

Document of  
**The World Bank**  
**FOR OFFICIAL USE ONLY**

Report No: ICR00006483

IMPLEMENTATION COMPLETION AND RESULTS REPORT

ON

CREDITS

IN THE AMOUNT OF SDR 18.6 MILLION (US\$28.5 MILLION EQUIVALENT)  
TO THE REPUBLIC OF GUINEA

IN THE AMOUNT OF SDR 35.6 MILLION (US\$54.5 MILLION EQUIVALENT)  
TO THE REPUBLIC OF MALI

IN THE AMOUNT OF SDR 46.3 MILLION (US\$71.0 MILLION EQUIVALENT) TO THE  
ISLAMIC REPUBLIC OF MAURITANIA

IN THE AMOUNT OF SDR 38.2 MILLION (US\$58.5 MILLION EQUIVALENT) TO THE  
REPUBLIC OF SENEGAL

FOR THE

SENEGAL RIVER BASIN MULTIPURPOSE WATER RESOURCES DEVELOPMENT  
PROJECT 2

ONE PROPOSED GRANT IN THE AMOUNT OF US\$16.0 MILLION FROM THE  
GLOBAL ENVIRONMENT FACILITY TRUST FUND  
AND THE LEAST DEVELOPED COUNTRIES FUND  
TO THE ORGANISATION POUR LA MISE EN VALEUR DU FLEUVE SENEGAL  
(ORGANIZATION FOR THE DEVELOPMENT OF THE SENEGAL RIVER)

FOR A SENEGAL RIVER BASIN CLIMATE CHANGE RESILIENCE DEVELOPMENT  
PROJECT

May 1, 2024

Water Global Practice  
Western And Central Africa Region

## CURRENCY EQUIVALENTS

(Exchange Rate Effective Oct 10, 2023)

Currency Unit = Franc CFAF (XAF) for Mali and Senegal;  
Euro for Guinea and Mauritania

---

CFAF = US\$ 0.00161

---

EURO = US\$ 1.05790

---

SDR = US\$ 1.31353

## FISCAL YEAR

January 1 – December 31

Regional Vice President: Ousmane Diagana

Country Director: Boutheina Guerhazi

Regional Director: Chakib Jenane

Practice Manager: Fatouma Toure Ibrahima Wane

Task Team Leader(s): Xavier Chauvot de Beauchene, Pierre Jacques Lorillou

ICR Main Contributor: Kevin Ahouandjinou

## ABBREVIATIONS AND ACRONYMS

<b>ADRS</b>	National Department for Rural Development in the Senegal Valley, Mali <i>(L'Agence de développement rural de la vallée du fleuve Sénégal)</i>
<b>CMU</b>	Country Management Unit
<b>COM</b>	Council of Ministers
<b>CPF</b>	Country Partnership Framework
<b>DNGR</b>	National Department for Rural Engineering, Guinea <i>(Direction Nationale du Génie Rural)</i>
<b>EA</b>	Environmental Assessment
<b>EFA</b>	Economic and Financial Analysis
<b>EIRR</b>	Economic Internal Rate of Return
<b>FCFA</b>	<i>Franc de la Communauté Financière Africaine</i> (African Financial Community Franc)
<b>FIRR</b>	Financial Internal Rate of Return
<b>GEF</b>	Global Environmental Facility
<b>GEO</b>	Global Environmental Objective
<b>IA</b>	National project Implementing Agency
<b>ICR</b>	Implementation Completion Report
<b>IDA</b>	International Development Agency
<b>ISR</b>	Implementation Status and Results Report
<b>LLIN</b>	Long Lasting Insecticide-Treated Net
<b>LQAS</b>	Lot Quality Assurance Sampling
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MTR</b>	Mid-term Review
<b>MWRD</b>	Senegal River Basin Multi-Purpose Water Resources Development Program
<b>MWRD 1</b>	Phase 1 of the MWRD
<b>MWRD 2</b>	Phase 2 of the MWRD
<b>NDCs</b>	Nationally Determined Contributions
<b>NPV</b>	Net Present Value
<b>NTD</b>	Neglected Tropical Diseases
<b>O&amp;M</b>	Operation and Management
<b>OMVS</b>	Senegal River Basin Organization <i>(Organisation pour la Mise en Valeur du fleuve Sénégal)</i>
<b>PAD</b>	Project Appraisal Document
<b>PDO</b>	Project Development Objective
<b>PIU</b>	Project Implementation Unit
<b>PWC</b>	Permanent Water Commission
<b>SAED</b>	Delta Management Holding Company, Senegal <i>(Société d'Aménagement des Terres du Delta)</i>
<b>SDAGE</b>	River Basin Masterplan <i>(Schéma Directeur d'Aménagement et de Gestion des Eaux)</i>
<b>SOGED</b>	Diana Dam Holding Company
<b>SOGEM</b>	Manantali Dam Holding Company
<b>SONADER</b>	National Company for Rural Development, Mauritania <i>(Société Nationale de Développement Rural)</i>
<b>WB</b>	The World Bank
<b>WUA</b>	Water Users Association

## TABLE OF CONTENTS

<b>DATA SHEET .....</b>	<b>1</b>
<b>I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES.....</b>	<b>7</b>
<b>A. CONTEXT AT APPRAISAL .....</b>	<b>7</b>
<b>B. SIGNIFICANT CHANGES DURING IMPLEMENTATION .....</b>	<b>11</b>
<b>II. OUTCOME .....</b>	<b>13</b>
<b>A. RELEVANCE OF PDOs .....</b>	<b>13</b>
<b>B. ACHIEVEMENT OF PDOs (EFFICACY) .....</b>	<b>15</b>
<b>C. EFFICIENCY .....</b>	<b>18</b>
<b>D. JUSTIFICATION OF OVERALL OUTCOME RATING .....</b>	<b>20</b>
<b>E. OTHER OUTCOMES AND IMPACTS (IF ANY).....</b>	<b>21</b>
<b>III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME.....</b>	<b>23</b>
<b>A. KEY FACTORS DURING PREPARATION .....</b>	<b>23</b>
<b>B. KEY FACTORS DURING IMPLEMENTATION .....</b>	<b>24</b>
<b>IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME ..</b>	<b>25</b>
<b>A. QUALITY OF MONITORING AND EVALUATION (M&amp;E) .....</b>	<b>25</b>
<b>B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE.....</b>	<b>26</b>
<b>C. BANK PERFORMANCE .....</b>	<b>28</b>
<b>D. RISK TO DEVELOPMENT OUTCOME .....</b>	<b>29</b>
<b>V. LESSONS AND RECOMMENDATIONS .....</b>	<b>30</b>
<b>ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS.....</b>	<b>32</b>
<b>ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION.....</b>	<b>42</b>
<b>ANNEX 3. PROJECT COST BY COMPONENT .....</b>	<b>45</b>
<b>ANNEX 4. ECONOMIC AND FINANCIAL ANALYSIS .....</b>	<b>46</b>
<b>ANNEX 5. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS ...</b>	<b>54</b>



**DATA SHEET**

**BASIC INFORMATION**

**Product Information**

Project ID	Project Name
P131323	Senegal River Basin Climate Change Resilience Development Project
Country	Financing Instrument
Western and Central Africa	Investment Project Financing
Original EA Category	Revised EA Category
Full Assessment (A)	Full Assessment (A)

**Related Projects**

Relationship	Project	Approval	Product Line
Supplement	P131353-Senegal River Basin Climate Change Resilience Development Project	05-Dec-2013	Global Environment Project

**Organizations**

Borrower	Implementing Agency
Ministry of Economy and Finance, Islamic Republic of Mauritania, Ministry of Finance, Republic of Guinea, Ministry of Finance, Republic of Mali, Ministry of Finance, Republic of Senegal	ADRS - Agence pour le Developpement Rural de la Vallee du Fleve Senegal, DNGR - Direction Nationale du Genie Rural, Organisation pour la Mise en Valeur du Fleuve Senegal, SAED - Societe Nationale Amenagement et Exploitation des Terres du Delta du Fleuve Senegal, SONADER - Societe Nationale pour le Developpement Rural



## Project Development Objective (PDO)

### Original PDO

The overall Program Development Objective is: to enhance regional integration among the riparian countries of the Senegal River Basin through OMVS for multi-purpose water resources development to foster improved community livelihoods.

The MWRD2 Project Development Objective is: to improve coordinated management of water resources for socially, environmentally and economically sustainable development in the Senegal River Basin.

Responding to the needs of OMVS and riparian country governments MWRD2 will have broadly similar components to MWRD1: (i) consolidating and further strengthening the institutional, legal and technical framework of the Senegal River Basin to better serve all four riparian countries, (ii) expanding the scope or coverage of concrete water resources development activities at the local level that generate significant income to reduce poverty, and (iii) defining and preparing new multipurpose infrastructure to harness the hydropower potential identified in the basin. MWRD2 activities will primarily be located in the priority areas defined by studies in MWRD1. Each component will scale-up activities started under MWRD1, incorporating lessons learnt and taking forward successful elements for further development.

### Revised PDO

The revised MWRD2 PDO is to improve coordinated management of water resources in the Senegal River Basin.

The revised GEO is to strengthen OMVS capacity to integrate climate change into the coordinated management of water resources in the Senegal River basin.

In this context, "coordinated management" means the concerted development of water uses in the basin between OMVS member States which is ensured through two main mechanisms: (i) the Senegal River Basin Master Plan, approved by the Council of Ministers of the four member states in 2011: all activities financed by the project should be in accordance with it and (ii) the regional Project steering committee (Comité Regional du Pilotage du PGIRE) with representatives from the 4 member states which approves the Project annual implementation plan and budget.



**FINANCING**

	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
<b>World Bank Financing</b>			
P131323 IDA-53220	54,500,000	54,500,000	43,393,381
P131323 IDA-53230	71,000,000	71,000,000	62,378,587
P131323 IDA-53210	58,500,000	58,500,000	51,840,333
P131323 IDA-53660	28,500,000	28,500,000	24,356,595
P131353 TF-16001	12,000,000	12,000,000	11,696,673
P131353 TF-15949	4,000,000	4,000,000	3,274,166
<b>Total</b>	<b>228,500,000</b>	<b>228,500,000</b>	<b>196,939,735</b>
<b>Non-World Bank Financing</b>			
Borrower/Recipient	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Project Cost</b>	<b>228,500,000</b>	<b>228,500,000</b>	<b>196,939,735</b>

**KEY DATES**

Project	Approval	Effectiveness	MTR Review	Original Closing	Actual Closing
P131323	05-Dec-2013	24-Jun-2014	22-Jan-2018	30-Jun-2021	29-Jun-2023

**RESTRUCTURING AND/OR ADDITIONAL FINANCING**

Date(s)	Amount Disbursed (US\$M)	Key Revisions
18-Sep-2019	111.55	Change in Project Development Objectives Change in Results Framework Change in Institutional Arrangements Other Change(s)
29-Jul-2020	139.94	Change in Loan Closing Date(s) Reallocation between Disbursement Categories
21-Dec-2022	176.67	Change in Loan Closing Date(s)
26-May-2023	181.59	Reallocation between Disbursement Categories



**KEY RATINGS**

<b>Outcome</b>	<b>Bank Performance</b>	<b>M&amp;E Quality</b>
Satisfactory	Satisfactory	Substantial

**RATINGS OF PROJECT PERFORMANCE IN ISRs**

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US\$M)
01	08-Apr-2014	Satisfactory	Moderately Satisfactory	0
02	20-Oct-2014	Moderately Satisfactory	Moderately Satisfactory	0
03	20-Mar-2015	Moderately Satisfactory	Moderately Unsatisfactory	2.41
04	15-Oct-2015	Moderately Unsatisfactory	Moderately Unsatisfactory	2.83
05	04-May-2016	Moderately Satisfactory	Moderately Satisfactory	16.13
06	14-Dec-2016	Moderately Satisfactory	Moderately Satisfactory	33.43
07	28-Jun-2017	Moderately Satisfactory	Moderately Satisfactory	43.46
08	27-Dec-2017	Moderately Satisfactory	Moderately Satisfactory	60.66
09	15-Jun-2018	Moderately Satisfactory	Moderately Satisfactory	78.94
10	28-Dec-2018	Satisfactory	Satisfactory	92.34
11	20-Jun-2019	Satisfactory	Moderately Satisfactory	108.19
12	17-Dec-2019	Satisfactory	Moderately Satisfactory	124.69
13	15-Jun-2020	Moderately Satisfactory	Moderately Satisfactory	138.13
14	07-Dec-2020	Satisfactory	Moderately Satisfactory	146.98
15	07-Jun-2021	Satisfactory	Moderately Satisfactory	158.61
16	04-Dec-2021	Satisfactory	Moderately Satisfactory	169.70
17	09-Jun-2022	Satisfactory	Moderately Satisfactory	176.24
18	21-Dec-2022	Satisfactory	Moderately Satisfactory	176.67
19	29-Jun-2023	Satisfactory	Moderately Satisfactory	181.84



**SECTORS AND THEMES**

**Sectors**

Major Sector/Sector (%)

**Agriculture, Fishing and Forestry 33**

Other Agriculture, Fishing and Forestry 33

**Public Administration 8**

Other Public Administration 8

**Health 17**

Health 17

**Transportation 3**

Ports/Waterways 3

**Water, Sanitation and Waste Management 39**

Other Water Supply, Sanitation and Waste Management 39

**Themes**

Major Theme/ Theme (Level 2)/ Theme (Level 3) (%)

**Private Sector Development 1**

Regional Integration 1

**Human Development and Gender 9**

Disease Control 9

Malaria 9



<b>Environment and Natural Resource Management</b>	<b>82</b>
Environmental policies and institutions	7
Water Resource Management	75
Water Institutions, Policies and Reform	75

**ADM STAFF**

<b>Role</b>	<b>At Approval</b>	<b>At ICR</b>
Regional Vice President:	Makhtar Diop	Ousmane Diagana
Country Director:	Colin Ashley Bruce	Keiko Miwa
Director:	Colin Ashley Bruce	Chakib Jenane
Practice Manager:	Jonathan S. Kamkwalala	Fatouma Toure Ibrahima Wane
Task Team Leader(s):	Shelley Mcmillan, Marie-Laure Lajaunie	Xavier Chauvot De Beauchene, Pierre Jacques Lorillou
ICR Contributing Author:		Kevin Spero Mawutondji Ahouandjinou



## I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

### A. CONTEXT AT APPRAISAL

#### Context

- 1. The Senegal River delta crosses a variety of hydrological conditions as it travels across borders.** Topographical, hydrographic, and climatic conditions are very different in these three regions and seasonal temperature variations are extensive and are high and arid from Mali onwards. The Senegal River Basin covers a surface area of about 300,000 km<sup>2</sup>. The Senegal River originates in the mountainous and forested high plateau of northern Guinea, which represents 31,000 km<sup>2</sup> (11 percent) of the River basin area. It then flows to western Mali, which has the largest share of the River basin (155,000 km<sup>2</sup>, 53 percent), southern Mauritania (75,500 km<sup>2</sup>, 26 percent) and northern Senegal (27,500 km<sup>2</sup>, 10 percent). The basin has three distinct parts. The upper basin, which includes the parts of the river basin located in Guinea and Mali, receives 700 - 2,000 mm of annual rainfall and provides most of the flow in the river. The valley and the delta, which are shared and represent the border between Senegal and Mauritania, only receive 150 - 300 mm of rainfall annually and are where most of the water use takes place. The total annual discharge of the Senegal River is estimated at 24 billion m<sup>3</sup> per year, but this annual flow is highly irregular.
- 2. While the four riparian countries of the Senegal River basin ranked among the poorest countries in the world, the river represents an artery for their socio-economic development.** 42-53% of riparian countries' population lived below the poverty line and the Gross National Income per capita was as low as \$430 in Guinea. All have Human Development Indices ranking within the bottom 32 countries in the world. The total population of riparian countries was estimated at 35 million inhabitants, of which 12 million (34%) was located in the River basin. They are mostly subsistence or smallholder farmers so are among the most vulnerable groups in the region. The average population growth rate in riparian countries was estimated at 2.7 percent, which means that the population doubles every 25 years. All riparian countries were and are facing energy shortages, growing demand for water and food security uncertainties, which are expected to worsen with climate change and demographic growth. Yet, the basin's hydropower and irrigation potential remain highly underexploited. Irrigated farming remained limited to the middle and lower river valley between Mauritania and Senegal. The irrigation potential for the basin was estimated at 375,000 ha, of which about 135,000 ha (36%) were equipped, but only 90,000 ha were irrigating. The hydropower potential was estimated at 1,200 MW of which less than 30 percent was currently installed and exploited. A study by the Economic Community of West African States (ECOWAS) prioritized the pipeline of proposed dams and developed supporting guidelines, which signaled an increased regional interest for water resources development. Increased water storage and infrastructure, coupled with multi-purpose water resources development and management, remained crucial to addressing the growing demand for water and food, and to ensure socio-political stability and peace, sustainable development and the welfare of the people living in the Basin.
- 3. The transboundary management of the river has been anchored in a sound institutional set-up pre-dating appraisal.** The 'Organisation pour la Mise en Valeur du fleuve Sénégal' (Senegal River Basin Organization – OMVS) was established jointly by Mali, Mauritania, and Senegal in 1972 in the context of severe droughts, famine, and degradation of the natural resource base as a River Basin institution with the mandate of securing Member States' economies and reducing the vulnerability of peoples' livelihoods through coordinated water resources management



and energy development. Guinea joined OMVS in 2006, bringing the coverage of the OMVS to the entire Senegal River basin. Following the Nouakchott Declaration of May 2003, which sets the strategic orientation for development of the Senegal River Basin, the OMVS vision for regional integration includes accelerating the development of multi-purpose water resources infrastructure to augment water availability and generate low-cost hydroelectricity. OMVS is a strong, stable regional organization, critically important for regional integration in West Africa, with a unique consensus-based governance structure and co-ownership between Member States of river management assets (e.g., dams) built in the river basin. OMVS' main priorities are to ensure coordinated river basin planning and investments and ensuring that assets built are properly used to ensure that the water and food security benefits materialize.

4. **The Project is embedded in the World Bank's long and successful history of partnering with OMVS and its Member States.** A first phase of Bank support to the Senegal River Basin Multi-Purpose Water Resources Development (MWRD) program, MWRD1<sup>1</sup> (2007-2013), focused on institutional strengthening activities to improve sector planning, advance water resources development and management at the regional level, and fund investments and capacity-building activities in the agriculture, energy, health, environment, and fisheries sectors. The MWRD Project (MWRD2), which is the focus of the present ICR, is the second phase of Bank support to the program. MWRD2 built on and pursued both the institutional and water management tool development. It funded critical investments to improve populations well-being and livelihood in the sectors already supported under MWRD1. It also included grant funding through trust funds to strengthen OMVS and pilot climate change adaptation and mitigation activities, with scale-up potential across the Senegal River basin and beyond.
5. **The MWRD2 was structured in four IDA Credits, one to each of the four Member States, totaling the equivalent of USD 212.5 million<sup>2</sup>, a USD 4 million Global Environmental Fund (GEF) Grant<sup>3</sup> and a USD 12 million Grant<sup>4</sup> from the Least Developed Countries Fund (LDCF), both to OMVS, and a cumulative USD 13.4 million in counterpart funding by Member States<sup>5</sup>.** Each Member States retroceded their Credits to OMVS to manage. The MWRD2 also received parallel financing through a EUR 10.04 million Grant from the Government of the Netherlands to OMVS (known as Trust Fund 3 or TF3<sup>6</sup>), which supported additional activities in parallel to the MWRD2, focused on reducing erosion in the upper basin and proliferation of the Typha reed in the lower basin of the Senegal river. TF3 closed on December 31, 2021, and was the focus of a separate ICR delivered in 2022 (Report No.: ICR00005660). This ICR focuses on Project activities funded under the four IDA Credits and the GEF and LDCF grants.

### Theory of Change (Results Chain)

6. **At the time of Project preparation, it was not a requirement to prepare a formal theory of change. The Task Team reconstructed the theory of change at closing, based on the Project's results chain, as follows.**

<sup>1</sup> P093826: Senegal River Basin Multi-Purpose Water Resources Development 1

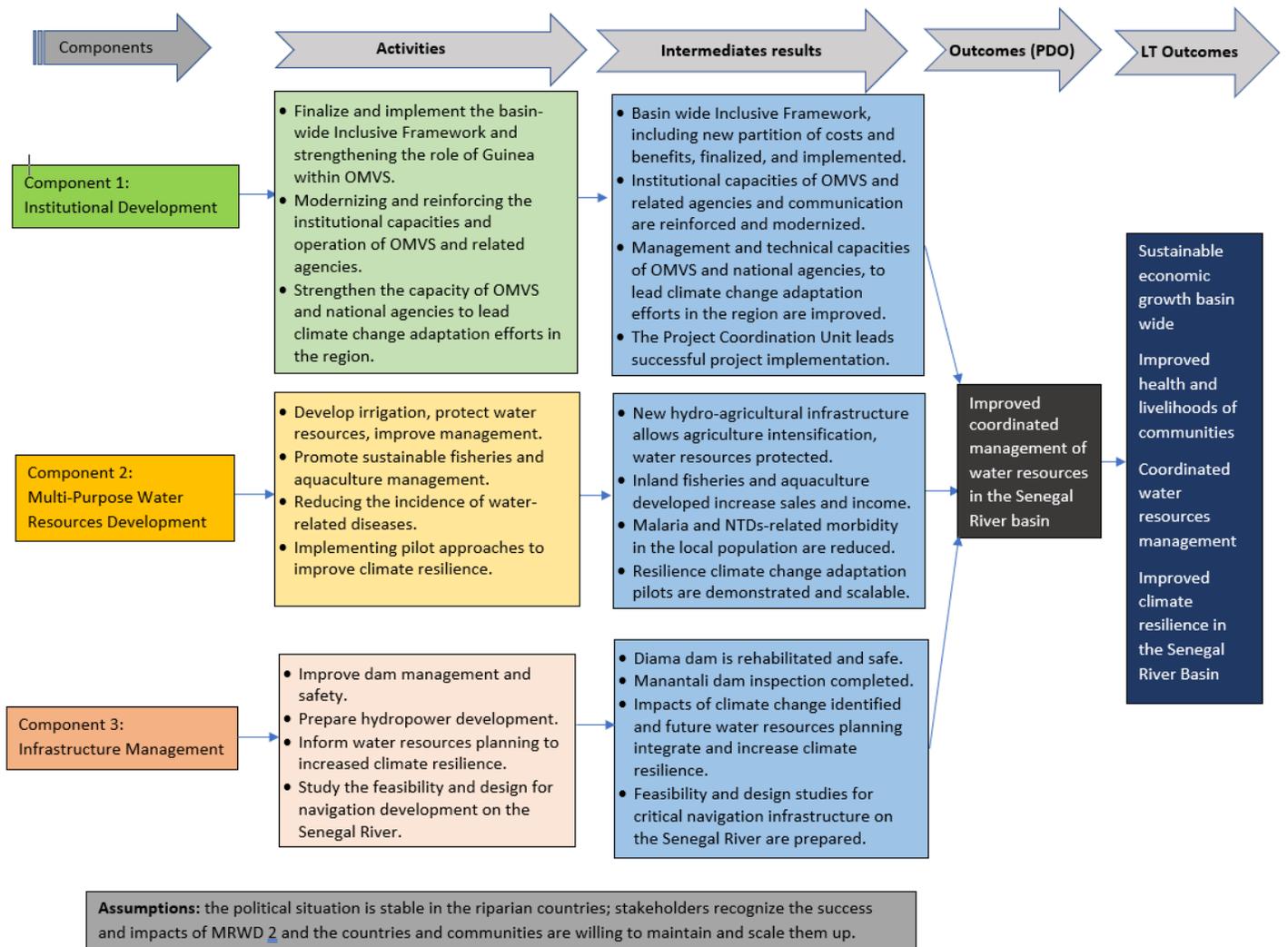
<sup>2</sup> Credit No. IDA 5321-SN of USD58.5 M to the Republic of Senegal; Credit No. IDA 5322-ML of USD54.5 M to the Republic of Mali; Credit No. IDA 5323-MR of USD71.0 M to the Islamic Republic of Mauritania; Credit No. IDA 5366-GN of USD28.5 M to the Republic of Guinea.

<sup>3</sup> TF015949

<sup>4</sup> TF016001

<sup>5</sup> A counterpart contribution of USD\$3,727,000 each for Mali, Mauritania and Senegal; and of USD2,184,000 for Guinea.

<sup>6</sup> P153863: Senegal River Basin Integrated Water Resources Management Project



### Project Development Objectives (PDOs)

- The overall Program Development Objective was: “to enhance regional integration among the riparian countries of the Senegal River Basin through OMVS for multi-purpose water resources development to foster improved community livelihoods.”**
- At appraisal, the MWRD2 Project Development Objective was: “to improve coordinated management of water resources for socially, environmentally and economically sustainable development in the Senegal River Basin”, and the related Global Environmental Objective, linked to GEF funding of the Project, was: “to strengthen trans-boundary water resources management in the Senegal River Basin including climate change adaptation and implementation of priority actions of the Strategic Action Plan”.**



**Key Expected Outcomes and Outcome Indicators**

9. **At appraisal, progress to achieve the PDO was measured through five PDO indicators**, two of which were either disaggregated (cf. PDO Indicator #1) or had sub-indicators (cf. PDO Indicator #4), as presented in Table 1.

**Table 1: PDO-level outcome indicators at Appraisal**

Original PDO Indicators	Baseline	Target	Actual	Achieved
1. Direct Project beneficiaries (Number)	0	4,500,000	4,500,000	100%
1.1 Female beneficiaries (Percentage)	0	51	51	100%
1.2 Direct Project beneficiaries benefiting from the pilot activities to build climate resilience (Number)	0	5,000	9,000	180%
2. The new framework for partition of costs and benefits in the river basin is finalized and presented to the Council of Ministers (CoM) (Yes/No)	No	Yes	Yes	100%
3. Area provided with new/improved irrigation or drainage services (hectares)	0	13,680	14,042	103%
4. Number of Long-Lasting Insecticidal Nets (LLIN) distributed (Number)	0	4,500,000	4,500,000	100%
4.1 Proportion of children 6-59 months sleeping under a LLIN	74%	80%	86,6%	109%
4.2 Proportion of women 15-49 years sleeping under a LLIN	65,2%	80%	92%	115%
5. Improved tools are used in decision-making on water allocation during the meetings of the Permanent Water Commission (Yes/No)	No	Yes	Yes	100%

**Components**

10. **Component 1: Institutional Development** (Appraisal estimate US\$19.11 million, of which US\$15.15 million IDA and US\$ 2.98 GEF; Actual US\$18.38 million, of which US\$15.95 m IDA, US\$1.83m GEF/LDCF and US\$0.60m counterpart funding). This component aimed at building capacity for OMVS and Member States to implement cooperative management and support institutional strengthening and Project implementation. Notably, the component focused on: (i) Updating the Inclusive Framework and strengthening the role of Guinea within OMVS (GEF-funded); (ii) Modernizing and reinforcing the institutional capacities of OMVS and related agencies; (iii) Strengthening the capacity of OMVS and agencies in the riparian States to lead climate adaptation efforts in the region (GEF-funded); and (iv) Promoting strategic Management of the Project.
11. **Component 2: Multi-Purpose Water Resources Development** (Appraisal US\$174.23 million, of which US\$156.22 million IDA and US\$ 7.00 GEF-LCDF; Actual US\$145.85 million, of which US\$135.95 m IDA, US\$6.68 m GEF-LDCF, and US\$3.22 m counterpart funding). This component funded investments implemented by national agencies of each Member State in irrigation, water resource protection, fisheries, and aquaculture to improve the livelihoods of the basin population. This component also included health activities to address water-related diseases and improve people's well-being, and pilot approaches to improve Climate resilience (GEF funding through the LCDF).
12. **Component 3: Infrastructure Management and Planning** (Appraisal US\$29.62 million of which US\$ 23.60 million IDA and US\$ 1.02 GEF and US\$ 5.00 GEF-LCDF; Actual US\$24.99 million, of which US\$20.55 m IDA, US\$4.44 m



GEF/LDCF). This component was to finance OMVS to develop advanced climate resilient water resources planning and development in the river basin such as: (i) Dam management and hydropower development; (ii) Planning for climate resilience; and (iii) Development of navigation along the Senegal River Basin. It also included capacity building activities and program management support expenditures.

13. At appraisal, US\$ 17.53 million was reserved as unallocated funds.

## B. SIGNIFICANT CHANGES DURING IMPLEMENTATION

14. **The Project went through four restructurings** (September 2019 and May 2023) which included two closing date extensions (an 18-month-extension in July 2020 and an almost 6-month extension in December 2022). The Bank extended the Project closing date from December 2022 until June 29, 2023, to add a dry season to facilitate finalizing remaining works (dry season is when works can happen). Most remaining activities could be completed during the extension period. Additional changes include the following:

- Two Member States faced coups and had all or part of their countries in FCV situations. This delayed implementation. It limited the number of companies willing to work in FCV areas and prevented supervision of certain Project sites.
- The Bank decided to move away from funding the Koukoutamba dam. The 2019 restructuring removed related studies from the Project and with them the ambition of “planning new hydropower”, which was an important part of economic development.
- Meanwhile, the inspection of the Manantali dam, which had been planned but could not be implemented under a Bank operation with Senegal, was transferred to the MWRD 2 in October 2022.

### Revised PDOs and Outcome Targets

15. **The PDO was revised once in 2019** as part of the first restructuring to remove the words "for socially, environmentally and economically sustainable development". The rationale for the change, as stated in the restructuring paper was to refocus the PDO on its core part, namely “to improve coordinated management of water resources in the Senegal River basin”, to improve the alignment of the PDO and indicators with Project-funded activities and what the Project could be accountable for.
16. **The Global Environmental Objective (GEO) was also modified** as part of the first Project restructuring in 2019 for the same reasons to read: “to strengthen OMVS capacity to integrate climate change into the coordinated management of water resources in the Senegal River basin.”
17. **The restructuring paper defined "coordinated management"** as “the concerted development of water uses in the basin between OMVS member States which is ensured through two main mechanisms: (i) the Senegal River Basin Master Plan, approved by the Council of Ministers of the four member states in 2011: all activities financed by the Project should be in accordance with it; and (ii) the regional Project steering committee (*Comité Régional du Pilotage du PGIRE*) with representatives from the four member states which approves the Project annual implementation plan and budget.”



### Revised PDO Indicators

18. In addition to the changes of formulation of the PDO and GEO, the 2019 restructuring also made changes to the PDO-level indicators, as presented in table 2. The rationale stated in the restructuring paper was to better align indicators with what could be attributed to Project-funded activities and what monitoring systems allowed measuring, and to right-size their end of Project target values of two indicators. The changes included moving the health-related indicator and sub-indicators from PDO- to intermediate-level and refocusing the PDO-level indicators on quantifiable income-generating activities. This signaled an emphasis of the economic aspects of the Project, although the same restructuring removed the reference to ‘sustainable development’ from the PDO.

**Table 2: Changes in PDO-level outcome indicators during implementation**

Original PDO Indicators	Original Target	Revised/added/deleted indicator	Revised Target	Actual	Achieved
New indicator (moved from intermediate indicator)	-	Increased sale of fresh and processed fish in Project sites (percentage)	20%	21%	105%
Long lasting insecticide treated malaria nets purchased and/or distributed (number)	4,500,000	Moved to intermediate indicators	-	4,500,000	
New indicator	-	The OMVS regional steering committee (‘Comité de Pilotage’) is composed of representative from the riparian States is operational (No/Yes)	Yes	Yes	100%

### Revised Components

19. The components of the Project did not change during implementation.

### Other Changes

20. In September 2019, the Project was restructured to revise the PDO, sharpen the definition of some indicators, make changes in the legal agreements, and make an explicit reference in the legal documents of the implementation of climate change pilot projects. Additional changes included:

- The July 2020 Project restructuring to extend the Project closing date to December 2022 (by 18 months).
- The December 2022 Project restructuring to extend the project closing date to June 29, 2023 (by almost 6 months).
- The May 2023 Project restructuring to reallocate funds between disbursement categories.

### Rationale for Changes and Their Implication on the Original Theory of Change

21. While the 2019 restructuring revised the PDO, changes in the disbursement profile, and funds reallocation in disbursement categories, **Project activities and components remained unchanged through Project implementation**, and so did the Theory of Change. The rationale for these changes is outlined below.



22. **First restructuring:** The first restructuring took place in September 2019, pursuant to the January 2018 Mid-Term Review (MTR) and the January 2019 supervision mission. The restructuring included: (i) sharpening the PDO, making it more precise and in line with what the Project could be accountable for; (ii) rationalizing the results framework, switching some indicators from PDO-level to intermediate-level, sharpening the definition of indicators to make them more directly linked to Project activities or to reflect corporate indicators (e.g., land areas under sustainable land management practices) more measurable and ensuring that targets are achievable; (iii) adjusting disbursement profile based on more realistic projections, taken into account significant delays incurred in the first two years of Project implementation and further delays since then in the signature of a few large contracts by the national implementing agencies; (iv) further clarifying that activities under Part C.1(a) of the legal agreement finance only studies (and excludes implementing any work related to the Koukoutamba dam, including its access road and transmission line); and (v) extending the scope of application of the performance contract between OMVS and the implementing agencies, namely the Rural Development Agency for the Senegal River Valley (ADRS) in Mali, the Delta Management Holding Company (SAED) in Senegal, and the National Company for Rural Development (SONADER) in Mauritania, to include the implementation by these entities of the pilot activities under Part B.4 of the legal agreement, financed by the LDCF Grant No. TF016001. These changes had no effect on Project components and outcomes.
23. **Second and third restructurings:** Despite disruptions due to the COVID-19 pandemic, implementation progress improved progressively and in order to meet development objectives, an almost 24-month extension was granted in two phases; the closing date was first extended by 18 months in July 2020 (up to December, 2022), to allow all the riparian countries to complete critical activities on fisheries and irrigation systems towards ensuring the achievement of the PDO. A second extension was granted for almost 6 months (until June 2023) to give an additional working season to achieve completion and operationalization of new irrigation systems and capturing them in the Result Framework.
24. **Fourth restructuring:** In May 2023, a last restructuring was processed to reallocate funds between disbursement categories in all Credit and Grant Agreements to reflect increased funding need under the infrastructure components and slower than planned progress under other disbursement categories. This was also to support the efforts to finalize as many of the activities funded under the Project as possible before the Project closing date.

## II. OUTCOME

### A. RELEVANCE OF PDOs

#### Assessment of Relevance of PDOs and Rating

25. **Both the original and revised PDOs remained aligned with the current World Bank's Country Partnership Frameworks (CPFs) for the four riparian countries and with the regional integration strategy at Project closing. The Project remains relevant to:**
- **Guinea's CPF FY18-FY23**, especially to objective 3 (Improved management of mining, natural resources, and biodiversity), objective 5 (Improved health and social protection, especially in rural areas), and objective 6 (Increased agricultural productivity and access to markets).
  - **Senegal's CPF FY20 – FY24**, particularly objective 2.4 (Boost the productivity and competitiveness of agriculture and related value chains), and objective 3.1 (Promote and protect resilient livelihoods, ecosystems, and infrastructures in the face of climate). Project Component 2 is particularly aligned with this objective.



- **Mauritania’s latest CPF FY18 – FY23.** The Focus Area One of the CPF is to Promote Economic Transition for Diversified and Resilient Growth, specifically by Increasing production value in the fisheries sector (objective 1.1); Increasing agriculture and livestock production in the face of climate change (objective 1.2); with the following outcomes: Volume of fresh fish exports (metric tons per year); Land area under new and improved irrigation (ha); Land area under sustainable land management practices (ha).
- **Mali’s latest CPF FY16 – FY19** and its Performance and Learning Review. To create economic opportunities, the CPF’s Second Area of Focus supports contributing to: (i) increased productivity in agriculture; (ii) expanded access to markets in key agricultural value chains; (iii) improved access and quality of ICT, electricity services in rural areas and water supply and sanitation in Bamako, all of which will build long-term resilience to shocks; and (iv) better water and natural resources management.

**26. Both the original and revised PDOs also remained aligned with the regional integration strategy at Project closing, with corporate priorities, and relevant with country priorities, as follows:**

- **Regional integration:** The PDO is also aligned with the World Bank Group’s Regional Integration and Cooperation Assistance Strategy - Update for the Period FY21–FY23. More specifically, the PDO contributes to Focus Area 4 (transboundary water and natural resources management) under Strategic Pillar 4: Reinforcing resilience and is aligned with objective 4.2: Support sustainable management and financing of transboundary water.
- **Corporate priorities:** The Project is also aligned with the Water Strategy of the Western and Central Africa sector units and with the Global Challenge Program for Water (GCP). It directly contributes to their core objectives to accelerate water security and climate adaptation, at the scale of the Senegal River basin, especially on their Pillar 2: “scaling up climate resilient irrigation to increase food production and water productivity” and Pillar 3: “reducing impacts of flood and droughts and sustainably managing water resources”, with special attention to FCV contexts.
- **Relevance with the country priorities:** The Project also was and remained aligned to the four riparian countries’ development plans and Nationally Determined Contributions (NDCs), where it specifically links to aspects related to rural development, environmental management, and cooperative management of the Senegal River Basin’s water resources. The Project remained aligned: (i) in Guinea, with the emergence plan “Vision 2040 for an emerging and prosperous Guinea” adopted and implemented by the Government, and from which flows the National Economic and Social Development Plan 2016-2020; (ii) in Mali, with the *Plan de Relance Durable* (Sustainable Recovery Plan), which includes structuring elements in the “*Cadre Stratégique pour la Relance Economique et le Développement Durable*” (Strategic Framework for Economic Recovery and Sustainable Development) (CS-REDD) 2019-2023; (iii) in the Islamic Republic of Mauritania, with the Strategy for Accelerated Growth and Shared Prosperity (SCAPP) for 2016-2030, published in 2017 and approved by the Council of Ministers in January 2018 and by Parliament in April 2018; and (iv) in Senegal, with the “*Plan Sénégal Emergent*”, 2014-2023 adopted and implemented by the Government.

**27. As the operation provided clear evidence of the alignment of the PDOs to the objectives of the current CPF, countries’ priorities and sector and corporate strategies, the proposed rating for relevance is High.**



## B. ACHIEVEMENT OF PDOs (EFFICACY)

### Assessment of Achievement of Each Objective/Outcome

28. **A split-evaluation was applied as the 2019 restructuring modified the PDO, changed some PDO indicators and reduced the end of Project target of one of the PDO-level indicators** (see Table 1). The team assessed both the original and the revised objectives to determine the overall outcome. The 2019 restructuring paper defined “coordinated management” as “the concerted development of water uses in the basin between OMVS member States which is ensured through two main mechanisms: (i) the Senegal River Basin Master Plan, approved by the Council of Ministers of the four member states in 2011 and which defined all activities financed by the Project; and (ii) the regional Project steering committee (*Comité Régional du Pilotage*) with representatives from the four member states, which approves the Project annual implementation plan and budget”. The GEO was “to strengthen transboundary water resources management in the Senegal River Basin including climate change adaptation and implementation of priority actions of the Strategic Action Plan”. As the GEO is an integral part of the PDO and all Project components involved activities funded by the GEF, the GEO is assessed as part of the PDO.
29. **Pre-2019 Restructuring:** The PDO prior to the 2019 restructuring was “to improve coordinated management of water resources for socially, environmentally and economically sustainable development in the Senegal River Basin”. The overall outcome prior to restructuring is therefore assessed in terms of the achievement of four equally weighted objectives: the core objective of “coordinated management of water resources”; and the three stated application areas of this core objective, namely “socially sustainable development”; “environmentally sustainable development”; and “economically sustainable development”.
30. **The Project measured the efficacy of Project’s core objective of “improving coordinated management of water resources in the Senegal River Basin” through: (i) the PDO indicator on the development of a new framework for the partition of costs and benefits in the river basin financed under component 1; and (ii) critical tools funded under component 3.** They provide the necessary data to quantify costs and benefits of the water usage and ensure that the developed framework is evidence-based and that it can be used for coordination and to inform the decision-making process of water allocation to each member State (during the meetings of the Permanent Water Commission - PWC). This outcome is measured by: (i) PDO indicators related to the institutional development, financed under component 1; and (ii) validation at country level of the new framework for cost and benefits and its presentation to the Council of Ministers (COM) of the Member States; and by (iii) the use of improved tools, developed under component 3, to inform the water allocation process during the meeting of the PWC.
31. **At Project’s closure, all related indicators were achieved.** The new framework on costs and benefits was validated at technical level and was submitted to COM for approval, meeting the PDO indicator. However, as of March 15, 2024, its approval by the COM is pending, because a newly appointed minister in one Member State asked for clarifications, which prevented reaching a consensus. The mapping, modeling and other analytical tools developed under the Project, including the new Water Evaluation And Planning (WEAP) tool to improve water management, effectively inform decisions made by the PWC on water allocation between Member States. Beyond indicators, the Project also financed the preparation of the new River Basin Masterplan 2050 (*‘Schéma Directeur d’Aménagement et de Gestion des Eaux - SDAGE 2050’*), which is the result of two years of analysis, modelling, and consultations across the four States. It integrates the latest climate information and includes a Climate Investment plan outlining concrete actions for climate adaptation and mitigation. The SDAGE 2050 was adopted by all Member States and OMVS and now stands as the new reference for coordinated water resources management in the Senegal river basin.



32. The Project measured the objective of “**socially sustainable development**” through the number of direct Project beneficiaries; operational Water Users Associations (WUAs) created and/or strengthened; and through the benefits derived from the mass treatment for locally occurring Neglected Tropical Diseases (NTD), and from the distribution of Long-Lasting Insecticide-treated Nets (LLINs), in particular women and children, under component 2. These health-related activities are continued from MWRD 1. A survey carried out in October and November 2022 of 4,500 households across the four member states showed good results on the health-focused activities. It concluded that the proportion of women and children under 5 sleeping under the LLIN provided by the Project exceeds end of Project targets and are in strong progression from the already strong progress recorded during MWRD 1. Related awareness raising campaigns also generated behavior change in targeted communities. Under the Project, respectively 97% and 86% of school-aged children were treated against schistosomiasis and geohelminth, which exceed the end-of-Project target of 80%. Close to 3 million people or 75% of children and 74% of pregnant women in the river basin declared sleeping under a LLIN (95% of the Project target). The report compares 2011 and 2022 health indicators and shows that a decrease in (i) prevalence of malaria and NTD in women (15-49 years old), (ii) in pregnant women, and (iii) anemia in children under 5 of 6.9 percentage points (pp), 14.3 pp and 7.1 pp, respectively. At closure, over 4,5 million people benefitted from one or more Project-funded activity, of which 51% female. This represents 13% of the population of riparian States and 38% of the population of the Senegal River basin. The Project focus on WUAs derives from the lessons of MWRD 1. It is a critical part of building the social capital and the confidence of the community to sustainably manage the assets created and the Project achieved 220% of the target.
33. The Project measured the objective of “**environmentally sustainable development**” through agroforestry and reforestation for slope stabilization, the successful implementation of numerous pilot activities to build climate resilience and related awareness raising, advocacy and capacity building activities promoting a lasting change. 3,256 hectares (ha) of land were “stabilized through agroforestry development and reforestation” and thereby protected against erosion, against a target set at Appraisal of 3,527 ha (92.3% achieved). This is the only indicator which did not meet or exceed its Appraisal target. Pilot projects for climate change adaptation successfully demonstrated the benefits of, inter alia, climate-resilient agricultural practices, efficient wood burning stoves, small-scale biogas digesters to transform agricultural by-products and farm waste into biogas and fertilizer, and methods to transform the invasive Typha reed into biochar and construction materials. These pilots can be scaled up or replicated, possibly through a future operation. The hydrometeorological monitoring pilot project, implemented in Senegal, has been accredited by the African Water Forum and attracted benchmarking missions by other countries. Climate change activities were also highlighted in strategic planning documents, including Country Climate Development Reports. At closure, 9,000 people benefitted from climate change adaptation pilots and related capacity building and awareness-raising activities (180% of the 5,000 people target), and member States are exploring ways to scale up some of these pilots. As part of the SDAGE 2050, the Project also delivered the Climate Investment plan of the Senegal river basin.
34. The Project measured the objective of “**economically sustainable development**” through the increase in agricultural productivity in areas benefitting from new or rehabilitated irrigation perimeters, improved performance and safety of the Diama and Manantali dams and other smaller storage facilities, and growth in the sale of fresh and processed fish in Project sites, under component 2. At closure, over 14,000 hectares had been equipped or rehabilitated under the Project, were cultivated, and generated an agricultural productivity of 124.5% (24.5% greater than the Project baseline). A 21% increase was observed in sales of fresh & processed fish (105% of the target), which contributed to improving beneficiaries’ livelihood, both in terms of income and protein intake in Project areas. Project’s activities for Diama dam and smaller infrastructure such as the Yedia weir in Senegal allowed securing water for more irrigated areas. Women cooperatives exploited small village irrigation perimeters for intensive vegetable crops and transformed agricultural produce for greater value addition. Areas of new irrigation perimeters were allocated to vulnerable groups including widows, disabled people or unemployed graduates, e.g., in Chechya in Mauritania. Since



closure, the Mback Dieuk irrigation perimeter was connected to electricity and started irrigating 617 hectares (not counted in the end-of-Project results), and the Government of Mali formally requested that works to complete irrigation in 958 hectares not achieved under MWRD 2 be transferred to another Bank-funded Project<sup>7</sup>.

35. **MWRD 2 outcomes are clearly attributable to the Project**, which intervention areas were deliberately focused on a limited number of regions of each Member States for greater impact. At closing, the Project results reached or exceeded the target values set at Appraisal for all PDO indicators and all but one intermediate indicators. Therefore, **the pre-restructuring PDO achievement is rated Substantial**.
36. **Post 2019 restructuring:** Based on analysis carried out during the Project mid-term review, the 2019 restructuring removed the part of the PDO which specified the aspects in which improved coordination management was required, namely social, environmental, and economic development, so the revised PDO reads: "improve coordinated management of water resources in the Senegal River basin." It also changed the GEO to read "to strengthen OMVS capacity to integrate climate change into the coordinated management of water resources in the Senegal Basin." This change did not alter Project components and activities, Project outputs, or the capacity to measure PDO achievements. Moreover, the definition of "coordinated management" mentions consistency with the Senegal River Basin Master Plan, from which all activities are derived. Therefore, the post restructuring PDO encompasses the social, environmental, and economic sustainable development impacts, which were made explicit in the original PDO, and thus **the pre-restructuring analysis applies as well to evaluate the revised PDO**. All indicators monitored in the post-restructuring result framework are directly related to Project implemented activities and are therefore attributable to the Project.
37. The actual progress of **the PDO indicator: "Area provided with irrigation and drainage services (ha)"**, which end of Project target was reduced in the 2019 restructuring from 13,680 ha to 10,000 ha due to higher than planned costs. With over 14,000 ha, the Project **outperformed both the original and reduced end of Project targets**.
38. **The only indicator which did not exceed its pre-2019-restructuring target value is the intermediate indicator "Slope stabilization through agroforestry development and reforestation (ha)"**, which the 2019 restructuring changed into "Land area under sustainable land management practices (ha)" to adopt the formulation of the corporate results' indicators. Its end of Project target value was reduced from 3,527 to 3,000, a 15% reduction attributed to higher than anticipated unit costs. Although, this change represented a minor reduction in scope or ambition, **at closing, the actual value for this indicator reached 3,256 hectares. This is 109% of the post-restructuring target value but 92.3% of the pre-restructuring value, which is considered a substantial progress**.
39. **While the irrigation related PDO indicator: "Area provided with irrigation and drainage services (ha)" exceeds the target value when considering consolidated results across the four countries, the situation varies when comparing the relative contribution of each country against indicative country targets**. Senegal and Mauritania largely exceeded their planned contribution to the irrigation indicator, which offset the modest delivery in Mali (1,549 ha, 52% of the planned contribution to the end of Project target value) and the negligible delivery in Guinea (105ha, 5% of its planned contribution). These shortcomings affect the capacity of the irrigation investments to generate the expected outcomes in Mali and Guinea and will require time and funding to complete these investments. Although these impacts are captured in the end of Project Economic and Financial Analysis (EFA), they also affect the assessment of the overall efficacy rating and represents a risk to the development outcome in these countries.

<sup>7</sup> Mali Dryland Development project - Projet de Développement de la Productivité et de Diversification Agricole dans les Zones arides et semi arides du Mali (PDAZAM)- P164052



40. **At closing, the Project results reached or exceeded the target values set at the 2019 restructuring for all indicators. Therefore, the post-restructuring PDO achievement is rated Substantial.**

#### Justification of Overall Efficacy Rating

41. **The overall efficacy rating is assessed as Substantial pre-restructuring and Substantial post-restructuring.** The Project has generated measurable outcomes at closing. Post-closing information show further development of irrigated areas and a commitment to complete some of the activities which could not be completed during the Project. The Project had set activities and a result framework which remained relevant throughout implementation. The restructuring introduced marginal changes, and the end of Project results reached or exceeded the target values set at Appraisal for all but one indicators. The Project had a clear focus on capacity building and institutional strengthening activities, most of which were implemented despite the COVID-19 pandemic. It delivered the SDAGE 2050, which is the new masterplan for the Senegal river basin, with a special focus on the climate agenda.

### C. EFFICIENCY

#### Assessment of Efficiency and Rating

42. **An EFA was carried out at Project Appraisal in partnership with the FAO-investments team (Appraisal EFA). The EFA considered four types of Project benefits:**
- **Regional economic benefits**, through effective cooperation in support of hydropower development, and community-level economic benefits within and beyond Project intervention sites, through increased agricultural productivity derived from irrigation rehabilitation or extension and enhanced fishing activities.
  - **Health benefits**, derived from Project-funded activities to address water related diseases, in particular the reduction of the most common NTD and the vector-control aspects of malaria, building on the results of MWRD1, which had demonstrated that the use of LLINs led to a reduction of parasitemia in target populations from 5.7 percent in 2008-09 to 2.9 percent in 2010-11. The EFA also quantified the associated economic impacts on the well-being of individual households and communities as well as aggregate economic output and growth.
  - **Nutritional benefits**, derived from both the increased consumption of locally produced fish as a source of protein in the local communities, and the increased levels of crops production, in particular rice production, which is a major staple food for communities living along the Senegal River, and diversified nutrition from market gardens, improving people's diets.
  - **Environmental benefits**, related to improved water resources management, and reduced erosion and siltation due to slope protection and reforestation.
43. **The Appraisal EFA focused on quantifying benefits deriving from fishery and irrigation activities and investments.** It also quantified expected additional economic fallouts derived from Project implementation in terms of number of jobs created in fisheries, agriculture, and agroforestry and the annual salary and sector net business income they generate but did not include these in the rates of returns. The Appraisal EFA did not quantify benefits related to Project-supported health and environment activities nor the benefits derived from capacity building activities, small



scale production units, GEF-funded pilots and institutional and governance activities. The Appraisal EFA thus underestimated some Project attributable benefits. The assumptions used in the Appraisal EFA were very optimistic (namely 167% valorization of the irrigated areas) and the EFA model needed some of the formulas to be corrected. As a result, the Appraisal EFA showed inflated Economic Internal Rate of Return (EIRR), Financial internal rate of return (FIRR) and Net Present Value (NPV). Appraisal entry EFA results, as presented in the PAD, are reproduced in table 3 below.

**Table 3: FIRR, EIRR, NPV, and additional economic benefits Estimated at Project Appraisal and at Closure**

	FIRR <sup>8</sup>	EIRR	NPV	Annual Income Generation (US\$, salary & net business income)
Estimate at appraisal	44.9 percent	37.7 percent	US\$ 343.6 million	US\$ 106.62 million
At closure	26.8 percent	34.7 percent	US\$ 275.3 million	

44. **The team ran the corrected Appraisal EFA** using the same methodology with end-of-Project data in terms of irrigation areas equipped or rehabilitated under the Project and incremental production since Project investments were completed. The EFA considered the costs of unfinished investments, but not the related expected benefits. It did not quantify the benefits listed in the PAD but not quantified in the Appraisal EFA. It also listed expected unquantified economic fallouts derived from the Project but did not count it in the EFA (See Annex 4 for details).
45. **The end of Project EFA shows a satisfactory EIRR and NPV, comparable to those of the Appraisal EFA.** The EFA results confirm the good performance of the Project already recorded in the Results Framework. Despite the overoptimistic assumptions used in the Appraisal EFA, **the end of Project EFA shows very good performance with an EIRR of 34.7% and an NPV @12% of US\$275.3 million** compared to the EIRR of 37.7% and an NPV@12% of US\$343.6 million at Appraisal. A sensitivity analysis was performed using reduced Project lifespan to 25, 20, and 15 years, with a significant cost item of 10% for maintenance, which demonstrated the robustness of the results.
46. **The Project shows an FIRR of 26.8% with an NPV12% of US\$96.2 million.** These results are driven by the financial profitability of the fisheries activities, which represent a FIRR of 81.96% and an NPV@12% of US\$89.7 million USD, while irrigation activities represent a FIRR of 13.3% and an NPV@12% of US\$6.5 million.

**Table 4: Economic analysis disaggregated by Member State**

Economic Analysis	Guinea	Mali	Mauritania	Senegal	Total PGIRE 2
<b>Appraisal</b>					
EIRR (%)	29.5%	33.8%	44.9%	38.4%	<b>37.7%</b>
NPV at 12% (US\$, millions)	40.8	78.1	140.8	83.9	<b>343.6</b>
<b>End of Project</b>					
EIRR (%)	16%	24.3%	42.7%	39.9%	<b>34.7%</b>
NPV at 12% (US\$, millions)	6.3	37.5	119.4	104.9	<b>275.3</b>

47. **The observed returns compare favorably to those obtained at the end of MWRD 1,** which EIRR was 29.3% at Appraisal and showed only 20.5% at the end of the Project, with EIRR of all four countries much lower than expected and a negative EIRR in Guinea.

<sup>8</sup> Financial analysis carried out for a period of 30 years with a 12percent discount rate.



48. **Administrative and institutional efficiency:** The Project faced numerous operational challenges. Mali and Guinea experienced coups. Security issues in Mali affected on-the-ground activities and prevented Bank missions to visit work sites. Poor selection and contract management of contractors and supervising engineers by executing agencies and insufficient supervision by national cellules and OMVS led to implementation delays, especially in achieving the hydro-agricultural works. Reluctance to make the changes recommended by the Bank led to underachievement of irrigation development activities in Guinea and Mali. Some studies had to be reduced in scope or cancelled. Consequently, the Project closed with a few remaining contracts and unfinished work and an undisbursed balance of US\$16.9 million (7.2%)<sup>9</sup>. This situation did not affect the overall economic profitability of the Project. The payment of counterpart funding was delayed throughout. Member States paid 76% of the pledged counterpart funding, with Senegal and Guinea having paid 100% of their share, Mali 67%, and Mauritania only 26%.
49. **The price paid by the Project** for irrigation infrastructure, fish market, dam rehabilitation derived from competitive procurement which all had several bids and **were considered competitive market rates**. Prices obtained under the Project for the development of irrigation areas could be compared with that of other projects in the Member States, including the Sahel irrigation Initiative project, which cost per hectare averaged US\$4,000 for large scale irrigation development in Mali to US\$22,500 for small-scale irrigation perimeters in Senegal. Prices obtained under the Project were cheaper, ranging from US\$2,600 to US\$3,300 for large-scale irrigation development in Mali and about US\$ 8,000 for small-scale irrigation perimeters in Guinea.
50. **The Project experienced a few instances of administrative inefficiencies.** In Guinea, the award of four out of five irrigation development contracts to a single company proven incapable of delivering the expected results, and the overpayment of said company is an extreme example of administrative inefficiency under the Project. Fortunately, it is also an isolated example and Guinea performed very well on other activities including fisheries and forestry. The Project closing date was extended twice, in June 2021 to account for delays induced by the COVID-19 pandemic and in December 2022 to give an extra dry season to advance works, which allowed significant progress, especially of irrigation activities. **The administrative and institutional efficiency of the Project is therefore conservatively rated Moderately Satisfactory.**
51. **The efficiency analysis shows significant results at the end of the Project**, despite the very optimistic hypotheses used and errors in the Appraisal EFA which inflated the results at Appraisal; lower than expected results under the irrigation activities and fewer campaigns than planned to prove increased agricultural performance, which reduced the actual benefits at the end of the Project; and a moderately satisfactory administrative efficiency. Considering all this, the Project economic and financial results are very positive, and are significant compared to the Appraisal EFA. **The efficiency rating is assessed as Substantial.**

#### D. JUSTIFICATION OF OVERALL OUTCOME RATING

52. **The overall outcome rating is Satisfactory** (See calculation in Table 5):

---

<sup>9</sup> This amount is the sum of the undisbursed balance accounts at the World Bank (US\$11.71m) and in Designated accounts (US\$4.66m).



**Table 5: Outcome Rating (Split Evaluation)**

	Before Sept 2019 Restructuring	After Sept 2019 Restructuring
Relevance of Objectives	High	
Achievement of the PDOs (Efficacy)	Substantial	Substantial
Efficiency	Substantial	
Outcome Ratings	S	S
Numerical Value of Outcome Ratings	5	5
Disbursements (USD)	111.55	80.73 <sup>9</sup>
Share of Disbursement	58%	42%
Weighted value of Outcome Rating	2.90+2.10 = 5.00	
<b>Final Outcome Rating</b>	<b>Satisfactory</b>	

**E. OTHER OUTCOMES AND IMPACTS (IF ANY)**

**Gender**

- 53. **Of the 4.5 million program beneficiaries, the Project has benefited 2.7 million women (more than 51%)** in the targeted area. The average level of use of LLINs by pregnant women is globally 92.2%. Surveys also showed that performance in the four countries exceeded the 80% target, reaching 85.5% in Guinea, 99.2% in Mali, 84.9% in Mauritania and 99% in Senegal.
- 54. **Throughout Project implementation, women have been empowered to get involved in the management of irrigated areas, tasks until then mostly handled by men.** Gender-focused actions included the development of small irrigation perimeters dedicated to women farmers. The beneficiary selection in the Chechya irrigation perimeter in Mauritania, reserved a share of the irrigation perimeter for widows and single mothers, and other shares were reserved for disabled people and for unemployed recent graduates. In Senegal, 100 ha were allocated to women in the Bardial (Dagana) and Dioulol (Matam) irrigation perimeters. In Senegal, the Project also supported groups of women organizing themselves in cooperatives to transform agricultural products and generate a higher margin than if selling raw produce. For example, women of Thiago organized themselves in a cooperative called “*Groupement des Femmes transformatrices de Produits halieutiques et Mareyeuses de la Taouey*”, which manages a small transformation unit selling various pickles, canned vegetables and jams in the Thiago area.
- 55. **The construction of hydro-agricultural facilities was accompanied by training in cultivation techniques and the supply of small agricultural tool kits.** Training on specific topics such as capacity building for women’s groups in water resource management has been developed to strengthen women’s capacity and ensure they play a key role in water resources management.

**Institutional Strengthening**

- 56. **Thanks to MWRD 1 and 2, and the institutional support measures implemented, OMVS has critical tools for regional and multi-sectoral Project management.** The OMVS collaborative platform was set up and planned communication actions were carried out. Performance contracts were signed with each national executing agency until 2022. The last half of 2023 has not been covered by the performance contracts. The audits recommended that institutional strengthening activities be regularly carried out and that accounts be certified. The Inclusive Framework has been updated. The new framework for partition of costs and benefits, which strengthened Guinea's role within OMVS, was adopted by all stakeholders at technical level and the political process of its adoption by the



OMVS COM is underway.

57. **The Project reinforced the national Project Implementing Agencies (IA):** During MWRD 2 implementation, the IAs fulfilled their delegated Project management missions with varying degrees of performance from one agency to another. The progress of indicators at the end of the Project illustrates a gradual strengthening of the agencies' capacities. In Guinea, the IA DNCR, although a government entity, required regulatory adjustments to entrust it with more flexibility in fulfilling its mission. In 2018-2019, SAED, the Project IA in Senegal benefited from 34 training to strengthen its capacities in various topics including: Feasibility studies; Planning and monitoring of investment projects; Improved management of hydro-agricultural facilities; Farm advisory services: tools, methods and approach; Farm advisory services: tools, methods and management of farm advisory teams; Statistical data collection and analysis with SPSS; and Financial management and disbursement procedures for projects financed by donors (WB, ADB, EU).
58. **Capacity-building for management entities involved in infrastructure management (producers and farmers):** The Project implemented a capacity-building program to improve the skills of local management entities to ensure sustainable operation and management (O&M) of infrastructure and equipment for processing agricultural products. It provided farmers with the capacity and production equipment necessary to increase agricultural productivity in irrigation perimeters. Project training covered topics including polyculture systems resilient to climate change; theoretical and practical training on technical aspects of irrigation perimeters' O&M (agricultural calendar, production, protection, use of agricultural inputs, transport, storage, etc.). They also trained farmers on optimized water use and management, by defining clear objectives for vegetative stages, feeding, drainage, organization of operators of an irrigation perimeter.

### Mobilizing Private Sector Financing

59. **The Project did not mobilize private sector financing. However, some of its activities are enabling private financing and solutions.** The implementation of the SDAGE 2050 and its Climate Investment Plan will rely in part on private sector financing to implement activities such as hydropower or navigation development. On the former, PGIRE 2 funded the preparatory studies of 3 micro hydropower plants in Guinea, which are planned to be developed as PPPs. Some of the GEF pilots are considered for scale up with private sector financing.

### Poverty Reduction and Shared Prosperity

60. **The Project has generated multi-faceted benefits in line with SDGs 7 to 12 on social inclusion.** Thanks to the construction of infrastructure (hydro-agricultural schemes, drinking water, etc.) and the provision of health services (LLINs and the fight against NTDs), over 4.5 million of the 12.3 million inhabitants of the Senegal River basin have seen their economic, social and health conditions improve. These benefits extend to women and children, particularly in terms of nutrition and education.
61. **Thanks to the Project, farm households supported have improved productivity.** Throughout the Project area, farmers who have benefited from the above-mentioned production factors reported a significant increase in production and income, compared to their pre-Project situation. This parameter is an indicator of the overall impact of MWRD 2 in terms of poverty reduction for the direct beneficiaries of the Project.



## Other Unintended Outcomes and Impacts

62. **GEF financing under MWRD 2 also enabled the satisfactory implementation within communities of pilot projects to adapt** climate-resilient polyculture systems, combat land degradation and deforestation, agroforestry, and test improved wood-burning stoves and biogas digesters. With the support of NGOs, rural and community radio stations (information campaigns, talk shows and messages in local languages) and community leaders, the Project has trained several thousand women, men, and young people on these topics. The NGOs have also raised awareness and trained several thousand schoolchildren (girls and boys) and their teachers on climate change (environmental education pilot schools). The success of these pilot projects (awareness-raising among communities, relaying of information to their fellow citizens, several thousand hectares reforested and protected by stone cordons, etc.) should lead to their scale up to consolidate the gains made and secure the related behavior change the Project aimed to achieve.

## III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

### A. KEY FACTORS DURING PREPARATION

63. **The MWRD 2 design is built on the foundations set under MWRD 1 and integrates its lessons.** It retained the Project structure, components and critical activities for improved water management, economic development and livelihood enhancement, including strengthening institutions at regional, states and local levels, irrigation development and fighting against malaria and NTD in communities. It integrated the lessons from MWRD 1. It maintained the legal structure whereby Member States retroceded their IDA Credits to OMVS for centralized management and monitoring. It introduced dated covenants for counterpart funding. It put a lot of emphasis on capacity building and training to ensure proper management of the assets developed under the Project. MWRD 2 design integrated value chains, for instance through supporting women cooperative for agricultural produce transformation, or fish markets with ice production for conservation. MWRD 2 Component 3 is based upon a multi-criteria analysis and wide stakeholder consultations completed during MWRD 1. MWRD 2 Project areas were identified through characterization studies and were jointly agreed upon between the Bank and key stakeholders in each country. Although MWRD 2 funding is much greater than MWRD 1's and covered an extended geographical area, the Project areas were voluntarily limited to a few regions in each country for greater impact.
64. **The ambition of MWRD 2 was sized based on past experiences:** The Project design simultaneously increased the productive uses of water while safeguarding the health and livelihoods of vulnerable communities in the river basin. This is reflected in the hydro-agricultural and fisheries activities, as well as the distribution of LLINs and NTD treatment included in component 2. All components integrated climate change activities financed by the GEF and LCDF grants. MWRD 2's institutional development focused on longer-term improvements both on Project management and implementation institutions. The most important for the PDO being the new partition of costs and benefits among the Member States, the tools to inform PWC's decisions and capacity building activities.
65. **The Project design was clear:** The Project design took over from what MRWD1 had achieved and established a clear roadmap and set of activities, which covered institutional modernization, local level water resources activities and regional water resources development planning. The activities planned for MWRD2 scaled up similar interventions to MWRD1, with due adaptation to incorporate lessons learnt, improve technical quality and further increase benefits to the communities in the Project areas. Notably, the components and activities remained very relevant and did not



need restructuring during the entire implementation period.

66. **Risks and their mitigation: MWRD2 activities required a substantive level of due diligence.** The Project-related risks were assessed in an Operational Risk Assessment Framework, which took into consideration the risks identified or faced during MWRD1. The preparation team assessed the overall risk level for implementation as ‘substantial’, mostly due to the Project complexity and the number of stakeholders involved. The risk of interruption to Project implementation due to civil strife in the countries or in the region was also considered.

## B. KEY FACTORS DURING IMPLEMENTATION

### Factors outside Project control

67. **Political instability in Guinea and Mali affected Project implementation.** There was a coup in Mali in August 2020 and in Guinea in September 2021, followed by a period of uncertainty in each country. These changes affected the movement of goods and people for several months. It complicated border crossing and led to changes in the countries’ administrations. They also limited the capacity of the Project to deliver on investments components, as companies, supervising consultants (*bureau de contrôle*), staff from implementing agencies and OMVS faced travel restrictions within these countries. It also affected the Bank’s capacity to carry out in-person supervision missions, reducing opportunities to agree on corrective actions. While OMVS demonstrated ability to operate under uncertain conditions, instability resulted in delays in Project implementation, particularly for irrigation related investments under Component 2 in Guinea and Mali, which slowed down disbursements.
68. **The COVID-19 pandemic caused severe delays and impeded in person implementation support and trainings at a crucial moment in implementation:** First, restrictions on the movement of people and goods disrupted supply chains, causing delays in works, but also in the procurement and delivery of materials and equipment necessary to complete civil works. While these delays were addressed through Project restructuring and closing date extensions in 2021 and 2022, the pandemic was a major factor for the two-year delay to achieve Project objectives. Second, the pandemic disrupted travel and meetings, which meant that World Bank supervision missions had to take place remotely for about two years, at a critical post-MTR period. This also altered the Bank’s capacity to cause timely course corrections during implementation. Training and capacity-building activities for the WUAs and OMVS had to be halted for a long time, which affected the speed at which Project benefits materialized. Some activities could be carried out online, but faced connectivity and internet access limitations, and it was not culturally widespread then. One Project-supported activity was to improve OMVS’ videoconferencing capacities.

### Factors subject to Bank control

69. **Improved World Bank group collaboration could have been better.** An investment supported by the IFC in Guinea affected chimpanzees and required selecting an offset sanctuary area. The selected offset sanctuary area included land which the development of the Koukoutamba hydropower dam would have flooded. Consequently, the Bank decided to put a stop to the Project-funded Environmental and Social Impact Assessment of the Koukoutamba hydropower dam and more broadly to its involvement in developing this dam. Although not in the result framework, this decision lowered the Project’s support to green energy generation in the river basin.



### Factors subject to implementing agency control

70. **The strong commitment by OMVS and the clear implementation arrangements led to successful Project implementation.** OMVS teams demonstrated strong commitment to the Project and ability to adapt to political instability and to COVID-19 related disruptions. Human and organizational capacity were mobilized on time. Staff turnover was minimal and ensured continuity. Implementation Status and Results Reports and Aide Memoires did not identify inefficiencies nor problems with OMVS' implementation approach and staffing. On the contrary, they highlighted timely progress and M&E efforts and that OMVS implemented activities in the health sectors, climate change pilots etc., were carried out quickly and were all completed by the original Project closing date. Project delays are largely ascribed to external conditions, including the coups in Mali and Guinea; the impacts of the COVID-19 pandemic; slower than anticipated procurement processes; and poor contract management practices in some States.
71. **The PIU of OMVS faced difficulties monitoring procurement and contract management carried out by certain implementing agencies in the Member States.** The response to share procurement status, contracts or disbursement progress was often late and it was sometimes difficult for OMVS to collect the relevant information. Bank requests for specific contracts were answered, but requests to received bids were not, especially in Guinea, where implementing agencies had to request bids from other government entities, which did not share them.

### Factors subject to government control

72. **Two Member States disagreed with Bank-recommended actions to cancel underperforming contracts** for irrigation development and reprocur the remaining works at a time when it was possible to complete the related investment before the closing date. Both later changed their mind and accepted to implement the Bank's recommendation, but it happened too late, and there was no longer enough time to cancel, reprocur and expect investments to be completed by the extended Project closing date.

## IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

### A. QUALITY OF MONITORING AND EVALUATION (M&E)

#### M&E Design

73. **While the PAD did not include a theory of change, it was developed ex post based on the PDO, results framework, components and activities. The original Results Framework was adequate but had minor shortcomings which were addressed during the 2019 restructuring.** For instance, a new indicator was added, namely "the operationalization of OMVS regional steering committee (*Comité du Pilotage*) composed of representative from the riparian States" to clarify the definition of the earlier indicator and another was deleted for redundancy. The M&E system of this regional Project was designed to be decentralized, facilitating systematic data collection in each of the four countries. Data was to be collected by the implementing agencies and shared with the PIU regularly. The PIU would use them to prepare quarterly reports assessing progress in achieving Project objectives, complementing data provided by the implementing agencies with surveys carried out by OMVS and visits by PIU experts. Monitoring techniques including sentinel surveillance sites, Lot Quality Assurance Sampling (LQAS) surveys and population-based surveys were developed to assess intervention coverage.



## M&E Implementation

74. **IAs ADRS (Mali), SAED (Senegal), DNGR (Guinea) and SONADER (Mauritania) collected data at country level and shared them in the form of progress monitoring reports with the PIU, on a quarterly basis.** There was no web-based centralized data collection and analysis system used to collect Project related data. Therefore, OMVS' PIU analyzed, consolidated, and assessed objectives achievement levels 'manually'. The PIU completed the data received from IAs through direct review missions by PIU experts and during Bank supervision missions. The PIU had a dedicated expert in charge of M&E, who monitored the reporting systems, followed up to ensure progress report submission by IAs, and provided feedback and support as required. Data collection was carried out according to the Project's Results Framework and to additional monitoring indicators agreed and validated by all parties, including indicators such as "areas with secured water provision". Each indicator was clearly defined to ensure that accurate and comparable data are collected by the IAs and the communities. The availability of certain data relating to the Project's impact on incomes and quality of life of the beneficiary populations needed household surveys which were not carried out. This affected the efficiency evaluation, leading to not counting the benefits which could not be quantified. Throughout Project implementation, the PIU made adjustments to address identified shortcomings.
75. During April 2020's supervision mission, **the Bank recommended expediting the adoption of the Geo-Enabling initiative for Monitoring & Supervision (GEMS) monitoring system to extend and enrich the existing monitoring system and practices.** This tool promotes the systematic use of cost-efficient and field-appropriate open-source technology to enhance Project M&E and supervision. Following training on the GEMS tool for Project stakeholders, the PIU mapped out the sites of all Project activities.

## M&E Utilization

76. **The Project Monitoring Information System and LQAS were used during implementation to assess Project progress, identify adjustments needs, and make informed decisions.** They improved visibility on Project progress as per the M&E framework to better guide implementation, identify and resolve issues and prepare scale up or next steps. The Project Steering Committee reviewed and validated progress reports and made decision as required.

## Justification of Overall Rating of Quality of M&E

77. **The quality of M&E is rated substantial.** Result framework indicators were carefully chosen at appraisal and remained aligned with Project activity throughout implementation. They were also consistent with the definition of "coordinated management of water resources", which avoided the risk of a disconnect when the 2019 restructuring removed the part of the PDO related to "sustainable development". The Project's main results indicators were included in reports and performance contracts. M&E functioned well, although IAs had to be reminded to report to OMVS. The Project was able to monitor all Project activities. Information was cross-checked and found reliable.

## B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

78. **Environmental and social compliance: The Project was classified as category A in the Environmental Assessment classification of the Bank,** primarily due to the preparation of studies for large hydropower dams. The individual activities financed by the Project were not expected to have significant negative social or environmental impact; nevertheless, their combined action might have consequences, such as the accumulated use of pesticides over developed agricultural areas. The following safeguards policies were triggered: Environmental Assessment



(OP/BP/GP 4.01), Natural Habitats (OP/BP 4.04), Pest Management (OP 4.09), Cultural Property (OP 4.11), Involuntary resettlement (OP/BP 4.12), Indigenous Peoples (OP 4.10), Forests (OP/BP 4.36), Safety of Dams (OP/BP 4.37), Projects in Disputed Areas (OP/BP/GP 7.60) and Projects in International Waterways (OP/BP/GP 7.50). Environmental and social screenings of activities were duly carried out. Environmental and social studies were developed, based on the Environmental and Social Management Framework, Resettlement Policy Framework, and the Pest and Pesticide Management Plan. The PIU monitored closely that environmental protection measures were implemented and ensured that contractors abide by the requirements. For some contractors, notably the Grand-Digue Tellel irrigation rehabilitation in Senegal, this needed regular follow-up to ensure that any remaining safeguards related aspect was delivered. The Bank and the PIU agreed that all environmental and social aspects should be abided by and documented as a prerequisite to the technical commissioning of Project-funded activities. The team also monitored closely the beneficiary identification process in Mauritania, which was exemplary in Chechya, but was very delayed in other perimeters including Mback Dieuk, to ensure that the process is transparent and comply with the pre-agreed identification criteria.

79. **Procurement: The PIU procured activities funded under the GEF Grants while national IAs handled procurement of credit-funded activities**, with oversight from PIU experts, in particular for large activities such as irrigation and fisheries activities. At both levels, the procurement system and procedures were clear and rated Satisfactory or Moderately Satisfactory throughout implementation. Procurement plans were established annually for OMVS and each national IA (SAED, SONADER, DNNGR, ADRS) and managed by the PIU. The OMVS procurement specialist worked closely with the PIU procurement specialist to build capacity and alleviate the workload. In turn the PIU procurement specialist provided support and training to the national IAs. This cascading capacity building has been a real strength of the Project. As a result of gains in procurement capacity, thresholds for review were raised for the second phase of the Project, reflecting the increased level of confidence.
80. **Nevertheless, the application of the procurement procedures in some contracts was not always optimal.** Some irrigation development contracts had unrealistically short implementation timelines to develop a new irrigation perimeter, some as short as 6 months, and did not allow for price adjustment. This was suboptimal, especially at the time of COVID-19 pandemic, which saw prices of commodities and construction materials skyrocket. This situation was aggravated by delayed payment by some IAs, placing awarded companies in difficult financial situation and breaching the trust between the companies and their contracting IAs, especially in Mali.
81. **Poor contract management practices led to several INT cases being investigated in Mali and Guinea.** In Guinea, the Project awarded four of the five major irrigation investments to the same company. It is unclear whether the company had the capacity to implement all the work it was awarded in the allocated period of time, and whether the company had to demonstrate that it met the selection criteria for the cumulative works at the time of award. Although it was paid larger than usual financial advances, the company could only deliver very marginal results, which were not enough to justify the advances paid. This greatly impacted the implementation of irrigation activities in Guinea. It also created an overpayment situation. A procedure is ongoing to get the difference between the advanced amount and the value of the work performed by Project closure to be reimbursed to the Bank. The overall performance of the Project's procurement is rated Moderately Satisfactory.
82. **Financial Management: Although the financial management system functioned well and complied with the Bank's requirements, the overall performance of the Project's financial management is rated Moderately Satisfactory.** This rating is mainly due to the late payment of some contracts and to the situation that exist at DNNGR/Guinea level with the poor oversight management which led to a large overpayment of a company, for which a procedure of reimbursement by the government of Guinea has been initiated.



## C. BANK PERFORMANCE

### Quality at Entry

83. **The World Bank team built on MWRD 1 successes and addresses its limitations in the MWRD 2 Project design.** The Project comes after the successful implementation of the first phase. It reproduced what worked, namely the technical focus of the Project, its legal structure, implementation, and monitoring arrangements. It also integrated measures to improve what could have worked better in MWRD 1, e.g., a stronger focus on building capacity at all levels and for all components for greater and lasting outcomes. MWRD 2 kept the same components. This allowed building on the results of MWRD 1 and helped bringing results to a higher level, e.g., for health outcomes. It scaled up activities such as fisheries and irrigation to confirm and expand outcomes, in particular to increase communities' livelihood. It entrusted OMVS to implement some activities, e.g., GEF-funded pilots on climate resilience, and to bring local activities into regionally integrated and coordinated approaches. As such, MWRD 1 & 2 implemented a de facto phased approach over 17 years (as an MPA would) and ensured continuity, scaling-up and consolidation of outcomes, making the overall approach more than the sum of two projects.
84. **The Project design was strong. Components, activities and result framework remained relevant and unchanged throughout implementation. The Quality at Entry is therefore rated Satisfactory.**

### Quality of Supervision

85. **The Bank team carried out regular supervision missions as per Bank requirements.** It adapted to the circumstances and needs of the Project, carrying virtual missions at the time of the COVID-19 pandemic and calling for regular virtual progress review meetings to monitor Project implementation. It relied on google earth, photos, and videos to review progress in areas where FCV situations restricted Bank travel. When the COVID-19 travel restrictions were lifted, the Bank team carried out comprehensive missions covering many of the activities and Member States, during which it went in-depth into the issues to understand their origin and provide clear, actionable and timely guidance for course correction. **The Quality of Supervision is rated Satisfactory based on the following:**
86. **At early times of implementation, the Bank team shared information about the Project mainly to the Regional Integration CMU. This generated an asymmetry of information with the CMUs of Member States,** aggravated by the fact that regional projects were not showing as part of the country CMU portfolio. This impacted the Bank capacity to best address issues, leverage Project results and created convergence in the policy dialog in the Member States. During and after the COVID-19 pandemic, the task team made special efforts to keep all concerned CMUs informed and to proactively seek guidance and support from CMUs to collectively address the implementation issues the Project was facing. Among others, this was essential in the turnaround of the irrigation related investments in Mali.
87. **The Project was restructured in time to adjust to evolving circumstances** and the team managed to work closely with OMVS to implement almost all the activities planned under the Project. However, the rationale to restructure the PDO and GEO in 2019 to remove the reference to sustainable development could have been better explained, as the definition of "Coordinated management" stated in the restructuring paper made clear that having a reference to "Sustainable development" or not would not change the evaluation of PDO outcomes.
88. **The Bank should have done additional due diligence in Guinea,** when the Government of Guinea recommended awarding four of the five major irrigation development contracts to the same company. It should have checked that the selection criteria, which was reported met for each contract individually, could also be met by the company for



the cumulative values of the contracts. This may have revealed that the company was awarded other large contracts under other projects funded by the Bank and other IFIs. This would have allowed raising questions on the capacity of the company to deliver on all these investments in the allocated timeframe.

89. **The transfer of dam safety inspection to the MWRD 2 should have been formalized.** The MWRD 2 took over in November 2021 the monitoring of the ongoing dam safety inspection of the Manantali dam, funded by the Manantali Dam management company SOGEM (*"Société de Gestion de Eaux de Manantali"*), and the funding of the dam safety inspection of the Diama dam under MWRD 2. Both dam safety inspections were pending dated covenants with the Republic of Senegal at the closing of the Bank-funded Senegal Sustainable and Inclusive Agribusiness Development project (PDIDAS – P124018 and P130271). In a letter dated November 2021, the Bank asked OMVS to accept the transfer of responsibility for completing these two dam inspections under the MWRD 2. Although, there is no record of a formal response to this letter, OMVS did procure the dam safety inspection of the Diama dam under MWRD 2. The transfer of ongoing safety inspection of the Manantali dam from the PDIDAS to the MWRD 2 should have been formalized, to legitimize the PIU's monitoring of its progress to SOGEM. This would have allowed identifying and resolving earlier the contract management issues which stalled the inspection progress for over 18 months. At closing, the Diama dam safety inspection had been completed, but the Manantali Dam inspection was still ongoing. A draft inspection report had been submitted to the Bank on January 10, 2024. However, it did not include the bathymetric assessment. **At the time of submission, the bathymetric assessment was ongoing. It was expected to be completed by March 31, 2024, and the final report of the Manantali dam safety inspection was expected to be submitted by OMVS to the Bank before the end of April 2024.**

#### Justification of Overall Rating of Bank Performance

90. **The Quality at Entry and the Quality of Supervision are rated Satisfactory and so is overall Bank performance.** The Project was consistent with the regional, national and World Bank priorities to reinforce the regional integration of the OMVS member states and foster economic growth of the region.

#### D. RISK TO DEVELOPMENT OUTCOME

91. **While OMVS is a strong, relevant and recognized regional organization, a large share of its operations costs depends on the management components of externally funded Project and to the payment of Project counterpart fundings by Member States.** The MWRD 2 PIU was dismantled at Project closing, and OMVS had limited means to allocated to carrying on monitoring Project development outcomes. Although it is expected that Member States will monitor them in their own country, the lack of recording of such outcomes at OMVS level is a risk to the development outcomes. The Bank is exploring ways to mitigate this risk as it prepared the Development, Resilience & Valuation of Water Resources for West Africa (DREVE) regional operation.
92. **One of the Project's major PDO indicators: *the new framework for partition of costs and benefits in the river basin* was validated at technical level but has not yet been adopted by the Council of Ministers.** This prevents getting the benefits of using the new framework. However, other tools developed under the Project are informing PWC's decision-making on water allocation, and the new Masterplan for the Senegal river Basin (SDAGE 2050) and its Climate Investment Plan (PIC) are critical to inform priority-setting and decision-making at basin level.
93. **Limited capacity building:** delayed identification of beneficiaries in certain irrigation perimeters and shortcomings in the training and support provided to beneficiaries due to the COVID-19 pandemic may reduce the capacity for beneficiaries to get better yields from their fields, reducing related development outcomes.



94. **Capacity of governments to finalize unfinished infrastructure and ensure beneficiary identification:** These include irrigated areas development contracts in Mali and Guinea, and fish market construction in Ourosogui in Senegal and Rosso in Mauritania. While these local underperformances were compensated by overperformance in other States and therefore did not impact the overall achievement of the Project's objectives, it negatively impacts the expected outcomes for some beneficiary communities. The option of transferring the unfinished contract to other ongoing Bank operations was explored in each country. The Government of Mali formally requested that works to complete the development of irrigation in 958 hectares not achieved under MWRD 2 be transferred to the Mali Dryland Development project (« *Projet de Développement de la Productivité et de Diversification Agricole dans les Zones arides et semi arides du Mali*»). If no State financing can be mobilized, Member States may consider including the studies and completion of unfinished activities to new World Bank operations under preparation.

## V. LESSONS AND RECOMMENDATIONS

95. **Lesson 1: OMVS is a strong and reliable institution able to successfully promote regional integration.** OMVS successfully implemented several Bank-funded regional projects, including, since 2006, MWRD1 and 2 and three grants from the Dutch government, the last one being Dutch TF3 for EUR12 million implemented between 2016 and 2021 in parallel to MWRD 2. OMVS managed to get tangible and lasting results despite numerous coups in some of the Member State and increasing Fragility, Conflict and Violence situations in the region. OMVS demonstrated that its unique country-owned and consensus-based governance structure and decision-making processes are compatible with the national agenda to implement large regional projects such as MWRD 2. OMVS is an example of good practice for regional integration. Its adaptive management and history of Bank support are a strong base to build on for the regional transboundary water program DREVE, currently under preparation.
96. **Lesson 2.1: Regular communication between OMVS and Member States was a key to success.** The successful implementation of MRWD2 was partly due to the long history of Bank support to the OMVS, the strength of OMVS as an institution, and the integration of lessons learned from the MWRD 1. Regarding the latter, MWRD 2 put in place clear mechanisms to maintain good and frequent communication and information exchange between the OMVS and Member States. Each Member State had an 'OMVS national cell' in charge of monitoring Project activities with IAs within the State and coordinating with OMVS' PIU. OMVS PIU itself had dedicated focal points per Member State and per component. It organized regular meetings with 'national cells' and IAs to review Project progress on the ground.
97. **Lesson 2.2: Regular communication between the task team and CMUs is key to success for regional projects and programs.** Regional projects often involve the Regional Integration unit and several CMUs, which do not have these regional projects in their portfolio, although they are in charge of the Bank-country dialogue. It is critical for task teams to keep CMUs involved so that the project can contribute to and benefit from the country dialogue and help solve country-specific issues. A very good example of fruitful collaboration between the task team and the CMU took place in Mali to help address the issues which stalled the implementation of the irrigation investments, and find ways to restore the companies' confidence that their work will be paid, which led them to remobilize and greatly improve delivery progress during the last months of the Project, resulting in increasing the area equipped under the Project from 200 ha to 1,549 ha by the closing date.
98. **Lesson 3: Quality of procurement and contract management should be carefully monitored.** Some IAs had issues in awarding contracts, and showed poor contract management practices, especially for irrigation development contract in Mali and Guinea. Future projects should have additional oversight mechanisms to ensure that: (i) contract durations are compatible with the time required to implement the works; (ii) companies recommended for award



for several contracts meet the cumulative criteria of all contracts; and (iii) advance payments amounts recommended by IAs and supervision engineers are verified and approved at PIU level. In addition, it is advisable for future operations to set clear and reasonable timelines and deadlines for the IAs to award contracts, after which the OMVS PIU should get involved, especially for outstanding contracts whose completion is crucial to achieve the Project's objectives. This is made possible by the legal retrocession by each Member State of the responsibility for Project implementation to OMVS. A similar approach should also be considered for contract management during contracts' implementation, with OMVS directly taking over the IA in cases of outstanding delays or poor contract management practices. Moreover, procurement documents from executing agencies should be checked more thoroughly by PIU and the Bank to ensure that the contractual implementation timelines match the scope of works, considering that work on the ground sometimes only takes place during the dry season.

99. **Lesson 4: Properly designed web-based Project monitoring platforms can facilitate the integration and tracking of key Project management functions, such as, technical progress, procurement, and financial management for individual country programs, thereby promoting more effective monitoring, transparency, and coordination of regional operations.** Such web-based platforms should ideally have interactive interfaces such as portals that facilitate and capture transparent and timely two-way communication in real time between country-level implementing agencies and regional oversight entities on key aspects such as, invoice submissions, review, and payments, to more effectively track and monitor Project implementation.
100. **Lesson 5: Unforeseen FCV situations require adaptive solutions.** The Project experienced the impacts of coups and of limitations derived from FCV situations in two Member States. These impacted implementation timeline in these countries and security concerns limited Bank capacity to visit the sites. The Project would have benefited by introducing more flexibility to redirect some of the funding from these member States to those who performed well and could have absorbed more funding. It could also have used remote supervision methods, e.g., through dedicated progress monitoring apps, or remote sensing to be able to inform course correction earlier.
101. **Lesson 6: World Bank group collaboration and coordination is essential for successful implementation of regional projects. Upstream collaboration between the IFC and the WB teams in Guinea could have averted selecting an offset area in the flooding area of a potential dam.** The IFC supported an investment in Guinea that required selecting an offset sanctuary area for chimpanzees, which was set in an area which the development of the Koukoutamba hydropower dam would have submerged. As a result, the WB put a stop to the Project-funded Environmental and Social Impact studies of the Koukoutamba hydropower dam, and to subsequent support for its construction. The Bank decision to pull out caused a strong negative reaction from OMVS and member States. Better coordination amongst IFC and WB interventions could have led to choosing an offset area outside of the area impacted by the construction of the Koukoutamba dam.



**ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS**

**A. RESULTS INDICATORS**

**A.1 PDO Indicators**

**Objective/Outcome:** Improve coordinated management of water resources in the Senegal River Basin

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Direct project beneficiaries (Number, Custom)	Number	0.00 05-Mar-2013	4,500,000.00 30-Jun-2021		4,500,000.00 29-Jun-2023
Female beneficiaries (Percentage, Custom Supplement)	Number	0.00 05-Mar-2013	51.00 30-Jun-2021		51.00 29-Jun-2023

**Comments (achievements against targets):**

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Direct project beneficiaries benefiting from the pilot activities to build climate resilience (Number, Custom)	Number	0.00 05-Mar-2013	5,000.00 30-Jun-2021		9,000.00 29-Jun-2023



Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Area provided with new/improved irrigation or drainage services	Hectare(Ha)	0.00	13,680.00	10,000.00	14,042.30
		05-Mar-2013	30-Jun-2021	18-Sep-2019	29-Jun-2023

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
The new framework for partition of costs and benefits in the river basin is finalized and presented to the CoM (Yes/No, Custom)	Yes/No	No	Yes		Yes
		05-Mar-2013	30-Jun-2021		29-Jun-2023

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Improved tools are used in	Yes/No	No	Yes		Yes



decision making on water allocation during the meetings of the Permanent Water Commission (Yes/No, Custom)		01-Jan-2013	30-Jun-2021		29-Jun-2023
--	--	-------------	-------------	--	-------------

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Increased sale of fresh and processed fish in project sites (Percentage, Custom)	Percentage	0.00 02-Jan-2013	20.00 30-Jun-2021		21.00 29-Jun-2023

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
The OMVS regional steering committee (Comité du Pilotage ) composed of representative from the riparian States is operational (Yes/No, Custom)	Yes/No	No 02-Jan-2013	Yes 30-Jun-2021		Yes 29-Jun-2023

Comments (achievements against targets):



## A.2 Intermediate Results Indicators

### Component: 1. Institutional Development

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
New framework for partition of costs and benefits tested and validated at a technical level	Yes/No	No 05-Mar-2013	Yes 30-Jun-2021		Yes 29-Jun-2023

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Improved knowledge of climate change amongst the beneficiaries of the climate change adaptation/resilience training program delivered to OMVS, its National Cellules, and National Agencies	Percentage	0.00 05-Mar-2013	2,000.00 30-Jun-2021	75.00 18-Sep-2019	100.00 29-Jun-2023

Comments (achievements against targets):

### Component: 2. Multi-purpose Water Resources Development



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Operational entities in charge of the management of an irrigation system (with a statute and rules and that meet regularly)	Number	0.00	50.00	25.00	55.00
		05-Mar-2013	30-Jun-2021	18-Sep-2019	29-Jun-2023
Comments (achievements against targets):					
Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
► Proportion of target beneficiaries having received mass treatment to locally occurring NTDs	Percentage	75.00	80.00		94.77
		05-Mar-2013	30-Jun-2021		29-Jun-2023
Comments (achievements against targets):					
Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Land area under sustainable land management practices (ha)	Hectare(Ha)	0.00	3,527.00	3,000.00	3,256.80
		05-Mar-2013	30-Jun-2021	18-Sep-2019	29-Jun-2023



**Comments (achievements against targets):**

Original indicator was: "Slope stabilization through agroforestry development and reforestation (ha)". The indicator was changed as part of the 2019 restructuring. It does not measure the same thing so the target values should not be compared.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Long lasting insecticide treated malaria nets purchased and/or distributed	Number	0.00 02-Jan-2013	4,500,000.00 30-Jun-2021		4,500,000.00 29-Jun-2023

**Comments (achievements against targets):**

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Proportion of children sleeping under a LLIN (%)	Percentage	74.00 02-Jan-2013	80.00 30-Jun-2021		86.80 29-Jun-2023

**Comments (achievements against targets):**

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
----------------	-----------------	----------	-----------------	-------------------------	-------------------------------



Proportion of women (15-49 years old) sleeping under a LLIN (%)	Percentage	65.00 02-Jan-2013	80.00 30-Jun-2021		92.20 29-Jun-2023
---	------------	----------------------	----------------------	--	----------------------

Comments (achievements against targets):

**Component: 3. Infrastructure Management and Planning**

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
► Mapping, modeling, and other analytical tools for WRM developed or updated	Yes/No	No 05-Mar-2013	Yes 30-Jun-2021		Yes 29-Jun-2023

Comments (achievements against targets):

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Completed rehabilitation of the Diama dam	Yes/No	No 05-Mar-2013	Yes 30-Jun-2021		Yes 29-Jun-2023

Comments (achievements against targets):



**B. KEY OUTPUTS BY COMPONENT**

<b>Objective/Outcome 1: Improved coordinated management of water resources</b>	
Outcome Indicators	<ol style="list-style-type: none"> <li>1. Direct Project Beneficiaries;</li> <li>2. New framework for partition of costs and benefits in the river basin is finalized, validated at country level and presented to the Council of Ministers;</li> <li>3. Improved tools are used for decision-making on water allocation during meeting of the Permanent Water Commission;</li> <li>4. The OMVS regional steering committee composed of representatives from the riparian States is operational.</li> </ol>
Intermediate Results Indicators	<ol style="list-style-type: none"> <li>1. New framework for partition of costs and benefits tested and validated at a technical level;</li> <li>2. Mapping, modeling and other analytical tools for water resources management are developed and updated.</li> </ol>
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	<ol style="list-style-type: none"> <li>1. SDAGE 2050 and Climate Investment Plan delivered and adopted</li> <li>2. Finalization and presentation of the new framework for cost and benefit allocation in the river basin to the CoM;</li> <li>3. Mapping, modeling and other analytical tools for water resources management are developed, e.g., WEAP in Guinea</li> <li>4. The OMVS regional steering committee is operational and has representatives from riparian States.</li> </ol>
<b>Objective/Outcome 2: Socially sustainable development</b>	
Outcome Indicators	<ol style="list-style-type: none"> <li>1. Direct Female Beneficiaries;</li> <li>2. Long-Lasting Insecticide-Treated Malaria Nets (LLINs) purchased and /or distributed</li> <li>3. Proportion of children (under 5 years of age) sleeping under a LLIN;</li> <li>4. Proportion of women (aged 15-49) sleeping under LLINs</li> </ol>



Intermediate Results Indicators	<ol style="list-style-type: none"> <li>1. Percentage of target beneficiaries who have received mass treatment for locally occurring Neglected Tropical Diseases (NTDs).</li> <li>2. Number of Long-Lasting Insecticide-Treated Malaria Nets (LLINs) purchased and /or distributed</li> <li>3. Proportion of children (under 5 years of age) sleeping under a LLIN;</li> <li>4. Proportion of women (aged 15-49) sleeping under LLINs</li> </ol>
Key Outputs by Component (linked to the achievement of the Objective/Outcome 2)	<ol style="list-style-type: none"> <li>1. Target beneficiaries received mass treatment for locally occurring NTDs</li> <li>2. 4.5 million of LLINs were distributed and used;</li> <li>3. Over 80% of children under 5 are sleeping under a LLIN;</li> <li>4. Over 80% of women aged 15-49 are sleeping under a LLIN.</li> </ol>
<b>Objective/Outcome 3: Environmentally sustainable development</b>	
Outcome Indicators	<ol style="list-style-type: none"> <li>1. Number of direct Project beneficiaries benefitting from the pilot activities to build climate resilience.</li> </ol>
Intermediate Results Indicators	<ol style="list-style-type: none"> <li>1. Number of climate change adaptation and resilience training programs delivered to staff in OMVS, National Cellules, National Agencies, and beneficiaries of the pilot projects;</li> <li>2. percentage of participant staff in OMVS, National Cellules, National Agencies, and beneficiaries of the pilot projects who score at least 75% in the final test of the climate change adaptation and resilience training programs;</li> <li>3. Number of hectares under sustainable land management practices.</li> <li>4. Number of hectares of slopes stabilized through agroforestry development and reforestation</li> <li>5. Number of hectares of land under sustainable land management practices</li> </ol>
Key Outputs by Component (linked to the achievement of the Objective/Outcome 2)	<ol style="list-style-type: none"> <li>1. Successful demonstration of climate resilient pilots;</li> <li>2. Enhanced awareness and knowledge of climate change among beneficiaries who have undergone climate change adaptation and resilience training delivered to OMVS, its National Cellules, and National Agencies.</li> </ol>



Objective/Outcome 4: Economically sustainable development	
Outcome Indicators	<ol style="list-style-type: none"><li>1. Areas provided with irrigation and drainage services (hectares);</li><li>2. Increased sale of fresh and processed fish in Project sites (Number); agricultural productivity in areas benefiting from new/improved irrigation.</li></ol>
Intermediate Results Indicators	<ol style="list-style-type: none"><li>1. Operational water users associations created and/or strengthened;</li><li>2. Operational entities in charge of the management of an irrigation system (with a statute and rules and that meet regularly) (Number);</li><li>3. Hydraulic axes rehabilitated (km) (number);</li><li>4. Sales of fresh and processed fish in Project sites (%);</li><li>5. A financing system for the long-term maintenance of Diama dam is put in place (Yes/No);</li><li>6. Completed rehabilitation of the Diama dam.</li></ol>
Key Outputs by Component (linked to the achievement of the Objective/Outcome 2)	<ol style="list-style-type: none"><li>1. Expansion of areas receiving new/improved irrigation or drainage services;</li><li>2. Increased agricultural productivity in areas benefiting from new/improved irrigation;</li><li>3. Growth in the sale of fresh and processed fish in Project sites;</li><li>4. Successful rehabilitation of the Diama dam;</li><li>5. Increase of areas with secured irrigation water.</li><li>6. Establishment of operational entities responsible for irrigation system management, complete with statutes and regular meetings.</li></ol>

**ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION****A. TASK TEAM MEMBERS**

<b>Name</b>	<b>Role</b>
<b>Preparation</b>	
Shelley Mcmillan	Task Team Leader(s)
Robert A. Robelus	Social Specialist
Salamata Bal	Social Specialist
Nadege Mertus	Team Member
<b>Supervision/ICR</b>	
Xavier Chauvot de Beauchene	Task Team Leader (at closing)
Pierre Jacques Lorillou	Co-Task Team Leader (at closing)
Haoussia Tchaoussala	Procurement Specialist
Aissata Z. Zerbo	Procurement Specialist
Laurent Mehdi Brito	Procurement Specialist
Moustapha Ould El Bechir	Procurement Specialist
Cheick A.T. Traore	Procurement Specialist
Ndri Marina Assoumou	Financial Management Specialist
Fatou Mbacke Dieng	Financial Management Specialist
Tahirou Kalam	Financial Management Specialist
Bella Lelouma Diallo	Financial Management Specialist
Dieynaba Bocoume	Team Member
Lucson Pierre Charles	Team Member
Yo Nishimura	Team Member
Karamoko Sanogo	Team Member
John Paul Clark	Health Specialist
Angele Compaore Ouattara	Procurement Team



Apolline Angel Bancole Ep Gaye	Team Member
Marie Thiawa Fall	Team Member
Mariama Altine Mahamane	Team Member
Amjad Muhammad Khan	Team Member
Laura Bonzanigo	Team Member
Richard Abdounour	Team Member
Mariame Bamba	Team Member
Medou Lo	Environmental Specialist
Maman Sani Issa	Environmental Specialist
Aoua Toure Sow	Team Member
Cedric Boisrobert	Team Member
Batouly Dieng	Team Member
Racky Dia Camara	Team Member
Andy Chi Tembon	Team Member
Jean Vincent Koua	Team Member
Salamata Bal	Social Specialist

**B. STAFF TIME AND COST**

Stage of Project Cycle	Staff Time and Cost	
	No. of staff weeks	US\$ (including travel and consultant costs)
<b>Preparation</b>		
FY13	37.626	374,181.68
FY14	24.317	253,386.44
FY15	3.999	18,968.51
FY16	1.705	4,300.71
<b>Total</b>	<b>67.65</b>	<b>650,837.34</b>
<b>Supervision/ICR</b>		
FY14	12.035	106,105.41
FY15	16.783	101,821.44



FY16	30.556	195,645.39
FY17	33.700	229,500.54
FY18	54.753	332,239.11
FY19	47.239	334,264.39
FY20	49.317	341,451.38
FY21	38.764	200,954.85
FY22	28.164	125,982.16
FY23	38.381	232,208.80
FY24	9.864	102,731.62
<b>Total</b>	<b>359.56</b>	<b>2,302,905.09</b>

---

**ANNEX 3. PROJECT COST BY COMPONENT**

<b>Components</b>	<b>Amount at Approval (US\$M)</b>	<b>Actual at Project Closing (US\$M)</b>	<b>Percentage of Approval (%)</b>
1. Institutional Development for Water Resources	19.11	18.38	96.18*
2: Multi-Purpose Water Resources Development	174.23	145.85	83.71*
3: Infrastructure Management and Planning	29.62	24.99	84.37*
Contingencies	17.53	15.28***	87.16*
<b>Total</b>	<b>240.50</b>	<b>106.75</b>	<b>92.85 **</b>

\* The percentages of actual versus approval does not include the impact of exchange rate as the Operations portal does not monitor actual expenditures and undisbursed balances by components.

\*\* The Credits are underwritten in SDRs, which exchange rate to the US\$ varied during implementation. At closing, the disbursed amount divided by the sum of the disbursed amount and undisbursed amount, including the balance of the designated accounts pending reimbursement to the Bank, equates to a 92.85% disbursement ratio.

\*\*\* Unallocated funds at closing amount to SDR1,694,355.32, which correspond to about US\$2.25 million. Hence the amount reallocated during Project implementation amount to US\$15.28 million equivalent.



## ANNEX 4. ECONOMIC AND FINANCIAL ANALYSIS

1. The objective of the MWRD 2 was to improve concerted management of water resources for social, economic, and environmental sustainability in the Senegal River Basin. The Project aimed at strengthening the development of multi-purpose uses of the basin's water resources and at boosting growth and improving livelihoods of communities in the fight against poverty. It had an environmental objective, integrating the issue of climate change into the concerted management of water resources in the river basin. It was implemented from 2014 to 2023, through three components and in the four Member States of OMVS, namely Guinea, Mali, Mauritania, and Senegal.
2. The end of Project EFA shows a satisfactory IRR and NPV, comparable to those of the Appraisal EFA. The EFA results confirm the good performance of the Project already recorded in the Results Framework. The progress of Project - funded activities did not make it possible to consume all the Project funding. The overall disbursement rate of the IDA Credits amounts to 92.85%, and the Member States paid 76% of the pledged counterpart funding, with only Senegal and Guinea having paid 100% of their share, Mali 67% and Mauritania only 26%). Consequently, the Project closed with a few remaining contracts and unfinished work. This situation did not affect the overall economic profitability of the Project. However, disaggregated information by country shows lower than expected performance in Guinea and Mali, where profitability indicators are lower than PAD forecasts. Despite this situation and the overoptimistic assumptions used in the Appraisal EFA, the end of Project EFA shows very good performance with an IRR of 34.7% and an NPV@12% of US\$275.3 million compared to the IRR of 37.7% and an NPV@12% of US\$343.6 million at Appraisal.

### **A. Methodology of the End-of-Project EFA evaluation**

3. An end-of-Project Economic and Financial Analysis (EFA) was conducted in accordance with the ICR guidelines to assess the performance of the Project at closing against the targets specified in the PAD results framework. The methodology of the EFA carried out at Appraisal and presented in Annex 8 of the PAD has been used in its entirety for the end of Project EFA. In this regard, it was necessary to revisit the economic and financial calculation model, without modifying it, but to update the data, parameters and assumptions used to establish the level of financial and economic criteria. The analysis approach was essentially based on the various steps selected in Annex 8 of the PAD relating to the economic and financial analysis (EFA) of the MWRD 2.
4. In the PAD, the Project viability was based on the economic rate of return and the net present value of the measurable incremental benefits and associated costs of the Project comparing the "no project" and "with project" scenarios. The economic analysis is based on a seven-year Project implementation period and the following additional assumptions: a) The net benefit assessment period is 30 years; (b) A discount rate of 12 per cent is used in the analysis, (c) Local market reference prices (Senegal and Mauritania) are calculated for the main raw materials and chemical inputs, and used in the economic analysis, The End-of-Project EFA conformed to this methodological approach.
5. In the PAD, several benefits were not quantified due to a lack of data suitable for analysis. As a result, these were not considered in the determination of the Project cost. These are mainly health, the environment (such as carbon credits), and nutritional benefits that represent significant value returns for the Project. The End-of-Project EFA also did not quantify these in the calculations.



6. The financial analysis of the PAD focused on a cost-benefit analysis and on the productivity of the investments to be financed under component 2 (Activity 2.1: Hydro-agricultural development and protection of water resources; and Activity 2.2: Sustainable fisheries management and aquaculture). The main objective of the analysis was to examine the financial attractiveness of these activities at the national and regional levels considering only the direct activities related to Costs and Benefits. The End-of-Project analysis used the same approach.

**B. Updating the assumptions and data of the EFA calculation model**

**Financing & Investment**

7. **The MWRD 2 funding amounted to US\$240.5 million**, through US\$212.5 million of IDA Credits, US\$16 million from the GEF and LDCF, and the equivalent of US\$ 12 million in counterpart funding from the four member States. The IDA funding was structured in four Credit Agreements, one per OMVS member State, namely US\$58.5 million for Senegal, US\$54.5 million for Mali, US\$71 million for Mauritania, and US\$28.5 million for Guinea. GEF funding was distributed among the 4 member States at a rate of USD 4 million per country. The completion report as of April 30, 2023, indicates a Project disbursement rate of 93.96%, corresponding to a cumulative disbursement of SDR 130,317,654.69. Resources mobilized as of April 30, 2023, amounted to SDR 129,297,694.78 from IDA, and US\$9,004,711.72 from government counterparts funding. As of October 31, 2023, the financial implementation statement indicates an implementation rate of: (i) 99.96% for the IDA financing, (ii) 99.8% for the GEF financing, and (iii) 39.2% for government counterparts funding.
8. **Backlogs of contracts and unfinished work.** The Project closed with a few remaining contracts and unfinished work. These contracts are no longer eligible for IDA financing. They represent amounts distributed according to currency at 1,193,512,625 CFA francs, 858,281,479 FGM and 742,545 UM.

**Hydro-agricultural/irrigation developments**

9. **The Appraisal EFA considered much larger irrigation developments than the forecasts in the PAD.** The Appraisal EFA considered that the Project would equip or rehabilitate 18,511 hectares while the target value for areas equipped or rehabilitated was 13,680 ha in the PAD's result framework, thereby overestimating the expected Project benefits from irrigation by over 35%. Table 1 shows the breakdown of the 18,511 ha by country and by type of crop in the Appraisal EFA model.



**Table 1: Production structure by country (PAD Profitability Calculation Model)**

	Guinée		Mali		Mauritanie		Senegal		TOTAL	
	ha	Production T/ha	ha	Production T/ha	ha	Production T/ha	ha	Production T/ha	ha	Production T/ha
*=(hypothese 50% de banane assimilé aux 20% de maraichage)										
<b>Assolement AVEC Projet PEGIRE 2: 2014-2020</b>										
<b>Assolement A : PIV (Haute Vallée)</b>		0	159	3434		0		0	159	3434
en hivernage :		0		2027		0		0	159	2027
en cs-froide :		0		1041		0		0	127	1041
en cs_chaude:		0		366		0		0	32	366
<b>Assolement B : GPI et PIV (Moyenne -Basse Vallée et Delta)</b>		0	0	2504		26918		7378	79314	9882
en hivernage :		0		0		13 772		40579	9882	54351
en cs-froide :		0		0		6 510		19183	2965	25693
en cs_chaude:		0		0		6 636		19552	3459	26187
<b>Assolement C : PPM (Haute, Moyenne et Basse Vallée)</b>	50	1590	58	1844	100	3180	100	3180	308	9794
en hivernage* :		745		864		1 490		1490	308	4589
en cs-froide :		545		632		1 090		1090	246	3357
en cs_chaude:		300		348		600		600	92	1848
<b>Assolement D : Decrue (Moyenne et Basse Vallée)</b>		0		0		0	4000	4000	4000	4000
en hivernage :		0				-		0	0	0
en cs-froide :		0				-		4000	4000	4000
en cs_chaude:		0				-		0	0	0
<b>Assolement E: BF (Haute vallee)</b>	1162	5810	3000	15000		0		0	4162	20810
en hivernage :		3718		9600		-		0	4162	13318
en cs-froide :		2092		5400		-		0	2497	7492
en cs_chaude:		0		0		-		0	0	0
<i>Sous-Total</i>	1212	7400	3217	20279	2604	30098	11478	86494	18511	144270
Surface moyenne occupée-intensification									30913	144270
Agroforesterie	1400		2000						3400	68985
Arbroculture	700	17885	2000	51100					2700	68985
Agroforesterie	700								700	0
<b>TOTAL</b>	2612	25285	5217	71379	2604	30098	11478	86494	21911	213255

10. **An initial overestimation of Project performance.** Although the Project delivered 15,581ha, which represents 114% of the initial target and 156% of the revised target after the 2019 restructuring, it remains below the 18,511ha used in the Appraisal EFA. This hinders the capacity of the Project to match the EIRR of the Appraisal EFA.

**Table 2: Area Forecast Variance**

Country	Appraisal EFA	End-of-Project EFA	Gap
Senegal	11 478	8 970	(2 508)
Mauritania	2 604	4 987	2 383
Guinea	1 212	75	(1 137)
Mali	3 217	1 549	(1 708)
<b>Total</b>	<b>18 511</b>	<b>15 581</b>	<b>(2 930)</b>

11. **Performance across countries is not homogeneous.** Table 2 shows that Senegal, Guinea and Mali did not achieve the ambition set at Appraisal with respect to irrigation development or rehabilitation. This is not true for Mauritania, which exceeded the ambition set at Appraisal.

12. **Agricultural intensification.** The rate of agricultural intensification is a monitored indicator recorded in the Project completion report, which stated an end-of-Project cultivation intensification rate of 124.5% against a target of 120%. The Appraisal EFA calculations reflected in the PAD used an overoptimistic intensification rate of 167%. This initial assumption was corrected.

13. **The results derived from arboriculture had a significant impact on the profitability of farms.** Initial forecasts devoted 700 ha to arboriculture in Guinea and 2000 ha to arboriculture in Mali, respectively. Table 3 below shows that the financial results of arboriculture are important for these two countries and account for about 87% of the



expected results. The loss of production in this branch of activity will have a negative impact on the Project's profitability indicators. Indeed, it emerged from page 83 of the MWRD 2 completion report submitted by OMVS that the success rate of plantations in Mali is 57.48%, this rate will be applied to the initial results of arboriculture to better reflect reality. In addition, the calculations will take into account the results obtained on areas where appropriate conservation techniques (including agroforestry or reforestation) were implemented, namely: i) In Guinea, 903.14 ha, 94.4% of which is reforestation, and 10,000 ml of stone barriers protecting 50 ha have been carried out; (ii) in Mali, 2,216 ha over three years, 86.77% of which was reforestation, and 290 ha protected by stone barriers, were also carried out; iii) In Senegal, 137.7 ha of plantations, including stone barriers, pits, open-air trenches, control wells, filtering dikes and lunar crescents, have been built. A total of 3,256 ha has been reforested and 340 ha protected by stone barriers, which is in excess of the end of Project target of 3,000 ha.

**Table 3: Financial results of arboriculture for Guinea and Mali**

Incrementation du projet à 9 ans (pour Analyse Financiere)					
		Guinée		Mali	
		FCFA	USD	FCFA	USD
<b>Agriculture</b>		396 535 320	826 115	1 137 796 700	2 370 410
<b>Arboriculture</b>		2 628 668 000	5 476 392	7 510 480 000	15 646 833
<b>Total</b>		3 025 203 320	6 302 507	8 648 276 700	18 017 243

Source: Profit\_PEGIRE2\_FIN Sheet, rows 59-64, columns AJ-AO

14. **Production increase in irrigation perimeters.** The yield data in the calculation model was updated based on the information obtained in OMVS' MWRD 2 completion report, which state in its page 47:

- Groundnut: 1 to 1.5 t/ha in Senegal and stable at 1 t/ha in Guinea;
- Fonio: 0.25 to 0.5 t/ha;
- Rice: 0.5 t/ha to 1 t/ha in Guinea; 2.5 t/ha to 3 t/ha) to 4 t/ha in Mauritania and Senegal;
- Millet: 1 t/ha remained stable in Mali while it doubled in Mauritania from 0.5 t/ha to 1 t/ha;
- Sorghum: 0.5 t/ha to 1.1 t/ha in Mali;
- Onions: 10 t/ha to 12 t/ha throughout the basin;
- Chili pepper 2.5 t/ha to 5 t/ha
- Tomate 3t/ha à 8,5 t/ha ;
- Eggplant 3 t/ha to 7.5 t/ha

**Fishing and fish farming**

15. **Data on fisheries and fish farming are not exhaustive.** OMVS' completion report indicates that Guinea delivered two fish farming stations, two fishponds, two landing stages and two fish markets and Mali has achieved five fish stations (ponds), two fish ponds, one floating cage, one artisanal hatchery, two landing stages and three fish markets. In addition, the report indicates that data updated at the end of April 2023 indicates that relative increase in fish sales at the targeted sites reached 30% in Guinea, 14% in Mali, 21% in Senegal and 19% in Mauritania. The average of 21% is rather driven by Guinea, which performed satisfactorily in this sub-component. However, the actual performance results recorded by the Project in the various reports, do not provide details of the related quantities sold nor on the number of jobs created, therefore the updating of the calculation model for this component will be based on the sales growth rates recorded by the Project. The other parameters relating to the fishing (1,577) and fish farming (40) units that receive annual support from the Project remain unchanged.



16. **Adjustment of wages in fisheries and fish farming.** In the Appraisal EFA calculation model, the wages resulting from the creation of new jobs were counted twice in the business case (see worksheet AFE MWRD\_2 details, columns AU-AX/BG-BI/CA-CD. The present EFA corrected this.

**Jobs created.**

17. **The Project creates significant jobs.** A total of 35,134 jobs are created by the Project, including 32,204 in the fisheries/fish farming sector and 2,930 jobs in the agriculture sector. The beneficiaries of the Project will benefit from an estimated total income of USD 162.5 million, 66% of which will be generated in agriculture and 34% in fisheries.

**Table 4: Evaluation of the jobs created by the Project.**

COUNTRY	Jobs Creation			Income Generation		
<b>FISHERIES</b>						
	Without MWRD2	With MWRD2	Incremental Per country %	Without MWRD2	With MWRD2	Incremental per country %
GUINEA	2 308	8 648	22%	3 423 000	15 742 662	29%
MALI	1 708	11 602	29%	4 650 000	15 642 431	28%
MAURITANIE	2 204	8 649	22%	3 420 000	12 526 830	23%
SENEGAL	1 693	11 218	28%	4 559 000	11 123 422	20%
<b>Total</b>	<b>7 913</b>	<b>40 117</b>	<b>100%</b>	<b>16 052 000</b>	<b>55 035 345</b>	<b>100%</b>
<b>HYDRO-AGRICULTURE</b>						
GUINEA	409	450	1%	330 587	699 072	1%
MALI	2 802	3 078	8%	2 500 570	5 359 437	5%
MAURITANIE	13 423	14 668	36%	36 575 164	51 555 315	48%
SENEGAL	20 749	22 116	55%	36 343 427	49 828 905	46%
<b>Total</b>	<b>37 382</b>	<b>40 313</b>	<b>100%</b>	<b>75 749 747</b>	<b>107 442 729</b>	<b>100%</b>
<b>Total both Sub-sectors</b>	<b>45 295</b>	<b>80 430</b>		<b>91 801 747</b>	<b>162 478 074</b>	

18. **In the agricultural sector,** the Appraisal forecasts were optimistic, and the number jobs actually created is 720 jobs lower compared to the PAD forecast of 3,650 jobs. Senegal and Mauritania alone account for 89% of the jobs created, i.e., a total of 2,937 jobs. In Guinea and Mali, job creation remained marginal with 284 new jobs created for Mali and 41 new jobs created for Guinea.

**Health**

19. **The impact of the Project on the health of the population.** Under the Project, each of the four countries received 1,125,000 LLINs in two phases. An initial distribution of 600,000 LLINs per country was organized in 2016 for Senegal, Guinea and Mali, and in 2018 for Mauritania. The second LLINs distribution took place in 2019 in Senegal and Guinea, in 2017 in Mali and in 2020 in Mauritania. Through its LLINs distribution program, direct beneficiaries of the MWRD 2 reached 5 million people against a target of 4.5 million people. Similarly, with regards to the eradication of neglected tropical diseases (NTDs) through the distribution of medicines, MWRD 2 supplied medicines (700,000 tablets) to health facilities and financed their distribution campaigns. This sub-component by the Project helped to build community momentum around NTD control, as evidenced by the malaria indicator survey, which reports percentages of target beneficiaries who received mass NTD treatment reached or exceeded the Project's target of 80%: Guinea 82.8%, Mali 87%, Senegal 99.5%, Mauritania 79.7%. The average use of LLINs by children under 5 years of age reached 85.3%, against a target of 80. Similarly the average use of LLINs by pregnant women reached 92.1%,



and surveys show that all four member states exceed the 80% target for this indicator: Guinea 86.8%; Mali 96.8%; Mauritania 86.3%; and Senegal 99%. These results demonstrate good coverage and awareness of the use of LLINs to prevent Malaria.

**Drinking water**

20. **Drinking water in Guinea.** The Project's completion report indicates that 31 village and pastoral hydraulic boreholes were drilled in Guinea in the Prefectures of Labé (8), Tougué (8), Mamou (7) and Dalaba (8), which supplied drinking water to over 13,950 inhabitants in Project intervention areas, thus enabling beneficiary communities to avoid waterborne and other diseases. This Project benefit is quantifiable but has not been factored into the EFA.

**C. Economic analysis**

21. *Economic profitability of the Project.* Table 5 presents the end-of- Project EFA results compared to the Appraisal EFA results by country. The analysis of the net present value (NPV) is carried out with a discount rate of 12% to allow comparing the results with those of the Appraisal EFA, otherwise the rates of 10% and 6% are usually used, consistent with World Bank recommendations. The Project has a very positive overall economic impact with an IRR of 33.1% and a NPV@12% of USD 268.7 million. Although these results remain below the PAD forecasts due owing to optimistic assumptions at Appraisal, Project performance is significant. The findings emerging from the country-by-country analysis indicate that all countries have an IRR above the discount rate of 12%. Mauritania and Senegal benefited greatly from the Project. Mauritania has an IRR of 42.7% and a NPV@12% of USD 119.4 million, which is very close to the PAD forecast. Senegal has an IRR of 39.9% and a NPV of USD 104.9 million, both above the forecast. These countries account for 81.5% of the total NPV generated by the Project. Meanwhile, Guinea and Mali were penalized by the poor performance of irrigation investments. Mali has an IRR of 24.5% and a NPV@12% of USD 38 million, which is well below forecasts. Guinea has an IRR of 16% and an NPV@12% of USD 6.3 million, which is the farthest from the forecast.

**Table 5: Economic outcomes of the Project by Member State**

Economic Analysis	Guinea	Mali	Mauritania	Senegal	Total PGIRE 2
<b>Appraisal</b>					
EIRR (%)	29.5%	33.8%	44.9%	38.4%	<b>37.7%</b>
NPV at 12% (US\$, millions)	40.8	78.1	140.8	83.9	<b>343.6</b>
<b>End of Project</b>					
EIRR (%)	16%	24.3%	42.7%	39.9%	<b>34.7%</b>
NPV at 12% (US\$, millions)	6.3	37.5	119.4	104.9	<b>275.3</b>

22. To support the long-term sustainability of the Project's investments, the economic analysis has retained a significant cost item of 10% for maintenance. In addition, Table 6 below shows the results of a sensitivity analysis on reduced Project lifespan to 25, 20, and 15 years, which demonstrate the robustness of the results.

**Table 6: Sensitivity Analysis**

Economic Indicators	30 years	25 years	20 years	15 years
WINNOW	\$268.7M	\$256M	\$235.3M	\$197.6M
SORTS	33.1%	33%	32.9%	32.5%



23. Moreover, a sensitivity test at the discount rate from 12% to usually used 10% and 6% results in significant improvement in the economic profitability of the Project: the VAN@12% of a value of USD 268.7 million; VAN@10% increases to USD 345.3 million and VAN@6% to USD 589.4 million. The TRIE does not vary based on the discounted rate.

**D. Financial analysis**

24. **Financial profitability:** The financial analysis derives from the economic analysis, but it does not take into account the income paid as salaries which are included in the operating expenses of the production units in the field of agriculture, fishing and fish farming. The Project results minimized certain parameters, including yields of the crops used in the development, the success rate of the agroforestry plantations, and the field prices of certain speculations such as papaya, mango and guava. In addition, the corrections made to the accounting of employment income have a downward impact of around 1.3% on the initial indicators. In short, the various adjustments made to the financial calculation model have led to the emergence of significant discrepancies between the forecasts and the reality of the profitability indicators presented in Table 7.

**Table 7: Financial Results of the Project**

Financial Analysis	Guinea	Mali	Mauritania	Senegal	Total PGIRE 2
<b>Appraisal Analysis</b>					
FIRR (%)	40.7%	42.6%	47.1%	46.6%	<b>44.9%</b>
NPV at 12% (US\$, millions)	28.6	55.1	90.7	49.7	<b>224.1</b>
<b>End of Project Analysis</b>					
FIRR (%)	20.5%	26.7%	29.2%	28.0%	<b>26.8%</b>
NPV at 12% (US\$, millions)	8.9	26.2	32.2	28.6	<b>96.2</b>

25. **The overall financial profitability of the Project** was an IRR of 26.8% with a 12% NPV of USD 96.2 million compared to an IRR of 44.9% and a 12% NPV of USD 224.1 million at Appraisal. Although the situation is the same at country level, it does not reflect a lack of financial profitability of the Project, on the contrary, the financial profitability levels are above 20% at country and at Project level, which is very significant.

26. **The financial profitability of the sectors.** The analysis of the value chains indicates that fisheries contribute a large part to the results of the Project compared to hydro-agricultural activities in terms of the financial quantifiable within the framework of the Project. Indeed, the financial profitability of fishing is estimated at an IRR of 81.96% and an NPV@12% of USD 89.7 million, compared to an IRR of 13.3% and a NPV@12% of USD 6.5 million for hydroagricultural/irrigation activities. The discrepancies with the PAD forecasts are the same as mentioned above for the economic analysis.

**Table 8: Fisheries and Agriculture Financial Results**

Heading	PAD Initial EFA		End-of-Project Evaluation	
	Agriculture	Fishing	Agriculture	Fishing
FIRR (%)	30,8%	163,60%	13,3%	81,96%
NPV at 12% (US\$, millions)	128,7	95,5	6,5	89,7



27. **Conclusion:** The MWRD 2 Project achieved significant results, which are close to the Appraisal EFA’s results, despite the optimistic assumptions and errors in the Appraisal EFA, the lower-than-expected results in terms of irrigation activities and a lower-than-expected number of agriculture campaigns. These led to the Appraisal model overestimating the expected Project results. Considering all parameters and constraints, the results of the MWRD 2 Project are very positive, both from an economic and financial point of view, and are significant. This justifies a “Substantial” rating for the Efficiency analysis.



## ANNEX 5. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

Après examen du rapport ICR du projet PGIRE, nous vous faisons parvenir, par le présent mail, notre contribution pour son amélioration.

Tout d'abord nous vous remercions pour la qualité du travail accompli qui reflète bien la mise en œuvre du projet.

Ainsi, notre contribution porte sur les éléments de clarification demandée par la Banque et les aspects liés à la supervision du projet et aux activités hydro agricoles.

### **Clé de répartition des coûts et charges :**

La clé de répartition des coûts et charges est utilisée pour définir la quote-part de chaque Etat membre dans la recherche de financement pour les ouvrages communs de l'OMVS. Elle prend en compte les besoins actuels et futurs de l'OMVS pour la réparation, l'entretien, le renouvellement des équipements et la réalisation des ouvrages communs.

Ainsi plusieurs scénarios de clés ont été présentés pour permettre à l'OMVS d'avoir une plus grande flexibilité dans la recherche des financements :

- Clé par ouvrage : Félou, Koukoutamba, Gouina, Bouréya, Gourbassi, Manantali-Diama etc.
- Clés agrégées pour
  - o Tous les ouvrages et tous les Etats : Manantali-Diama, Koukoutamba, Félou etc.
  - o Les ouvrages à 3 Etats : Manantali-Diama, Félou, Gouina et Gourbassi
  - o Les ouvrages à 4 Etats : Koukoutamba, Balassa, Bouréya.

Les clés ci-dessus validées par l'ensemble des Etats membres seront utilisées chaque fois que l'OMVS recherche des financements pour les ouvrages communs.

### **Renforcement du rôle de la Guinée par le projet :**

Grâce au projet, le nouveau modèle de répartition des coûts et charges des ouvrages a été élaboré pour prendre en compte l'adhésion de la Guinée.

En outre la formation des acteurs nationaux et l'équipement des services d'hydrologie, de l'énergie, de l'environnement, de la pêche, de la santé et de la Cellule nationale ont complété la réforme institutionnelle de l'OMVS réalisée dans le cadre du PGIRE qui a permis l'intégration effective des cadres guinéens au sein de l'OMVS et permis de renforcer la participation de la Guinée au sein de l'OMVS.

### **Activités santé et pêche dans la zone du projet :**

Dans le cadre de la planification régionale des activités, l'intervention dans le bassin du fleuve était réservée à l'OMVS à travers le projet. C'est pourquoi dans le domaine spécifique de la santé, il y a eu plusieurs distributions des



moustiquaires pour prendre en compte les stratégies nationales de lutte contre le paludisme. Il en est de même pour les Maladies Tropicales Négligées (MTN). Toutes ces actions ont été complétées par des campagnes de sensibilisation des populations.

De même dans le domaine de la pêche, la formation des acteurs, la réalisation et l'équipement des infrastructures ont permis de répondre aux besoins spécifiques des Etats dans la zone du projet et éviter ainsi la multiplication des intervenants dans la zone concernée.

### **Agroforesterie**

Les chiffres indiqués dans le tableau 9 « Les données des indicateurs additionnels » du rapport de clôture notamment un taux de réussite des plantations de 57,48% sur les 2216 ha des forêts et versants traités par des techniques d'agroforesterie concerne uniquement les activités mises en œuvre par l'ADRS au Mali. Il convient de préciser que taux de réussite concerne les plantations qui ont marché.

### **Supervision/ICR**

Dans l'équipe de supervision du projet il manque les experts ci-après :

Moustapha Ould El Bechir : [mouldelbechir@worldbank.org](mailto:mouldelbechir@worldbank.org) Procurement Specialist

Cheick A.T. Traore : [traore@worldbank.org](mailto:traore@worldbank.org) Procurement Specialist

Bella Lelouma DIALLO : [bdiallo@worldbank.org](mailto:bdiallo@worldbank.org) Financial Management Specialist

Lucson Pierre Charles : [lpierrecharles@worldbank.org](mailto:lpierrecharles@worldbank.org) Team Member

Maman Sani Issa : [missa1@worldbank.org](mailto:missa1@worldbank.org) Environmental Specialist

John Paul Clark : [jclark4@worldbank.org](mailto:jclark4@worldbank.org) Team Member (spécialiste en santé)

### **Activités hydro agricoles page 50**

Revoir le tableau 1 « production structure by country » notamment au niveau de la moyenne-basse vallée et delta qui concerne uniquement les activités en Mauritanie et au Sénégal. En particulier les chiffres indiqués (zéro pour la décrue en Mauritanie et 4000 au Sénégal). Il en est de même pour les PIV au niveau de la vallée/Delta où les chiffres indiqués « 7378 ha » pour le Sénégal et « 2504 ha » pour la Mauritanie. En conséquence les chiffres 11 478 ha pour le Sénégal et 2604 ha pour la Mauritanie indiqués dans le tableau 2 doivent être revus et/ou confirmés