



Promoting Environmental Sustainability In Nigeria

Success Story



A well terminated drain with bio-remediation work in Auchu, Edo State.



Vegetative Nursery plants for bio-remediation in Ekehuan, Edo State



Automated weather system installed in Imo State.

Acknowledgements

In response to the myriad of problems of environmental degradation and gully Erosion in Nigeria, especially in the south east, the federal government in consultation with the states decided on the need for a holistic approach that gave birth to the concept of Nigeria Erosion and Watershed Management Project (NEWMAP). By this action government has been able to demonstrate the resolve to improving the livelihoods of the people and regenerating a sustainable environment. We thank the government of Nigeria for the implementation of this project, the federal and state governments were able to bring together quality personnel, and the results are visible across the project states. 4 years on, of project effectiveness, it has been a success story all the way!

We also acknowledge our partners The World Bank /IDA Group. The efforts of the World Bank group have been tremendous to activities of Newmap in the environment and ecological sector as well as in other sector of the economy: in addition to the project financing of NEWMAP at \$500 million IDA of low moratorium (which is one of the largest in Africa and perhaps the largest in Nigeria), the Bank's Board through the efforts of the Nigeria Country office and its partnership with Government has continued to show greater commitment to the Nigeria Project: the approval in March 2017 of a \$200 million credit to support the Government of Nigeria's response to the acute humanitarian and forced-displacement crisis triggered by the Boko Haram conflict in North

East; the April 14, 2017 \$150 million credit to enhance the contribution of the mining sector to the Nigerian economy; the support to the Power and Agriculture sectors to mention a few. This was evident, with the March 2017 Board approval of \$200 million credit to further support the Government of Nigeria in its efforts to enhance agricultural productivity of small and medium scale farmers in participating states.

Very importantly, we acknowledge the Global Environment Facility (GEF), the grants from the two organizations have provided significant support to project implementation especially in the area of component 3 (Climate Change Response) activities.

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Foreword

Buhari Administration: A Dogged Focus to Restoring the Landscape and Promoting Environmental Sustainability

At the outset of this administration the President outlined three specific areas for immediate intervention on assumption of office: these were Security, Corruption and the Economy.

Under the economy Agriculture and sustainable environment also took center stage. With this new leadership and renewed confidence, positive results are now clear for all to see.

Mr. President and the Ministers of Environment have increased the vigor towards environmental sustainability. This manifests in the unwavering attention on Gully Erosion and Land degradation, the inspired focus to clean up polluted creeks in the Niger-Delta, to the eroded (Kumaro and Alpha) and overflowing (Makoko) communities in Lagos, the attention on Nnaka erosion site in Anambra and others through the polluted Sharada industrial sites of Kano, the drought-affected areas (Bama) in Borno as well as the degraded dunes in Yobe and other parts of the catchment area of the disappearing Lake Chad. These efforts have not gone unnoticed and this is why environment stakeholders continued to hail the steady focus to improve the environment and livelihoods through many programmes, including NEWMAP.

In the last four years, NEWMAP's successes in transforming degraded landscape battered with massive soil erosion into a healthy one have been remarkable. This became possible given the commitment and ownership exhibited at all Levels of government and communities. Very important too is the overall project structure that meticulously implemented activities towards reducing vulnerability to soil erosion in targeted sub-watersheds. Truly, the Journey 4 years ago drew skepticism from many quarters, but today it's a different ball game with forays into 19 states, considering that NEWMAP started in 7 initial states. Today the scaling up and replicating such successes is even stronger.

Three years after effectiveness, what are the success factors and why does it look like the project is being oversubscribed?

- a. **Action Planning:** is an operational Key to Success for Watershed Management Organizations. An action plan is important because it clearly outlines a Project vision and goals.
- b. **Community participation and mobilization** the consultation, public



His Excellency, Muhammadu Buhari,
President Federal Republic of Nigeria

education and information on newmap techniques strengthens community outreach, with necessary awareness.

- c. **Quality Civil and Environmental Engineering Designs** High level design overview support and contracts-management guidance. Robust supervision of site designs to meet the highest possible international standard.
- d. **Effective supervision and Project Management:** Efficient fiduciary



Governor Ben Ayade of Cross River State, Dr. Benoit Bosquet, World Bank Practice Manager Environment and Water Resources and Dr. Amos Abu of the World Bank during NEWMAP mission to Cross River State.



Honourable Minister Environment, Ibrahim Usman Jibril at Amachalla site, Anambra State on oversight and supervising mission.

administration, Procurement and financial management, Social and environmental safeguards management and oversight, Strategic project communication and documentation and Project M&E.

e. **Commitment of Staff and authorizing environment**

f. **Technical support from the task team:** The IDA Task Team provides hands on supports and monitoring of project activities and this has contributed to the entire success story.

g. **Best Practices:** As a category “A” project NEWMAP ensure best practices in its entire operations. The project conducts Environmental Safeguards and Management Plan (ESMP) in all the project sites to ensure proper disaster risk management. The project also implemented resettlement Action Plan (RAP), where necessary, to compensate all project affected persons before commencement of civil works. Site designs are carried out with combination of flexible

structures and bioremediation as well as livelihood components. All procurements are done in accordance with procurement guidelines and of best practices.

The lessons learned from this extraordinary process are important for Nigeria and other countries seeking to restore their landscapes, build the resilience of ecosystems, and improve the livelihoods of their people whose Future depends on the sustainable use of natural resources.



Bio-remediation activities
to regenerate the soil.

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Preface

Reclaimed site with combination of flexible and hard structures as well as bio-remediation.

The environment is naturally blessed with dynamic resources that include vegetation, waters, soils and animals. However the naturalness of the lush vegetation, aquatic lives gets degraded, polluted and depleted courtesy of human activities. Over the last 2 centuries, one significant dilemma of the natural environment is the sharp destruction, progressively by drought, Human activities (via tree felling machines, bulldozers and sand mining) and very recently the aggressive climatic changes. One common factor thereof between the human interaction and nature is the inability to sustainably manage the natural environment.

Whilst land deterioration and degradation is on the increase across sub-Saharan Africa, managing these trends have become a nightmare to many African governments; ranging from measures to adopt to arrest the degradation to what to do to ensure sustainable environmental behaviours of the citizenry to curb the increase. If therefore we agree with the statement credited to Myers¹ (1992) that efforts to stop further deterioration are never late, the Nigeria response could then be described as timely coming when all past efforts have failed to yield the required purpose. Her current sustainable mitigation strategies—a combination of natural and civil works mixed with a total watershed approach

may now be a good recipe for like situations across the continent.

The emergence of the Nigeria Erosion and watershed Management Project NEWMAP therefore was in line with the Nigeria strategic response to the challenges and the emerging Land degradation and environmental insecurity. The Project, which commenced in the summer of 2013 initially in seven States: Abia, Anambra, Cross River, Ebonyi, Edo, Enugu and Imo known as the first mover states, gradually reduced the loss of agricultural lands; loss of infrastructure including roads and houses; and Improved access to economic/livelihood activities, social services while it progressively restored vegetative cover and created an improved environmental conditions.

It is expedient to state that the successes recorded in the aforementioned initial seven states led to more requests by the states to join the project. Thus, in September 2015 additional 7 states; Delta, Gombe, Kogi, Kano, Plateau, Oyo and Sokoto joined the project having met the necessary selection criteria.

In 2016 another third phase of states joined the project; Akwa Ibom, Borno, Katsina, Nasarawa, and Niger, States; thus making a to-

tal number of 19 NEWMAP Project states. The Nigerian government believes that such remarkable achievements cannot be realized without the vanguard involvement and committed leadership of the statesmen and stateswomen serving the country at all hierarchies. The government also recognizes and appreciates the communities, the professionals, and the development partners who have made valuable contributions to the successful implementation of the first wave of NEWMAP activities that yielded the visible excellent results.

Finally, I would like to express my sincere appreciation to the World Bank /FAO for their financial and technical support. I would also like to thank all the stakeholders; most especially the Project Teams and others from the line Ministries who have cooperated and participated in developing this case study. It is my great pleasure to announce the release of this booklet on NEWMAP's Activity towards Environmental Sustainability.

Signed :

Ibrahim Usman Jibril

Hon Minister of State

Federal Ministry of Environment

1 | Introduction

On going remediation activities in 9th Mile, Enugu State.

In the last decade or so, the menace of soil erosions, landslides and environmental degradation has greatly worsened, and thus threatened the survival of almost all the states in south eastern Nigeria.

The degradation caused by erosion in Nigeria is occurring at an increasing and alarming rate, aggravated by such factors as increased agricultural activities, civil construction works, deforestation, bush burning, over grazing, sand mining, drainage blockade, poor water management, urbanization and increased population pressure. In Anambra State for example, it affects more than 70% of the State's land in form of sheet and gully erosion. Indeed, over 550 gullies have been mapped in Anambra State alone, with enormous soil loss and severe threat to agricultural production, homes and other civil structures.

To the residents living within the shadows of these gullies; the gully formations were very

gradual, initially unnoticed and later became "gaping holes."

Madam Nkese Oyo-Ita a 75-year old mother of 10 with many grand children, born and grew up at No 5 Tete Street Atakpa in Calabar Municipality, never believed that a life threatening situation will emerge from a small erosion problem which started off by a poorly terminated drainage behind the Union Bank 20 years ago. Over the years she has had to endure some losses to erosion and most importantly her farmland due to the gully formation. Her situation was the level of extreme poverty until NEWMAP intervention and subsequent livelihood enhancement that lifted her out of the Poverty situation.

Nkese explained that "the erosion had been disturbing for about 20 years. Government promised to intervene but nothing happened. Whenever it rained, all the boys in this area will come out with shovels and cutlass to clear the street

and create gutters for the water to flow but that one was not enough to solve the problem. We live in extreme fear of being drowned or washed away with our belongings. Many people lost their homes to the recurrent flooding" she said.

This is the story of thousands of many Nigerians living in the shadows of erosion degraded areas and gullies. They all have similar stories to tell—of how their lives were transformed from extreme precarious poverty situations to mod-



Madam Nkese Oyo-Ita of Calabar Municipality, Cross River State

est success and hope for greater prosperity, as a result of better catchment and land management introduced by NEWMAP. Among them are Evangelist Jeremiah Azuka, 56, secretary of the Stream Way Association of Nyang Asang Community; Ekheogbe Juliet an Auchi Community resident born, lived and married in Oshibugie Auchi; Florence Nkemakonam of Amachalla Community in Anambra State and The Parish Priest of St Aquinas Catholic Church, Benin City, Edo State, Rev Fr. Richard Ofere.

Narrating his experience, Azuka said, he lived in Nyangasang community for over eleven years. “My wife used to pass through this gully erosion area to her school. We built the first bridge but it collapsed. We later built a longer but that also collapsed. We did everything we could do and when they are not working we then resulted to looking for help. We went to Water Board, NEMA and others but none could help until NEWMAP and The World Bank came to our rescue.”

The story is more frightening in Edim Otop another Community in Calabar Municipality. Mrs Shola Bassey a Community leader in Edim Otop, gave a vivid description of her experience: “There have been loss of lives and properties such that many had to abandon their homes out of fear and in search of help



The Parish Priest of St Aquinas Catholic Church, Benin City, the Edo State capital, Rev Fr. Richard Ofere.



Madam Florence Nkemakonam of Amachalla Community, Anambra State



Mrs. Shola Bassey of Edim Otop Community, Cross River State

before the NEWMAP intervention came to the rescue. I have been living here in Edim Otop for over 10 years.

This gully started as small erosion, until it started expanding, affecting houses and human beings. In 2014 we lost a household with

mother, father, and children to the gully. It also carried away a new-born baby and a pregnant woman. They were buried where we do not even know, until now. So, we are very happy for the intervention of NEWMAP and World Bank. Moreover, we do pray that they should please “continue this job.”

2 | Addressing Land Degradation in Nigeria: Past efforts with Limited Impact

The Environmental problems experienced in Nigeria are very diverse. They include soil degradation, rapid deforestation, urban air and water pollution, desertification, loss of arable land, pollution of water, air, and soil from oil spills. Each of these has notable costs for both individuals and entire economic sectors due to their implications for industries and agricultural productivity. As a number of environmental problems stem from industrial endeavours, both their causes and effects are relevant to Nigeria's economy.

Since the United Nations conference on environment and development, 1992 aggressive efforts were initiated to combat environmental issues in Nigeria. The efforts yielded positive result in the establishment of Federal Ministry of Environment in June 1999 to ensure effective coordination of all environmental matters, which hitherto were fragmented and resident in different line Ministries. The creation was intended to ensure that environmental matters are adequately mainstreamed into all developmental activities.



Edim Otop gully site in Cross River State before NEWMAP intervention

Gully erosion is widespread in Abia, Imo, Anambra and Bayelsa States while coastal erosion is commonly found along the nation's 853km long coastline with estimated mean shoreline retreats of 2 - 30 metres per year. The worst affected areas include Victoria Beach in Lagos, Awoye/Molome in Ondo State, Ogborodo/Es-cravos and Forcados in Delta State, Brass in Bayelsa State and Ibeno - Eket in Akwa Ibom State. In recent years, the Federal Government spent almost 91.0 billion on the periodic reha-

bilitation aid sand replenishment projects of the Bar Beach in Lagos. In the far north where vegetation cover is scarce, wind erosion is a common land degradation factor which frequently sweeps away the top soil.

It is estimated that over 90% of the total land area of Nigeria is under severe sheet, rill and gully erosion with the severest gully erosion accounting for 80% of Nigeria's total land area. Sheet erosion leads to impoverishment of the

Budgetary	Allocation	to	Federal	Ministry	of	Environment
Year	Federal Capital Appropriation for Environment #Billion	Federal Capital Appropriation for Environment #Billion	Federal Capital Appropriation for Environment #Billion	Total Federal Budget #Billion	% of total Federal appropriation onto total budget	
1999	2,500	N/A	2,500	299.000	0.840	
2000	1.238	0.577	1.815	702.000	0.260	
2001	0.761	0.384	1.145	894.000	0.130	
2002	N/A	1.180	1.180	1064.000	0.110	
2003	N/A	2.024	2.024	1446.000	0.140	
2004	0.910	0.631	1.541	1189.000	0.130	
2005	3.279	N/A	3.279	1800.000	0.180	
2006	2.742	3.313	6.055	1900.000	0.320	
2007	1.021	N/A	1.021	2300.000	0.040	
Total	12.450	8.109	20.560	11594.200	0.180	

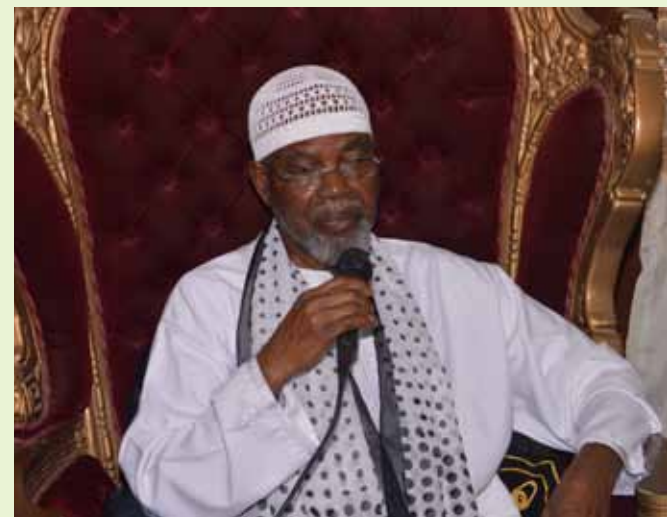
Source: Office of the Accountant General of the Federation

soil as nutrients are washed away, loss of livelihood as farmlands become wasteland thus increasing the menace of rural-urban migration and pollution and siltation of available sources of drinking water. Human lives and properties especially buildis are endangered as they collapse into gullies. There are currently over 2,000 active gully erosion sites spread around the country.

Due to the environmental problems existing in Nigeria, laws and acts relating to environmental protection were made. They include: oil and navigable water decree of 1968; the mineral act of 1969, 1973 and 1984; Chad basin Development act of 1973; and association gas injection

act of 1969 etc.

These laws/acts were promulgated to address specific and identified problems. They were narrow in scope and spatially restricted. But Decree No 58 of 1988 as amended by Decree 59 of 1992, gave birth to the Federal Environmental Protection Agency FEPA (Now Ministry of Environment) it empowers the ministry to have control over all issues relating to Nigerian environment, resources, exploitation and management. But the success recorded by the Ministry is nothing to write home about. Problems of urbanization, desertification, pollution and deforestation continued due to the Government's Top-down approach, inconsistencies of govern-



HRH Alhaji Aliyu H. Momoh Ikelebe III, Otaru of Auchi Kingdom, Edo State

ment policies, neglect of indigenous knowledge, and use of inappropriate technology, sectoral approach, inadequate funding, and inadequate awareness.

Considering the threats and the extent of degradation to which the Nigerian environment is being subjected, substantial resources are required for control, monitoring and remediation in the sector, however, the level and consistency of funding is usually a measure of the political will of successive administration to address a particular problem. This was corroborated by His Royal Highness Alhaji Aliru H. Momoh, Ikelebe III, Otaru of Auchi Kingdom when the NEWMAP team visited the Otaru in his pal-

ace in 2016. His Highness, he was very businesslike. He commended NEWMAP; the then Edo state Government, for the vision to partner with NEWMAP towards addressing the decade long gully erosion menace that has divided and fragmented the Auchi city into many unreachable parts.

According to Him, a great number of houses and lives have been lost due to the gully erosion issues in Auchi. He said “previous ad-

ministrations have tried to employ a piecemeal approach to remedy the gully erosion issues. Such methods was not only unproductive but rather escalated the level of degradation of the area.”

He therefore commended the intervention of NEWMAP Its holistic and systematic approach which he described as the best standards and global best practice in fighting the erosion menace. Auchi gully accelerated in the 1980s when

the Government engaged in several gully control construction activities within the area in their quest to prevent the action of the gully. In the intervention, most of the drainage systems have insufficient capacity, wrongly placed and in most cases abruptly terminated. All these anthropogenic factors together with the natural factor of convergent topography of Auchi town brought about further destruction and environmental degradation of the gully area.

According to a former Edo State Commissioner for Environment and Public Utilities, Prince Clem Agba, the nature of soil and topography coupled with the fairly heavy rainfall contribute immensely to the menace of gully erosion in the south east. He, however, noted that situations of many erosion sites worsened as a result of inadequate funding and poor procurement management of the previous attempts to solve erosion problems in the country.

He cited the example of the Auchi and Queen Ede gullies which he stressed was primarily caused by poorly terminated drainage channels from poor road constructions that were abruptly terminated.

Many believed that a classic example of bad approach to tackling gully erosion was the case of the Auchi and Queen Ede erosion sites in Edo state. For those who may not be aware, prior



Reclaimed Queen Ede site with a combination of civil works and bioremediation.

to the intervention of NEWMAP, Auchi Gully (known as Oshiobugie Gully) located in Auchi town, on the Oshiobugie plain occupies a large area of land stretching from Warrake Road to Auchi – Igarra road in the main Auchi town. The gully cuts across the villages in Auchi-Osomekhe, Oluedide.

The flood water drains from the sloppy terrain, towards Orle River and this then affected roads and adjoining streets in the town. This led to a dangerous situation whereby roads became severed and cut –off by the gully. Schools were threatened and structures submerged by the gully including pipes, as well as siltation of rivers in the area.

Queen Ede on the other hand is located in Ikpoba Okha Local Government Area of Benin City, Edo State, with a population of about 200,000 inhabitants’ residents in Pogah, Edebor, Agbonlahor and Ignore streets across the road as well as Aroko estate and Ogbeson village.

The gully started as a result of abrupt termination of the outlet drain from the Benin-Aghor highway. There were severe impacts of flood water along the highway, and several streets across the road. Many houses and two public schools were destroyed.

Like many other gully erosion situations in the



A state of the art engineering design with proper drainage system to contain storm water




A well terminated drain with bio-remediation work in Auchi site, Edo State.

country these gullies expanded with repeated rainfalls and the consequent huge overland flow and runoffs. In the case of Oshiobugie, the pattern of flow was such that the flood water flows through several communities such as Ibie, Jattu, Akharuma, Aibotse, Igbei, Akpekpe, Utsogu, Iyekhei, the GRA (through the general hospital) and Oluedide. Then, each heavy rainfall flow builds up to a heavy storm water that destroyed everything on its path before emptying into River Orle; 2km from the gully sites.

It is worthy to note that before NEWMAP commenced intervention, the Auchi gully was “about 2.4 km in length, with a depth of about 25 - 30m, with the top and bottom widths ranging between 70-120m and 17-108m respectively, with a spread that resulted to seven (7) gully fingers. The erosion gullies became a great threat to the lives and properties of the town folks while in many situations hindered the socio-economic activities in the area over the years.

3 Search for a New Approach



A state of the art and engineering output

A fresh vision

A big step forward came in 2010 when the severity of environmental degradation prompted the Nigerian Government to seek urgent support from the World Bank to tackle the challenge in seven states on a pilot basis: Abia, Anambra, Cross River, Ebonyi, Edo, Enugu and Imo.

The vision then at top Government levels was that reversing land degradation was not only a matter of addressing poverty but also of addressing livelihood activities of those living in the shadows of the gullies. Therefore there was a need to holistically address the gully erosion sites. This new approach emerged and was embedded in the Nigeria Erosion and Watershed Management Project (NEWMAP)

Vision to Action

With determination from the country's leaders and committed political support, the Bank responded through the US\$500 million IDA-

financed Nigeria Erosion and Watershed Management Project (NEWMAP) and subsequently mobilized a strong coalition at national and international levels to tackle and reduce soil erosion on a war footing. The project became effective on September 16, 2013 and has received \$3.96 million from the Global Environment Facility and \$4.63 million from the Special Climate Change Fund.

In the designing the project, the approach was an integrated catchment watershed approach with the development objective to support on-the-ground interventions to help reduce vulnerability to land degradation. The strategic approach was; (i) Stabilize severe erosion sites, and/or (ii) prevents emerging erosion problems early while intervention costs are relatively low, while (iii) Improving preparedness for landslides and floods. Physical interventions was to include a range of engineering/structural and vegetative measures, supported by participatory sub-watershed planning and extensive communications and outreach.

On effectiveness, contracts were awarded for 21 gully sites with construction work at various stages. Already, civil works/land reclamation activities have reached appreciable level and bioremediation is nearing completion in the 21 sites across the NEWMAP 1st mover states of Abia, Anambra, Cross River, Ebonyi, Edo, Enugu and Imo) Also, compensation has been paid to Project Affected Persons (PAPs) who would be directly affected by the ongoing construction works.

NEWMAP is warehoused under the Federal Ministry of Environment, and coordinated at the Federal by the Federal Project Management Unit. The states equally have their States management Units under the state's Ministries of Environment. NEWMAP has four components: (1) Erosion and Watershed Management Investments; (2) Erosion and Watershed Management Institutions and Information Services; (3) Climate Change Agenda Support; and (4) Project Management.

4 | Building trust with the right approaches

With vivid memories of the failed attempts of previous decades, many stakeholders initially resisted the NEWMAP approach. Rev. Fr. Richard Ofere, Parish Priest of St Aquinas Catholic Church, Benin City, Edo State had witnessed the failure of past interventions and was wary that the NEWMAP intervention may fail too. But Fr Richard Ofere like many others in the community surprisingly witnessed a better outcome this time around. He commended the regular community interface employed by the Project to allay the fears of community members and gained their confidence that it was not going to be business as usual.

NEWMAP/ world bank according to Adams Oshiomole, former Governor of Edo state are comrade in the struggle to fight and defeat erosion using the best approach.

Speaking to the World Bank supervisory team in November 2015, he said “We are very appreciative of the support and partnership that we have enjoyed from the World Bank. Maybe this is another occasion to repeat my pleasant



Queen Ede site before intervention and after intervention



The site I saw in Edo State government book that my predecessor has awarded the contract. I asked the contractor to take me to the site. He took me there, and I saw an abandon tractor. Three months later, the Federal Minister of Environment informed me that he was coming to inspect projects. He said I should accompany him to the site and he took me to the same Queen Ede. The Federal Government had also awarded same contract .For me that was a scandal. They did it through the Benin –Owena River Basin Authority.”

surprise when I've come to appreciate more and more and realise that over the years my attitude to the bank when I was in the union was very negative. My brief and my understanding of the conventional literature about international finance capital whether World Bank and International Monetary Finance is that these are double breasted consultants who dictates to nation states as if we are not sovereign and impose harsh policies that pauperise our people and they walk away to the next country and wreck the same havoc. This was my fixation. I was very much active and sometimes leading the Nigerian squad in attacking the bank”. The former Governor said his perception has changed with the progress of work at the gully sites in the state.

According to him, “our people here have almost given up. That Queen Ede site had consumed a couple of houses. It has destroyed two public schools and we had to transfer the pupils to another school. The Catholic Church was almost giving way and people were already avoiding that area. We've written to Abuja severally. We've written to the Ecological Fund and The Presidency. We can never thank the World Bank and NEWMAP enough. We are clear that we can only retain this partnership when we are committed to the right approach and rules; abstain and allow the system to run itself. These rules are the outcome of our joint conversation. We both agreed on them. We've enacted procurement laws to try to help us to institutionalise some of the weaknesses in public sector procurement. This NEWMAP approach of principled open and transparent procurement method is not for the Bank to become procurement officer but to enable Edo people and Nigerians to know what government is doing and to have opportunity to participate in what government is doing. Overall, the people get value for money. We can't be part of this beautiful process and then turn-around to breach it.”

Speaking further, he acknowledged that “the people in Auchu are extremely happy. The traditional ruler said people had given up. He was at our seventh anniversary and they were all full of praises to NEWMAP, the World Bank and the government. They said they can now play





football in the area that has been secured.

So it's not just saving them from dying but also reclaiming land that they can now use for other purposes." He added, "What made the difference really is the best procurement practices and the discipline to appoint competent consultants to do the design. Noteworthy also is the discipline to appoint qualified contractors. I joked with it all the time but it is a statement

of fact that this is not the first time to deal with erosion crisis in Auchi and Queen Ede. The Federal Government awarded contract some 10-12 years ago to local contractors. The intention was self-help. Money was spent and even the contractor's tractor was trapped in the gully. He neither had the know-how or the competence. And of course, there were no design but money was spent."



Properly terminated drainage in finger 2 Ikot Anwatin site, Cross River State.

5 | Changing attitudes with evidence

In the case of Gully Rapid Action and Slope Stabilization (GRASS) which basically addresses land degradation and restoration, seeing is believing. This sub-component supports actions to stabilize and rehabilitate major erosion-related sites and causes using both structural and vegetative measures. And belief was enacted shortly after the effectiveness of the Project with a guided tour of primary stakeholders and policy makers in the environment sector, to other watershed transformations; to share ideas and innovative practices, as well as to build confidence,

in Brazil, Israel as well as to Tigray which was facilitated by the Ethiopian SLMP.

After seeing the results in other watersheds, as well as in other regions such as Tigray, majority of the stakeholders and policy makers could now anticipate the economic benefits of restoring their land and imbibing safe environmental practices

Breaking from the norm and rediscovering the form

In the closed communal areas, the integrated

watershed approach follows the logic of watershed conservation, which requires physical and biological treatments to begin from the upper part of a watershed or micro watershed averaging 500 hectares (ha)—a size manageable for communities. What the project has embarked upon is the demographic delineation captured via a 3D sub-catchment map. The delineation and mapping was arrived at wholly through 100% community participation and this has greatly inspired community members towards project ownership.

Some of the re-introduced practices under the catchment planning include Rain water harvesting; Soil /water conservation other technologies have included, among others, stone bunds, bench terraces, check dams, with the later three especially useful in conserving soil moisture. These technologies have significantly

stopped erosion, saved top-soil, improved surface-water availability, and allowed for percolation of rainwater into the soil to replenish groundwater and spring flows. They have enhanced soil moisture and accelerated plant growth and regeneration. The revegetation of the restored lands have reduced degraded hill-sides, soil erosion and flooding.



9th Mile site, Enugu State before and after intervention.

6 | Restoring Landscapes, Enhancing Livelihoods

Looking into the lush landscape in Atakpa, Efiom Etim one of the major beneficiaries and a resident of the area praised the Project for restoring the landscape. “I have visited many of NEWMAP intervention sites in the state, which include Ikot Epo and Nyanghassang the lush greenery and the stone pitching makes it look as if these areas are lifted from a developed country like London or Australia. The Project has provided the benefits never experienced by our parents: benefits generated through fully integrated landscape conservation, trust among watershed facilitators and beneficiaries, joint resolutions to resolve conflicts over resource use, and an improved communal working spirit.”

It is no doubt that the state and local Governments and their constituencies were overwhelmed by the scale and complexity of the gully erosion problem. Attempts to prevent or rehabilitate gullies have generally been unsuccessful for the following reasons: (a) poor, incomplete or inadequate scale of response (such as placing more emphasis on civil engineering interventions without addressing the sub-catchment); (b) absent or weak land-use planning;

(c) unclear land and water rights that maintain perverse incentives; (d) weak regulatory enforcement; (e) weak local participation; (f) insufficient attention to livelihood issues; and (g) contract management issues. NEWMAP is addressing these gaps by investing in the public goods critical for multiple sectors and themes.

But with NEWMAPs Integrated catchment management approach sustainable resource

management from a catchment perspective, in contrast to a piecemeal approach has address the interlinked challenges of poverty, ecosystem services, climate change, disaster risk management, biodiversity, institutional capacity and governance. In totality this has integrated natural resources with community livelihood.

The NEWMAP alternative livelihoods program is meant to increase incomes for rural households from improved agricultural and forest practices through the use of conservation agriculture, agro-forestry, and natural regeneration and thereby help to reduce pressure on the soil. Under this subcomponent, project beneficiaries have formed Community Interest groups using the Community Demand Driven



A state of the art design with bio-remediation could be a game changer. Atakpa site, Cross River State.

Project Livelihood activities

NEWMAP innovative Livelihood agenda strategy. Enugu State NEWMAP has 29 Community Interest Groups (CIGs). They have been empowered with the sum of N20,000,000.00 (Twenty Million Naira) being 50% of the total sum alternative livelihood allocation.



CIG for Piggery at Ngwuto Nsude Community, Enugu State



CIG for Computer Training and Community ICT



CIG for Computer Training and Community ICT.



CIG for Welding and Gabion Box

approach (CDD) and the beneficiaries have been empowered to develop business proposals and community action plans for funding.

, three out of seven first mover states are implementing their various livelihoods activities and the beneficiaries comprise of women, men and youth including vulnerable groups such as direct project affected persons, persons with issues on litigation, widows, persons with disabilities and teenage single mothers. Some of the alternative livelihoods activities include Poultry, Fishery, pig farms, tailoring, cassava, and palm oil processing, ICT etc.

Presently, 4,187 persons are currently implementing their livelihoods activities in the states of Abia (male 339 female 453 total 792) Anambra (male 608 female 678 total 1, 254) Ebonyi (male 292 female 537 total 829) Enugu (male 301 female 457 total 758) Imo (male 321 female 233 total 554). Other states submissions of business proposals are undergoing review.

For Eunice Ebguruiche a widow and a beneficiary of the NEWMAP livelihood programme in Nguzzu Edda, Ebonyi state, praises have not ceased. "All thanks to God for the vi-

sion of Government to design this project. Life has been very hash and difficult until miraculously NEWMAP came into our community." For her the Garri processing Machine has given her hope to live and the little income jointly shared with the other two women in her group (all widow) helps greatly towards her subsistence. Before the disbursement of sub-grant to 4,187 beneficiaries for alternatives livelihood activities, compensation amounting to N821, 835,799.00 was fully paid to 984 persons across the 21 sites who were directly affected by the ongoing construction works at the gully sites in six out of seven mover states excluding Ebonyi State.

The NEWMAP alternative livelihood approach has further endeared the project to many, most especially those in the rural communities and the policy makers as well. This is why Governor Ben Ayade of Cross River state recently stated in November 2016, when he hosted the NEWMAP supervision Team in his Office, "what NEWMAP is doing is the real essences of life, to better the life of people leaving at the watershed thereby lifting them out of poverty. He added, with this integrated watershed management approach, NEWMAP is also indirectly tackling the issue of climate change because it is massive deforestation that causes water surfaces evapotranspiration to excessive solar radiation that leads to the cumulative impact of watershed lost".

7 | The Future Is Bright

After suffering decades of hardship, community leaders such as Rev Fr. Richard Ofere, Parish Priest of Aquinas Catholic Church, Benin City, Kese Oyo-Ita of Atakpa Community in Cross River State, Florence Nkemakonam of Amachalla Community in Anambra State, Deaconess Grace Omorodion, Women Leader, Queen Ede Gully Erosion Site, Benin City, Edo State, and millions of others have witnessed dramatic improvements, both in their lives and in their environment. Grace Omorodion said “our children now move around without fear. Schools destroyed have been reconstructed and our children are back in school. NEWMAP has beautified this area, they have consoled our heart and we have peace now. It is what we need to renovate our house that we are looking for and not that our houses will collapse tomorrow. That shall never be again. I am beautifying my house little by little now because there is hope for me that I will leave long here.”

Rev Fr. Richard Ofere, said the Church, himself and the community are beneficiaries of the NEWMAP initiative in Edo State. “I am a member of Christian Association of



Reclaimed Atakpa site in Cross River State.



Nigeria (CAN), representing the Catholic Church. CAN members from all over the country were invited to a thanksgiving in Abuja. I went to the thanksgiving with a letter signed by our Bishop. The letter was sent to President Goodluck Jonathan. Later they started calling me for World Bank meeting with NEWMAP. That was the beginning. Recently, with the massive filling that they did, the two roads are now been used. Old Agbor road is alive. The road linking the church to new Agbor road is also passable now. I am a beneficiary because my church is being protected. NEWMAP is doing very well”.



Amachalla reclaimed site in Anambra State. Before and after intervention



Reclaimed Amachalla site in Anambra State.



A state of the art engineering design in Auchifinger 2, Edo State.

Auchi Community:

Otaru Of Auchi:World Bank Remains consistent On Erosion Project. The traditional ruler, Otaru of Auchi, HRH Alhaji Aliru H. Momoh has noted the consistency of the World Bank in bringing the NEWMAP initiative to intervene in the Auchi erosion project to which previous governments have remained indifferent.

According to him: “so, some of the stages we have passed through over the years erosion has been very rough as you say the World Bank as a bank that underwrite a lot of the cost of some of these projects in the past committed \$20m to Auchi erosion and of course you are aware of that but what happened to the money was a different thing. Today, we are into a new phase because when you pray to the Almighty God, He accepts and answers your prayers and decides when that will be manifested. This time around we are

all saying that a lot of progress have been made by the contractors who have been given the opportunity to prove their worth. We are happy with them because the work is progressing.

“We appreciate World Bank’s assistance for this project. They have been consistent to ensure that the Auchi erosion project manifests into reality and now we have seen it. And we thank them for their consistency on this project. we thank God and we are grateful for what is happening. I have gone round the place; people have been going round including the governor himself who is satisfied with the work”. What I will say is that the future is bright for the country, as long as we can tailor other interventions in line with the approach of NEWMAP.

For President of Auchi Community, Edo State, Mrs Ekheoghe Juliet, “NEWMAP initiative

changed our situation. It came, and the people in this environment and even Auchi as a whole are grateful to God for it. And we thank World Bank for their assistance. We thank everybody that contributes to make this project a success. We believe the future is bright any future intervention should definitely be according to the NEWMAP approach. President of Amachalla Community in Anambra State, Mrs Florence Nkemakonam, was short of words to describe the transformation that occurred in the community with the arrival of the NEWMAP initiative.

In her words: “I think I lacked the words to describe the state of my condition before the intervention of NEWMAP It was a really terrible experience. You can imagine where you were living comfortably and gradually you were losing the land. With every rain you lose a portion of your land. We started crying and God stepped in, NEWMAP came, World Bank came, attention came and work started. I feel very happy, I feel very glad. I appreciate God, World Bank , NEWMAP, I appreciate our Governor too. Our belief is that all state governments should adopt the NEWMAP approach to tackling the menace of gully erosion and land degradation. This will not only facilitate the expected environmental turnaround, it will also contribute to sound resource management that will improve the well-being of rural people, especially those living in the shadows of the gullies.

Testimonies

“When the rain fall, nobody will be able to come out. There are trees here but when the rain fall some of them fall. Even human beings were carried away by water. We decided to block the road so that people will not get carried away.

We have made several efforts to attract government attention. We prayed and continue to inform the government. Of a truth, there was a day we hear that the World Bank will come. Some doubted but those of us that have faith remain convinced.

Now we are happy. No one expect that there will be road here. Today NEWMAP and World Bank have beautified this area. We have peace now and we can sleep without any anxiety or fear. Unlike before that we fear for our lives what we are concerned with now is how to maintain our houses because there is hope that we’ll live long here. We are now looking for what to use to beautify our house not that our house will go.

Apart from the work done, we have been taught not to dispose refuse indiscriminately. We are going to imbibe the culture of safe waste disposal and maintain the work done here. We have also started planting flowers so that the ground can be strong”.

Mrs. Grace Osame, Women Leader,
Queen Ede Erosion Site

“I have lived here for nine years. I bought the place in 2005 when it was a major road. I used to pass through the place to drop building materials for my building. I completed my building and relocated here in 2007. The erosion started in 2009 and gradually, we were thinking it was something we can stop. We requested for help from the State Ministry of Works. They came in and saw it wasn’t something the state government could handle. They told the Governor about it and the state government had sympathy and recommended us to the Ecological Fund. It was thereafter that the World Bank came in. They started their due process since 2009 up till last year when the contract was awarded. As you can see we are now living here happily, because the project is on-going. From what we are seeing that is a good development.

“When the erosion commences when it rains, and you know Calabar is a rainy place. When it rains some of us who are very close to the gully don’t sleep. Sometimes I use bag of cement to block it but by the next day it would have cut. The distance from the gully to my house was just a meter. Until when the World Bank came

in the experience we had here was very serious. As I’m talking to you now, I am very happy because I don’t think we are going to suffer that same thing again. The erosion started gradually through a gutter here, because we opened a gutter as the population increased, we started developing this place. The moment people started roofing the erosion expanded. We lost buildings and in 2009 we lost a six-year-old boy who, while attempting to cut some fronds was swept away by the erosion”.

With smiles, Offiong pointed to his new house which he had just moved into a day before. “That is my new place we packed-in there yesterday. I can see that within the next 5 to 10 years, this place will come back to normal”.

Mr. Offiong Kanu Ekpo, 52, a civil servant of Ikot Ekpo Community in Calabar, capital of Cross River State

“I’ve been in this community for eleven years now. My wife used to pass through this gully erosion area to her school. We built the first bridge but it collapsed. We later built a longer one but that also collapsed. We did everything we could do and when they are not working we then resulted to looking for help. We went to Water

Board, NEMA and others but none could help until NEWMAP and The World Bank came to our rescue”.

“For us here NEWMAP means gully must go. Due to NEWMAP’s intervention, the morale of the people is high. Many years ago, you cannot stand here. This place was a deadly jungle, but as you can see we are standing and cars are passing through this place. It is an evidence of service delivery. And again you find out that NEWMAP did not just come to intervene in erosion but to also boost the economic and social life of the people. This place was a jungle but NEWMAP has paid compensation to those women who own the farm land and their lives are better now. When it comes to this gully intervention, you can already see, the water is flowing down there.

“I was afraid at some point that I’ll lose my house, but due to this intervention the house is standing. More houses have been secured, so far none collapsed. With this development residents of Njang Asang can now afford to sleep with both eyes closed as against the previous years where they do sleep with one eye closed waiting to respond when the erosion will hit the area. Asuka added that through the knowledge acquired from NEWMAP, members of the community are now aware that water can be harvested and stored in reservoirs to reduce the inflow which usually caused havoc in the area. This water according to him can be used in the arid period to service household needs. The

community leader explained that residents of Njang Asang were happy that the area is now wearing a facelift because NEWMAP had given the area a new vegetation due to the remediation work on-going and promised to go extra length to stop activities of illegal sand miners who were in the habit of devastating the environment.

Evangelist Jeremiah Asuka, 56, Secretary of the Stream Way Association Njang Asang Community, Cross River

“I have been living here in Edimotop for over 10 years. This gully started as a small erosion, small erosion, until it started expanding, affecting houses and human beings. We lost a household with mother, father, and children to the erosion. It also carries away a new born baby and a pregnant woman. They were buried where we don’t even know, till now. So, we are very happy for the intervention of NEWMAP and World Bank. And we do pray that they should please continue this job. Like you see this gutter, we would want it is raised up a little, so that even if it rains, the rain will wash it down to this place so that it will not collapse.

“When NEWMAP came on-board we been going to them from time to time to beg. Because we know the gravity of effort they put here. So,



Mrs. Shola Bassey of Edim Otop Community, Cross River State

we cried for help, and anything they need from us we do- like securing all the materials they are using. She also explained the effort of the community to discourage dumping of refuse at the site adding that the youths have been mandated to trail the perpetrators who do so in the night. “But we have asked the youth to keep watch on the place, especially in the night. When they sleep and before they wake up somebody has come to do what you did not expect to see.

Mrs. Shola Bassey, a community leader at the Edimotop site, Ntunkai, Cross River State

“I was born and brought up here. I live at no 5 Teteh Street. During the erosion, water entered our houses. One side of the wall of my cracked but didn’t fall completely and I had to use wood to hold it. We thank God that nobody was killed by erosion here. We liked this project because before now erosion worried us a lot. This project has made our area to open.

“The erosion has been disturbing for about 20 years. Government promised to construct this road into the street but nothing was done. So,

when rain fall, all the boys in this area will come out with shovels and cutlass to clear the street and create gutters for the water to flow but that one was not enough to solve the problem. But now the place is changing. NEWMAP and World Bank have done well. God will bless them. Everything they are doing here now is nice and it will be good when they finish it.

“We also got compensation for our crops destroyed because the run-off water channel passed through our waterleaf beds. Those of us whose farms were affected have been compensated. Apart from that there is this issue of community interest group where they bring people together. I belong to the poultry group. We are going to be taught how to do the poultry and many things and after this, they said they will give us money to do what we have learnt. Before this project people didn’t have hope. The erosion came and took the farm land and now Government has come to do our environment to prevent erosion. And now we are going to have small business so we are happier”

Mrs. Nkese Oyo-Ita, a 75-year old mother of 10, Atakpa Community, Cross River State.

“This problem of erosion had been with us for a long time. The erosion destroyed many things such as crops, cocoa farm, the land, houses. We used to have cocoa plantation including other means of livelihood but the erosion swept them away.



Madam Nkese Oyo-Ita of Calabar Municipality, Cross River State

especially government has tried to intervene to do some correction but didn’t work, this time around we can talk about the current intervention.

“Many companies have come in to try to solve our erosion problem but they could not. Since the World Bank has come in with NEWMAP to work on the erosion, we have seen a very good improvement. If you check the entire streets have been linked. Before when you are going from Water Board to Wareke road you will walk across the whole Auchi to Wareke road, but now

“Many people died during the time of erosion, any-time rain was falling then we everybody stand up, some people will be running to their houses then they fall in and it will take their life.

“We have been told that 2-3 times, people especially

when you enter by Mortuary junction you pass all the connection as Auchi was before. They have connected it”.

“Again, all the affected people have been compensated, nobody is complaining at all and that is why we all are happy, for the work they are doing now. “I lost my half part of my house. I have been paid and the house now repaired. Also, people who lost their means of livelihood like farms were also compensated.

“And people whose means of livelihood were affected, may be cocoa farm, may be some other property lost, they have also been compensated.

To ensure that the people are organized to take responsibility for subsequent development of themselves with the training and the oversight function on the intervention projects of NEWMAP, they held election to pick leaders who will coordinate the activities that will enable them as a people and a community own these projects and maintained them.

“Apart from this, the community has organized a body of environmental people to monitor the erosion, and we have announced in the mosque, everywhere that no man or woman must drop any refuse into the gully. Anyone caught will be arrested and fined. This project belongs to us.

Mr. Michael Igboria, 47, chairman of Egbeadoka Community Erosion Control Committee, Auchi, Edo State.

Nigeria's Sustainable Land Management, NEWMAP Approach



Special Climate
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