

**The World Bank**

Nigeria Erosion and Watershed Management Project (P124905)

Implementation Status & Results Report

Nigeria Erosion and Watershed Management Project (P124905)

WESTERN AND CENTRAL AFRICA | Nigeria | Environment, Natural Resources & the Blue Economy Global Practice |
 IBRD/IDA | Investment Project Financing | FY 2012 | Seq No: 20 | ARCHIVED on 29-Jun-2022 | ISR51134 |

Implementing Agencies: Federal Ministry of Finance

Key Dates**Key Project Dates**

Bank Approval Date: 08-May-2012

Effectiveness Date: 16-Sep-2013

Planned Mid Term Review Date: 25-Jan-2016

Actual Mid-Term Review Date: 25-Jan-2016

Original Closing Date: 30-Jun-2020

Revised Closing Date: 30-Jun-2022

Project Development Objectives

Project Development Objective (from Project Appraisal Document)

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

Has the Project Development Objective been changed since Board Approval of the Project Objective?

No

Components Table

Name

Component 1: Erosion and Watershed Management Infrastructure Investments:(Cost \$659.20 M)

Component 2: Erosion and Watershed Management Institutions and Information Services:(Cost \$74.99 M)

Component 3: Climate Change Response:(Cost \$50.38 M)

Component 4: Project Management:(Cost \$124.02 M)

Overall Ratings

Name	Previous Rating	Current Rating
Progress towards achievement of PDO	<input type="checkbox"/> Satisfactory	<input type="checkbox"/> Satisfactory
Overall Implementation Progress (IP)	<input type="checkbox"/> Moderately Satisfactory	<input type="checkbox"/> Satisfactory
Overall Risk Rating	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate

Implementation Status and Key Decisions

All Project Result Framework indicators are met; some exceeded and disbursement from the World Bank Project Portal is 99%. The Project pioneered a new approach for integrated watershed management that addresses key priorities of the Federal Government of Nigeria (FGN) around sustainable landscape restoration, climate change responses, and institutional strengthening for watershed management. NEWMAP demonstrated proof-of-concept by (a) *successfully implementing at scale, a new and holistic, integrated approach* for community-based landscape restoration, addressing climate change issues in Nigeria, while supporting alternative livelihoods; (b) *pioneering innovative technology* including spatial analysis for Resettlement Action Plan (RAP) preparation, implementation, monitoring and grievance resolution, geospatial technology (remote sensing from satellites and drones) for Project implementation and monitoring, and 360-degree cameras for planning, implementation and monitoring and



evaluation; and (c) *building individual and institutional capacity* to continue such innovative and effective approaches beyond Project closure (new policies, guidelines, manuals and agencies, apart from trainings provided to government and non-governmental staff).

Key highlights include:

- All Project Result Framework indicators met, some exceeded. 86 out of 103 civil works at gully erosion sites have been completed.
- Almost complete disbursement: The Project had disbursed 99%. As per Bank records, the outstanding DA balances (combined for all the IDA Credits 51050, 62770, and 62780) are about US\$43.5 million of disbursed funds. The team continues to work with the client to ensure that all expenses are documented on time.
- RAPs have been completed for all sites and more than 99% of 9,523 PAPs compensated.
- 1156 out of 1162 (99%) of GRS/GRM complaints have been resolved.
- Land prices in erosion-prone areas have increased post NEWMAP intervention: in Katsina State, for instance, from ₦ 300,000/ha to ₦ 3 million/ha.
- Over 27, 000.00 ha of degraded land reclaimed.
- More than 12.5 million direct and indirect beneficiaries as houses, hospitals, schools, roads and water pipelines have been saved from erosion damage at more than 103 sites across States, around 1.8 million have received training and advisory services, over 9,523 people have been safely re-located and compensated, around 35,000 have been provided with alternative livelihoods, while several others have benefitted from innovative technology demonstrations (e.g., solar meat processing, fuel-efficient cookstoves).
- Erosion and Watershed Management Agencies: As part of the sustainability and exit strategy for NEWMAP, eight (8) States namely: Enugu; Anambra; Katsina; Kogi; Delta; Sokoto; Edo; and Kano have established agencies for erosion, watershed and climate change management to sustain NEWMAP's activities. These agencies have been established by State legislation and have a dedicated budget line from the respective State government and will thus ensure that the capacity and knowledge gained through NEWMAP will remain in the States. Several States such as Edo, Anambra, Kogi, Katsina are already serving as the technical hub and advisors to their State governments on climate change, erosion and watershed management.
- Support to the country to participate in international fora. The Project provided support to Department of Climate Change (DCC) and relevant MDAs to participate in international fora such as UNFCCC Conferences, CoPs etc. for knowledge exchange and partnership that would further strengthen the climate change agenda in Nigeria. The Project also supported climate change Mitigation by developing the Nationally Appropriate Mitigation Actions Document (NAMAs). The support also among other things enhanced the process that led to Nigeria being the 1st African Country and 3rd in the world to issue Sovereign Green bond.
- Sovereign Green Bonds of Nigeria. One of Nigeria's landmark achievements since the signing of the Paris Agreement was the successful issuance of Africa's first sovereign Green Bond (USD 30 million) in December 2017. The World Bank (through NEWMAP) provided financial and technical support - including technical assistance which brought global knowledge and experience with bonds, financing of the underpinning studies, stakeholder's consultation, and production of the prospectus. In signing the Paris Climate Agreement in September 2016, President Buhari committed Nigeria to reducing greenhouse gas emissions unconditionally by 20 percent and conditionally by 45 percent, targets that are now articulated in the Nationally Determined Contributions (NDCs)[1]. Beyond these targets, Nigeria's broader aim is to build a climate resilient society across the country's diverse landscapes. The proceeds of the Green Bond sales are financing selected carbon-efficient Projects mostly in the energy and forestry sectors, creating thousands of new jobs, greening the economy, and reducing carbon emission and deforestation. The first Green Bond of USD 30 million was oversubscribed and a second Green Bond was issued (USD 40 million).[2] and these currently support Project across five sectors (Agriculture, Power/Energy, Transport, Water, and Environment) linked to the Economic Recovery and Growth Plan (ERGP) and the NDCs. The Green Bond program contributes to Program 47 of Nigeria's ERGP, striving to build a climate resilient economy. In addition to the targeted environmental impacts, other benefits will include job creation: a total of 20,000 direct jobs, 32,000 indirect jobs and positive impacts for around 4 million people. These progress and achievements demonstrate collective leadership and partnership by the government and stakeholders, a sense of urgency in resolving climate issues, active private sector participation, as well as transparency and credibility of the process.
- National Space Research and Development Agency (NASRDA). The Project facilitated the signing of bilateral MoU between the government of Nigeria and the Government of India for knowledge transfer on geospatial and earth observation technology between the Indian Space Research Organization (ISRO) and the Nigeria Space Agency (NASRDA).
- Environmental Impact Assessment (EIA) Department. The Project supported the Federal Ministry of Environment to develop two EIA Guidelines to improve technical effectiveness of the EIA process. The guidelines are designed to help improve the EIA process for erosion, watershed and climate change related programs nationally. In addition, the Project also provided support by equipping the department with geospatial tools as part of the EIA review process and the geospatially enhanced archiving and digitization process helped reduce the time taken to approve EIAs from around 180 to less than 90 days. The department also benefitted from trainings on Environmentally Sustainable Tools in the UK and USA.
- National Centers of Excellence. The University of Lagos (UNILAG), Federal University of Technology, Owerri (FUTO, Imo State), and Kano State University of Science and Technology, (KUST, Wudil) are now National Centers of Excellence, having been supported by NEWMAP in various ways. While UNILAG will serve as platform for knowledge dissemination on environmental sustainability and social inclusion (E&S) in Africa, FUTO and KUST will provide opportunities for cutting edge research in soil management, erosion control, Hydromet systems, GIS mapping as well as watershed management in Nigeria.
- Nigeria Meteorological Agency (NIMET), Nigeria Hydrological Services Agency (NIHSA) and other River Basin Development Authorities. NEWMAP installed 116 hydrological and meteorological (Hydromet) stations and Automated Flood Early Warning Systems (AFEWS) across the country (well above the target of 100). These stations are generating data for flood forecast and rainfall prediction to NIHSA, NIMET and other River Basin Development Authorities in the areas of disaster risk management around potential flooding events. All installed Hydromet stations are providing data that are being used to in weather and flood forecasts, the resulting increase in the density of weather stations is improving the efficiency and effectiveness of forecasts made by NIHSA, NIMET and other River Basin



Development Authorities under the Federal Ministry of Water Resources. Apart from absorbing the cost of the equipment, NEWMAP has also provided capacity building services to these institutions. In addition to the Monthly Digest Bulletin generated by the Federal University of Technology, Owerri, Imo State, students at the University of Calabar, Cross River State, are also utilizing the data for their doctorate research.

- Department of Erosion, Flood and Coastal Zone Management of Federal Ministry of Environment has been strengthened by the Project through upgrading the Geographic Information System (GIS) Lab. The upgrade has improved data generation, accuracy and reliability of data. The lab provides evidence-based data for decision making related to erosion risks and flood management.
- Department of Climate Change. The support also includes ensuring the participation of Nigeria in several climate change international forums, besides capacity enhancement, advisory services and financing of the underpinning studies, stakeholder's consultation, and production of the prospectus towards the issuance of Africa's first sovereign Green Bond in 2017 and a second issuance in 2019, all of which has strengthened Nigeria's climate resilience efforts.
- State Stormwater Management. Two Stormwater Master Plans were developed in the States of Anambra and Ebonyi in addition to the existing Stormwater Master Plan in Edo State. These plans will serve as a guiding principle to the States to manage urban flooding, high rainfall intensities and run-off.
- Support to State-level MDAs. In addition to the national institutional strengthening, NEWMAP provided specific support to several State-level MDAs including the Ministry of Environment, Ministry of Works, Ministry of Lands, Ministry of Finance, State Emergency Management Agency (SEMA), State Waste Management Authority (SWAMA), State Physical Planning Board (SPPB), Capital Territory Development Authority (CTDA), Ministry of International Donor Cooperation, Ministry of Lands and Survey, Ministry of Urban Development, Ministry of Works, Housing and Transport, Forestry Commission, State Planning Commission, Water Resources, Ministry of Agriculture, River-Basin Development Authorities, and the Ministry of Justice (as part of the Grievance Redress Committee).
- Strengthening State and Local Governments for Operations and Maintenance (O&M). As part of post Project O&M and oversight, to encourage ownership and ensure post-Project sustainability of investment, NEWMAP helped States to deepen collaboration with relevant LGA representatives in the implementation of O&M activities, to better foster understanding of the Project within LGAs. Since States via LGAs are responsible for post-Project O&M and oversight (as part of Project design), Liaison Officers drawn from the LGA offices have been involved in NEWMAP activities such as erosion control works and community sensitization.
- South-South Knowledge Exchange (SSKE). A trust fund from the China-World Bank Group Trust Fund, facilitated South-South Knowledge Exchange. The Trust Fund supported important knowledge sharing and learning between China, India and Nigeria while also complimenting the outcomes of NEWMAP. **The key achievements under the SSKE are:**
- *High-level knowledge sharing and cooperation* with Nigeria on geospatial applications and Decision Support System tools for watershed management, infrastructure, and agriculture.
- *Study tours of Nigerian counterparts to China* facilitated by NEWMAP and the China Irrigation and Drainage Development Center (CIDDC) in June 2018 for 30 Nigerian officials. The study tour focused on climate change and climate smart agriculture and involved officials from both the NEWMAP Project and the FADAMA agriculture Projects in Nigeria. The knowledge gained led to NEWMAP developing the National Guidance Manual for Climate Change Agenda.
- *International Geospatial Conference* held in Nigeria in October 2017, involving specialists from Washington DC, China, India and Nigeria. More than 300 Nigerian officials and technical experts participated in the conference, which set the tone for the bilateral cooperation and the MoU between India and Nigeria on geospatial technology transfer.
- *Study visit to Washington DC*: A group of 15 NEWMAP counterparts visited Washington DC in November 2018 to study how the DC Council is using innovative policies and incentives to reduce surface run-off in the city. This information was directly applicable to NEWMAP States dealing with major gullies in urban and peri-urban areas. The study tour included a full-day workshop in the World Bank to share experience from other regions.

Risks

Systematic Operations Risk-rating Tool

Risk Category	Rating at Approval	Previous Rating	Current Rating
Political and Governance	--	□ Substantial	□ Substantial
Macroeconomic	--	□ Moderate	□ Moderate
Sector Strategies and Policies	--	□ Moderate	□ Moderate
Technical Design of Project or Program	--	□ Moderate	□ Moderate
Institutional Capacity for Implementation and Sustainability	--	□ Low	□ Low
Fiduciary	--	□ Moderate	□ Moderate



Environment and Social	--	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Stakeholders	--	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Other	--	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Overall	--	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate

Results

PDO Indicators by Objectives / Outcomes

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

► Targeted gully complexes and other erosion sites treated with 100% of planned measures for targeted sub-watersheds (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	56.00	85.00	55.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (154.5%). The indicator measures the number of targeted gully complexes and other erosion sites that have been fully restored using an integrated approach including bioremediation, and where the erosion has been stabilized as a consequence. The target for this indicator was revised during the 2019 AF from 30 to 55. Each gully erosion site was identified by the local communities to the State which hired an engineering design firm to study it in detail and prepare detailed plans for remediation. These plans were vetted by the FPMU for quality control and once cleared, sent to the Bank's engineering team for their review. A Bill of Engineering Material and Evaluation (BEME) was then prepared for all Bank or IDA-approved designs, now considered bankable. The state then appointed a firm to implement the work and another to supervise the work, all under the guidance of the SPMUs. Progress was monitored regularly and reported to the Bank till completion of the civil work. 85 sites are completed.			

► Targeted gully complexes and other erosion sites with reduced severity level after treatment (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	82.00	102.00	55.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (184%). The indicator measures the number of targeted gully complexes and other erosion sites where the planned work has reached at least 50% completion. The percentage of completion is calculated using a weighted average of the work detailed in the BEME, detailed for every civil work (specifying all work components at the site). All work components (e.g., drains, culverts, siphons, bioremediation) are measured and field-level progress worked out as a percentage to the total work effort required, weighted by the share of the work in the total budget, and a weighted average is worked out. Bioremediation is also included and calculated based on % area completed. Erosion at all sites are classified as Catastrophic, Severe, Moderate, and Low, and thus, any site that has reached 50% of completion will have reduced in severity from catastrophic (i.e., causing deaths and loss of infrastructure, etc.) to at least Moderate, while 80-100% means that the erosion on that site has been stabilized. Only Urualla site in Imo have not achieved this status due to political economy in the state.			

► Area under bio-remediation in targeted sub-watersheds (Hectare(Ha), Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
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Value	0.00	1,928.10	2,164.02	400.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (541%). This indicator measures the area under bioremediation, a 'soft' measure that complements the 'hard' engineering solution (e.g., reno mattresses, gabions, drainage lines, etc.). Bioremediation involves planting grasses and trees to stabilize erosion in the gully erosion site and is an important measure to make the engineering solution 'climate smart' – and has contributed hugely to the GHG emission reductions achieved under NEWMAP. This combination of hard and soft measures is one of the innovations implemented under NEWMAP.			
► Land area under sustainable landscape management practices (Hectare(Ha), Corporate)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	23,829.00	27,592.86	400.00
Date	08-May-2012	10-Sep-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (6683%): Under NEWMAP, bioremediation, afforestation etc. was carried out in close coordination with the local community, which not only reported the problem and requested support to address the problem but was also closely involved in the solution. NEWMAP created a Bioremediation Manual, specific to different areas in Nigeria, which guided the community-led watershed management process. Thus, community members helped analyze the tree and grass species at each site, chose indigenous, sustainable and viable species (avoiding alien species that cause environmental problems), raised and planted the seedlings and planting (often as a NEWMAP livelihood activity, against payment), and monitored their survival and development. The total area in ha accounts for total AoI.			
► Net Greenhouse Emissions (tonnes CO2 annually) (Tons/year, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	149,554.31	-2,411.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (6203%): A detailed GHG inventory was conducted for NEWMAP in accordance with UNFCCC and IPCC guidelines and, being the first of its kind, is reviewed by the Federal Ministry of Environment as a prototype for future nation-wide application. This analysis showed that NEWMAP had annual GHG emission reductions of 149,554 tonnes of CO2 equivalent (CO2 e) per year (i.e., -149,554 CO2 e). This annual emission reduction is from afforestation (-198,908 CO2 e) and energy savings by using solar power (-93,284 CO2 e), which offset the GHG emissions from civil construction work for gully restoration (142,618 CO2 e) – which is much lower than normal due to bioremediation and other measures adopted during civil work.			

Intermediate Results Indicators by Components

Component 3: Climate Change Response				
► Technical reports/ guidelines on promoting low carbon development or enhancing climate resilience completed (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	7.00	7.00	7.00



Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	(100 %). 7 reports completed on promoting low carbon development or enhancing climate resilience (i) NAMAS Report (National Appropriate Mitigation Actions on Climate Change) which provides a framework for developing actions, policies or projects for promoting a low carbon trajectory. (ii) Off-Grid Solar Power Feasibility Study Report , providing clear technical, financial, economic, social and environmental guidelines on grid-connected solar power generation in green fields or co-generation with existing power generators. This will help in promoting low carbon development (iii) Climate data Management System Report , a technical report was developed, providing options for a World Meteorological Organization (WMO) standard for collaborative mechanism of data sharing amongst all MDAs that have relevant data. This support guided NIMET in retrofitting and upgrading their Climate Data management and information sharing System. (iv) Baseline Survey of Clean Cook Stoves - NEWMAP noted the menace of deforestation and tree felling, and their role in exacerbating climate change, flooding and erosion. Nigerians, especially in rural communities depend much on fuel wood as a source of energy. The baseline was done in the seven mover states to establish worst areas and types of stoves that would be most acceptable in those areas. This led to the distribution of about 10,769 different types of fuel-efficient cook stoves accompanied with education and awareness creation. (v) Report for installation of Low Carbon Bakery in Jigawa State , reduced the dependence on firewood for the production of bread, which is always on high demand especially in Jigawa State (vi) LPG as a Low Carbon alternative to Firewood and Kerosene , provides comprehensive framework looking at the value chains from LPG production to consumption, which when implemented by government, will move the country away from dependence on firewood and kerosene as household sources of fuel. It is noteworthy that the Framework has been approved for implementation by the Federal Ministry of Petroleum Resources, which received an intervention facility of up to 250 billion Naira from the Central Bank of Nigeria. (vii) Green Bond Impact Report , which enabled investments & capital raising for green projects in helping to meet Nigeria's NDC targets of 20% emission reduction by 2030. These guidelines have strengthened Nigeria's policy and institutional framework towards promoting low carbon emission.			

► Climate adaptation /low carbon demonstration projects completed (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	42.00	42.00	10.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (420 %). NEWMAP has implemented 42 climate demonstration Projects, surpassing the target of 10 demonstration Projects. Implementing the carbon demonstration projects has strengthened Nigeria's capability for climate action in line with reducing carbon emissions which is a core aspect of the NDCs and Paris Agreement.			

► Development and Issuing of Green Bond Phases (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	2.00	2.00	1.00
Date	27-Jun-2018	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	One of Nigeria's landmark achievements since the signing of the Paris Agreement was the successful issuance of Africa's first sovereign Green Bond (USD 30 million) in December 2017. The World Bank (through NEWMAP) provided financial and technical support - including technical assistance which brought global knowledge and experience with bonds, financing of the underpinning studies, stakeholder's consultation, and production of the prospectus. In signing the Paris Climate Agreement in September 2016, President Buhari committed Nigeria to reducing greenhouse gas emissions unconditionally by 20 percent and conditionally by 45 percent, targets that are now articulated in the Nationally Determined Contributions (NDCs). Beyond these targets, Nigeria's broader aim is to build a climate resilient society across the country's diverse landscapes. The proceeds of the Green Bond sales are financing selected carbon-efficient projects mostly in the energy and forestry sectors, creating thousands of new jobs,			



greening the economy, and reducing carbon emission and deforestation. The first Green Bond of USD 30 million was oversubscribed and a second Green Bond was issued (USD 40 million) and these currently support project across five sectors (Agriculture, Power/Energy, Transport, Water, and Environment) linked to the Economic Recovery and Growth Plan (ERGP) and the NDCs. The Green Bond program contributes to Program 47 of Nigeria's ERGP, striving to build a climate resilient economy. In addition to the targeted environmental impacts, other benefits will include job creation: a total of 20,000 direct jobs, 32,000 indirect jobs and positive impacts for around 4 million people. These progress and achievements demonstrate collective leadership and partnership by the government and stakeholders, a sense of urgency in resolving climate issues, active private sector participation, as well as transparency and credibility of the process.

Component 4: Project Management

► Reports produced on project progress at federal and state levels (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	22.00	24.00	18.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	24 States including the FPMU are submitting progress reports.			

Component 2: Erosion and Watershed Management Institutions and Information Services

► Spatial Knowledge Management Information System on erosion and watersheds operational (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	1.00	1.00	1.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (100%). An MIS exists at the Federal which has a Spatial management Information System. Current users of the MIS include FPMU and SPMUs as well as Federal Government stakeholders from the Federal Ministry of Environment (Department of Erosion, Flood and Coastal Zone Management). Features of the MIS is that it is an automated web-based System; can easily sort, analyze and report information using a dashboard mechanism. Importantly, the MIS is integrated with a GIS feature where activities can be tracked spatially. Other features include audit and monitoring capability where user activities are tracked within the System for transparency. After the closure of NEWMAP, the System will be owned and managed by the Federal Ministry of Environment and migrated into the ACReSAL MIS for watershed management.			

► Upgraded and newly installed stations providing data for integrated catchment planning (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	107.00	116.00	100.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (116 %). The 116 stations have been installed across Anambra, Cros River, Imo, Gombe, Abia, Nasarawa, Plateau, Kogi, Delta, Sokoto and Kano States add density to the existing system and			



thus improved the precision of the forecasts of the MDAs mandated to provide guidance on weather impacts (e.g., Nigerian Hydrological Services, which does flood forecasting, and NIMET, which provides weather forecasts). NIMET, for instance, produces Weather Outlook to provide weather-related information to relevant federal and state MDAs (e.g., transport, agriculture, environment, etc.), which is also translated into local languages for radio. NHA produces an annual Flood Outlook for Nigeria regarding flood forecasts (high, medium and low) and precautions to be taken. By adding to the density of the Nigerian weather station network, NEWMAP has added to the accuracy of these forecasts.

► City storm water master plans developed which are informed by climate projections of increased rainfall intensity and risk assessments (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	1.00	3.00	3.00	3.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (100 %). While Edo already had a Stormwater Master Plan (SWMP) at project start, SWMPs were also developed in two other states (Ebonyi and Anambra) as part of the Exit Strategy - to strengthen institutional capacity to plan and implement measures to manage erosion, watersheds, disaster risk, and climate impact and stormwater and flooding. The 8 agencies for Erosion and Watershed Management established will guide future activities on stormwater management. These SWMPs are informed by climate projections of increased rainfall intensity and by climate risk assessments, including the consideration of 100-year return period floods and maximum levels of rainfall over 100-years in hydraulic modeling (HEC Suite), and of a 20% increase in discharge diameter in drainage designs.			

► EIA guidelines developed for targeted investment types that affect erosion (road cross drainage, urban water supply and drainage) (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	2.00	2.00	1.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (200 %). Two national EIA thematic guidelines have been developed to improve effectiveness of the Environmental Assessment process. The target has been surpassed. The two national EIA Guidelines will further strengthen the country's process in managing watershed and erosion related intervention, programs and projects from a climate change and watershed management lens.			

► National Centers of Excellence in erosion control established, operational and functional (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	2.00	3.00	3.00
Date	27-Jun-2018	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (100 %). The Project has supported 3 National Centres of Excellence (NCEs) at the Federal University of Technology, Owerri (FUTO) in Imo State, the University of Lagos (UNILAG), Lagos State, and the Kano State University of Science and Technology, Wudil. All NCEs are registered with University Commission of Nigeria, the regulatory body within the Nigerian University system, and are designed to be operationally self-sustaining through student fees and corporate sponsorship. These NCEs help promote innovations and capacity building around HydroMet, E&S management and GIS and will support research and knowledge opportunities within Nigeria and Africa.			

► States with improved erosion risk mapping (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target



Value	0.00	19.00	19.00	19.00
Date	27-Jun-2018	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (100 %). Improved erosion risk mapping has been carried out in 19 States (Abia, Anambra, Cross River, Edo, Enugu, Ebonyi, Imo, Akwa Ibom, Delta, Kogi, Plateau, Kano, Sokoto, Ondo, Katsina, Gombe, Ekiti, Niger and Borno) as part of NEWMAP's national-level prototype for erosion control activities elsewhere in Nigeria. Erosion risk mapping involves aerial mapping and GIS-based identification of erosion prone and flooding/inundation prone areas and the specification of mitigation measures to address the resulting problems. Carrying out its own GIS mapping of erosion risk mapping ensures that each state has a clear understanding of the erosion risk and mitigation measures.			
► Community Interest Group collecting municipal solid waste in project intervention areas (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	54.00	54.00	50.00
Date	27-Jun-2018	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (108 %). The 54 CIGs established are part of the O&M aspect of the Project. The CIGs are responsible for waste management around the intervention areas. While some states have established their agencies, some states are still in the process. For states with already established agencies, the agency will work with the CIG post-closure. For states without agencies, the O&M responsibility lies with the state government mostly the ministry of environment via the LGAs.			

Component 1: Erosion and Watershed Management Infrastructure Investments				
► Targeted land treated for erosion with selected measures in targeted sub-watersheds (Hectare(Ha), Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	23,829.00	27,529.86	20,000.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (137.6 %). While successful gully erosion control can affect the entire (sub-) watershed, the targeted land treated for erosion was restricted to the Area of Interest (AoI) defined for each project site. GIS-based AoIs were estimated by taking the coordinates of each site within the watershed and considering all project work done on the site (e.g., civil works, bioremediation, livelihood, etc.).			
► Participatory sub-watershed Management plans developed under the project for targeted erosion affected sub-watersheds (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	59.00	65.00	38.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (171.05 %): NEWMAP invested in a detailed process to help states develop participatory sub-watershed (or catchment) management plans (CMPs) for each gully erosion sites. The process started with participatory Problem Identification (e.g., type of land degradation - deforestation, loss in soil fertility, gully erosion, flooding, etc.) and, once the local community identified the problem and expressed an desire to resolve it, a Stakeholder Engagement is carried out to solicit community suggestions, which is supplemented by detailed Catchment Analysis across the Lower, Upper and Middle catchments and in terms of sub micro-watersheds, to understand the technical dimensions of the issue (e.g., topo surveys, soil analysis, water balance, hydrological survey, population densities etc.). This forms the basis of the CMP, which covers all activities to be carried out in the catchment, including the Investment Plan,			



livelihood support activities, training and capacity building, etc. Training goes beyond livelihood support activities and includes water harvesting, O&M of civil works, bio-engineering techniques (to identify sheet or gully erosion at early stage), and innovative technologies (e.g., solar bore holes, drip irrigation, solar panel installation and maintenance) and afforestation (e.g., raising of seedlings, and vetiver grass), and gender-based violence and occupational health. CMPs thus cover various aspects and are complex to create, manage and monitor.

► People receiving project-supported advisory support services in integrated land/water management practices, planning, and/or monitoring under the Project (of which 40% female) (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	185,058.00	1,827,885.00	90,000.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (2031%): While NEWMAP has more than 12 million indirect beneficiaries (including those who use roads, pipelines and other infrastructure that were saved from erosion in the watershed), direct beneficiaries of NEWMAP resettlement, livelihood support and capacity building are more than 1.8 million (300,000 female). While <u>Community Interest Groups</u> (CIGs) provided alternate livelihoods (e.g., to people whose earlier activities may have been contributing to soil erosion like sand mining, or to help maintain constructed structures by keeping solid waste from clogging drains and water channels) and built capacities (e.g., in value chains), NEWMAP also supported <u>afforestation</u> (e.g., the use of new seedlings and equipment, tree planting) and <u>innovative climate-friendly technologies</u> (e.g., solar-powered cook stoves, boreholes, drip irrigation, etc.) – to promote climate adaptation and mitigation. In addition, NEWMAP's ' <u>advisory services</u> ' ranged from providing information and training on Hydromet systems, training in water harvesting, organizing visits by MDA who have come to site to give expert advice (through talk shows and practical sessions). And providing advice on resettlement (to people who have benefitted from RAPs); building the capacity of students from schools, universities and interns (e.g., in ground water monitoring, tree planting, waste management and erosion control). These do not include participants of international study tours to NEWMAP (e.g., Zimbabwe) or the South-South Knowledge Exchange.			

► Households benefitting from livelihoods enhancement activities under the Project (of which 40% female) (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	25,491.00	25,895.00	12,000.00
Date	08-May-2012	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (215.8%). 25,895 households have benefitted from livelihood enhancement activities surpassing the target of 12,000. The livelihood activities implemented are categorized into CIG implementation (4,532 households), cookstove distribution (8,199 households) and SCCF implementation (13,164 households). Beneficiaries of CIGs have benefitted from sub-grants and are into businesses such as livestock farming, tailoring, plant nurseries, gabion box welding, block molding, renting of chairs and canopy (done by physically challenged), palm oil production and processing, trading etc. Through the SCCF and GEF, the project also piloted climate change demonstration initiatives by constructing and installing solar-powered meat dryers and fuel-efficient kilns (for making <i>kilishi</i> , a local delicacy), solar-powered boreholes (with drip irrigation) etc.			

► Packages with detailed design for treatment of gully complexes and erosion sites in targeted subwatersheds prepared under the project that have received WBG No-Objection but not financed by NEWMAP (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	51.00	61.00	30.00
Date	27-Jun-2018	20-Dec-2021	20-Jun-2022	30-Jun-2022
Comments:	ACHIEVED (203.3%). A total of 61 designs have received the WBG No-objection but have not been financed by NEWMAP. The cleared designs are part of the TA to participating states. A typical design			



review could range from 6 months to 2 years and thus, through this process, NEWMAP has built the required capacity and skills to design a climate proof engineering solution for erosion and watershed management. Since these designs are eligible for implementation, this TA will help to reduce time when funding is available for their implementation.

Performance-Based Conditions

Data on Financial Performance

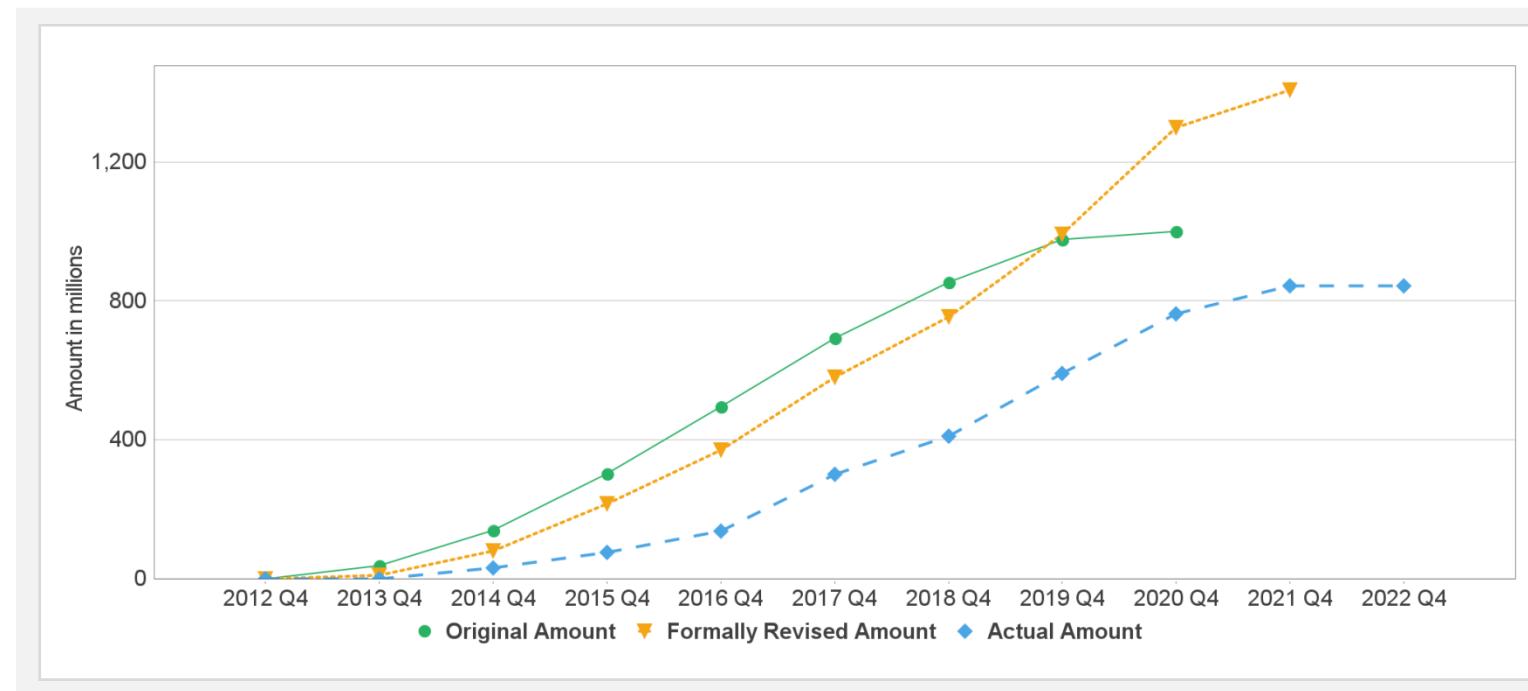
Disbursements (by loan)

Project	Loan/Credit/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	% Disbursed
P124905	IDA-51050	Effective	USD	500.00	500.00	0.00	450.68	0.00	<div style="width: 90%; background-color: #66cc66;"></div> 100%
P124905	IDA-62770	Effective	USD	300.00	300.00	0.00	286.85	1.00	<div style="width: 95%; background-color: #66cc66;"></div> 100%
P124905	IDA-62780	Effective	USD	100.00	100.00	0.00	98.18	1.82	<div style="width: 98%; background-color: #66cc66;"></div> 98%
P126549	TF-12434	Closed	USD	3.96	3.68	0.28	3.68	0.00	<div style="width: 100%; background-color: #66cc66;"></div> 100%
P126549	TF-12435	Closed	USD	4.63	4.56	0.07	4.56	0.00	<div style="width: 100%; background-color: #66cc66;"></div> 100%

Key Dates (by loan)

Project	Loan/Credit/TF	Status	Approval Date	Signing Date	Effectiveness Date	Orig. Closing Date	Rev. Closing Date
P124905	IDA-51050	Effective	08-May-2012	16-Apr-2013	16-Sep-2013	30-Jun-2020	30-Jun-2022
P124905	IDA-62770	Effective	27-Jun-2018	12-Feb-2019	27-May-2019	30-Jun-2021	30-Jun-2022
P124905	IDA-62780	Effective	27-Jun-2018	12-Feb-2019	27-May-2019	30-Jun-2021	30-Jun-2022
P126549	TF-12434	Closed	16-Apr-2013	16-Apr-2013	16-Apr-2013	30-Jun-2020	30-Jun-2020
P126549	TF-12435	Closed	16-Apr-2013	16-Apr-2013	16-Apr-2013	30-Jun-2020	30-Jun-2020

Cumulative Disbursements



Restructuring History

Level 2 Approved on 27-Apr-2018 ,Level 2 Approved on 29-Jun-2021

Related Project(s)

P126549-Nigeria Erosion and Watershed Management Project ,P164082-Nigeria Erosion and Watershed Management Project (NEWMAP) - Additional Financing