Report Number: ICRR0023713

1. Project Data

Project ID	Project Name
P124905	Erosion & Watershed Mgt Project
Country	**Practice Area(Lead)**
Nigeria	Environment, Natural Resources & the Blue Economy

L/C/TF Number(s)	Closing Date (Original)	Total Project Cost (USD)
IDA-51050,IDA-62770,IDA-62780	30-Jun-2020	846,795,140.38
Bank Approval Date	**Closing Date (Actual)**	
08-May-2012	30-Jun-2022	

	IBRD/IDA (USD)	Grants (USD)
Original Commitment	500,000,000.00	0.00
Revised Commitment	900,000,000.00	0.00
Actual	837,268,410.75	0.00

Prepared by	Reviewed by	ICR Review Coordinator	Group
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Project ID	Project Name
P126549	NG Erosion and Watershed Mgmt. (PSG) (P126549)

L/C/TF Number(s)	Closing Date (Original)	Total Project Cost (USD)
		8247580.94
Bank Approval Date	**Closing Date (Actual)**	

08-May-2012

	IBRD/IDA (USD)	Grants (USD)
Original Commitment	0.00	8,590,000.00
Revised Commitment	0.00	8,247,580.94
Actual	0.00	8,247,580.94

2. Project Objectives and Components

a. Objectives

The Project Development Objective as formulated in the Legal Agreement (p. 6, 2019) and the PAD (p. 5, 2012) was to “reduce vulnerability to soil erosion in targeted sub-watersheds.”

b. Were the project objectives/key associated outcome targets revised during implementation?

Yes

Did the Board approve the revised objectives/key associated outcome targets?

No

c. Will a split evaluation be undertaken?

No

d. Components

The project had four components:

Component 1: Erosion and Watershed Management Infrastructure Investments (Appraised cost:US$405.97 million; Additional Financing: US$304.00 million; Actual cost:US$665.94 million)

Component 1 had three subcomponents:

A. Gully rapid action and slope stabilization (GRASS): stabilization and rehabilitation of selected erosion related sites and prevention of further erosion. Activities included: i) emergency and temporary stabilization of gullies and management of landslides; ii) complementary structural and erosion and water management works, and; iii) preventive erosion management works.

B. Integrated watershed management: activities for integrated management of selected sub-watersheds surrounding the gully systems. Activities included: i) sensitization, mobilization and organization of communities to manage erosion and prevent disasters; ii) preparation and implementation of integrated sub-watershed management plans and related technical guidelines and manuals, including land and water

management, and disaster risk preparedness measures; and iii) subprojects for identification, establishment, and management of soil and water conservation zones, including implementation of associated land and water management practices, through the provision of sub-grants to eligible community organizations.

C. Livelihoods Improvement: activities aimed at improving the livelihoods of communities in selected sub-watersheds. Activities included: i) provision of training and other capacity building assistance to communities to identify and develop livelihood support activities and enterprises; ii) sub-projects for the acquisition of skills and resources to create employment and livelihood opportunities, through the provision of sub-grants to eligible community organizations, and; iii) development of household and community water harvesting facilities.

D. Technical and Socioeconomic Analysis: Technical and socio economic analysis to identify appropriate remediation measures in locations with different characteristics from those already addressed under the project in view of providing recommendation for major landscape and watershed level restoration programs involving issues other than those addressed under the project, including other farms of watershed management risks that compromise the natural resource base and associated livelihoods at a landscape scale.

Component 2: Erosion and Watershed Management Institutions and Information Services (Appraised cost:US$39.7 million; Additional Financing; US$40 million; Actual cost:US$76.49 million)

Component 2 had five subcomponents:

A. ***Federal MDAs effectiveness and investment services for states***: activities to strengthen the capacity of relevant federal and MDAs to perform their functions and to support and guide participant states relevant MDAs in performing their functions related to erosion and watershed management.
B. ***State MDAs effectiveness and services***: activities to strengthen the capacity of relevant participating states MD's to perform their functions related to erosion and watershed management.
C. ***Local government authorities effectiveness and services***: activities to strengthen the capacity of relevant LGAs to guidance sustain the operation and maintenance of infrastructure and facilities developed under the project.
D. ***Private and non-government institutions and services*****:** activities to strengthen the capacity of relevant private contractors and other non-government entities to deliver effective services in the area of erosion and watershed management.
E. ***Support and capacity building activities focusing on training and other forms of human resource development,*** for the benefit of national centers of excellence in the areas of erosion control, landscape management and environmental assessment, erosion risk mapping, enhancing climate readiness work and environmental impact assessment capacities facilitating completion of guidelines for road construction to reduce gully erosion; and addressing solid waste management in restored gullies.

Component 3: Climate Change Response (Appraised cost:US$30.00 million; Additional finance: 24 million; Actual cost: US$ 50.38 million) Activities to strengthen the Recipient's capacity to adapt to climate change, including advancing the preparation of activities identified under the Recipients Nationally Determined Contributions (“NDCs”), and issuing green bonds.

Component 3 had 2 subcomponents:

A. Strengthening the strategic policy and institutional framework through institutional development and capacity building.
B. Promoting low carbon development by supporting the development of an enabling framework for renewable energy.

Component 4: Project Management (Appraised cost:US$32.92 million; Additional finance: US$32 million; Actual cost:124.02 US$ million)

A. ***Federal project management:*** Management and coordination of the project at the federal level, including procurement and financial management, social and environmental safeguards management, communication, and monitoring and evaluation.
B. ***State project management:*** Management and coordination of project activities within the respective participating state, including procurement and financial management, social and environmental safeguards management, communication, and monitoring and evaluation.

The PAD listed two subcomponents under component 3. The Legal Agreement (2018) did not, but it explicitly included the issue of green bonds.

There are minor differences in the activities mentioned in the Project paper (2018) and the ICR. The ICR does not include activities 1D and 2E, which were added in 2018 with additional financing.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates

Project cost: The project was appraised at US$497.00 million. Additional funding raised it to US$908.59 million, and the actual cost was US$845.52 million.

Financing: The project was funded through a Specific Investment Loan of US$508.59M, consisting of a US$500M IDA concessional loan blended with GEF and SCCF grants totaling US$8.59M. Additional financing of US$400 was done through US$300 million from IDA 18 and US$100 million from IDA 18 scale-up Facility.

Borrower Contribution: Planned contribution in cash and kind was approximately US$150M (Federal: US$83.34M; States: US$67M).

Dates: The project was approved on May 8, 2012, and it became effective on September 16,2013. MTRs review took place on January 25, 2016. The original closing date was June 30, 2020, but it was extended twice for a total of 24 months, and actual closing was on June 30, 2022. The first extension from 2020 to 2021 was because of a 16-month delay in the project becoming effective. The second extension was because of delays caused by COVID-19.

The project went through two restructurings, one in 2018 which included additional financing and extension of the closing date, and a second restructuring in 2021 to extend the closing date because of delays in starting the project. According to the Bank team (discussed in a meeting on October 17, 2023), the project

became effective more than a year after approval because of the usual delays in setting up project implementation infrastructure.

3. Relevance of Objectives

Rationale

Country Context: High growth in Nigeria, with significant contributions from renewable and non-renewable natural resources, has come at a high cost. The non-oil economy was degrading the natural resources. The cost of environmental degradation and associated disasters, such as landslides and flooding, was estimated at 9 percent of GDP in 2011. Erosion, specifically, had caused loss of human lives, damage to infrastructure (including roads, highways, pipelines, houses and buildings, and silted waterways), and losses to natural assets (including productive farmland and forests, and thus, watershed functions). Southern Nigeria was affected by massive and expanding gully erosion, an advanced form of land degradation. Degradation was also accelerating in northern Nigeria. The causes of gully erosion in Nigeria were related to human activity: (a) improper road design and construction; (b) poor solid waste management in urban and peri-urban areas that choked the already-inadequate drainage; and (c) unsustainable land-use practices (such as overgrazing, deforestation, cultivation of marginal lands, and uncontrolled mining for building material) that removed protective vegetative cover.

Country Strategy: The PDO was consistent with the growth and resilience goals of Nigeria's Vision 20:2020 (2010), which sought to implement programs to control environmental degradation and pollution and promote sustainable use and conservation of natural resources. The country's Transformation Agenda (2011-2015) also called for efficient exploitation and utilization of available agricultural resources. The PDO was specifically designed in response to the President of Nigeria's request to the Bank to support the country in addressing severe erosion and its impacts in southeastern Nigeria. It also aligned with the priorities of Nigeria's Economic Recovery and Growth Plan (2017-2020), particularly relating to environmental sustainability, job creation, and public-private partnership by investing in public infrastructure, restoring degraded land, and mobilizing private financing (green bonds) for carbon-efficient projects various sectors.

World Bank Strategy: The PDO was consistent with the Country Partnership Strategy (CPS) II (2010-2013), which sought to support sustainable and inclusive non-oil growth. Improved environmental and climate risk management was a central part of CPS II, which acknowledged the need to address weak policy, institutional, and incentive frameworks to support the wider adoption of sustainable land use practices. The PDO aligned with achieving Pillar 2 (vulnerability and resilience) of the Bank's Africa Development Strategy, Africa's Future and the World Bank's Support to It (2011) and the goals of the TerrAfrica program in which the government and Bank both participate and which helped fund project preparation. The additional financing that was given in 2018 aligned with the priorities of Nigeria's Economic Recovery and Growth Plan (2017-2020). The PDO was consistent with i) enhancing Nigeria's resilience to climate variability, a key focus area of the Bank's CPS (FY14-FY19) , ii) enhancing climate resilience through sustainable erosion control structures, landscape management practices, and livelihood options, a strategic pillar of the CPS (FY21-FY25), iii) the World Bank's regional strategy for Africa, and iv) all five Strategic Directions of the World Bank's Next Generation Africa Climate Business Plan (NGACBP) of 2020,

and v) the Biodiversity, Climate Change, and Land Degradation focal area strategies of the GEF and the SCCF.

The recently approved follow-on Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL) built on the results and lessons learned from the project, is expected to both consolidate and scale up the successes of NEWMAP while complementing these achievements with a stronger focus on the arid states in Northern Nigeria. GEF/SCCF incremental funding to the project was also relevant as it was part of a larger Umbrella Program led by the World Bank – the Sahel and West Africa Program (SAWAP) in support of the Great Green Wall Initiative.

Level of the PDO: The PDO was pitched at the appropriate level to address the problem that Nigeria was facing, that is, to arrest land degradation. Both state and federal governments had failed previously to limit degradation because they were not able to address the problem comprehensively and at scale.

As the PDO was pitched at the appropriate level to address the problems faced by Nigeria and it was consistent with the priorities and strategies of the Government and the World Bank, its relevance is rated high.

Rating
High

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1
Objective
To reduce vulnerability to soil erosion in targeted sub-watersheds.

Rationale
Theory of change

The theory of change outlined that inputs or project activities such as:

a. Stabilizing and rehabilitating major erosion related sites, using both structural and vegetative measures,
b. Organizing communities in the sub-watersheds surrounding the targeted erosion related sites, helping them prepare integrated sub-watershed management plans, and supporting subprojects to implement improved land and water management practices,
c. Assisting communities to develop livelihood support activities and enterprises, supporting sub-projects of community organizations, and developing household and community water harvesting facilities,
d. Strengthening the enabling environment and capacity for investment planning and readiness for implementation of erosion and watershed management at federal, state, and local levels, and

e. Enhancing Nigeria's capacity to promote low carbon, climate resilient development to better address the threat of climate variability exacerbating Nigeria's erosion challenges;

With the following expected project outputs:

a. Gully complexes or other erosion sites treated with all planned measures and area treated with bioremediation measures at the selected sites,
b. Area brought under sustainable management practices, number of sub-watershed management plans developed, and the number of people benefitting from advisory services on integrated land/water management practices,
c. Communities and community groups supported, and household and community water harvesting facilities developed,
d. Data and knowledge systems established, and plans, frameworks, and erosion risk maps developed,
e. Technical reports completed, green bond released, low carbon demonstrations completed, and GNG emission reduced;

These outputs were in turn expected to lead to reduced vulnerability, indicated by the number of "targeted gully complexes and other erosion sites with reduced severity level after treatment." This was to measure the biophysical severity of each gully site after project treatment, compared to a site-specific baseline to be collected before works begin, using a set of 5 qualitative categories (from 'Catastrophic' - category 5 to 'Stable' - category 1). 'Stable' was defined as sites where "drainages are represented as natural, stable channels; no signs of erosion; vegetation very common; and no signs of active headcuts, nickpoints, or bed erosion." The PAD noted that additional physical impact indicators that are not directly attributable to the project were to be included in the broader M&E system, given the large numbers of variables outside the project's direct span of control. These indicators will support the project's efforts to better understand the complex gully and watershed dynamics and improve project interventions during project implementation. These indicators were to also inform the project's Impact Evaluation and scientific capacity building.

Outputs:

Stabilization/rehabilitation

- 92 gully complexes and other erosion sites were treated with 100% of planned measures, exceeding the target of 55
- 2,164 ha was developed through bioremediation in targeted sub-watersheds, exceeding the target of 400 ha
- 61 detailed gully treatment plans were developed and received World Bank no objection without the funding, exceeding the target of 30

Sub-watershed activities

- 30,627.96 ha was brought under sustainable landscape management practices, exceeding the target of 20,000 ha
- 65 participatory sub-watershed management plans developed under the project for targeted erosion affected sub-watersheds, exceeding the target of 38

- 1,827,887 people (of which 300,000 were female) received project supported advisory services in integrated land and water management practices, planning and or monitoring, exceeding the target of 90,000

Livelihood

- 35,977 households were supported with livelihoods enhancement activities, exceeding the target of 12,000.

Institutional capacity

- One spatial knowledge MIS on erosion and watersheds was operationalized, achieving the target of one
- 116 stations that provide data for integrated catchment planning upgraded or newly installed, exceeding the target of 100
- Three national centres of excellence in erosion control were established, achieving the target of three.
- Two city stormwater plans informed by climate projections were developed, achieving the target of two
- Two EIA guidelines were developed for targeted investment types that affect erosion, exceeding the target of one
- 19 state improved erosion risk maps were completed, achieving the target of 19
- 54 community interest groups to collect solid waste were established, exceeding the target of 50

Climate capacity

- 149,554.31 tons of CO2 annually of Net Greenhouse emissions were reduced, exceeding the target of 2,411.00 tons
- 7 technical reports on enhancing climate resilience completed, meeting the target of 7
- 42 climate adaptation/low carbon demonstration projects were completed, exceeding the target of 10
- 1 green bond was developed and issued, meeting the target of one.

Outputs not listed in results framework but reported in ICR include:

- 8,199 households received solar powered cook stoves
- 54 Community interest Groups (CIGs) established and supplied with equipment to undertake community-driven waste management micro-enterprises to help maintain constructed structures

Outcomes

- 103 Targeted gully complexes and other erosion sites with reduced severity level after treatment, exceeding the target of 55
- 149,554.31 tonnes of annual GHG emission reduced, exceeding the target of 2,411 tons per year.

Three other PDO indicators, which are project outputs rather than outcomes – hence, included among the outputs above – are:

- 92 gully complexes and other erosion sites were treated with 100% of planned measures, exceeding the target of 55
- 2,164 ha was developed through bioremediation in targeted sub-watersheds, exceeding the target of 400 ha
- 30,627.96 ha was brought under sustainable landscape management practices, exceeding the target of 20,000 ha

The project has met the targets for all the outputs, and exceeded the targets in most cases. Importantly, many more gully systems and erosion related sites were treated with 100 percent of the planned measures (92) than planned (55).

The expected outcome was reduced vulnerability to erosion at the treated sites. The ICR reports that vulnerability was reduced at 103 sites, exceeding the target (55) and the number of gully complexes that were fully treated (92). The sites at which 50 percent of the planned measures were completed have been treated as sites at which vulnerability has been reduced.

However, the actual methodology for reporting the outcome on 'reduced vulnerability to erosion at the treated sites' differs from the suggested methodology in the results framework. The proposed results framework in the PAD (p. 40) and the Project paper (2018) (p. 37) suggests that vulnerability should be independently assessed and recommended impact evaluation to establish causality given the large numbers of variables outside the project's direct span of control (PAD, page 32). The biophysical severity of each site after project treatment was to be compared with a site-specific baseline using qualitative categories to assess reduced vulnerability. The reduction in severity was to be measured using the classification system from level 5 (catastrophic) to level 1 (stable). The PAD (page 40) states that "Gully categorization will be carried out by an independent body and reinforced by aerial photography or high-resolution remote sensing". Additionally, completion of 100 percent of the planned measures was deemed necessary to avoid erosion and flooding impacts because of which the PDO indicator relating to treatment of sites was changed from completion of 75 percent of the planned measure to 100 percent of the planned measures in 2018. Instead, the ICR assesses the indicator based on the sites at which 50 percent of the planned measures were completed and treated and uses this as a proxy for sites at which vulnerability has been reduced. Even though the ICR notes that the impact evaluation was conducted in 2022, it does not offer any information on the findings from the impact evaluation on physical impact indicators.

The project met or exceeded the targets for all outputs. However, the project did not adequately measure the key outcome (sites with reduced severity after treatment) as recommended in the design and offer adequate evidence of project outputs contributing to the outcome. The efficacy is rated as substantial with moderate shortcomings.

Rating
Substantial

OVERALL EFFICACY

Rationale

The project has met all the output targets. More erosion sites have been treated than planned. Information systems and capacities for planning and implementation have been developed at federal, state and local levels, as evident from the plans prepared and implemented. Communities in the surrounding watershed have been organized and supported to adopt good practices and develop livelihoods that contribute to improving the environment. These outputs are likely to reduce vulnerability of the treated sites to erosion. However, the indicator has not been measured adequately as suggested in the framework; the reduction in vulnerability is measured as a derivative of an output of planned measures implemented and not independently assessed as recommended. Thus, the efficiacy is rated as Subsatntial with moderate shortcomings.

Overall Efficacy Rating

Substantial

5. Efficiency

Economic and Financial Efficiency

A quantitative cost benefit analysis was carried out at appraisal for an anticipated 30 intervention sites based on a sample of draft designs for a subset of candidate sites. The analysis included eight sources of benefits: i) income losses and asset damage from soil erosion avoided, ii) untimely deaths avoided, iii) reduced time wasted due to improved road conditions, iv) port Calabar dredging costs avoided, v) urban domestic water supply improved, vi) decrease in agricultural yield avoided, vii) unusable farmland due to erosion avoided, and viii) topsoil nutrient loss avoided. The estimated IRR was 12% over 30 years. The analysis conducted in 2019 for additional funding considered only six sources of benefits: only three that were included in the appraisal (i) avoided income losses and asset damage, ii) untimely deaths avoided and iii) reduced wasted time in traffic) and three new ones: i) displacement of people avoided, ii) incremental profits from afforestation, iii) and GHG emissions reduced. The estimated IRR was 16%.

The analysis at closing replicated the 30 year BCA but used seven sources of benefits. The sources included all the sources from the 2019 analysis, including the 3 from 2012 (income losses and asset damage from soil erosion avoided, Untimely deaths avoided; reduced time wasted due to road conditions), 3 benefits added in 2019 (Avoided displacement of people; afforestation benefits, and GHG emission reduction), and 1 new benefit source, increase in value of previously erosion-prone land. The estimation yielded an IRR of 15%.

Even a stringent combination of assumptions, such as an 8% decrease in benefits and an 8% increase in costs (as done in the analysis at appraisal), returned an NPV of US$ 136 million, an IRR of 12% and a benefit-cost ratio of 1.15.

The analysis done at project closure uses benefit sources that are different from the ones used at appraisal. The sources that have been left out relate largely to upstream benefits from improved management practices through improvements in quantity and quality of water and agricultural lands (urban domestic water supply improved, decrease in agricultural yield avoided, unusable farmland due to erosion avoided, and topsoil nutrient loss avoided).

The project incurred costs of US$7.25 million per site compared to the estimated average costs of US$4 million, but the costs were estimated to be US$10 million in the southern states where most of the sites treated by the project were.

Administrative efficiency

Nigerian states, which have the primary responsibility for land management and allocations, implemented the project with support from the federal government. Effective implementation of the project, therefore, required inter-ministerial and interstate coordination, collaboration and information sharing.

The project experienced some procurement-related inefficiencies because of i) delays in getting Environmental and Social Management Framework (ESMP) approvals and in mobilizing communities and ii) state Project Management Units (PMUs) delayed site visits to monitor compliance because transfer of funds to states was delayed, which in turn slowed down work by contractors.

A few other factors affected implementation: insurgency and security concerns, political changes that disrupted work, extreme weather, COVID restrictions, and conflicts between states and contractors.

The economic returns estimated at the end of the project were higher than anticipated at appraisal. Even leaving out some of the benefits anticipated at inception, the returns are higher. Overall costs are close to anticipated. The rating, therefore, is substantial.

Efficiency Rating

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	12.00	0 ☐ Not Applicable
ICR Estimate	✓	15.00	0 ☐ Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

The PDO was highly relevant as it addressed the fundamental problem that Nigeria faced in managing its land and water resources. The project delivered the outputs exceeding the targets in many cases. Efficacy is rated substantial with moderate shortcomings because of the lack of use of the methodology proposed at design for the critical outcome indicator related to "erosion sites with reduced severity level after treatment" based on

independent verification rather than measuring the outcome in terms of implementation of planned measures. Efficiency is rated substantial. The overall rating is, therefore, Moderately Satisfactory.

a. Outcome Rating
Moderately Satisfactory

7. Risk to Development Outcome

Technical Risk: One source of risk to continued benefits comes from the level and the extent to which the beneficiaries in the treated sites will continue to adopt improved livelihood and land management practices. Their continuing to do so will depend on the extent to which local and state institutions reinforce the ideas. For example, whether agricultural extension systems mainstream conservation-based production practices among the agricultural practices they promote to farmers.

Institutional Risk: The actions of state and local institutions and governance structures that have a role to play in influencing how infrastructure is designed and built and how urbanization takes place also are critical. Administrative boundaries rarely coincide nicely with watershed boundaries, thus making decisions at local levels often less than ideal from a watershed perspective. Continuing to benefit from the investments will require internalizing watershed concerns at various levels of governance.

Technical Risk: The biggest threat to sustaining the benefits comes from inadequate operation and maintenance of project-financed infrastructure. The MTR had revealed that Improper waste disposal was threatening the sustainability of civil works. The project established 54 community groups and provided them with equipment to manage enterprises that handle solid waste in their communities. To what extent they will sustain themselves and whether solid waste is managed in other communities will matter.

Political Risk: Political commitment to manage watersheds, mainly at the state level, is also important. The fact that eight states have organized Erosion and Watershed Management Agencies (created by Acts of Legislature and funded by the State Annual Budget) offers hope. The project helped in laying institutional foundations for Nigeria to address soil erosion and watershed management on its own. Apart from developing individual capacity, the project has established data systems and knowledge institutions. Whether they will be utilized depends on the political commitment and policies that governments at the federal and state levels put in place.

Environmental Risk: Nigeria also faces climate risks with extreme droughts and precipitation which may lead to reduced vegetation and inundation of erosion control structures – although they are designed to withstand 50-year floods.

8. Assessment of Bank Performance

a. Quality-at-Entry

The PDO was relevant to address the problems Nigeria was facing. The project was well designed and included components that could be expected to achieve the PDO. The activities included the building up of capabilities and provision of resources required to urgently rectify heavily eroded sites and take preventive measures at other sites. They were complemented with an activity to build the capability to address climate change as well.

The Implementation set up was complex because it required considerable coordination between the states, which have the mandate to deal with land issues, and the federal government. Because the project was multi sectoral as well, it involved many federal and state ministries, departments and agencies, local governments, communities, and civil society. Effective implementation required inter-ministerial and Interstate coordination, collaboration, and information sharing. Project management units were planned for all the states to be housed in respective ministries of environment.

Implementation by the states guided by the federal ministry also required a tiered M&E system. M&E was embedded with that of the government systems at state and federal levels, requiring the PMUs in the states to send the data to the central PPU. The results framework included key parameters to track progress in meeting the objectives, Recognizing the need to attribute outcomes to project activities, the results framework required two impact studies.

The PAD assessed the risks and proposed mitigation measures. For example, capacity risks were thought to be high. The project planned to hire at least one internationally recognized expert in land degradation and also planned to create an expert service pool with national and international expertise. Considering the history of failed approaches to gully management in the southern region, project design risks were considered substantial. Project design therefore was guided by a review of best practices and lessons learned in Nigeria and elsewhere.

The project was appraised in such a way that it was likely to achieve the planned objectives. How the work would be implemented was also thought through. The PAD anticipated and planned to address difficulties in implementation and M&E. However, the project seems to have been very conservative in setting the targets for activity one despite increase due to AF. Nearly all of them have been exceeded to a significant degree.

The overall rating of Bank Performance at entry is Satisfactory.

Quality-at-Entry Rating
Satisfactory

b. Quality of supervision
Supervisory inputs were as planned. Joint implementation support missions took place semiannually; a total of 21 missions throughout the 10 years of the project's operation. They were complemented by technical field missions by the country office staff. The composition of the supervision missions reflected the technical and fiduciary requirements of the project, by including specialists in financial management, procurement, and safeguards in all the missions. Additionally, cameras and drones were used to monitor work at numerous sites when travel was curtailed.

The ICR notes that the Bank team's regular engagement with the borrower helped in developing a mature relationship, which contributed to building commitment and ownership both at the federal and state levels. The commitment was reflected by their timely allocation of counterpart funds for payment of compensation, the selection of participating states in a transparent manner, absence of ineligible expenditures in procurement despite the large number of complex transactions and the commissioning of numerous project reviews and evaluations, including a comprehensive and objective borrower completion report.

Following encouraging performance in the first seven states, the supervision team and management responded to the client's request to expand the scope of the project by conducting a comprehensive review that justified additional funding for considerable expansion of the project's scope. The project also implemented an exit strategy over the last 12 months by monitoring physical progress and disbursements to accelerate site completion resolving outstanding Grievance redressal mechanism (GRM) complaints, identifying measures to reduce occupational health and community risk. The overall rating at Supervision is Satisfactory.

Quality of Supervision Rating
Satisfactory

Overall Bank Performance Rating
Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design
The results framework included indicators of outputs and the expected outcome, adequate to capture the theory of change. One indicator captured the outcomes of the PDO statement; it was a slightly modified version of the PDO itself. The indicators were clear and measurable except for the key outcome indicator which required qualitative assessment. The framework depended on two impact studies to examine the causal impact of the project and its intervention on key outcomes. The framework suggested collecting information on additional physical impact indicators as background information to the project's planned impact evaluation and suggested baseline characterization of erosion-related sites that would benefit from project activities.

The project seems to have been very conservative in setting the targets for activity one despite increasing some of them at AF. Nearly all of them have been exceeded to a significant degree.

b. M&E Implementation
M&E was implemented by individual state units in participating states. State units collected and fed technical, financial and fiduciary information to the central M&E at the federal PMU. The M&E system also included a comprehensive image database documenting situations before, during, and after

interventions. During COVID, virtual reality 360-degree cameras and droners were used to remotely monitor progress.

All the indicators in the results framework have been collected and reported, except for the key PDO indicator, as noted above. The ICR notes that the limited connection between physical progress and contractual obligations of the M&E system resulted in significant difficulties in keeping track of actual and pending payments for individual contracts. However, this was subsequently addressed.

The M&E efforts can be sustained past the project as they are mainstreamed in the state and federal units, but they are unlikely to be as they pertain largely to project outputs.

Marginal modifications were made to the framework. Key among them was the change in the definition of one PDO indicator, requiring treated sites to include those in which 100 percent of the planned measures have been implemented. But all the targets were changed with additional funding.

The ICR notes that the mid-term review and impact evaluation were conducted in 2022.

c. M&E Utilization

The M&E system was designed and implemented to adequately fulfill the state level and consolidated information requirements of project management and supervision as well as to assess the achievement of results. The information was utilized for dissemination and communication, as well as to provide important inputs into external evaluations such as the MTR and the impact evaluation conducted in 2022. However, the ICR doesn't offer any information from the impact evaluation or any information on physical impact indicators.

The designed framework, including the suggested impact studies to be implemented in phases was adequate to monitor activities, measure outcomes and link outputs to activities. The framework was implemented as planned by units embedded in state and federal systems as planned. M&E informed the MTR, restructuring for additional financing, and the impact study, although the details are not available. The rating, therefore, is substantial.

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

The project was categorized as a Category A project, and it triggered 8 safeguards: Environmental Assessment (OP/BP 4.01); Natural Habitats (OP/BP 4.04); Forests (OP/BP 4.36); Pest Management (OP 4.09); Physical Cultural Resources (OP/BP 4.11); Involuntary Resettlement (OP/BP 4.12); Safety of Dams (OP/BP 4.37); and Projects on International Waterways (OP/BP).

The project had in place a checklist for screening subprojects to ensure compliance with the Bank's social and environmental safeguards policies. Furthermore, all site-specific interventions identified for funding by the project had Environmental and Social Management Plans (ESMPs) prepared and disclosed and were fully implemented. A total number of 136 ESMPs/Environmental and Social Impact Assessments (ESIAs) were prepared and disclosed during project implementation. The project also deployed 360-degree cameras for environmental and safeguards compliance performance monitoring and incident investigations, even in remote areas.

Environmental specialists were employed by the project at national and state levels making them responsible and accountable for compliance and enforcement of safeguards, and they were required to provide monthly and quarterly reports to the Federal Program Management Unit (FPMU) and state project implementation units.

Environmental Assessment (OP/BP 4.01): The project prepared Environmental and Social Management Framework (ESMF) and Resettlement policy Frameworks (RPF), disclosed, and implemented them.

Forests (OP/BP 4.36): No major deforestation took place at the project sites except for minor clearances required to erect project structures and campsites. No cases of air, water, and land pollution were reported across the project's locations.

Occupational Health and Safety (OHS) issues were reported including three fatalities which triggered the Environmental and Social Incident Reporting Toolkit (ESIRT).The findings of the root cause analyses carried out showed that they were not systemic issues. To address the OHS issues, the projects conducted a series of capacity building in OHS/Construction Health and Safety (CHS) for Federal Project Management Unit (FPMU) and State Project Management Unit (SPMU) staff and all contractors.

The project complied with OP 4.01 and OP 4.12 by preparing a Resettlement Policy Framework and an Environmental and Social Management Framework at project preparation. The corresponding applicable Resettlement Action Plans (RAP) and Environmental and Social Management Plans (ESMP) were prepared to address site-specific social risks. At closing, 21 states had fully implemented their RAPs. Two states could not locate some PAPs (32) for which an escrow account was opened and funded with counterpart funding. One state was still implementing its RAP with the compensation fund in an escrow account.

Given the need to track Implementation of RAPs and resolve grievances at multiple sites, a database of the status of all RAPs state wise was developed. Cumulatively as of October 31st, 2022, 9,696 project Affected Persons (PAPs) were compensated, and 94 RAPs were fully implemented.

Specific information is not available from the ICR on actions taken related to Natural Habitats (OP/BP 4.04), Pest Management (OP 4.09), Physical Cultural Resources (OP/BP 4.11), Projects on International Waterways (OP/BP), and Safety of Dams (OP/BP 4.37).

Two environmental and social audits were conducted by third party consultants. The findings of both audits were both satisfactory, which corroborated the findings of various supervisory missions.

The additional financing did not trigger any new safeguards policies, and the existing instruments were all updated accordingly to reflect the new set of activities and inclusion of additional states.

b. Fiduciary Compliance

Financial Management

The project had adequate financial management (FM) arrangements with qualified staff, who had knowledge of the Bank's FM/disbursement procedures, engaged performing FM functions. Approved annual work plans were used as the basis for implementing project activities.

The quality of accounting and financial reporting was unacceptable at the beginning of the project but it improved over the life of the project. The consolidated interim financial reports (CIFRs) submitted at the beginning was unacceptable to the Bank. The project regularly submitted Interim financial reports (IFRs) to the Bank, although occasionally late. The project also regularly submitted annual audited financial statements to the Bank. The project delivered an acceptable final CIFR on August 26, 2022.

The auditors issued an unqualified opinion on the audited financial statements for all years. The performance of the auditors was found acceptable to the Bank.

The Bank's FM team regularly supervised the project's financial management. It routinely rectified the issues that it identified, such as unretired advances, inadequate documentation, and questionable expenditures. At project closure, there were no outstanding issues. However, the project closed its grace period with unexpected demands for funding post-closure as four states did not provide accurate and timely information on commitments.

At the end of the project, some states had more funds in their designated accounts (DA) than commitments, while others did not have enough because of poor monitoring of disbursement between January 2021 and June 2022. Enormous efforts were made to recover the excess funds and redirect them to states that needed them. There were unexpected demands for funding post-closure. Some States did not provide accurate and timely information on commitments, even up to the Fiduciary Workshop held June 6-10, 2022. Four states that had earlier indicated that they had sufficient funds, later sent in payment requests post-closing far in excess of available funds. The project therefore closed with a cost overrun of around USD 16 million. The FM rating was Satisfactory at project closing.

Procurement.

Procurement practices too were unacceptable in some states in the beginning. The states, where the practices were acceptable were asked to help in improving capacity in other states. The quality of the procurement documents, bidding documents, RFP and evaluation reports improved over the lifetime of the projects.

Systematic Tracking of Exchanges in Procurement (STEP), required by the Bank to process procurement in all IPF projects, was also initiated. However, the challenge was that the SPMUs were not making post procurement review of activities in the STEP. The Bank followed up with SPMUs to ensure that they did as required. By project closure, procurement, including post procurement activities required in STEP, were substantially complete.

At project closure, no mis-procurement had been recorded. The procurement rating was Satisfactory at project closing.

c. Unintended impacts (Positive or Negative)

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d. Other

Two project activities may have benefited women in particular. The project distributed improved cookstoves to over 8,000 households, which would have reduced women's exposure to air pollution from cooking and save their time spent on firewood collection. The provision of potable drinking water systems in selected communities improved access to drinking water, would also have reduced the time women spent on fetching water.

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Moderately Satisfactory	Insufficient evidence of outcomes achieved
Bank Performance	Satisfactory	Satisfactory	
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Modest	

12. Lessons

The following lessons are derived from the ICR with some modification of language.

- **Where projects are required to supervise structural work sites in numerous distant areas, remote monitoring through the use of technologies such as 360 degree cameras, drones and satellite imagery can complement physical monitoring, reduce costs, and enable supervision where it may not be possible because of restricted travel.** The project used remote monitoring when travel was restricted during COVID. The project implementing units were able to remotely check the work done by contractors who were paid by the percentage of work done.
- **In decentralized operations, an M&E system that tracks both physical progress and financial transactions (such as physical completion percentage and financial payments made), in addition to the results framework indicators, can strengthen both monitoring and financial management.** The weak connection between physical progress and financial transactions in the system caused significant difficulties in tracking pending payments during the last 12 months of the project when substantial work was completed.
- **Where subunits such as states implement the projects but without a fixed share of funds allocated to them, setting up an allocation mechanism that is based on states meeting certain fund-use criteria, can reward states that utilize funds and ensure**

effective use of funds. Using statements of expenditures (SoE) instead of Interim Financial reports (IFRs) can also avoid large balances from initial advances remaining unutilized in some states.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR comprehensively overviews project activities, outputs, and outcomes. It also nicely lays out the complex situation under which the project was implemented, having many states implement it under the guidance of the federal ministry, particularly with COVID-19-related travel restrictions, and the innovative ways the project overcame the difficulties. The ICR is internally consistent and adheres to the guidelines.

The evidence offered on the outcomes, however, is inadequate. More information was potentially available from the impact study. The report is silent on the impact study except to note that it was done even though the project design recommended using the analysis of the impact study to demonstrate results for some key indicators. The evidence presented in the ICR comes exclusively from the M&E results indicators. Mainly because of limiting itself to indicators from the results framework, the report lacks a results orientation to connect project outputs to outcomes and suggest how the project may have made a difference to communities and the resources. More information could have made the analysis richer and the evidence more robust.

a. Quality of ICR Rating
Modest