



RESTRUCTURING PAPER
ON A
PROPOSED PROJECT RESTRUCTURING
OF
SENEGAL RIVER BASIN INTEGRATED WATER RESOURCES MANAGEMENT PROJECT
APPROVED ON JUNE 23, 2016
TO
OMVS - ORGANISATION POUR LA MISE EN VALEUR DU FLEUVE SENEGAL

June 11, 2020

WATER

AFRICA

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ABBREVIATIONS AND ACRONYMS

EA	Economic Analysis
EUR	Euros
GEF	Global Environmental Fund
IDA	International Development Association
MWRD	Multipurpose Water Resources Development
OMVS	<i>Organisation pour la Mise en Valeur du fleuve Sénégal</i> (Senegal River Basin Organisation)
PCU	Project Coordination Unit
PDO	Project Development Objective
PGIRE	<i>Projet de Gestion Intégrée de Ressources en Eau</i> (see definition of MWRD for the English Translation)
SOGED	<i>Société de Gestion de Diama</i> (Diama management company)
TKLM	Térékolé/Kolimbine/Lac-Magui system
TF	Trust Fund
TF1	First Dutch Trust Fund project
TF2	Second Dutch Trust Fund project
TF3	Current Dutch Trust Fund project
US\$	United States Dollar
WUA	Water User Association



BASIC DATA

Product Information

Project ID P153863	Financing Instrument Investment Project Financing
Original EA Category Partial Assessment (B)	Current EA Category Partial Assessment (B)
Approval Date 23-Jun-2016	Current Closing Date 31-Dec-2020

Organizations

Borrower OMVS - Organisation pour la Mise en Valeur du Fleuve Senegal	Responsible Agency OMVS
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Project Development Objective (PDO)

Original PDO

The development objective of the Senegal River Basin Integrated Water Management Project is to strengthen the capacity of OMVS and local water user associations to improve the environmental and water quality conditions of the Senegal River Basin's water resources.

Current PDO

The development objective of the project is to strengthen the capacity of the OMVS and local user associations for reducing erosion in the Upper Basin and proliferation of typha in the Lower Basin of the Senegal river.

Summary Status of Financing

Ln/Cr/Tf	Approval	Signing	Effectiveness	Closing	Net		
					Commitment	Disbursed	Undisbursed
TF-A2254	31-Mar-2016	09-Sep-2016	07-Dec-2016	31-Dec-2020	11.73	8.71	3.19



Policy Waiver(s)

Does this restructuring trigger the need for any policy waiver(s)?

No

I. PROJECT STATUS AND RATIONALE FOR RESTRUCTURING

A. Project status

1. The Trust Fund (TF) in the amount of US\$11.68 million was signed on September 9, 2016 and came into effectiveness on December 7, 2016. This TF project is the third round of financing by the Dutch Government to OMVS via the World Bank and it is commonly referred to as TF3. In July 2018, the project was restructured to fix some minor inconsistencies in the original design of the project, including revising the PDO to more closely align the wording with project activities. The overall objectives of the project did not change. The revised development objective (PDO) is “to strengthen the capacity of the OMVS and local user associations for reducing erosion in the Upper Basin and proliferation of typha in the Lower Basin of the Senegal river”.

2. The TF3-supported project has three components, aimed specifically to address river bank erosion in the upper basin, the proliferation of an invasive plant species – typha - in the lower basin, and the capacity of users’ associations to continue to fight these phenomena beyond the life of the project.

- Component 1 “Upper Basin Sustainable Land Management” supports restoration of the main headwaters of the Senegal River, the banks of other rivers in the basin, and the deforested slopes in Guinea and Mali through the sustainable reversal of the process of deforestation and erosion in the Térékolé/Kolimbine/Lac-Magui system (TKLM) north of Kayes. In addition, the riverbanks protecting Kayes will be restored, continuing work initiated under two previous Dutch Trust Funds.
- Component 2 “Management of Invasive Aquatic Plants in the Delta and the Operationalization of Water User Associations (WUAs)” aims to control and manage the proliferation of typha to a level where it does not constitute a threat to the ecological balance and to economic activities in the basin. This component also aims to improve access to drinking water and to operationalize WUAs in continuity with the activities from the two previous Trust Funds.
- Component 3 “Institutional Support for OMVS and National Agencies” aims to build the capacity and skills of OMVS and National Cellule staff through training and the exchange of lessons learned. The component supports the management and implementation of regional and state level activities. The component also supports national technical services to implement OMVS activities, such as environment, forestry, water resource management, and public health.

3. This TF3 is linked to the Senegal River Basin Integrated Water Resources Management APL, currently in its second phase (P131323, MWRD2/PGIRE2). The MWRD2 project was approved in 2013, became effective in January 2014 and will close in June 2021. It includes US\$212.5 million of IDA financing and US\$16 million of GEF-TF. The MWRD2’s Project Development Objective is to 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.



4. The linkages between the two projects concern the typha management activities in the lower basin and the agroforestry activities in the upper basin. In the lower basin, typha is a severe concern for irrigation perimeters rehabilitated and/or expanded by MWRD2. TF3 activities under component 2 and 3 aim to strengthen the institutional capacity to manage typha and clear some of the large irrigation canals from the invasive plant. In the upper basin, the target areas for the agroforestry activities under component 1 are complementary with those financed under PGIRE2. Moreover, some of the nurseries financed by PGIRE2 supply seedlings to sites being reforested under TF3; and the capacity building activities benefit both actors under PGIRE2 and TF3. The PCU is the same for both projects.

5. The project made good progress in 2019, with 35% disbursements (from 31% in January 2019 to 66% at the end of December). By May 31, 2020, six months from project's closure, 65 percent (or, US\$7.76million) of the TF3 funds have been disbursed and the rate will increase to 74% as soon as the latest disbursement request is finalised (down from an 85% projection, due to COVID). If the situation improves, so the project's good implementation pace can resume, disbursement is expected to reach 85% by December 2020. Results on the ground continue to materialize:

- 625 ha have benefitted of agroforestry activities;
- 20 000 beneficiaries have benefitted of agroforestry activities (reforestation and/or trainings), since the first tranche of the reforestation has been completed;
- 2 080 ha have benefitted of the recalibration of irrigation canals and the removal of typha;
- two of the three typha management studies are completed and of good quality;
- the platform integrating remote sensing data for the monitoring of typha expansion has been installed on the OMVS website and the first results published in December 2019; and
- the drinking water supply works have finished in two sites and are nearly completed in all the others.

6. Some activities are now stalled because of COVID-related measures. In particular, the contracts for the mechanical works for erosion control and the delivery of plants for reforestation in the Upper Basin have not been finalized yet due to difficulties in the evaluation of the offers (for Guinea) and contract negotiations and signature (for Mali), as OMVS staff is working from home. Moreover, the works on typha removal in Mauritania, already delayed, may not be able to continue at the recently renewed pace as the government installs more stringent measures on self-isolation. The same applies for reforestation, as plants cannot be delivered to the sites due to traveling restrictions. Finally, the protocol with SOGED, in charge of the capacity building activities on typha management and agroforestry, which require gatherings and site visits, has been suspended in April due to COVID19. The PIU was carrying out bi-monthly missions and frequent follow ups with the entities in charge of all activities, but all missions have now been suspended - including on the Bank side.

B. Rationale for restructuring

7. The proposed restructuring intends to extend the closing date by 9 months, to September 30, 2021, and revise the targets of some indicators to make sure they are attainable, as well as revise the economic and financial analysis for the project. Six months may be sufficient to achieve the PDO indicators as this will provide one additional dry season in which to conduct the work (described below in more detail). The overall objectives of the project will not change, but the restructuring provides an opportunity to more realistically reflect what can be achieved with the current funding. Indeed, though the nature of the activities did not change, some interventions recommended in the feasibility studies as more sustainable turned out to be more expensive than the type of works foreseen in the PAD. Therefore, some targets need revision.

8. The proposed restructuring complies with the World Bank Directive on Investment Project Financing, paragraph 50, to the extent that: (i) the project objectives continue to be achievable; (ii) the performance of the Recipient remains



satisfactory; and (ii) the World Bank and Recipient have agreed on actions that will be undertaken by the Borrower to complete the Project. There are no overdue audit reports.

II. DESCRIPTION OF PROPOSED CHANGES

9. The proposed restructuring changes will encompass the three following areas:

- The **results framework** will be revised to ensure that the indicator targets are attainable and that they accurately reflect the project’s activities (Table 1).

TABLE 1. PDO INDICATORS AND TARGET CHANGES

Indicators	Original target	Achieved May2020	Revised target June 30, 2021	Explanation of change/Indicator’s definition
PDO indicators				
Direct Project Beneficiaries (number), of which female (%)	40 000 Female beneficiaries= 45%	20 000	<i>Unchanged</i>	For now, the indicator reflects mostly the beneficiaries of agroforestry activities. When the potable water supply works will end in April 2020 and the recalibration of the irrigation canals in August 2020, the target will be achieved, and expectations are that it will be surpassed.
Land area under sustainable landscape management practices (ha)	2 000 ha	625 ha	1 100 ha	<p>The original idea at appraisal was to hire two NGOs (one in Mali and one in Guinea) to carry out the agroforestry works, including awareness raising activities amongst the communities. However, lessons learnt from similar activities funded by previous projects - whose impacts materialized during this project - showed that tendering reforestation at a larger scale without proper training and ownership of local beneficiaries did not lead to sustainable results. Therefore, during implementation it was decided to directly engage the community in the implementation of the activities, under the supervision of the two NGOs, in order to ensure better appropriation of the technologies by the beneficiaries and the sustainability of the interventions. Communal lands were therefore chosen, in agreement with the communities. As a result, the achievable target in terms of surface under sustainable land practices is 1 100 ha (and not, 2 000ha).</p> <p>Moreover, the studies which identified needs for this activity took longer than anticipated to be launched, so by the time the contracts were signed with the NGO, their duration was reduced to 18 months to make sure the activities could be completed on time, which also contributed to a further reduction of the target. The contracts were signed in March 2019 and were expected to be completed by September 2020, but due to COVID-related-delays, this planting season has been lost, so they will now finish by June 2020. The risk remains however that this indicator may not be fully achieved by June 2021, as there is still a lot of uncertainty around COVID-related measures.</p> <p>The indicator’s definition still reads: “Area treated with erosion control in the Upper Senegal River Basin under the project (ha),</p>



				through reforestation, agroforestry activities, and soil protection and management/water and soil conservation practices”.
Area with improved irrigation and drainage services due to typha removal (ha)	15 000 ha	2 080 ha	2 600 ha	<p>Works ongoing. In Senegal, 2080 ha will benefit from improved irrigation and drainage in March. In Mauritania, works which will benefit 520 ha will finish in December 2020, despite COVID19. At appraisal, this activity was budgeted for cleaning the large irrigation canals, which allowed to improve irrigation in larger areas at a relatively low cost (though it depends on the canal, on average 104 EUR/ha).</p> <p>However, a study financed by the project under component 2.1a identified the best and more sustainable ways of clearing the canals from typha. As the study, completed in April 2019, explains, lessons learnt - including from TF1 and TF2 - showed that the original type of interventions was not sustainable. In most cases, one or two seasons after the cleaning was completed, typha invaded the canals again, so maintenance also became very expensive. Therefore, based on recommendations of the study, and lessons learnt from similar interventions under the MWRD2 project which showed good results, the TF3 now finances the diking and axes recalibration – which have more durable impact on delaying the return of typha in the canals, yet (much) more expensive (though it depends on canals, average cost 600 EUR/ha, a five-fold increase). Importantly, less frequent and expensive maintenance will be required in the future. The new type of works still contribute to the same objective, hence the indicator remains unchanged. However, the target area with improved irrigation and drainage services needs to be reduced to what can be financed with the budget available for the activity (EUR 1.56 million). OMVS is looking for additional source of funding to continue the activities beyond this project and come closer to the foreseen impact.</p>
Functional entities in charge of typha management in the delta (#)	10	1	<i>Unchanged</i>	<p>The diagnostic has been completed and trainings/support of the entities was planned to start in February 2020. However, due to COVID, SOGED, the OMVS agency in charge of this activity, asked for the convention to be suspended until field missions will be allowed again (currently, OMVS and its related agencies are doing home-based-work).</p> <p>“Functional” means “the entity that develops an annual typha management plan and implements it”.</p>
Intermediate indicators				
Length of canals cleared of typha (km)	15	0	<i>Marked for deletion</i>	The PDO level indicator on the improved irrigation and drainage area already more accurately reflects the impact of the activity.
Drinking water supply equipment installed (number)	8	2	<i>Unchanged</i>	Works in Mali, have been completed. The remaining works will terminate in July 2020 in Senegal and Mauritania; and in August 2020 in Guinea.
Typha spatial distribution report produced annually using remote sensing system (Yes/No)	Yes	Yes	<i>Unchanged</i>	Reports were produced for the first time in June 2019 and they are being produced for 2020. A link to the tool is available on the OMVS website.



River banks restored from erosion (m)	1 000 m	0	<i>Unchanged</i>	Works ready to start in Mali and they are at negotiation stage in Guinea. Both are currently on hold due to COVID19. With the 6-months extension, the target will be met and likely exceeded by the end of the project.
Typha assessments completed (number)	3	2	<i>Unchanged</i>	It includes the needs, institutional, and financial assessment of typha extension and its management. The first two reports were delivered in 2019. The third one, whose inception has been delayed by COVID, should be signed in June 2021, start in July 2020 and be completed by December 2020.

- **The closing date will be extended by 9 months, to September 30, 2021.** The 9 months extension, to September 30, 2021, is expected to help buffer ongoing delays due to COVID19. An extension till September 2021 will allow a full additional dry season during which the typha removal works can be completed, and the capacity building activities can continue. It will also allow the project to fully exploit the planting season for the agroforestry activities, which continues until September. This extension will help secure sufficient time for the finalization of the mechanical works for erosion control In Mali and Guinea. The latter two activities are currently on hold due to COVID19. Moreover, the extension will also benefit the consolidation of capacity building programs of both beneficiaries of agroforestry activities and the organizations in charge of managing typha. Indeed, because of delays in project set up and effectiveness and in the launch of these activities, the remaining implementation time has been less than what was estimated at preparation by the feasibility studies for these soft activities, plus they have now been on hold since April 2020 due to COVID. COVID-aside, when the project was first restructured in 2018, with a 14 months extension in the closing date, it was agreed that a second extension may be necessary to consolidate the capacity building activities. Since some of the groups trained under TF3 intervene also in the canals and in agroforestry areas rehabilitated by the MWRD2, this extension will also increase the sustainability of the MWRD2 project.

The extension of the closing date to September 30, 2021 will not lead to additional costs – as on one hand the PCU is shared with the MWRD2 project¹, whilst on the other, the supervision budget for TF3 comes from the donors (hence it does not require BB).

By increasing the chances of completing the project’s activities, the project will further contribute to decreasing communities vulnerabilities to COVID19 in the Senegal Basin area, mostly through typha removal’s activities, which allow a large area to resume irrigation and reduce the inception of water borne diseases such as malaria and schistosomiasis, which if contracted, make people much more sensitive to the COVID virus, reducing the capacity of their immune system to fight back. Moreover, it will provide jobs via the agroforestry activities, which are implemented jointly with communities. It is estimated that it will provide jobs for at least an additional 7500 person/day for the remaining duration of the project (considering 15 person/day/ha). Given that most of the current planting season has been lost due to COVID19, a large percentage of these jobs would not be provided if the current closing date remained.

- **Appraisal Summary Change in Economic and Financial Analysis.** In the PAD, the economic analysis considered five different benefits of the project:

¹ Currently scheduled to close in June 2021. However, the PIU has sent a request for the extension of MWRD2 on June 10, 2020, from June 2021 to December 2022, since most works are now on hold due to COVID19-related movement restrictions.



- i. *socio-economic benefits* stemming from the increased cultivated areas through the reduction of typha proliferation, slope stabilization works, and the reforestation of river banks. The analysis predicted that about US\$3,155,000 of yearly incremental agricultural (including agroforestry) economic fallouts
- ii. *Food Security and Nutritional Benefits*, also resulting from river bank restoration and clearance of canals; It was projected that implementation of selected activities aimed at increasing water resource availability would lead to an incremental production of about 50,000 tons of diversified agricultural products (including rice, maize, okra, tomato, sweet potato and sorghum), per year.
- iii. *Job creation and poverty alleviation* through the employment of local communities for project activities and their continuation after the project's closure; The analysis projects that, overall, 59,700 local, direct jobs were likely to be created per year by this operation. The associated, anticipated income generation for local communities, at the average monthly minimum wage of US\$100, was calculated at US\$2,744,000 per year over the project's life span.
- iv. *Health Benefits* through the clearance of typha, which leads to increased incidence of increased incidence of diseases such as bilharzia and malaria; and
- v. *Environmental benefits* through reduced soil erosion and reforestation.

The analysis covered 25 years, including four years of project implementation and took into account only quantifiable benefit and cost streams. It calculated the Net Present Value (NPV) and both Internal and Economic Rates of Return (IRR/ERR). The sensitivity of the project's IRR/ERR to the change in expected incremental irrigated areas and/or operating and maintenance (O&M) costs was also tested.

The main objective of the analysis was to examine the financial viability of selected productive investments taking into account only related direct costs and benefits. The Financial Analysis concluded that the overall IRR was 18% and the NPV US\$ 2.1 million. The Economic Analysis' ERR is 21%, with a NPV of US\$ 4.5 million. Job creation and related income generation that were considered in the economic analysis mostly explain the difference between the project's IRR and ERR.

The sensitivity analysis revealed that the project would not remain financially viable if the expected irrigated cultivable area were to decrease by 20 percent. At this reduction rate, the project's NPV would become negative at US\$ (-310,000). The new targets being lower than 80% of the original targets (respectively 18% and 55%), based on the original economic and financial analysis, the project's NPV is now negative. However, as mentioned above, the Economic Analysis did not consider several benefits which could not be quantified due to lack of usable data. These include mainly environmental benefits (such as carbon credits), non-timber benefits such as hunting, and biodiversity/ecological protection benefits. These benefits represent returns of significant value for the project. If accounted for, they would enhance the overall economic viability of the project.

Several donor projects are financing activities to tackle typha and erosion, with mixed results. With this project, particularly for typha management, we had the opportunity to change course mid-way based on the best available information and recommendations on a report that collected all the best practices to ensure that even if the impact will be lower than initially planned, it will be more sustainable. In other words, it will benefit local population's food security, livelihoods, and health for the longer term. The work on institutional set up of typha management, and the capacity building and awareness raising are already showing its results: the High Commissioner of OMVS for the first time called a regional workshop to discuss the results of the institutional study on typha management and propose an action plan to implement and deepen some of its main recommendations. Moreover, the results of the same study informed the development program of SOGED, which for the first time is working on typha management with local, already established and working cooperatives, instead of creating new parallel organizations at high risk of becoming dormant after the project (as it is the case with the large majority of organizations established in previous projects). Thus, the project is laying the right



foundation for a successful long-term management of typha, which will in its turn enable to foster and protect local communities’ food security, livelihood opportunities, and health. These benefits are hard to quantify, but they go beyond the direct outputs of the projects, such as the surface where irrigation is improved and the area reforested.

III. SUMMARY OF CHANGES

	Changed	Not Changed
Results Framework	✓	
Loan Closing Date(s)	✓	
Disbursement Estimates	✓	
Implementation Schedule	✓	
Economic and Financial Analysis	✓	
Implementing Agency		✓
DDO Status		✓
Project's Development Objectives		✓
PBCs		✓
Components and Cost		✓
Cancellations Proposed		✓
Reallocation between Disbursement Categories		✓
Disbursements Arrangements		✓
Overall Risk Rating		✓
Safeguard Policies Triggered		✓
EA category		✓
Legal Covenants		✓
Institutional Arrangements		✓
Financial Management		✓
Procurement		✓
Other Change(s)		✓
Technical Analysis		✓
Social Analysis		✓



Environmental Analysis		✓
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IV. DETAILED CHANGE(S)

LOAN CLOSING DATE(S)

Ln/Cr/Tf	Status	Original Closing	Revised Closing(s)	Proposed Closing	Proposed Deadline for Withdrawal Applications
TF-A2254	Effective	31-Oct-2019	31-Dec-2020	30-Sep-2021	30-Jan-2022

DISBURSEMENT ESTIMATES

Change in Disbursement Estimates
Yes

Year	Current	Proposed
2016	0.00	0.00
2017	1,470,000.00	530,237.47
2018	3,150,000.00	2,529,511.88
2019	4,650,000.00	4,214,379.78
2020	2,448,630.00	2,000,000.00
2021	0.00	1,000,000.00
2022	0.00	0.00



Results framework

COUNTRY: Western Africa

Senegal River Basin Integrated Water Resources Management Project

Project Development Objectives(s)

The development objective of the project is to strengthen the capacity of the OMVS and local user associations for reducing erosion in the Upper Basin and proliferation of typha in the Lower Basin of the Senegal river.

Project Development Objective Indicators by Objectives/ Outcomes

Indicator Name	PBC	Baseline	End Target
Reducing erosion in the Upper Senegal River Basin			
Land area under sustainable landscape management practices (Hectare(Ha))		0.00	1,100.00
<i>Action: This indicator has been Revised</i>			
Direct project beneficiaries (Number)		0.00	40,000.00
Female beneficiaries (Percentage)		0.00	45.00
Reducing typha proliferation in the Lower Senegal River Basin			
Area with improved irrigation and drainage services due to typha removal (Hectare(Ha))		0.00	2,600.00
<i>Action: This indicator has been Revised</i>			
Functional entities in charge of typha management in the delta (Number)		0.00	10.00
<i>Action: This indicator has been Revised</i>			



Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	End Target
Upper Basin Sustainable Land Management			
River banks restored from erosion (Meter(m))		0.00	1,000.00
Management of Invasive Aquatic Plants in the Delta and the Operationalization of Water User Associations (WUAs)			
Length of canals cleared of typha (Kilometers)		0.00	15.00
Action: This indicator has been Marked for Deletion			
Typha assessments completed (Number)		0.00	3.00
Typha spatial distribution report produced annually using remote sensing data (Yes/No)		No	Yes
Drinking water supply equipments installed (Number)		0.00	8.00



The World Bank

Senegal River Basin Integrated Water Resources Management Project (P153863)
