promoting production development cooperatives so that they are better equipped to supervise their members for the generalization of localized irrigation and agricultural development. 	<p>ORMVA/ AUEA</p>
<p>4. How can the project's purpose and objectives be achieved?</p>	<ul style="list-style-type: none"> • Continue the enhancement of facilities undertaken by PAPNEEI as part of future projects planned for the schemes (PAPNEEI II for example), to sustainably improve the income and living conditions of the population. This concerns in particular the promotion of value chains in terms of aggregation; • The project must continue to implement environmental mitigation measures, as well as the internal equipment of the plots. 	<p>DIAEA/ ORMVA</p>
<p>5. How can PAPNEEI's institutional sustainability be sustained?</p>	<ul style="list-style-type: none"> • Upgrade the socio-institutional fabric prior to conversion to localized irrigation and organize communication and awareness-raising campaigns with producers by involving Agency, ONCA and AUEA's supervisory structures for greater adhesion to the project. • Implement a monitoring and evaluation mechanism capable of generating socio-economic and socio-institutional impact indicators, and PAPNEEI outcomes that are recorded in its logical framework. • A full institutional assessment of all support and management structures at national, regional and local level is necessary to better appreciate PAPNEEI's constraints and ensure its institutional sustainability. 	<p>ORMVA/ ONCA/ AUEA</p>

V Overall PCR rating	
Dimensions and criteria	Rating*
DIMENSION A: RELEVANCE	3
Relevance of project development objective (II.A.1)	4
Relevance of project design (II.A.2)	3
DIMENSION B: EFFECTIVENESS	4
Development Objective (DO) (II.B.4)	4
DIMENSION C: EFFICIENCY	3.5
Timeliness (II.C.1)	2
Resource use efficiency (II.C.2)	3
Cost-benefit analysis (II.C.3)	3
Implementation Progress (IP) (II.C.4)	3
DIMENSION D: SUSTAINABILITY	2.75
Financial sustainability (II.D.1)	3
Institutional sustainability and strengthening of capacity (II.D.2)	3
Ownership and sustainability of partnerships (II.D.3)	3
Environmental and social sustainability (II.D.4)	2
AVERAGE OF THE DIMENSION RATINGS	3.25

VI Acronyms and abbreviations	
Acronym	
ADA	Agricultural Development Agency
AfDB	African Development Bank
AUEA	Agricultural Water Users' Association
CNCP	National Product Coordination Committee
CRCP	Regional Project Coordination Committee
DIAEA	Directorate of Irrigation and Agricultural Space Development
ECGP	Central Project Management Team
ERGP	Regional Project Management Team
ESMP	Environmental and Social Management Plan
FDA	Agricultural Development Fund
HVA	High value-added crops
IGF	Inspectorate General of Finance
LI	Localized Irrigation
MAPM	Ministry of Agriculture and Maritime Fisheries
MDG	Millennium Development Goal
ONCA	National Agricultural Advisory Office
OPA	Agricultural Professional Organizations
ORMVA	Regional Agricultural Development Authority
PAPNEEI	National Irrigation Water Saving Programme Support Project
PI	Irrigated Area
PMV	Green Morocco Plan
PNEEI	National Irrigation Water Saving Programme
RMP	Mid-Term Review
SDG	Sustainable Development Objectives
TA	Technical Assistance
TIC	Cropping Intensification Rate