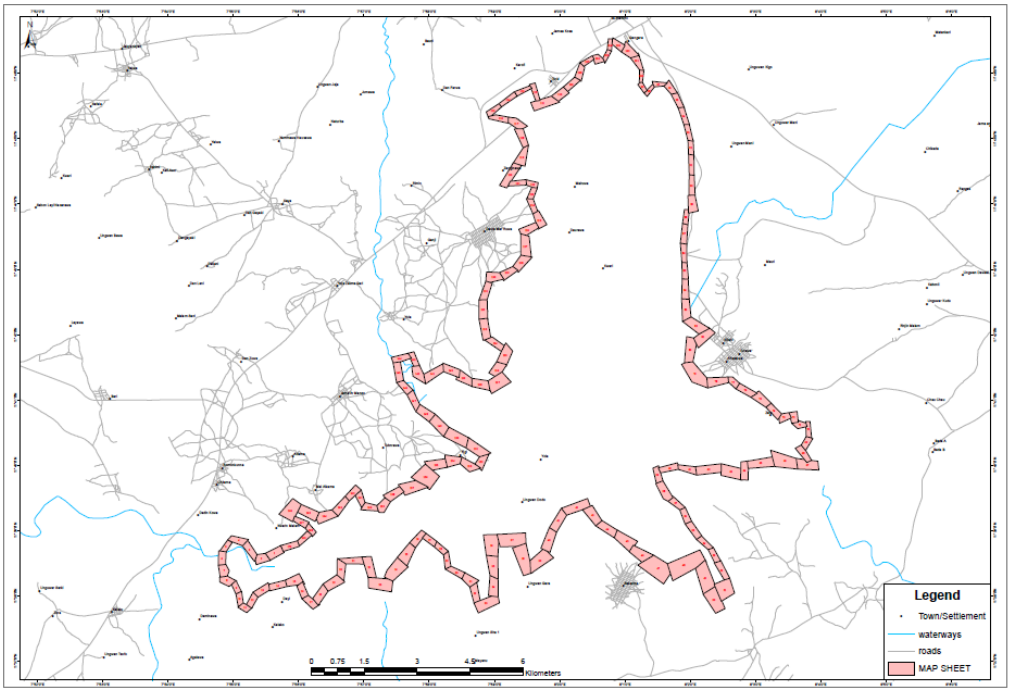
RESETTLEMENT ACTION PLAN (RAP) FOR THE CHALLAWA GORGE DAM WATERSHED MANAGEMENT PROJECT

GRANT NUMBER: 5600155005455



Submitted to

HADEJIA JAMA'ARE KOMADUGU YOBE BASIN TRUST FUND

May 2023

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Abbreviations

Acronyms	Meaning
AfDB	African Development Bank
ARAP	Abbreviated Resettlement Action Plan
AIDS	Acquired Immune Deficiency Syndrome
BP	Bank Policies
CBO	Community-Based Organization
CDF	Community Development Funds
CSO	Community Support Organizations
CEDAW	Convention on the Elimination of all Forms of Discrimination against Women
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FGN	Federal Government of Nigeria
FMEnv	Federal Ministry of Environment
FGD	Focus Group Discussion
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GIS	Geographic Information System
GRM	Grievance Redress Mechanism
GRC	Grievance Redress Committee
HIV	Human Immune Virus
HSE	Health Safety and Environment
HJKY	Hadejia Jama'are Komadugu Yobe
HJRBDA	Hadejia Jama'are River Basin Development Authority
HJKYBTF	Hadejia Jama'are Komadugu Yobe Basin Trust Fund
KYB	Komadugu Yobe Basin
LGA	Local Government Area
LRC	Local Resettlement Committee
LUA	Land Use Act
M&E	Monitoring and Evaluation
m	Metre
M^2	Meter square
N/A	Not available
NGO	Non-Governmental Organization
NGN	Nigeria Naira
OP	Operational Policies (of the World Bank)
PAD	Project Appraisal Document
PAC	Project Affected Community
PAPs	Project Affected Persons
PAH	Project Affected Household
PM	Project Manager
PMU	Project Management Unit
PIU	Project Implementation Unit
RAA	Registry of Affected Assets
RAP	Resettlement Action Plan
RBDA	River Basin Development Authority
RCC	Resettlement and Compensation Committee
RIC	RAPImplementation Consultant

RoW	Right of Way
RPF	Resettlement Policy Framework
SEA	Sexual Exploitation and Abuse
SAP	Strategic Action Plan
SEP	Stakeholders Engagement Plan
SGBV	Sexual Gender Base Violence
STD	Sexually Transmitted Diseases
ToR	Terms of Reference

ACKNOWLEDGEMENT

I wish to acknowledge support received from the following, in the course of the studies:

- Traditional rulers, council of chiefs and village chiefs of the affected communities as well as the people affected and other members of the communities for their cooperation and understanding.
- The Chairmen of the Rogo, Karaye and Kiru Local Government Areas traversed by this project for their immense interest and participation
- The HJKYBTF and HJRBDA project team for technical support and insights related to this project.

DEFINITIONS

Children: all persons under the age of 18 years according to international regulatory standards (Convention on the Rights of Child 2002)

Community: a group of individuals broader than households, who identify themselves as a common unit due to recognized social, religious, economic, and traditional government ties or shared locality.

Compensation: cash or kind payment for an asset or resource acquired or affected by the project.

Cut-off-Date: the date of announcement of inventory of project-affected items, upon which no new entrant or claimant, or development is allowed or will be entertained as affected assets within the project area of influence.

Economic Displacement: a loss of productive assets, usage rights, or livelihood capacities because such assets/rights/capacities are located in the project area.

Entitlement: the compensation offered by RAP, including financial compensation; the right to participate in livelihood enhancement programs; housing sites and infrastructure; transport and temporary housing allowance; and, other short-term provisions required to move from one site to another.

Head of the Household: the eldest member of the core family in the household, for the project.

Household: a group of persons living together who share the same cooking and eating facilities and form a basic socio-economic and decision-making unit. One or more households often occupy a homestead.

Involuntary Resettlement: resettlement without the informed consent of the displaced persons or if they give their consent, it is without having the power to refuse resettlement.

Lost Income Opportunities: lost income opportunities refer to compensation to project-affected persons for loss of business income, business hours/time due to project

Operational Safeguard OS 2: Describes the basic principles and procedures for resettling, compensating, or at least assisting involuntary displace persons to improve or at least restore their standards of living after alternatives for avoiding displacement are not feasible

Physical Displacement: a loss of residential structures and related non-residential structures and physical assets because such structures/assets are located in the project area.

Project-Affected Community: a community that is adversely affected by the project.

Project-Affected Person: any person who, as a result of the project, loses the right to own, use or otherwise benefit from a built structure, land (commercial, residential, agricultural, or pasture), annual or perennial crops and trees, or any other fixed or moveable asset, either in full or in part, permanently or temporarily.

Rehabilitation: the restoration of the PAPs' resource capacity to continue with productive activities or lifestyles at a level higher or at least equal to that before the project.

Relocation: a compensation process through which physically displaced households are provided with a one-time lump-sum compensation payment for their existing residential structures and move from the area.

Replacement Cost: the amount of cash compensation and/or assistance suffices to replace lost assets and cover transaction costs, without taking into account depreciation or salvage value.

Resettlement Action Plan (RAP): documented procedures and the actions a project proponent will take to mitigate adverse effects, compensate losses, and provide development benefits to persons and communities affected by a project.

Resettlement Assistance: support provided to people who are physically displaced by a project. This may include transportation, food, shelter, and social services that are provided to affected people during their resettlement. Assistance may also include cash allowances that compensate affected people for the inconvenience associated with resettlement and defray the expenses of a transition to a new locale, such as moving expenses and lost work days.

Resettlement: a compensation process through which physically displaced households are provided with replacement plots and residential structures at one of two designated resettlement villages in the district. Resettlement includes initiatives to restore and improve the living standards of those being resettled.

Vulnerable group: People who by their disadvantage conditions will be economically worse impacted by project activities than others such as female-headed households, persons with disability, at-risk children, persons with HIV-AIDS, and elderly household heads of 70 years and above.

EXECUTIVE SUMMARY

Summary of Compensation

The summary of payable compensation for the acquisition of the project sites (PSW_1, PSW_2 and Challawa Dam area) for the proposed Challawa Gorge Dam watershed Management Project is presented below.

#	Executive Summary	Number	
	Total Number of claimants	**842**	
1	Number of PAPs for structures	13	
2	Number of PAPs for economics trees	237	
3	Number of PAPs for crops	519	
4	Number of vulnerable PAPs	73	
#	**Cost Elements**	**Amount (NGN)**	**Amount (USD)**
1	Budget for structures	25,938,650.00	55,782.04
2	Budget for Land replacement assistance	1,242,162,412.06	2,671,317.02
3	Budget for cash crops/economic trees	108,311,382.22	232,927.70
4	Loss of Business/Value	54,155,691.11	116,463.85
#	**Total for 1-4**	**1,430,568,135.39**	**3,076,490.61**
5	Allowance for livelihood restoration program (10% of compensation cost)	143,739,813.54	309,117.88
6	Allowance for contingency for crops and structures (5% of compensation cost)	71,869,906.77	154,558.94
7	Support for vulnerable group	6,830,000.00	14,688.17
8	Community social development program (water & sanitation, health, school, agriculture etc.)	150,000,000.00	322,580.65
	Subtotal for 5 - 8	**372,439,720.31**	**800,945.64**
#	**Total (Compensation cost + Allowances)**	**1,803,007,855.70**	**3,877,436.25**
8	Resettlement Implementation Consultant (10% of Compensation cost)	165,300,785.57	355,485.56
#	**Grand Total (compensation cost + Allowances + RIC)**	**1,968,308,641.26**	**4,232,921.81**

E S 1.1 Project Background

The proposed Challawa Watershed Management project is one of the subprojects of the Komadugu-Yobe Integrated Water Management Program and is aimed to extend the longevity of the Challawa Gorge Dam reservoir by reducing the sediment flux into the reservoir through integrated watershed management. This will help to significantly reduce the siltation problem in the Challawa Reservoir and also contribute to soil conservation within the watershed. It will also address the problem of sedimentation at the Challawa Water Works treatment plant.

The project is funded with a loan from African Development Bank (AfDB) and Prof. Andrew Obafemi was commissioned by Hadejia Jama'are Komadugu Yobe Basin Trust Fund to prepare the Resettlement Action Plan (RAP) for the project.

E S 1.2 Project Components

The project comprises 3 project areas namely:

- Pilot sub-watershed 1 (PSW_1)
- Pilot sub-watershed 2 (PSW_2)
- Challawa Gorge Dam reservoir buffer area

The project areas are aimed at erosion and gully control and reducing sediment deposition in the reservoir through watershed management intervention. The proposed watershed management work largely includes the provision of erosion control structures in the upland active watersheds in pilot 1 and pilot 2, and the provision of riparian buffer around the Dam reservoir. The selected PSW_1 and PSW_2, each containing its own main and finger gullies with lengths as outlined in the table below

Description	Length (m)	Proposed Work	Remark
MG	4,581	Bank protection, Check Dams, sediment trap, and buffer	PW_1
LFG-1	1,006	Bank protection and Check Dams	PW_1
LFG-2	2,124	Bank protection and Check Dams	PW_1
LFG-3	787	Bank protection and Check Dams	PW_1
RFG1	2,612	Bank protection	PW_1
MG	8,047	Bank protection, Check Dams, sediment trap, and buffer	PW_2
LFG-1	654	Bank protection	PW_2
LFG-2	760	Bank protection and Check Dams	PW_2
LFG-3	705	Bank protection and Check Dams	PW_2
LFG-4	955	Bank protection and Check Dams	PW_2
LFG-5	937	Bank protection and Check Dams	PW_2
RFG1	902	Bank protection and Check Dams	PW_2
RFG2	1,984	Bank protection	PW_2
RFG3	2,152	Bank protection	PW_2

E S 1.3 Objectives of the Resettlement Action Plan

This RAP, prepared for this project, is consistent with the policies of the Government of Nigeria and in line with the AfDB OS2 and the banks resettlement policy of 2003. These policies on involuntary resettlement cover both physical displacement and economic dislocation (loss of assets or access to assets that leads to loss of livelihood) because of land acquisition or restrictions on land use. The Challawa Gorge Dam

Watershed Management project is one of such projects which shall affect persons living within the project area thus resulting in the phenomenon of Project Affected Persons (PAPs) and involuntary Resettlement.

The overriding objective of the Resettlement Action Plan is to:

- assess the potential resettlement impacts of the proposed Challawa Gorge Dam Watershed Management Project works, and prepare a Resettlement Action Plan (RAP) line with the guidance provided by the African Development Bank's Integrated Safeguards Systems (ISS), and its associated Operational Safeguards.
- outline procedures that the HJKYBTF will follow and the actions that it will take to mitigate adverse effects, compensate losses, and provide development benefits to persons and communities affected.
- Carry out a thorough socio-economic analysis of the project influence area (Challawa Gorge Dam watershed), with an emphasis on the potentially affected people groups (including analysis of vulnerable groups), including baseline data for benchmarking in future livelihood restoration assessment.

The thrust of this report includes explanation of the of RAP components and associated costs of compensation and assistance measures, organizational and institutional arrangements for the implementation of the RAP, eligibility criteria, and the planned grievance management mechanism. The actual number of households and the agricultural area that will be affected is also presented.

E S 2.1 Project Location

The three (3) Project areas is located in Kano State Northern Nigeria, close to Karaye town about 120 km southwest of Kano City, within the HJKY Basin as presented in the table below

- Location of pilot sub-watershed 1

Feature	**Description**
Coordinates	**Outlet:** Latitude 11.623273° and Longitude 7.792381° **Head of the watershed**: Latitude 11.554715° and Longitude 7.770082°
State	Kano state
LGA	Rogo Local Government Area
Emirate	Karaye
Project Affected Communities within Pilot sub-watershed 1	Ayaga Kwari Ayaga Tudu Ayaga Kusari Ungwan Datti

- Location of pilot sub-watershed 2

Feature	Description
Coordinates	**Outlet:** Latitude 11.454754° and Longitude 7.739324° **Head of the watershed**: Latitude 11.391271° and Longitude 7.703919°
State	Kano State
LGA	Rogo Local Government Area
Emirate	Karaye
Project Affected Communities within Pilot sub-watershed 2	Ruwan Bago Tsara Tsara Cikin Gari Tsara Kunga Tsara Kuringa Tsara Kwalwa

- Location of Challawa Gorge Dam Reservoir area

Feature	Description
Coordinates	**Point 1:** Latitude 11.762569° and Longitude 8.011766°. **Point 2**: Latitude 11.643773° and Longitude 7.954833°. **Point 3**: Latitude 11.671108°and Longitude 8.051564°
State	Kano state
LGA	Kiru and Karaya Local Government Areas
Emirate	Karaye
PACs around the Challawa Gorge Dam Reservoir	Turawa, Yola, Tinikas, Magaji Haji, Magaji Gari, Ma Village, Kyari, Kwarin Mallam, Gudal, Daura, Chimata and Sakarma

E S 3.1 Project Description

The Challawa Watershed management project is aimed at erosion and gully control and reducing sediment deposition in the reservoir through watershed management intervention. The proposed watershed management work largely includes the provision of erosion control structures in the upland active watersheds producing large amounts of sediments. The selected Pilot sub-watersheds have been designated as PSW _1 and PSW _2, each containing its own main and finger gullies as outlined below and draining into the main rivers

Description	Length (m)	Proposed Work	Remark
MG	4,581	Bank protection, Check Dams, sediment trap, and buffer	PW_1
LFG-1	1,006	Bank protection and Check Dams	PW_1
LFG-2	2,124	Bank protection and Check Dams	PW_1
LFG-3	787	Bank protection and Check Dams	PW_1
RFG1	2,612	Bank protection	PW_1
MG	8,047	Bank protection, Check Dams, sediment trap, and buffer	PW_2
LFG-1	654	Bank protection	PW_2
LFG-2	760	Bank protection and Check Dams	PW_2
LFG-3	705	Bank protection and Check Dams	PW_2
LFG-4	955	Bank protection and Check Dams	PW_2
LFG-5	937	Bank protection and Check Dams	PW_2
RFG1	902	Bank protection and Check Dams	PW_2
RFG2	1,984	Bank protection	PW_2
RFG3	2,152	Bank protection	PW_2

Considering the nature and extent of erosion and other site-specific conditions within the sub-watersheds, check dams and sediment traps were proposed as the most feasible erosion and sediment control structures within each pilot sub-watershed. This is to be further integrated with bio-engineering measures, as well as agricultural measures. The control measures are to be provided inside the main and finger gullies and on adjacent farmlands and the eroded river banks. To do this, the gulley sections were designed to be provided with check dams to stabilize the flow and promote sediment deposition. The check dams are to serve as grade control and energy dissipation structures along the main and finger gullies. The check dams are designed to be provided at recommended intervals to serve as grade and velocity control. Proposed measures for control of sediment flux include:

(i) Construction of soil erosion control structures for:
- Main gullies
- Finger gullies
- Check dams
- Sediment traps

(ii) Gully bank treatment:
- Bio-remediation through the planting of vetiver grass
- Agricultural erosion control methods

(iii) Buffer zones which include:
- Riparian buffer for Challawa reservoir
- Buffer zones for pilot water shed streams

The proposed measures will be undertaken in a total area of 969 Ha as outlined below:

- Around reservoir (475 Ha)
- In Pilot area_1 (276 Ha)
- In Pilot area_2 (218 Ha)

E S 3.2 Engineering Components

Structural (engineering) measures to control gully formation and check channel and reservoir siltation are to be constructed inside the gullies while bio-remediation and agricultural measures are to be provided on eroded gully banks and adjacent farm lands respectively to stabilize soil, and reduce surface flow. Gabion check dams and sediment traps are the main structural measures to be provided at selected sites.

S/No	Engineering Components	Component Description
1	Check Dam Design	- Check dams are one of the most practical and effective erosion control measures used for the stabilization of gullies and erosion sites. - They are also provided to stabilize active gullies and steep slopes in Challawa Gorge Dam Pilot Sub Watershed areas. - Check dams are provided to stabilize the gradient of the gully bed in the steep slope reaches.
2	Sediment Trap	- At the outlet of stable bed gullies, slope of the gully tend to be milder because of significant sand deposition. - The sand deposition is lowering the channel capacity promoting lateral stream bank erosion. - Therefore, once the check dams capture a portion of sediment the remaining will be captured at the sediment trap and will be used for different purposes for the community such as construction activity.
3	Sediment Trap Design	- Gullies with steeper slopes and active gully bed erosion are provided with check dams to stabilize the gully bed and to trap sediments upstream of check dams, while gullies with relatively stable slopes are provided with sediment traps at the outlet. - Theses sediment traps will serve to trap sediments which comes from the agricultural land until the agricultural and bio-remediation erosion control measures will fully develop and reduce sediment.
4	Dewatering Orifice	- Basin dewatering will be done with orifice structure provide at the downstream direction. The discharge orifice should be sized to dewater the live storage zone within a stated time period 24 hours
5	Grading and trimming	- The middle reach of the gully has relatively narrow and deep very exposed gully bank section; the existing slope is from 45 to 50 degrees. This slope is not stable for such poorly structured geological formations. Therefore, the slope of gully

		banks is proposed to be graded with the following recommendations: - Provision of a graded slope of 1:1.5 with a 4m wide berm at the middle of the bank, the proposed graded bench is horizontal and along the contour, and interceptor drainage is provided every 10m elevation interval to intercept the storm water and evacuate to the collector drain. - Provision of bio-degradable geo-matt on the treated surface where the gully slopes are steep and exposed, the geo-matt will create a support for the banks until the bio-remediation is fully developed.
6	Bio-remediation (Vetiver grass)	- Even with bank stabilizing measures, the gully banks are still vulnerable to further erosion by uncontrolled surface stormwater runoff from the surrounding areas. Hence, protection measures are to be provided. After careful analysis of various types of bank protection measures, vetiver grass was selected. - The non-vegetated slopes are subject to frequent and sometimes serious erosion processes, due to storm water runoff. - The gully banks are exposed in active reaches of the gully and are vulnerable to surface erosion from direct rainfall. These exposed surfaces shall be covered with vetiver or other fast-growing deep-rooted grass to minimize the formation of rill type of waterways. Bio-remediation measures can be used to protect gully bank walls and prevent erosion. - Vertiver grass provides important resistance to erosion forces and is more aesthetic and environmentally friendly than other structures. - Vetiver grass is to be planted on gully bank slopes of less than 40^0.
7	Gully Slope Stabilization	- The vetiver vegetation is being used as a natural and effective bio-engineering tool to control erosion and stabilize slopes against sheet flow erosion; this is because: - Vetiver roots can penetrate a compacted soil profile providing a good anchor for fill and top soil. - Vetiver's extensive and thick root system binds the soil. - When planted closely together Vetiver plants form dense hedges that reduce flow velocity, spread and divert runoff water and create a very effective filter that controls erosion. - Acting as a very effective filter, vetiver hedges reduce the turbidity of surface runoff. Since new roots develop from nodes when buried by trapped sediment, Vetiver continues to rise with new ground level and terraces form at the face of the hedges. The fertile sediment typically contains seeds of local plants which facilitate their re-establishment
8	Erosion Control measures on Farm: Contouring	This is the practice of orienting field operations such as ploughing and planting along the contour. - Contours are level lines across a slope at a constant elevation.

		- It reduces surface runoff by trapping water in small depressions and decreases the incidence of rill formation. - Contouring is proposed in steep cultivated lands of Pilot sub-watersheds with slopes exceeding 5%. - Vegetative barriers (such as grassy strips) will be located on the contour to control soil erosion. - Water flowing down the slope picks up the soil. When it reaches a contour barrier it slows down, the soil particles settle out, and more water enters into the soil.
9	Strip Cropping	- For water erosion control the strips may be aligned along the contour and the crops follow a different rotational sequence so that the entire field is never bare. - Buffer strips may also be used to protect sensitive areas of the field from erosion, or to create areas that will retard runoff and trap sediment.
10	Conservation Tillage	- One of the most important agricultural conservation measures being adopted in many areas of the world in recent years is the reduction in tillage (turning off the soil). - Under conservation tillage, the crop stubble is left standing and the residue is evenly spread across the field as mulch instead of being ploughed under. - Weeds are controlled by cutting and herbicide. - Compared to conventional tillage, conservation tillage can increase soil organic matter, reduce erosion by as much as 90%, enhance infiltration, and reduce moisture loss. - When implemented across a watershed, enhanced infiltration can reduce peak discharge and downstream flood damages.
11	Grassed Waterways	- This is a shallow drainage way in which vegetation protects the channel against erosion, thereby increasing the permissible (non-erosive) velocity compared to bare soil; - Maximum permissible velocities depend on the type of grass, but are generally limited to about 1.2 m/s and slopes not exceeding 5%. - For streams that have a base flow, a stone center is provided. Scour resistance may be enhanced by geo-synthetic reinforcement;
12	Terraces	- Terraces work against gravity, interrupting the tendency of water to flow down- the slope. - It is recommended to use stiff grass hedges in the Challawa Watershed area by planting a dense hedge of stiff grass on the contour, which retards runoff and causes water to pond and deposit sediment on the uphill side of the hedge. - Because it is living, the grass hedge will become stronger with time and can grow as sediment collects and the terrace height increases. - Deposited sediment fills in low spots, runoff tends to become more evenly dispersed and less erosive with time, and the hedge tends to naturally build terraces that follow the contour.
13	Riparian buffers	In the Challawa Gorge Dam watershed, the provision of riparian

		buffer around the reservoir and maintenance of existing riparian buffers in their natural condition has been identified as one of the most effective means of protecting Challawa Gorge Dam reservoir sedimentation, including water quality, hydrology, natural communities, and watershed ecosystem function. *The objective of the buffer strips* - Reduce erosion runoff of sediment, nutrients and other potential pollutants - Remove pollutants from water runoff - The objectives of the proposed buffer strip are mainly to: - Intercept sediments remove nutrients and other non-point source pollutants from surface runoff and also serve to prevent erosion of soil through soil stabilization. - Attenuate runoff. Maintenance of riparian vegetation or stream buffer strips and reduction of erosion lowers the potential for substance movement by surface runoff, thereby reducing the potential for water quality degradation. - Enhance the landscape diversity, providing visual appeal, and also serve to conserve and/or supplement open space. - Reservoir buffers are recommended in different widths around the reservoir as per the required purpose. To design and maintain an effective buffer it is important to assess the physical condition of the reservoir corridor. However, for this preliminary design a reservoir buffer width of 30m is recommended, as per literature, is proposed.
14	Stream Buffer Strip Design	- The spatial placement of buffer strips within a watershed can have profound effects on water quality. - Riparian buffers in headwater streams (i.e., those adjacent to first-, second-, and third-order systems) have much greater influences on overall water quality within a watershed than those buffers occurring in downstream reaches; - Downstream buffers have proportionally less impact on polluted water already in the. On the other hand, buffer strips on the downstream rich of the river will have a significant impact on stream bank erosion.

E S 3.3 Coverage of RAP

The RAP was carried out within the gully fingers as identified in the two sub-watersheds (PSW_1 and PWS_2) with a Right of Way of 25m on both sides to accommodate the Check dams, vegetation planning within the buffer zones of the Gulley's fingers and 30m around the Challawa dam reservoir area for the riparian buffer.

E S 4.1 Policy, Legal and Institutional Framework

It is imperative to analyse the Acts and Bye-laws relevant to this project. This will help in understanding the legalities and procedures in implementing the project and identifying gaps that need to be strengthened

in order to comply with the Bank's Policy on resettlement and rehabilitation of project affected persons and indigenous population development plan.

National Land Policy

The legal basis for land acquisition and resettlement in Nigeria is the Land Use Act Cap L5, LFN 2004. According to the Act, all lands in Nigeria is vested in the Governor of each State, to be held in trust for the use and common benefit of all people. Lands are further classified into urban and rural (non-urban) for administrative purposes.

The 1999 Constitution of the Federal Republic of Nigeria

Property ownership is guaranteed alongside other fundamental human rights like freedom of speech, association, and movement. Specifically, Section 43 confers the right to acquire immovable property by citizens and Section 44 reserves government's power of eminent domain and prescribes how this power is to be exercised by the government.

Land Use Act CAP L5, LFN 2004 and Resettlement Procedures

The Land Use Act Cap L5, Laws of the Federation of Nigeria 2004 is the key legislation that has direct relevance to this project. Relevant Sections of these laws as it may relate to this project with respect to land ownership, property rights, resettlement and compensation are summarized in this section.

State Legislations

The relevant state ministry is the:

- Kano State Ministry of Lands and Survey;
- Kano State Ministry of Environment;
- Kano state ministry of Agriculture
- Kano state ministry of women affairs and social development
- Kano state physical and urban planning

Some of the functions of the State Ministry related to this RAP include taking up responsibility for all forms of land policies within the state. It advises the government on land tenure issues and also manages government land and properties. The Ministry is also tasked with administrative rights to land use decree, urban development, city and town rejuvenation as well as environmental protection.

E S 4.2 International Laws, Procedures and Guidelines

The African Development Bank Group's (AfDB) Integrated Safeguard System (ISS)

In 2013, the African Development Bank Group updated its policy on Involuntary Resettlement and created an Integrated Safeguards System (ISS) to improve clarity, coherence, and consistency as well as overall

operational effectiveness. Resettlement is covered under Operational Safeguard 2 (*Involuntary Resettlement: Land Acquisition, Population Displacement, and Compensation*), which includes comprehensive notions of livelihood and assets, accounting for their social, cultural, and economic dimensions. It also adopts a definition of community and common property that emphasizes the need to maintain social cohesion, community structures, and the social interlinkages that common property provides. It furthermore stresses the importance of improving living conditions for PAPs through a Livelihood Restoration program. OS2 has the following specific objectives:

- avoid involuntary resettlement where feasible, or minimize resettlement impacts where involuntary resettlement is deemed unavoidable after having explored all other alternative project designs.
- ensure that displaced people are meaningfully consulted and given opportunities to participate in the planning and implementation of resettlement programs.
- ensure that displaced people receive significant resettlement assistance under the project, so that their standards of living, income-earning capacity, production levels, and overall means of livelihood are improved beyond pre-project levels.
- mitigate the negative impacts of displacement and resettlement, actively facilitate social development and establish a sustainable economy and society; and
- set up a mechanism for monitoring the performance of involuntary resettlement programs and remedying problems as they arise to safeguard against ill-prepared and poorly implemented resettlement plans.

E S 5.1 Methodology

The preparation of the RAP commenced with review of the HJKYBTF Challawa Gorge Dam Watershed Management Project - ESIA report 2021 and other relevant literature including the harmonized rates for compensation for North western States, legal documents, AfDB safeguard policy, conducting several consultation activities with concerned stakeholders and PAPs in the communities within the project area.

Subsequently, the RAP study was conducted through;

- Consultations with several key stakeholders at the state and local levels (see Chapter 9).
- The reconnaissance visits to the project sites
- The completion of a census of households, private and community assets, and properties affected within the project sites (see Chapter 7);
- The completion of socioeconomic surveys of communities and households whose land will be affected by the project (see Chapter 7).

- Detailed enumeration of affected assets and valuation of same to establish a comprehensive budget for effective RAP implementation (See Chapter 15).
- Presentation of preliminary RAP report to HJKYBTF for comments.

The census and socioeconomic studies were conducted based from 10th April to 23rd April 2023. The first survey was meant to assess the affected households' assets and socioeconomic circumstances and the second survey assessed the community's characteristics and assets that would be affected by the project implementation.

E S 6.1 Census and Socioeconomic of the Project Affected Area

Summary of of the PAPs affected by the project are as follows;

State	Project-defined Component	LGA	Community	Number of PAPs
Kano	Pilot Sub watershed 1	Rogo	Ayaga Kwari	62
			Ayaga Tudu	45
			Ayaga Kusari	3
			Ungwan Datti	41
			Tsohon Rogo	11
			Total	**162**
	Pilot Sub watershed 2	Rogo	Tsara cikin Gari	1
			Ruwan Bago	9
			Tsara	61
			Tsara Kuringa	8
			Tsara Kwalwa	9
			Total	**88**
	Challawa Dam Reservoir Area	Karaye	Ma	26
			Turawa	42
			Yola	10
			Tinkis	26
			Magaji Hajji	87
			Magaji Gari	66
			Kyari	40
			Kwarin Mallam	41
			Gudal	48
			Daura	79
			Chitama	12
		Kiru	Sakarma	105
			Tsohuwar	10
			Total	**592**
			Grand Total	**842**

E S 6.2 Demographics of affected people

Age and Sex Structure: According to projections by the national population commission population of the affected LGAs in 2016 are as follows,

Local Government Area	Projected Population Size (2016)*	Land Area (km^2)	Population density/ km^2
Karaye	200,400	419.9	477.3
Rogo	316,600	801.8	394.8
Kiru	371600	937.1	396,5
Total	888,600	2158.8	411.6

The sex distribution index (number of males per 100 females), depicts an inconsiderable excess of males in the state with 52.6% male and 47.4% female.

Marital Status of Heads of Households: The survey data showed that 35% of respondents in the project area are married, 21% are children of non-marriageable age, 43.8% are single, 0.1% are separated and 0.1% are widowed.

Household Sizes: The household size distribution from the survey ranged from a minimum of one person to a maximum of 22 persons. The average size of households is 10 persons for the project area. within the Study area about 65% had more than one wife. On the extreme household size ends, the project area has 9.3% of the households with one to two members and 38.6% of the households with more than 8 persons

Education and Literacy: UNESCO defines literate person as one who can with understanding both read and write a short simple statement on his(her) everyday life in any language. The survey responses indicated that in the project area, the population of schooling age who never attended school is 34.6%; 32.4% had basic primary school education (FSLC), 27.7% attended Secondary school (SSCE), 3.2% are Undergraduates, 1.5% are Graduates and 0.5% had a Post-Graduate degree. The very low literacy level within the project-affected area is reflected in the significantly low number of existing educational infrastructure support within the area.

Income and Livelihoods of Household: Income analyses of households from all sources show that, farming attracts the highest proportion of the respondents upto 46.4% are farmers, 24.5% are in the private sector, 0.2% are civil servants, 26.8% are students and 3.6% are unemployed. This implies that land take shall be applicable in the RAP budget, this will help mitigate the major impact on agricultural activities in the area. The people are living in the abject poverty line, 42.0% earned less than N10,000 monthly, 23.2% earned between N10,000 -15,000 monthly, 12.5% earned N15,000-20,000 monthly, 15.5% earned N20,000-25,000 monthly, 6.8% earned above N25,000 monthly.

Social Infrastucture: The socioeconomic infrastructures (road system, electric power, and access to water) within the study area are generally in a poor state. Public access to potable water is non-existent and power

is generally not steady. There is a public power supply system from the national grid in the main towns but no power supply to the smaller villages in the project area.

Health Facilities: The health facilities in the area comprise of Primary Health Centres (PHC) and private clinics. The grossly inadequate health facilities are generally inaccessible and the quality of the health care services in the areas is poor, most of the PHCs are dilapidated and abandoned.

E S 6.3 Settlement characteristics

The settlements system consists of permanent structures made from mud, wood, grass, and in a few cases, concrete blocks and temporary Fulani herdsmen huts scattered around. The people of the project area are predominantly of Islam religion (Muslims). A large number of the population is Muslim practicing Islam but there are still a few communities of people who do not follow Islam, they are of the Christian faith. Hausa is the most widely spoken language in the area, however there are vibrant communities of all the ethnicities of Nigeria and some neighboring countries speaking various languages including Igbo, Yoruba, Igala, Idoma, Kanuri, etc among several other Nigerian Languages. The family system is mainly polygamous but it is mostly dictated by the economic resources of the man. The average number of births per woman is eight and each household has about eight to twenty people. Farming is the mainstay of the people with their production of varieties of cash crops throughout the year. Fishing, dyeing, weaving, carving, and blacksmithy are among the traditional industries of the people.

E S 6.4 Vulnerable Groups in the Study Area

Vulnerability is a dynamic situation that focuses upon the probability of one's future deficiency. This view further sees the relationship of poverty, risks and vulnerability as a nexus of inter-related and reinforcing conditions. Poverty and vulnerability are not synonymous, however, even persons who are currently wealthy may be vulnerable if their source of income is not sustainable or if they do not invest their earnings in other profit-yielding ventures. Persons may be productive and able to secure above average earnings, but they are dependent upon access to resources that may become inaccessible later. Consequently, anti-poverty measures alone are not likely to solve vulnerability problems.

Informants and discussants reported that a number of categories of person are likely to be more vulnerable than others. The most vulnerable groups within the study area include the elderly above 70years, women and those that have lost their lands and are now without means of livelihood. A total of 73 vulnerable persons are present in the project area.

E S 6.5 Potential Security Risk

There is already an existing insecurity issues of kidnapping and Banditry, especially within the Pilot sub-watershed 2. For example, during RAP exercises, it was reported that areas of pilot sub-watershed 2 are

areas to watch in terms of kidnapping and other forms of criminality. It should therefore be anticipated that there will be increased demand for police services and other security issues in the project area.

E S 7.1 Impacts of the Challawa watershed Management project

Loss of Economic Trees/Farmlands

During the construction phase, 147 economic trees and 1167.79ha of farmlands within the Project affected areas may be destroyed. Owners of damaged economic trees/farm crops shall be compensated based on fair market values plus the cost of regrowth of those economic trees (replacement cost). Compensation to households will be allocated according to the prescribed rates up to replace these trees. The PIU specialist will help the affected households to plant trees to restore their source of income and livelihoods.

Impact on Structures

Structures affected by the project are mainly residential houses, Fulani settlements, and no community structures. There is a total of 13 structures will be removed from the projected affected areas. The owners of these structures will be compensated to reconstruct their houses. However, this relocation will result in loss of time, income and disruption of the organization for the daily life of affected households. It would need to be mitigated. During the consultations, the PAPs indicated that with adequate cash compensation they would not have problem obtaining an available land to relocate their houses to.

Impact on Gender and Vulnerable Groups

A special focus shall be given to the livelihood improvement of vulnerable groups prior to the construction of the project. NGN 6,830,000.00 (USD 14,688.17) of the compensation cost is reserved for the 73 Vulnerable PAPs including the elderly, low income families, women, or handicap headed households in the RAP implementation budget.

E S 9.1 Stakeholders Consultation

Prior to the conduct of surveys and administration of study questionnaires, HJKYBTF representatives and officials of the RAP team engaged all community stakeholders in several consultations. These public consultations served as avenue to educate them on the purpose of the project and the possible associated impacts and their respective rights.

The traditional rulers, youths, and other stakeholders within the project areas have been identified as veritable partners in this project and adequate consultation has been carried out prior to the implementation of the RAP.

E S 9.2 Concerns, expectations and recommendations expressed by stakeholders

The main concerns, expectations and recommendations made by stakeholders that are related to the population resettlement and compensation process, are summarized below.

Public enlightenment: Provide adequate enlightenment to the public. Specifically, affected communities have requested to be notified of the start date of the project sooner than later, to avoid loss of farm produce.

Fair compensation: Local authorities and communities have emphasized their expectations over adequate and timely compensation of the PAPs.

Compensation for fallow land: It was noted that, based on the requirements of the Land Use Act, there is no compensation for land and only assets on the land will be compensated.

Consultant Safety: Concerns regarding the safety of any consultant or EPC contractors were keenly expressed. The community is quite apprehensive due to the insecurity situation (kidnapping and banditry) especially within the Pilot sub-watershed 2.

E S 10.1 Valuation and Compensation

Valuation of assets and other forms of losses occasioned by the project was conducted by a qualified Estate Surveyors and Valuers to ascertain individuals whose properties or livelihoods will be directly or indirectly affected by the project activities. A general principle adopted in the formulation of the compensation valuation is that lost income and assets will be valued at their full replacement cost such that the project affected populations should experience no net loss. This is in accordance with African Development Bank Operational Safeguards on involuntary resettlement OS 2 as well as the Nigerian Land Use Act

The said site which is the subject of our brief, comprises 23 communities in three LGAs within Kano state. The said project sites, where the economic trees and cash crops were enumerated for compensation covers a gross area of about 1167.79 hectares as described in Appendix 1 is required for repossession purposes.

Cut-Off Date: A comprehensive census of the PAPs and inventory of affected assets and property were conducted. Notice of entry was served on the communities. The notification also included the dates for census of PAPs and property enumeration in the communities. The date of commencement of the enumeration established the cut-off-date, which was 10th April 2023. Therefore, any improvements made by PAPs on their parcel or on structures after the cut-of-date shall not be eligible for compensation.

E S 10.2 Eligibility Criteria

The African Development Bank's Resettlement Policy/Guidelines require compensation for the lost assets and replacement costs to both titled and non-titled landholders and resettlement assistance for lost income and livelihoods. In this project, the absence of formal titles will not constitute a barrier to resettlement

assistance and rehabilitation. Furthermore, the principles adopted herein contain special measures and assistance for vulnerable affected persons, such as the elderly, physically challenged persons, and the poor.

E S 10.3 Value of Land

The Land Use Act does not provide for compensation for land, only for assets and improvements. However, AfDB OS2 provides for land replacement, asset replacement as well as restoration of livelihoods. Therefore, there is no justification to make presentation on the value for lands which the PAPs currently occupy under the laws of Nigeria.

E S 10.4 Entitlement Matrix for Resettlement Activities

This provides a framework for entitlement for each category of impacts of the project. To determine the eligible person for compensation the Land Use Act and the criteria set by the AfDB contained in OS2 of the AfDB Operational Manual were both considered, and the more stringent applied. The principles adopted forms the basis for establishing eligibility and makes for the provision for all types of losses (land, structures, business / employment, and work day wages). All affected assets shall be compensated at reasonably negotiated replacement costs, considering that the all affected assets are within the project sites.

E S 10.5 Basis for Valuation of Losses and budgets

Valuation of assets to be affected by the implementation of the project was conducted using a general principle adopted in the formulation of the compensation valuation which follows the African Development Bank's Policy that lost income and asset will be valued at their full replacement cost such that the PAPs shall experience no net loss. It is noteworthy that consultation with the project communities and the census showed that the affected communities accept the project as a means for development and control of erosion menace.

E S 10.6 Compensation for Trees

Some of the households in the project area have economic trees. These trees will have to be cut and cannot be replanted in the area of the line. This will be a permanent loss over the years. Evaluation of the number of trees for each family has been done.

E S 10.7 Access Roads and Workers Camps

The allowance required for workers to access roads to account for the damages or temporary impacts on land for which the owners must be compensated, shall be included in the EPC contract.

E S 11.1 Income and Livelihood Restoration Strategies

The HJKYBTF is encouraged to use the guidelines below and involve the affected communities, local leaders, NGOs and other stakeholders to gather opinions in order to assess livelihood restoration procedures.

- **The African Bank operational safeguards (AfDB)'s OS2 paragraph (6c), states the following:**

Displaced persons shall be offered support after displacement, for a transition period, based on a reasonable estimate of the time likely to be needed to restore their livelihood and standards of living; and provided with development assistance, such as land preparation, credit facilities, training, in addition to the compensation they receive.''

- **AfDB OS2, paragraph (2c)**

Displaced individuals be given assistance for their efforts to improve their living standards or to at least restore them to the highest standard between pre-displacement or standards prevailing prior to the beginning of the project implementation.

E S 11.2 Income Restoration and Improvement

Different restoration packages will be required for each of the various categories of PAPs and will depend on the type and magnitude of loss suffered, the vulnerability level of the PAPs' household, the indicated preferences associated to their family characteristics and other relevant circumstances. NGN 143,739,813.54 (USD 309,117.88) of the compensation cost has been budgeted for Livelihood Restoration Program of the RAP implementation.

E S 11.3 Land Base

Further investigations paired with experience on similar projects indicate that in most cases it would be difficult and cumbersome for the HJKYBTF to find and propose replacement land for different reasons (risk of speculation, administrative burden, PAP's lack of trust, etc.). It is thus preferable to pay cash compensation to the PAPs to provide them with an opportunity to purchase new land and condition it themselves and continue with their livelihood.

E S 11.4 Trees

Natural and planted trees within the project sites will be destroyed during the construction. Compensation to households will be allocated according to the prescribed rates up to replace these trees. The PIU specialist will help the affected households to plant trees to restore their source of income and livelihoods.

E S 11.5 Structures

In a limited number of cases, houses and other structures that are located in the project sites will have to be displaced. In that case and during the survey campaign, the PAPs indicated that with adequate cash compensation they would not have problem obtaining an available land to relocate their houses to.

E S 11.6 Vulnerable Groups

A special focus shall be given to the livelihood improvement of vulnerable groups prior to the construction of the project. NGN 6,830,000.00 (USD 14,688.17) of the compensation cost is reserved for 73 Vulnerable PAPs including the elderly, low income families, women, or handicap headed households in the RAP implementation budget.

E S 11.7 Employment and other Benefits

Priority shall be given to all able-bodied members of resettled households during the labour recruitment process. This applies to the following employment and contract opportunities: clearing of the project areas, porterage for movement of construction materials to sites, construction of access roads and construction camps, reconstruction of community buildings and houses, provision of services and goods to the workers; administration of the compensation program, monitoring activities, etc. Furthermore, all the affected households and communities shall be given all the wood that is cut on their parcel for their own use or sale. The materials salvaged from the affected structures shall also be left to the affected households and communities.

E S 11.8 Social Development Projects for the Project Affected Communities

The project will have many impacts on land use and many households and the positive impacts of the communities are limited to jobs during construction. It is therefore recommended that HJKYBTF as part of its CSR dedicates some funds to general development of the project affected communities, with communities taking the lead in determining which project they wish to prioritize and implement as well as how the project should be implemented. It is proposed that NGN 150,000,000.00 (USD 322,580.65) be added to the cost of the project to finance the CSR.

E S 12 Institutional Arrangements For RAP Implementation

E S 12.1 Actors involved and organizational structure

This section highlights relevant institutions through which the planning and implementation of the RAP for the project will be conducted. A number of institutions were identified and consulted and will be involved in the overall implementation of this RAP.

E S 12.2 Procedures and responsibilities

The responsibilities and roles of each of the institutions are discussed in chapter 12 of this report. However, in addition to the described roles, we recommend the PIU to establishment of Local Resettlement Committee (LRC) and the hiring of RAP Implementation Consultant (RIC) who shall be the RAP consultant.

E S 12.3 Institutional arrangement

The responsibilities for the implementation and monitoring of the RAP are shared between multiple stakeholders, including the funding agencies, competent ministries, departmental authorities and HJKYBTF.

In order to encourage the coordination of decisions as well as application of the various measures in an appropriate way, HJKYBTF shall engaged the services of a RAP Implementation Consultant (RIC). Furthermore, as discussed, an LRC and GRC shall be put in place and a witness NGO shall be engaged to participate in the process.

E S 13.1 Monitoring, Review And Evaluation

Monitoring and Evaluation (M&E) procedures establish the effectiveness of all land and asset acquisition and resettlement activities, in addition to the measures designed to mitigate adverse social impacts. The procedures include internal track keeping efforts as well as independent external monitoring.

HJKYBTF through the RIC is responsible for adequate M&E of the activities set forth in the resettlement instrument. Monitoring will provide both a warning system for the PIU and HJKYBTF and a channel for the affected persons to make known their needs and their reactions to resettlement execution.

PIU monitoring and evaluation activities and programs shall be adequately funded and staffed. PIU monitoring will be verified by the witness NGO to ensure complete and objective information.

The monitoring and evaluation framework consist of three elements:

- Internal monitoring by PIU+ RIC
- External monitoring undertaken by the Witness NGO; and
- Independent RAP Completion Audit.

Indicators have been established in order to measure RAP activities, results, objectives and goals. There are five categories of indicators for performance monitoring.

The first three (3) Internal Performance Monitoring are: input, output and process indicators.

They are mostly used for medium term measures to ensure that the RAP is relevant, effective and efficient.

The last two Impact monitoring indicators are: outcome and impact indicators. They are mostly used for long term measures for assessing the results.

E S 13.2 Monitoring Indicators

Input Indicators : these cover the human and financial resources that are utilized in the RAP activities.

Output Indicators: include activities and services produced with the inputs, which can be a database of land acquisition, Compensation payments made for the loss of assets etc.

Process Indicators: process indicators represent the change in the quality and quantity of access and coverage of the activities and services.

E S 13.3 Outcome Indicators

The delivery of mitigation activities and measures to compensate physical and economic losses created by the project such as restoration and compensation of agricultural production and overall income levels, changes in PAPs and community attitudes towards the project, use of compensation payments for income generating activities.

E S 13.4 Impact Indicators

Impact indicators define the change in medium and long-term measurable results in behavior and attitudes, living standards, and conditions. Impact indicators aim to assess whether restoration activities of the RAP are effective in maintaining and even improving social and economic conditions of PAPs.

Tracking this data will allow PIU determine the following types of information:

- The extent to which quality of life and livelihood has been restored;
- The success of the resettlement; and
- Whether PAPs have experienced any hardship as a result of the project.

E S 13.5 RAP Completion Audit

A RAP completion audit will be undertaken when previous monitoring has indicated that there is no significant outstanding issue regarding livelihood restoration and resettlement. It is expected that this final audit will be performed 3 years after the resettlement at the latest and will be undertaken by an Accredited Agent with support from PIU and HJKYBTF as required, and will provide final indication that the livelihood restoration is sustainable and no further interventions are required.

E S 13.6 RAP Implementation M & E Reporting

RAP monitoring progress reports will be prepared for the following tasks:

- Internal monitoring;
- External monitoring;
- Compensation; and Completion audit.

The PIU team will have primary responsibility for the implementation of all internal monitoring activities. Designated staff will collect relevant data in a standardized format. PIU will use a device such as a bar chart/Gantt chart or Microsoft Project table to assess and present information on progress of time bound actions.

E S 13.7 Frequency/Audience Of Reporting

Monthly performance monitoring reports will be prepared by the RIC for the PIU, beginning with the commencement of any activities related to resettlement, including income restoration. These reports will summarize information that is collected and compiled in the quarterly narrative status and compensation disbursement reports and highlight key issues that have arisen.

E S 14 Grievance Mechanisms

During implementation of the project activities, it is possible that disputes/disagreements between the HJKYBTF and the PAPs will occur especially in terms of compensation, boundaries, ownership of crops or land, etc. There are great challenges associated with grievance redress especially in a project of this magnitude. The practice of grievance arbitration over resettlement issues in Nigeria is conducted within the framework of the Land Use Act (LUA) of 1978, reviewed under Cap 202, 1990. Two stages have been identified in the grievance procedure: customary mediation and judiciary hearings.

E S 15 RAP Implementation Budget

#	Executive Summary	Number	
	Total Number of claimants	**842**	
1	Number of PAPs for structures	13	
2	Number of PAPs for economics trees	237	
3	Number of PAPs for crops	519	
4	Number of vulnerable PAPs	73	
#	**Cost Elements**	**Amount (NGN)**	**Amount (USD)**
1	Budget for structures	25,938,650.00	55,782.04
2	Budget for Land replacement assistance	1,242,162,412.06	2,671,317.02
3	Budget for cash crops/economic trees	108,311,382.22	232,927.70
4	Loss of Business/Value	54,155,691.11	116,463.85
#	**Total for 1-4**	**1,430,568,135.39**	**3,076,490.61**
5	Allowance for livelihood restoration program (10% of compensation cost)	143,739,813.54	309,117.88
6	Allowance for contingency for crops and structures (5% of compensation cost)	71,869,906.77	154,558.94
7	Support for vulnerable group	6,830,000.00	14,688.17
8	Community social development program (water & sanitation, health, school, agriculture etc.)	150,000,000.00	322,580.65
	Subtotal for 5 - 8	**372,439,720.31**	**800,945.64**
#	**Total (Compensation cost + Allowances)**	**1,803,007,855.70**	**3,877,436.25**
8	Resettlement Implementation Consultant (10% of Compensation cost)	165,300,785.57	355,485.56
#	**Grand Total (compensation cost + Allowances + RIC)**	**1,968,308,641.26**	**4,232,921.81**

CHAPTER 1
INTRODUCTION

1.1 Project Background

The Hadejia-Jama'are Komadugu Yobe Basin Trust Fund, through the Federal Ministry of Water Resources of the Republic of Nigeria, has received a grant from the African Development Bank (AfDB) for the Komadugu-Yobe Integrated Water Management and Development Program.

In 2019, the Federal Government of Nigeria (through financing by the AfDB) concluded the preparation of the Komadugu Yobe Basin Strategic Action Plan (SAP). The SAP, a long-term development strategy covering the period up to 2040, promotes the management and use of the basin water resources for inclusive and sustainable growth. The FGN intends to contribute to water security in the KYB with the KYB SAP providing a clear roadmap for developing and managing the limited available water resources on a sustainable basis. The multi-sector program focuses on infrastructure development, agriculture value chain development, institutional strengthening, and information management aligning with the National Water Resources Master Plan 2013 and the Agriculture Promotion Policy (2016-2020). The SAP comprises the following priority sub-Program/schemes: (i) the Challawa Gorge Dam Watershed Management Program; (ii) the Gashua Irrigation scheme Rehabilitation & Expansion; (iii) Harnessing of Water for Community Fisheries Development on the Jos Plateau and (iv) Jama'are River Regulation Sub-Program

The Komadugu Yobe Basin (KYB) under the Hadejia-Ja'mare RBDA, and the Chad Basin Development Authority (CBDA) cover an area of 84,000 km^2. It is of strategic national and international importance as it supports the livelihood of over 15 million people in six States in Nigeria (Bauchi, Borno, Jigawa, Kano, Plateau, and Yobe). The KYB represents approximately 35% of the Lake Chad Basin and it is important as a transboundary water resource.

At the heart of the Sahel region, the KYB has a semi-arid climate, rainfall variability is high and severe drought is a frequent hazard, leaving communities less able to cope with change. Climate variability and change have manifested themselves through the shrinkage of Lake Chad with enormous socio-economic consequences for the northeastern region of Nigeria and resulted in the deprivation of their livelihood source.

1.2 Objective of the Challawa Watershed Management Project

The main objective of the Challawa Watershed Management project is to extend the longevity of the reservoir by reducing the sediment flux into the reservoir through integrated watershed management. This will help to significantly reduce the siltation problem in the Challawa Reservoir and also contribute to soil conservation within the watershed. It will also address the problem of sedimentation at the Challawa Water Works treatment plant.

1.3 Project Components

The project comprises of 3 components namely:

- Pilot sub-watershed 1 (PSW 1)
- Pilot sub-watershed 2 (PSW 2)
- Challawa Gorge Dam reservoir buffer area

The project components are aimed at erosion and gully control and reducing sediment deposition in the reservoir through watershed management intervention. The proposed watershed management work largely includes the provision of erosion control structures in the upland active watersheds in pilot 1 and pilot 2, and the provision of riparian buffer around the Dam reservoir. The selected PSW 1 and PSW 2, each containing its own main and finger gullies (fig. 1.1 and 1.2) and draining into the main rivers that later join the Challawa River.

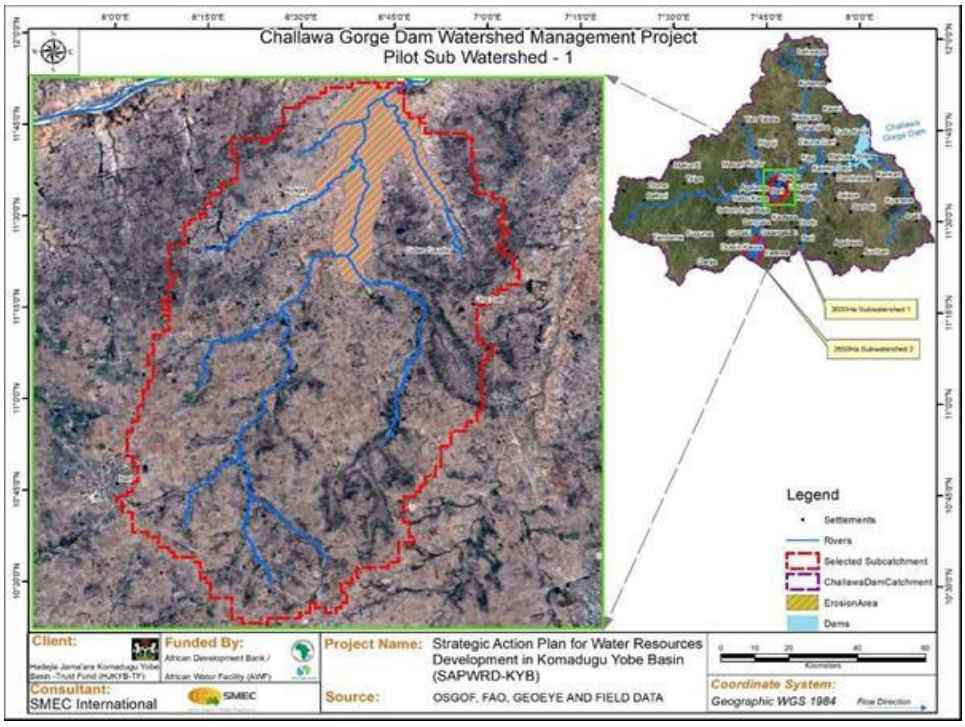


Figure 1.1: Pilot Sub Watershed 1 (PWS-1) showing its gully fingers in blue color
(Source: HJKYBTF Challawa Gorge Dam ESIA Report 2021 Pg. 77)

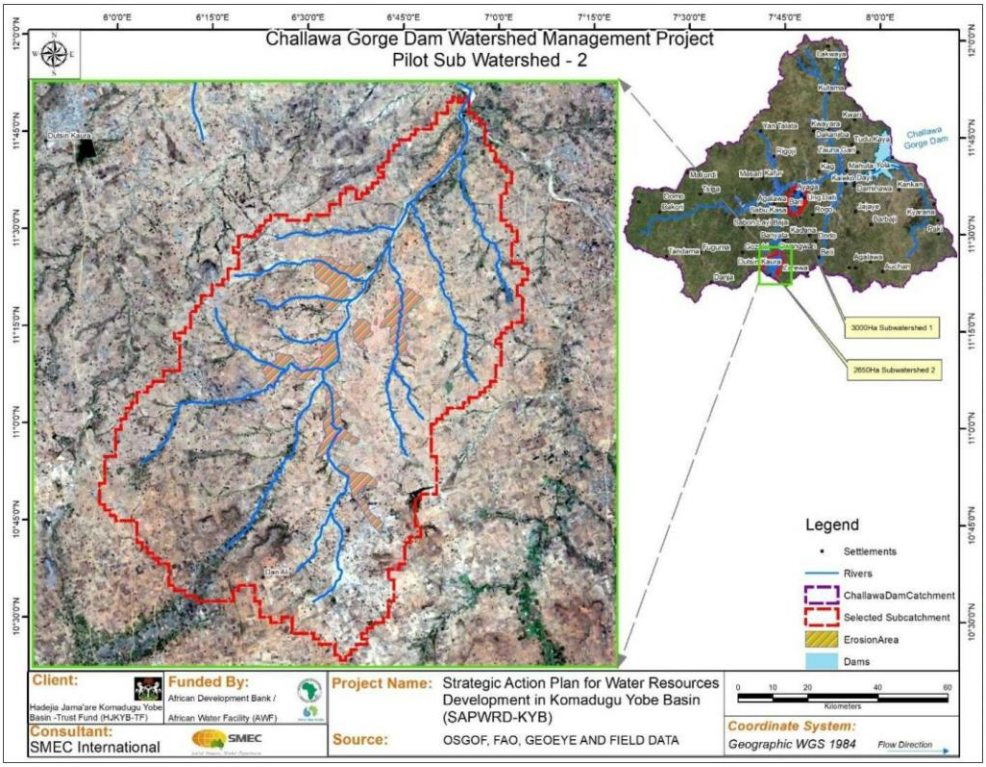


Figure 1.2: Pilot Sub Watershed 2 (PWS-2) showing its gully fingers in blue color (**Source:** HJKYBTF Challawa Gorge Dam ESIA Report 2021 Pg. 77)

The gullies identified in the two sub-watersheds (PSW_1 and PWS_2) and the works to be carried out on each are presented in table 1.1 and the provision of riparian buffer around the Dam reservoir (fig 1.3). The gullies have very steep slopes from the head to the middle reach and tend to have milder slopes near the outlet, forming a relatively stable and wide bed. The gullies are expanding upstream by head cutting and laterally with stream bank erosion. Urgent intervention is needed to stop the gully from developing laterally and endangering the surrounding farmland and deposition of sediments in the downstream reservoir.

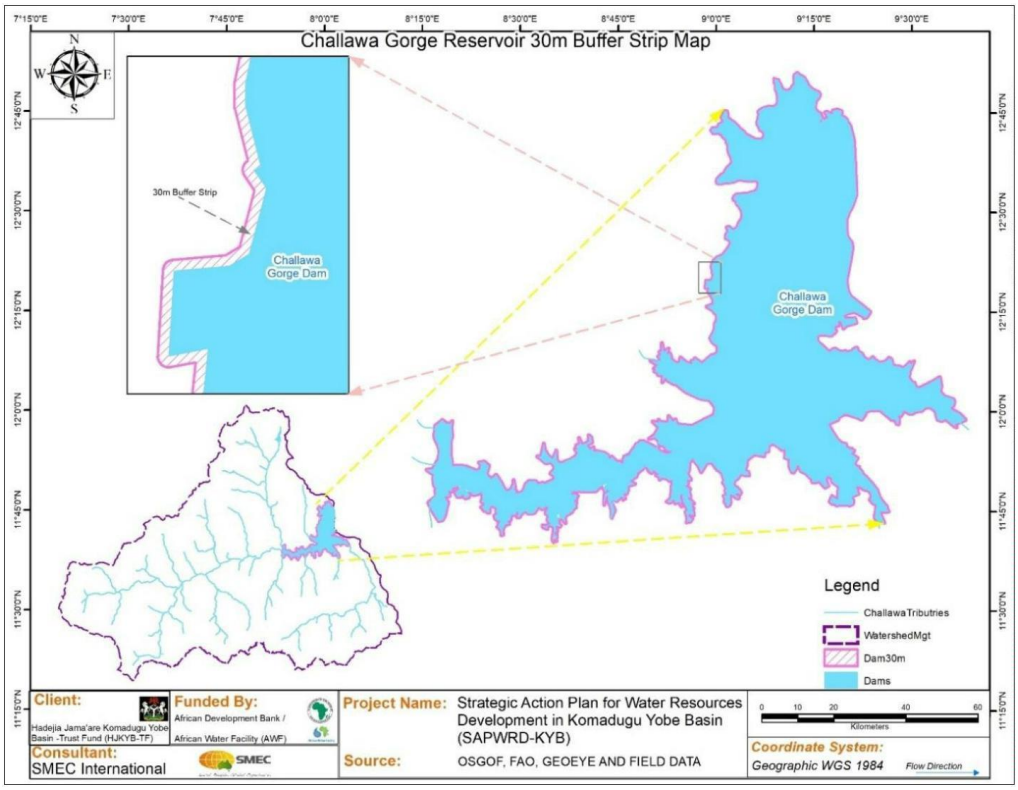


Figure 1.3: Challawa Gorge Dam reservoir area and proposed buffer zone
(**Source:** HJKYBTF Challawa Gorge Dam ESIA Report 2021 Pg. 108)

Table1.1: PWS_1 and PWS_2 Main and Finger Gully Features and proposed works

Description	Length (m)	Proposed Work	Remark
MG	4,581	Bank protection, Check Dams, sediment trap, and buffer	PW_1
LFG-1	1,006	Bank protection and Check Dams	PW_1
LFG-2	2,124	Bank protection and Check Dams	PW_1
LFG-3	787	Bank protection and Check Dams	PW_1
RFG1	2,612	Bank protection	PW_1
MG	8,047	Bank protection, Check Dams, sediment trap, and buffer	PW_2
LFG-1	654	Bank protection	PW_2
LFG-2	760	Bank protection and Check Dams	PW_2
LFG-3	705	Bank protection and Check Dams	PW_2
LFG-4	955	Bank protection and Check Dams	PW_2
LFG-5	937	Bank protection and Check Dams	PW_2
RFG1	902	Bank protection and Check Dams	PW_2
RFG2	1,984	Bank protection	PW_2
RFG3	2,152	Bank protection	PW_2

Source: HJKYBTF Challawa Gorge Dam ESIA Report 2021 Pg. 75.
Note: MG = Main gully; LFG = Left finger gulley; RFG = Right finger gully;

Thus, The construction activities under the watershed management project in specific locations will impact mainly the 'land users' within the selected sites. This could result in the acquisition of land or displacement of families, businesses, or utilization of land and loss of access and property. Hence, the need to develop a RAP. Resettlement Action Plan is required for

(i) any project that results in either the physical or the economic displacement of 200 or more persons

(ii) or any project that is likely to have adverse effects on vulnerable groups.

The resettlement plan identifies the full range of people affected by the project and justifies their displacement after consideration of alternatives that would minimize or avoid displacement. The RAP outlines eligibility criteria for affected parties, establishes rates of compensation for lost assets, and describes levels of assistance for relocation and reconstruction of affected households. As a minimum requirement, a resettlement plan must ensure that the livelihoods of people affected by the project are restored to levels prevailing before the inception of the project while also considering women, elderly and vulnerable persons.

1.4 Objectives of the Resettlement Action Plan for the Challawa Gorge Dam Project

The Challawa Gorge Dam Watershed Management project, one of the subprojects of the Komadugu-Yobe Integrated Water Management Program, shall affect persons living within the project area, thus resulting in the phenomenon of Project Affected Persons (PAPs).

Based on the occurrence of PAPs as a result of the sub-project, the Hadejia-Jama'are Komadugu Yobe Basin Trust Fund procured the services of an individual consultant with the requisite experience to prepare the Resettlement Action Plan (RAP) for the Challawa Gorge Dam Watershed Management Project.

The overriding objective of the Resettlement Action Plan is to:

- assess the potential resettlement impacts of the proposed Challawa Gorge Dam Watershed Management Project works, and prepare a Resettlement Action Plan (RAP) line with the guidance provided by the African Development Bank's Integrated Safeguards Systems (ISS), and its associated Operational Safeguards.
- outline procedures that the client will follow and the actions that it will take to mitigate adverse effects, compensate losses, and provide development benefits to persons and communities affected.
- Carry out a thorough socio-economic analysis of the project influence area (Challawa Gorge Dam area), with an emphasis on the potentially affected people groups (including analysis of vulnerable groups), including baseline data for benchmarking in future livelihood restoration assessment.

All work undertaken and output produced must comply with the African Development Bank safeguard policies and structure provided by RAP while taking into consideration the environmental and social procedures of the Federal Government of Nigeria. This complies with the African Development Bank's Integrated Safeguards Systems, and the country's environmental regulations and approval mechanisms.

CHAPTER 2

PROJECT LOCATION

The Project is located in Kano State Northern Nigeria, close to Karaye town about 120 km southwest of Kano City, within the HJKY Basin. The main Challawa Gorge Dam watershed boundary falls into three States' administrative boundaries namely Kano, Katsina, and Kaduna as shown in Fig. 2.1.

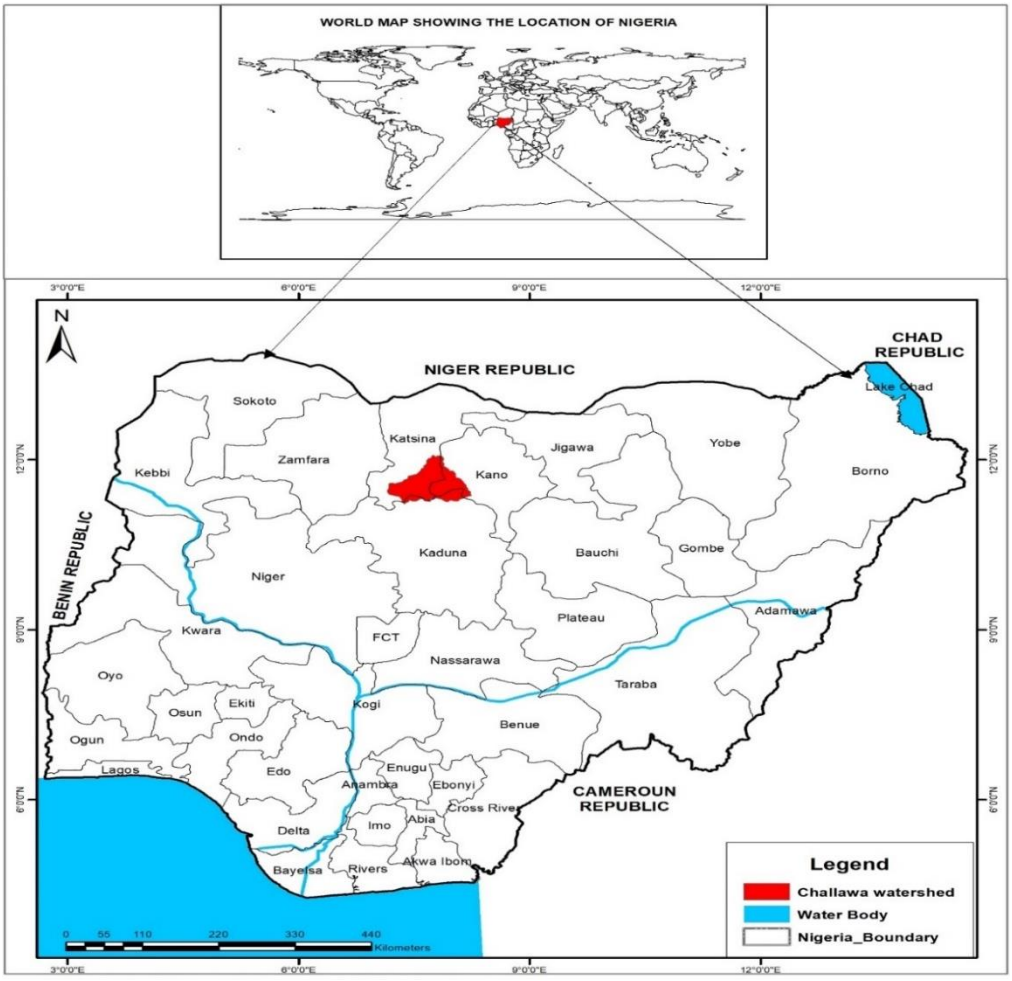


Figure 2.1: Map of Nigeria Showing the Challawa Watershed

The project area is located in the HJKY River Basin with geographic coordinates of 11°41'21.29"N and 8° 0'49.16"E, at the Challawa Gorge Dam (figure 2.2). The watershed area covers about 3,842 km2 with an altitude ranging between 520 to 720masl. It is a major reservoir on the Challawa River, a tributary of the Kano River. The Challawa Dam itself lies astride the land areas of three riparian local government areas of Karaye, Rogo, and Kiru in Kano State. Although the upper reaches of the Challawa Sub-basin watershed extend to parts of Katsina and Kaduna States, the greatest areas of the project likely to be more affected lie

in Kano state, especially areas in Karaye, Kiru, and Rogo Local Government Areas. The Challawa River merges with the kano river south of Kano to form the Hadeja Jamaare River system in Jigawa and Bauchi States.

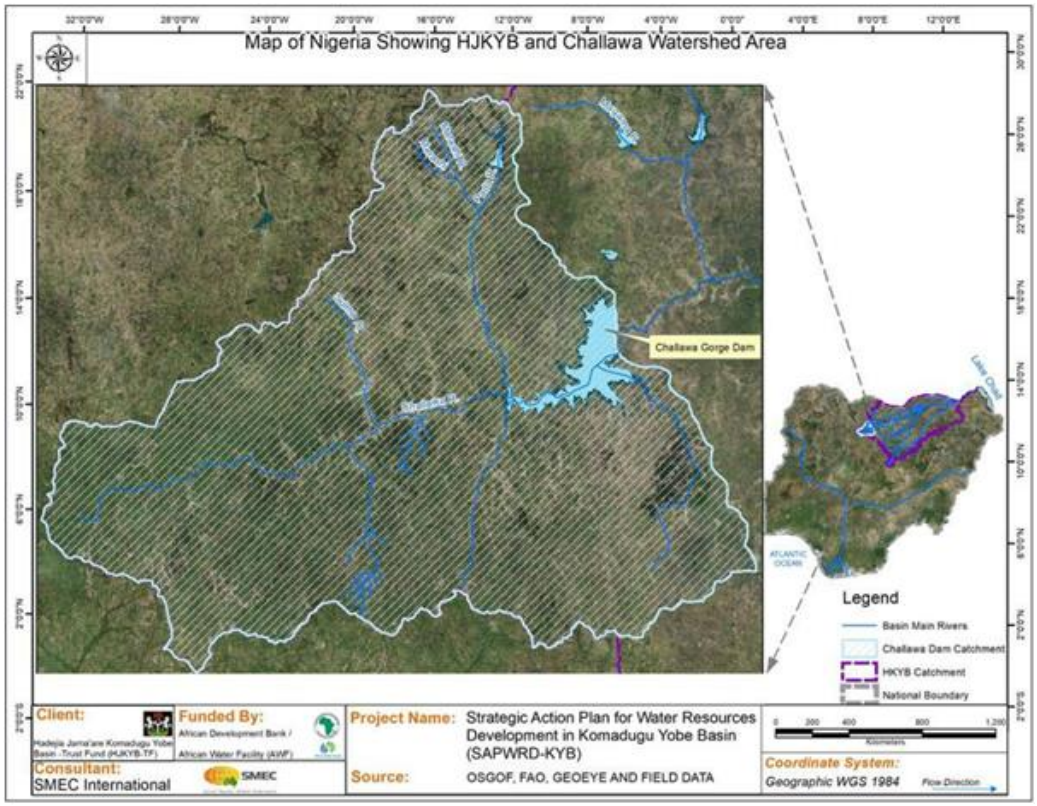


Figure 2.2: Challawa Gorge Dam Watershed Location Map
(**Source:** HJKYBTF Challawa Gorge Dam ESIA Report 2021 Pg. 72)

For proposed watershed management work, the Challawa Gorge Dam watershed was subdivided into 22-Pilot Sub Watershed as shown in Fig 2.3. Two pilot watersheds (Pilot 1 and Pilot 2) were selected after screening the 22-pilot sub-watershed for the first phase (fig 2.4).

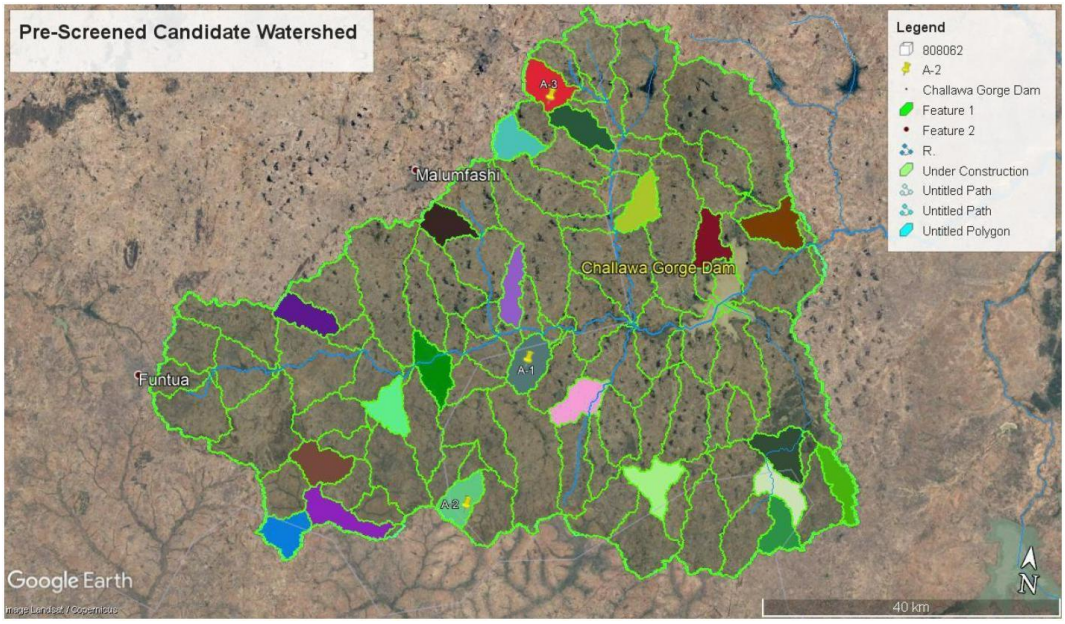


Figure 2.3: Map showing the 22 Pre-Screened Watersheds
(**Source:** HJKYBTF Challawa Gorge Dam ESIA Report 2021 Pg. 78)

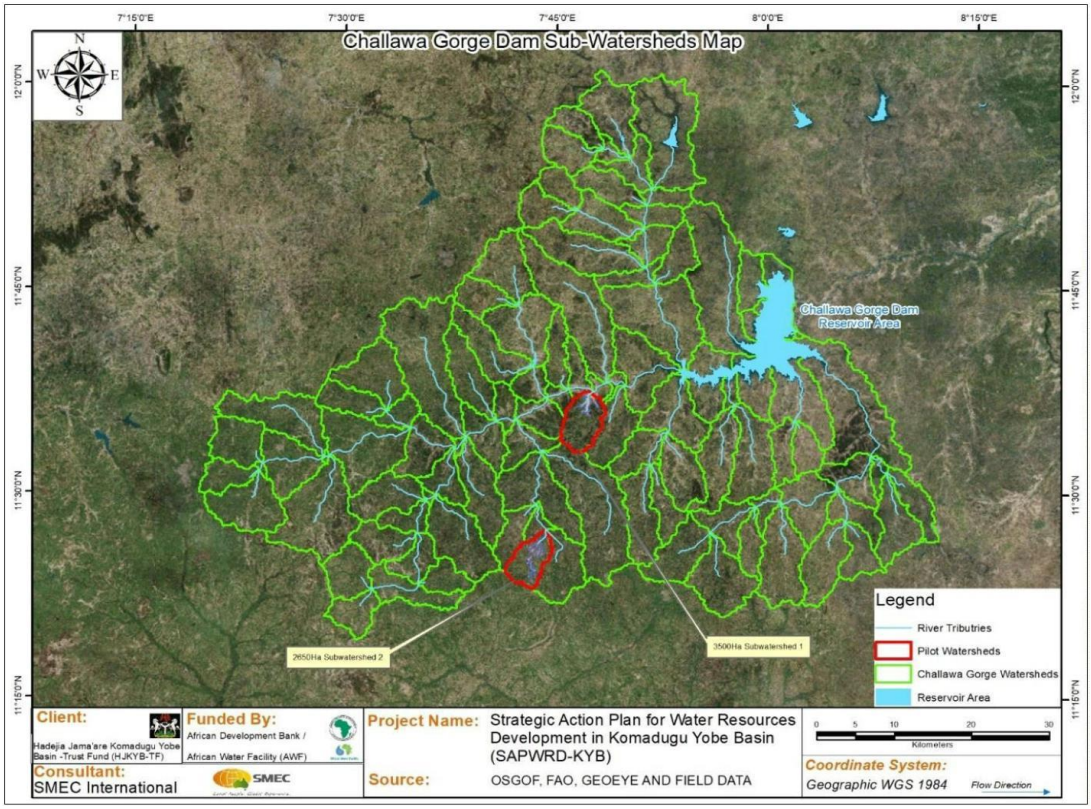


Figure 2.4: Map showing the selected Pilot 1 and Pilot 2 sub-watersheds
(**Source:** HJKYBTF Challawa Gorge Dam ESIA Report 2021 Pg. 76)

2. 1 Pilot Sub Watershed 1 (PWS – 1)

The Pilot sub-watershed 1 management project aims to control erosion and gully and reduce sediment deposition in the Challawa Dam. The proposed pilot 1 sub-watershed (fig 2.5) is made up of its own main and finger gullies and drains into the main rivers that later join the Challawa River.

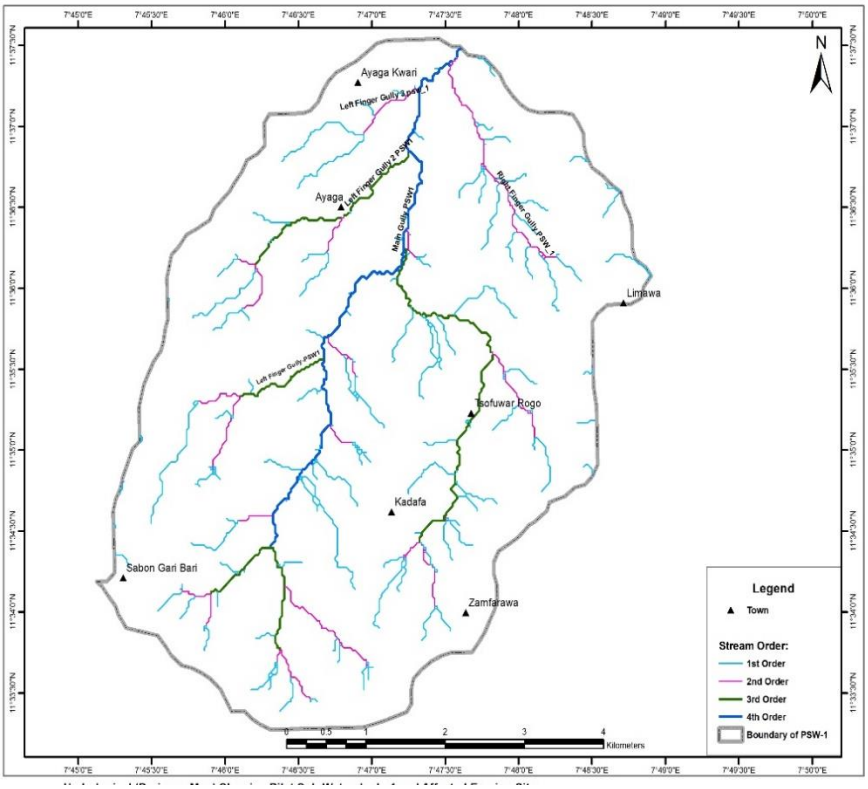


Figure 2.5: Pilot Sub Watershed 1 (PWS-1) showing its gully fingers

The location of Pilot sub-watershed 1 is at the boundary of Challawa Gorge Dam Watershed as outlined in Table 2.1;

Table 2.1: Location of pilot sub-watershed 1

Feature	**Description**
Coordinates	**Outlet:** Latitude 11.623273° and Longitude 7.792381° **Head of the watershed**: Latitude 11.554715° and Longitude 7.770082°
State	Kano state
LGA	Rogo Local Government Area
Emirate	Karaye
Project Affected Communities within Pilot sub-watershed 1	Ayaga Kwari Ayaga Tudu Ayaga Kusari Ungwan Datti

Source: RAP fieldwork 2023

2. 2 Pilot Sub Watershed 2 (PWS – 2)

The Pilot sub-watershed 2 management project is located at the boundary of Challawa Gorge Dam Watershed as outlined in Table 2.2 and Fig 2.6

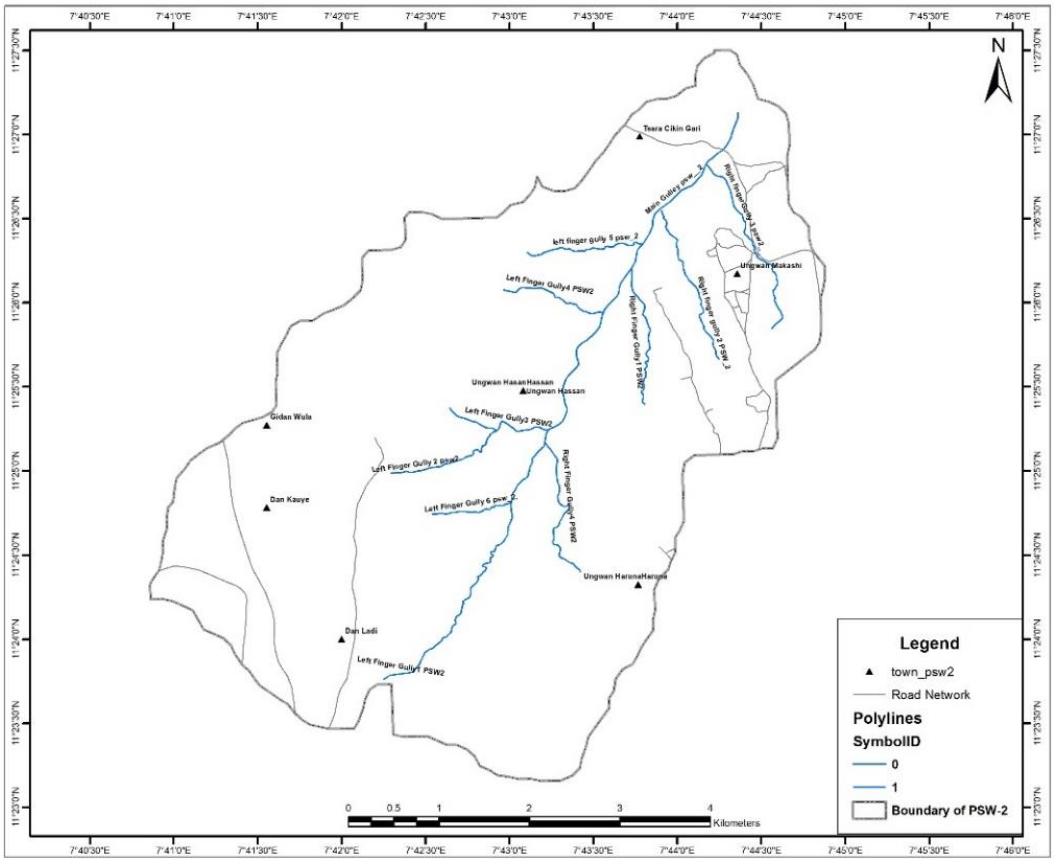


Figure 2.6: Pilot Sub Watershed 2 (PWS-2) showing its gully fingers

Table 2.2: Location of pilot sub-watershed 2

Feature	Description
Coordinates	**Outlet:** Latitude 11.454754° and Longitude 7.739324° **Head of the watershed**: Latitude 11.391271° and Longitude 7.703919°
State	Kano state
LGA	Rogo Local Government Area
Emirate	Karaye
Project Affected Communities within Pilot sub-watershed 2	Ruwan Bago, Tsara Tsara cikin Gari Tsara Kunga Tsara Kuringa Tsara Kwalwa

Source: RAP fieldwork 2023

2. 3 Challawa Dam Reservoir buffer area

In the Challawa Gorge Dam watershed, the provision of riparian buffer around the reservoir and maintenance of existing riparian buffers in their natural condition has been identified as one of the most effective means of protecting Challawa Gorge Dam reservoir sedimentation, including water quality, hydrology, natural communities, and watershed ecosystem function. The Challawa Gorge Dam reservoir (Fig 2.7) is located in Northern Nigeria within HJKY Basin. It is a major reservoir on the Challawa River, a tributary of the Kano River. it lies astride the land areas of three riparian local government areas of Karaye, Rogo, and Kiru in Kano State with geographic coordinates as outlined in Table 2.3.

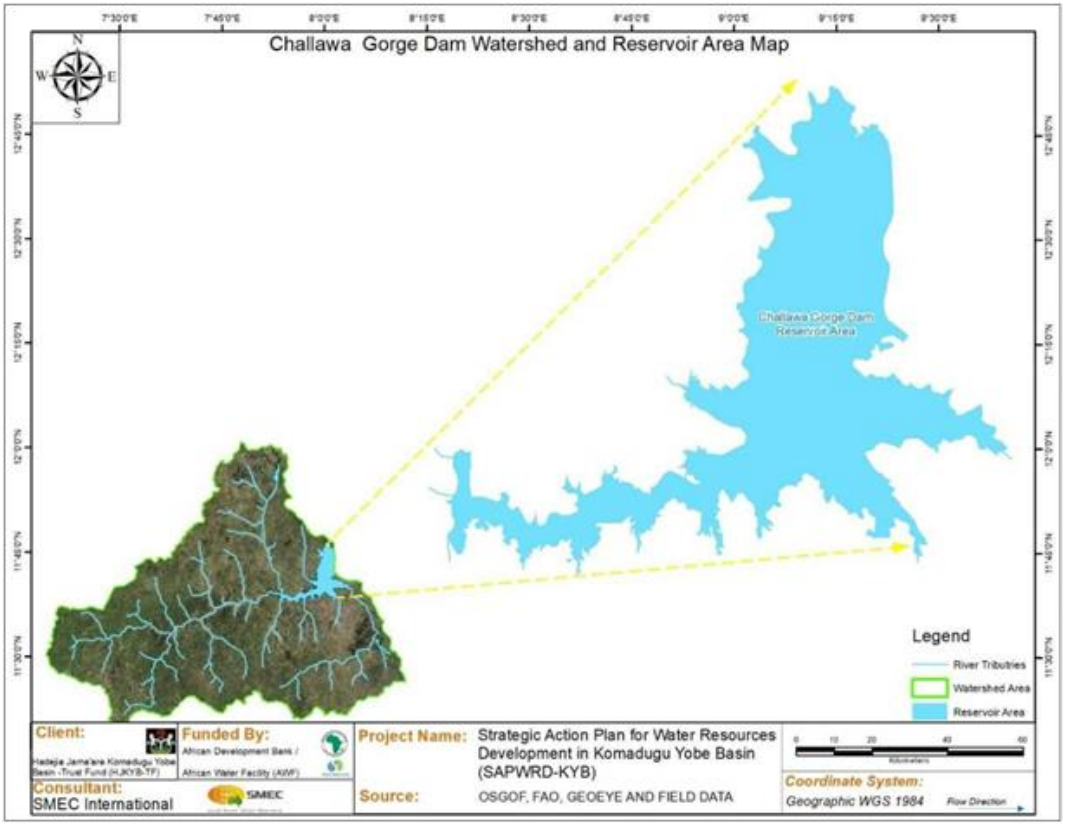


Figure 2.7: Map showing the Challawa Gorge Dam Reservoir
(**Source:** HJKYBTF Challawa Gorge Dam ESIA Report 2021 Pg. 108)

Table 2.3: Location of Challawa Gorge Dam reservoir

Feature	**Description**
Coordinates	**Point 1:** Latitude 11.762569° and Longitude 8.011766°. **Point 2**: Latitude 11.643773° and Longitude 7.954833°. **Point 3**: Latitude 11.671108°and Longitude 8.051564°
State	Kano state
LGA	Kiru and Karaya Local Government Areas
Emirate	Karaye

Feature	Description
PACs around the Challawa Gorge Dam Reservoir	Turawa, Yola, Tinikas, Magaji Haji, Magaji Gari, Ma Village, Kyari, Kwarin Mallam, Gudal, Daura, Chimata, Sakarma

Source: RAP fieldwork 2023

CHAPTER 3
PROJECT DESCRIPTION

3.1 Introduction

The Challawa Watershed management project is aimed at erosion and gully control and reducing sediment deposition in the reservoir through watershed management intervention. The proposed watershed management work largely includes the provision of erosion control structures in the upland active watersheds producing large amounts of sediments. For this purpose, two pilot sub-watersheds were selected and appropriate erosion control measures were designed and presented for the two sites.

The selected Pilot sub-watersheds have been designated as PSW _1 and PSW _2, each containing its own main and finger gullies and draining into the main rivers that later join the Challawa River (fig. 3.1). The gullies identified in the two sub-watersheds (PSW_1 and PWS_2) and the works to be carried out on each are presented in table 3.1. The gullies have very steep slopes from the head to the middle reach and tend to have milder slopes near the outlet, forming a relatively stable and wide bed. The gullies are expanding upstream by head cutting and laterally with stream bank erosion. Urgent intervention is needed to stop the gully from developing laterally and endangering the surrounding farmland and deposition of sediments in the downstream reservoir. The gully is shallow at its tail and is deeper in the middle and head section, up to 30m depth. The width of the gully varies from 60m in shallower areas to 30m in the deeper sections. The shape of the gully is generally a V-shape gully at the head and middle with a side slope ranging from 30^{o} to 40^{o}. In Pilot Sub Watershed 1 gully site, the level of gully erosion is so active that it is progressing aggressively towards the adjacent farm lands encroaching into private properties.

Table 3.1: PWS_1 and PWS_2 Main and Finger Gully Features and proposed works

Description	Length (m)	Proposed Work	Remark
MG	4,581	Bank protection, Check Dams, sediment trap, and buffer	PW_1
LFG-1	1,006	Bank protection and Check Dams	PW_1
LFG-2	2,124	Bank protection and Check Dams	PW_1
LFG-3	787	Bank protection and Check Dams	PW_1
RFG1	2,612	Bank protection	PW_1
MG	8,047	Bank protection, Check Dams, sediment trap, and buffer	PW_2
LFG-1	654	Bank protection	PW_2
LFG-2	760	Bank protection and Check Dams	PW_2
LFG-3	705	Bank protection and Check Dams	PW_2
LFG-4	955	Bank protection and Check Dams	PW_2

Description	Length (m)	Proposed Work	Remark
LFG-5	937	Bank protection and Check Dams	PW_2
RFG1	902	Bank protection and Check Dams	PW_2
RFG2	1,984	Bank protection	PW_2
RFG3	2,152	Bank protection	PW_2

Source: HJKYBTF Challawa Gorge Dam ESIA report 2021 pg 75
Note: MG = Main gully; LFG = Left finger gulley; RFG = Right finger gully;

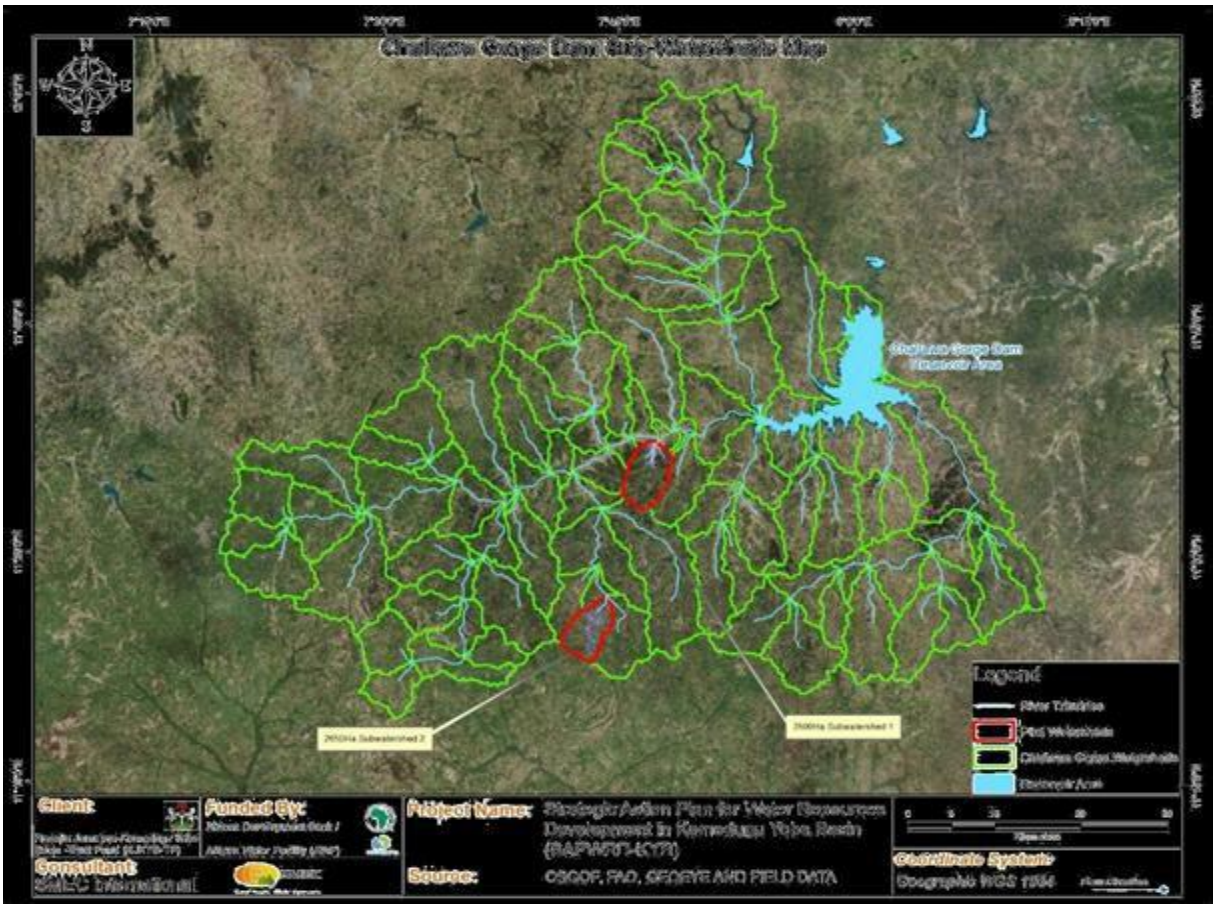


Fig 3.1: Project sites PSW_1 and PSW_2
Source: HJKYBTF Challawa Gorge Dam ESIA report 2021 pg 76

Table 3.2: Location and Physical Characteristics for PSW-1

Physical Feature	Description
Location	The location of Pilot sub-watershed 1 is at the boundary of Challawa Gorge Dam Watershed with a Location coordinate of *368,351.66 m E, 1,285,176.12 m N* at the outlet, and *365,887.78 m E, 1,277,604.20 mN* at the head of the watershed.
Watershed area and Characteristics	The watershed is characterized by discrete watersheds with most representative of the general watershed. The Watershed area for this Pilot Watershed is *3,150 ha* with a regular shape and is appropriate for the density of the stream network.

Physical Feature	Description
Topography and Watershed Slope	The topography of the watershed is rolling in nature with *an average slope of 1.5%* and is generally suitable for agriculture. However, it gets steeper towards gully banks. The streams have bigger slopes in some sections with significant contribution for erosion.
Land use and Soil type	The land use is majorly agricultural land cultivated by individual farmers, which is more representative of the general watershed. The dominant soil is sandy loam soil which has high infiltration and low runoff potential.
Erosion nature and size	The nature of erosion is pronounced in the area which is encroaching toward the agricultural land and eroding stream banks. The extent of erosion is more representative of the general watershed area.

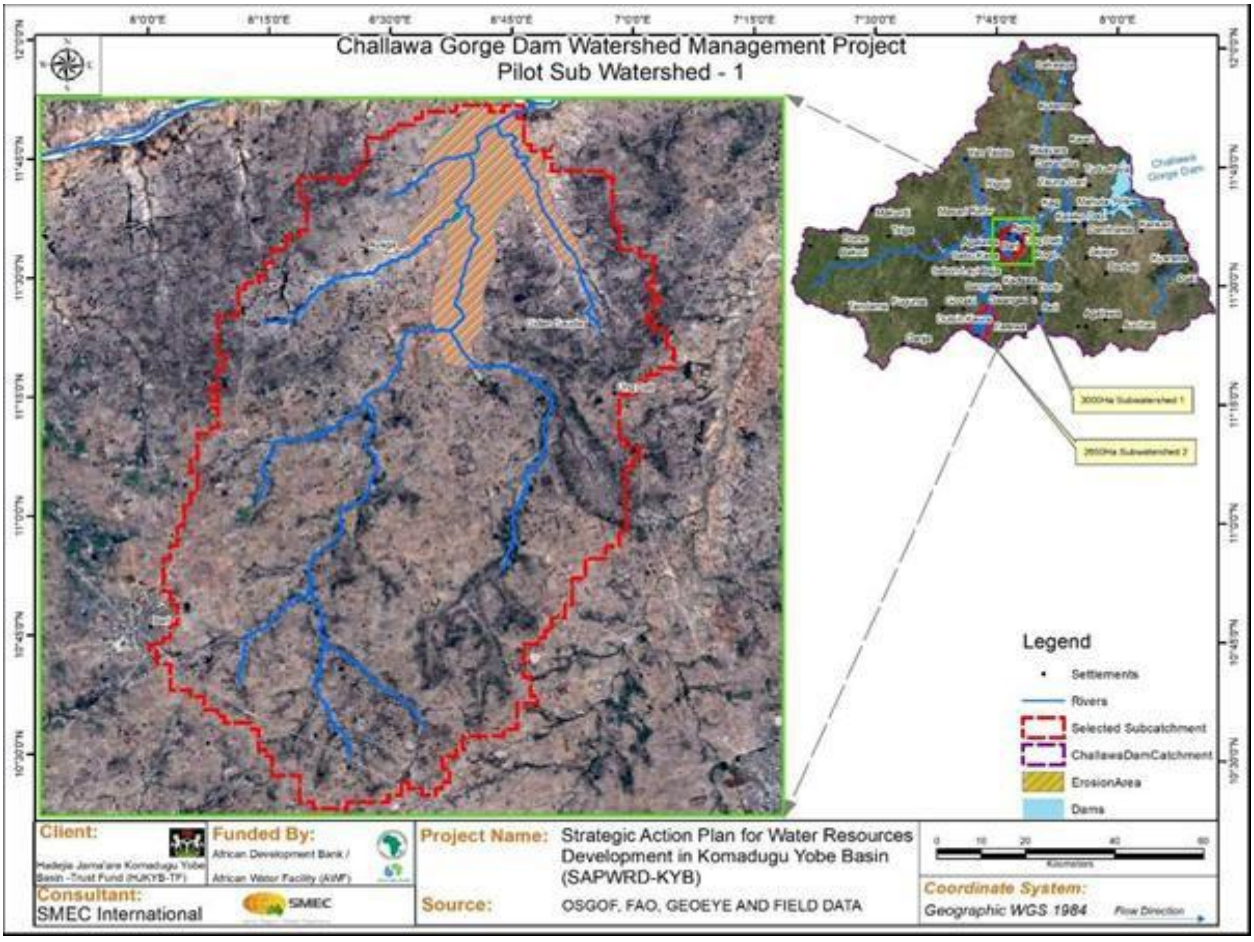
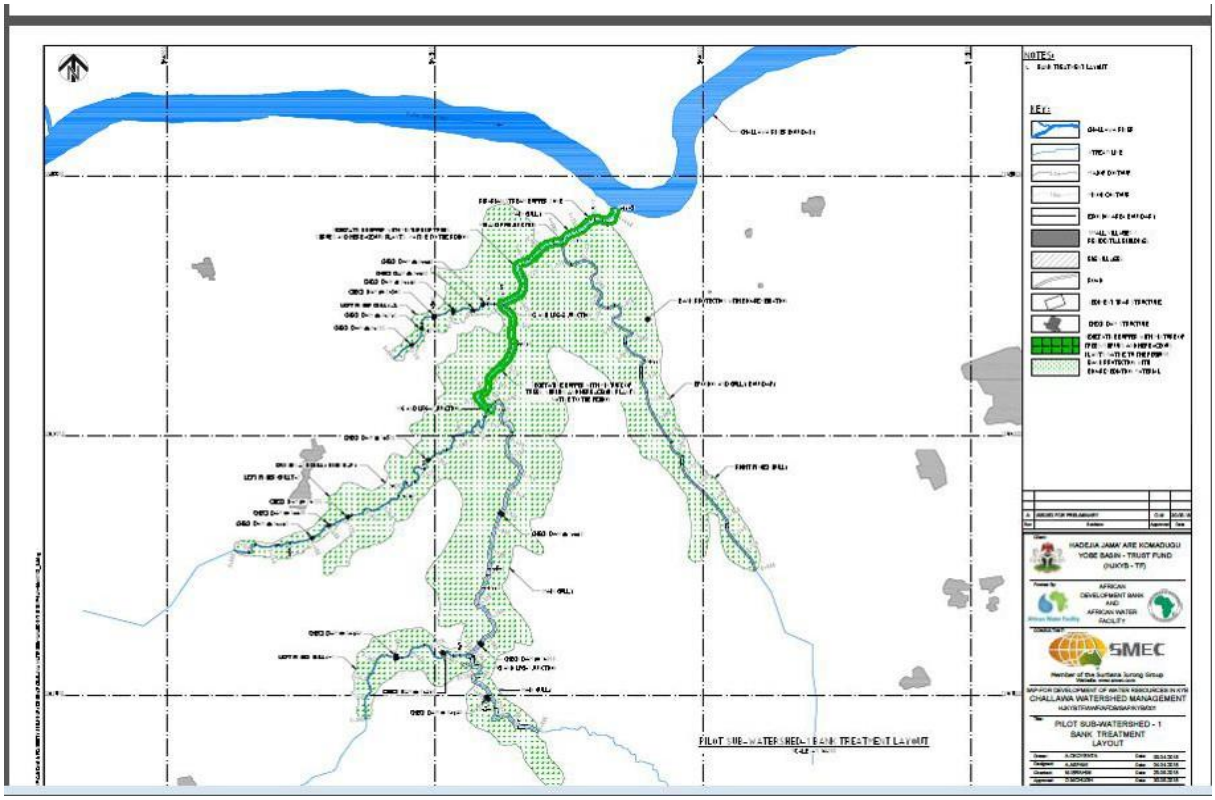


Fig 3.2: Pilot Sub Watershed 1 (PWS-1) showing main erosion sites

Fig 3.3: Challawa Gorge Dam Pilot Sub W atershed_1 General Layout



Source: HJKYBTF Challawa Gorge Dam ESIA Report 2021, pg 78. (Index: Mg = Main Gulley; LFG = Left Finger Gulley; RFG = Right Finger Gulley.)

Table 3.3: Location and Physical Characteristics for PSW-2

Physical Feature	Description
Location	The location of Pilot sub-watershed 2 is at the boundary of Challawa Gorge Dam Watershed with Location coordinates of *362,484.24 m E*, *1,266,563.85 m N* at the outlet, and *358,590.13 m E*, *1,259,559.41 m N* at the head of the watershed.
Watershed area and Characteristics	The watershed is characterized by discrete watersheds with the most representative of the general watershed. The Watershed area for this Pilot Sub Watershed is 2,661 ha with regular shape and appropriate density of stream network.
Topography and Watershed Slope	The topography of the watershed is rolling with average slope of 1.5% and generally suitable for agriculture. The streams have bigger slopes in some sections with significant contributions to erosion.
Land use and Soil type	The land use is majorly agricultural land cultivated by individual farmers, which is more representative of the general watershed. The dominant soil is sandy loam soil which has high infiltration and low runoff potential.

Physical Feature	Description
Erosion nature and size	The nature of erosion is pronounced in pilot sub-watershed areas and currently is encroaching towards adjacent agricultural land and eroding stream banks. The extent and rate of erosion are more representative of the general watershed area.

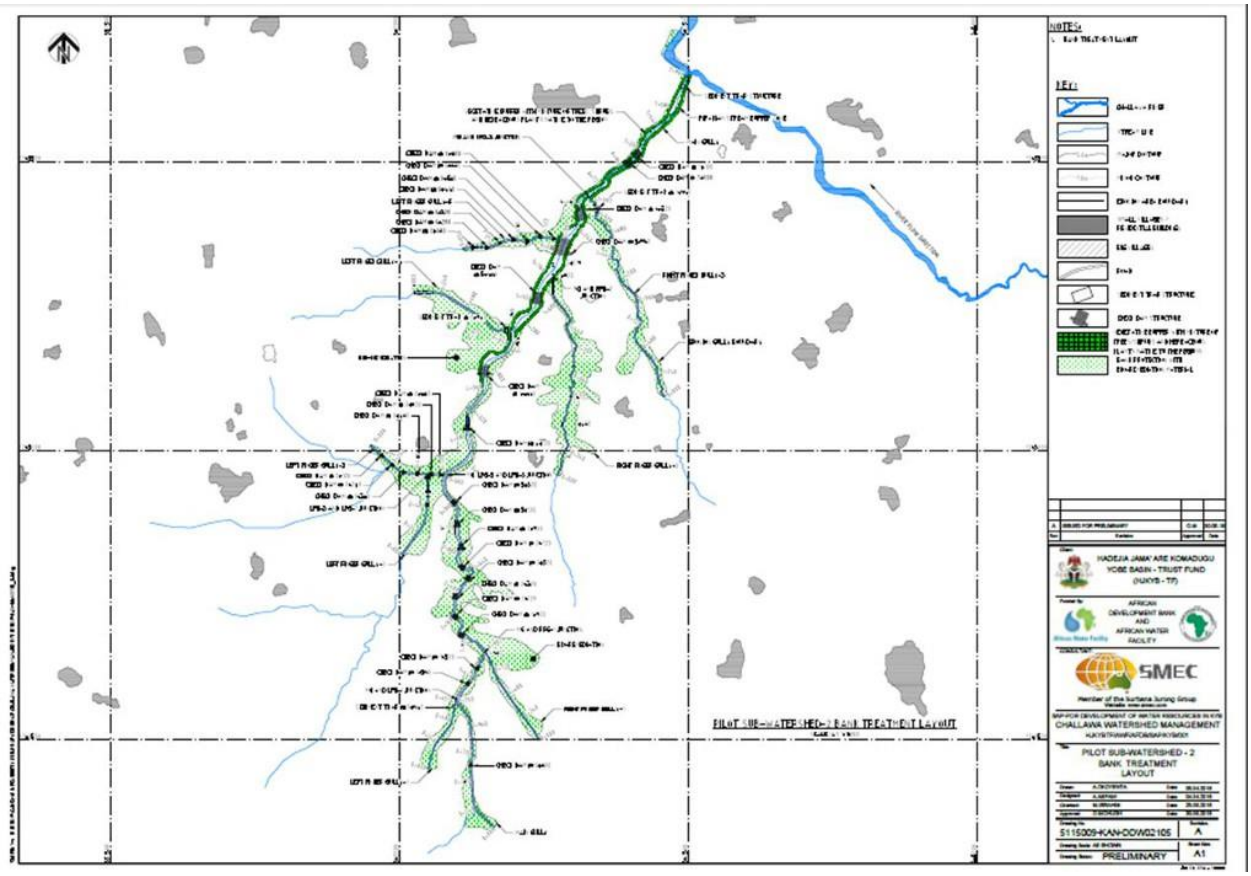


Fig 3.4: General Layout of Pilot Sub-W atershed_2 (PWS_2)

Index: Mg = Main Gulley; LFG = Left Finger Gulley; RFG = Right Finger Gulley.

Considering the nature and extent of erosion and other site-specific conditions within the sub-watersheds, check dams and sediment traps were proposed as the most feasible erosion and sediment control structures within each pilot sub-watershed. This is to be further integrated with bio-engineering measures, as well as agricultural measures. The control measures are to be provided inside the main and finger gullies and on adjacent farmlands and the eroded river banks. To do this, the gulley sections were designed to be provided with check dams to stabilize the flow and promote sediment deposition. The check dams are to serve as grade control and energy dissipation structures along the main and finger gullies. The check dams are designed to be provided at recommended intervals to serve as grade and velocity control. Overall, the Challawa Gorge dam watershed covers an area of 3,842 km^2 but the measures proposed in this study cover two pilot sub-watersheds with an area of 3,150 ha (pilot 1) and 2,661 ha (Pilot 2). Proposed measures for control of sediment flux include:

(ii) Construction of soil erosion control structures for:

- Main gullies
- Finger gullies
- Check dams
- Sediment traps

(ii) Gully bank treatment:

- Bio-remediation through the planting of vetiver grass
- Agricultural erosion control methods

(iii) Buffer zones which include:

- Riparian buffer for Challawa reservoir
- Buffer zones for pilot water shed streams

The proposed measures will be undertaken in a total area of 969 Ha as outlined below:

- Around reservoir (475 Ha)
- In Pilot area_1 (276 Ha)
- In Pilot area_2 (218 Ha)

3.2 Project Component

3.2.1 Gully Bank Erosion Control

The watershed level of the Challaawa Gorge Dam down-cutting is causing the stream bank to become too steep for vegetation to exist, this is encroaching on farmlands and there is little a farmer can do to protect a streamside other than temporary fixes. In addition, the erosion is also due to human activity along the riparian area, like cutting down vegetation for agriculture land and allowing livestock access along long portions of a stream (Plate 3.1). On Plate 3.1, farmers are cultivating their lands to the edge of the river in the project area. The banks of the rivers are not protected with vegetation and farmers cultivate the land to the edge of the river promoting lateral erosion. The components of erosion control structures proposed for the project were based on the severity of the erosion and other technical considerations (SMEC, 2019, p.38). The proposed erosion control measures include Check dams, bioengineering, and agricultural measures.

Plate 3.1: Farmers cultivating land to the edge of the river

3.2.2 Check Dams component

Check dams made of gabions are one of the most practical and effective erosion control measures used for the stabilization of gullies and erosion sites. They are proposed to be provided to stabilize active gullies and steep slopes in Challawa Gorge Dam Pilot Sub-Watershed areas. Check dams are provided to stabilize the gradient of the gully beds in the steep slope reaches of PSW _1 and PSW _2 gullies. The check dams are proposed to promote sediment deposition and later create a stable bed gradient for the gullies. A total of 50 check dams were proposed for the two pilot sub-watersheds. There are 15 proposed gabion check dams for PWS_1 and 35 for PWS_2 as shown in fig 3.5 and fig 3.6 respectively.

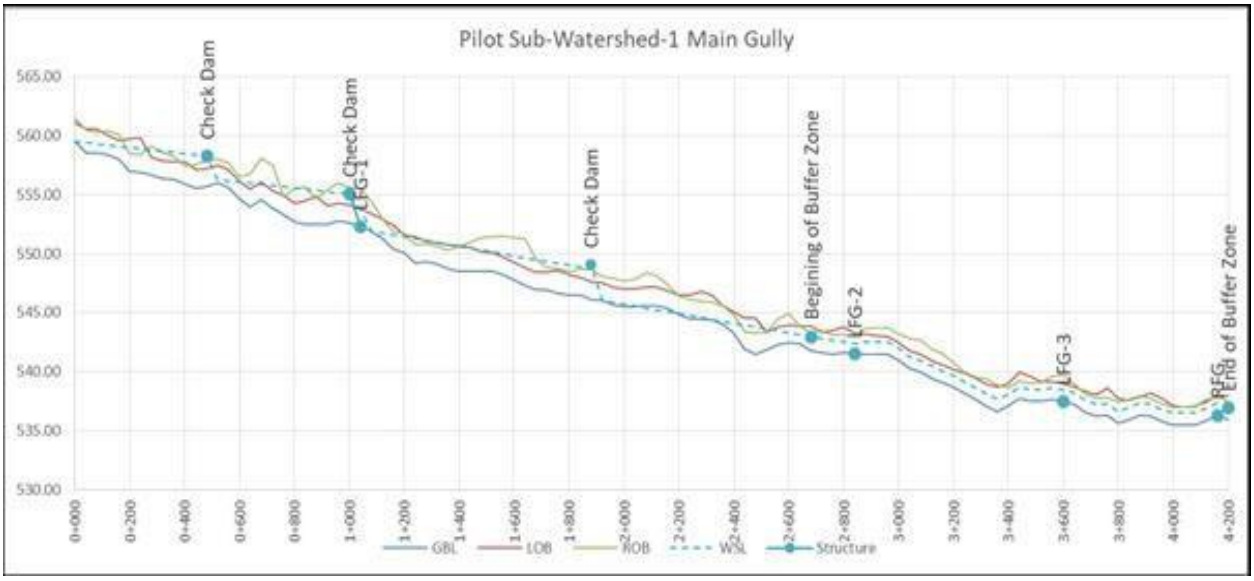


Fig 3.5: Water surface profiles and proposed check Dams along PW S-1 Main Gulley

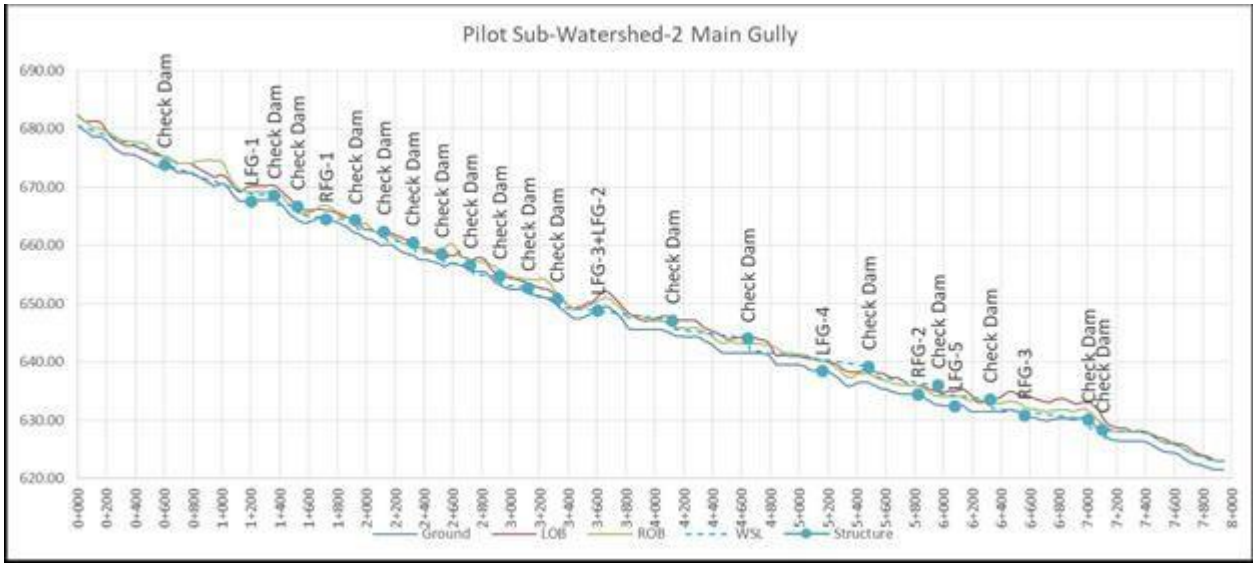


Fig 3.6: Water surface profiles and proposed check Dams along PW S-2 Main Gulley

3.2.3 Stream bank stabilization with Bio-remediation

A. Grading and trimming

The middle reach of the gully has a relatively narrow and very deep exposed gully bank section with a slope varying from 45 to 50 degrees. This slope is not stable for such poorly structured geological formations. Therefore, the slope of gully banks is proposed to be graded with the following recommendations:

- Provision of a graded slope of 1:1.5 with a 4m wide berm at the middle of the bank, the proposed graded bench is horizontal and along the contour, and interceptor drainage is provided every 10m elevation interval to intercept the storm water and evacuate to the collector drain.
- The provision of bio-degradable geo-matt on the treated surface where the gully slopes are steep and exposed the geo-matt will create support for the banks until the bio-remediation is fully developed.

Even with bank stabilizing measures, the gully banks are still vulnerable to further erosion by uncontrolled surface stormwater runoff from the surrounding areas. Hence, protection measures are provided. After careful analysis of various types of bank protection measures, vetiver grass was selected and an explanation was provided in the following sub-section. Engineering construction of erosion control structures inside the stream channels, and providing bio-agricultural measures including forest buffers along river banks and gully-prone locations within the watershed.

B. Bio-remediation (Vetiver grass)

The non-vegetated slopes are subject to frequent and sometimes serious erosion processes, due to storm water runoff. The gully banks are exposed in active reaches of the gully and are vulnerable to surface erosion from direct rainfall. These exposed surfaces shall be covered with vetiver or other fast-growing deep-rooted grass to minimize the formation of rill type of waterways. Bio-remediation measures can be used to protect gully bank walls and prevent erosion. They provide important resistance to erosion forces and more aesthetic and environmentally friendly than other structures. Accordingly, the main bio-remedial measure proposed at Challawa Gorge Dam Pilot Sub watershed site is planting vetiver grass on gully bank slopes of less than 40^0.

C. Measures for growing Vetiver grass

i. Description

The proposed work for gully slope stabilization consists of planting fast-growing Vetiver grass.

ii. Vetiver grass

Vetiver is a perennial and fast-growing grass growing up to 2 Metres high with roots stretching down to 3 Metres deep in the ground. It has a strong dense and vertical root system and grows in extreme climate and environmental conditions. The vetiver grass can grow on deep sandy soil, under humid conditions, and can survive in more than 700 mm of rainfall. The whole plant is a Culm, from leaf to roots. Vetiver displays a high level of tolerance to soil acidity, salinity, and acid sulphate conditions. Vetiver grass grows quickly and becomes established under hostile conditions. The very deep and extensive root system provides structural strength in a relatively short period. The main disadvantage of Vetiver is its intolerance to shaded areas, particularly during its establishment phase. It is also difficult to plant on very steep slopes.

iii Special characteristics of Vetiver grass:

Some special characteristics of vetiver grass include:

- Given its extraordinary root depth and strength, mature Vetiver is extremely resistant to washout from the high-velocity flow.
- The mean tensile strength of Vetiver is about 75 Mpa at 0.7mm-0.8 mm root diameter which is a common size and so its roots have been proven positive for slope reinforcement which means the increase in shear strength of soil increases in shear strength of the soil.
- On steep slopes (30-60 degrees), the Vetiver spacing between rows at 1m vertical interval is very close and therefore the grass moisture uptake would be greater to offset the increase in infiltration and further improve the slope stabilization process. However, to enhance the use of Vetiver on steep slopes in very high rainfall areas, a precautionary measure is to plant Vetiver

hedges on a gradient of about 0.5% as in graded contour terraces to divert the extra water to stable drainage outlets.

iv. Gully Slope Stabilization

The vetiver vegetation is being used as a natural and effective bio-engineering tool to control erosion and stabilize slopes against sheet flow erosion:

- Vetiver roots can penetrate a compacted soil profile providing a good anchor for fill and top soil.
- Vetiver's extensive and thick root system binds the soil which makes lodge it difficult.
- When planted closely together Vetiver plants form dense hedges that reduce flow velocity, spread and divert runoff water and create a very effective filter that controls erosion.
- Acting as a very effective filter, Vetiver hedges reduce the turbidity of surface runoff. Since new roots develop from nodes when buried by trapped sediment, Vetiver continues to rise with new ground level and terraces form at the face of the hedges. The fertile sediment typically contains seeds of local plants which facilitate their re-establishment.

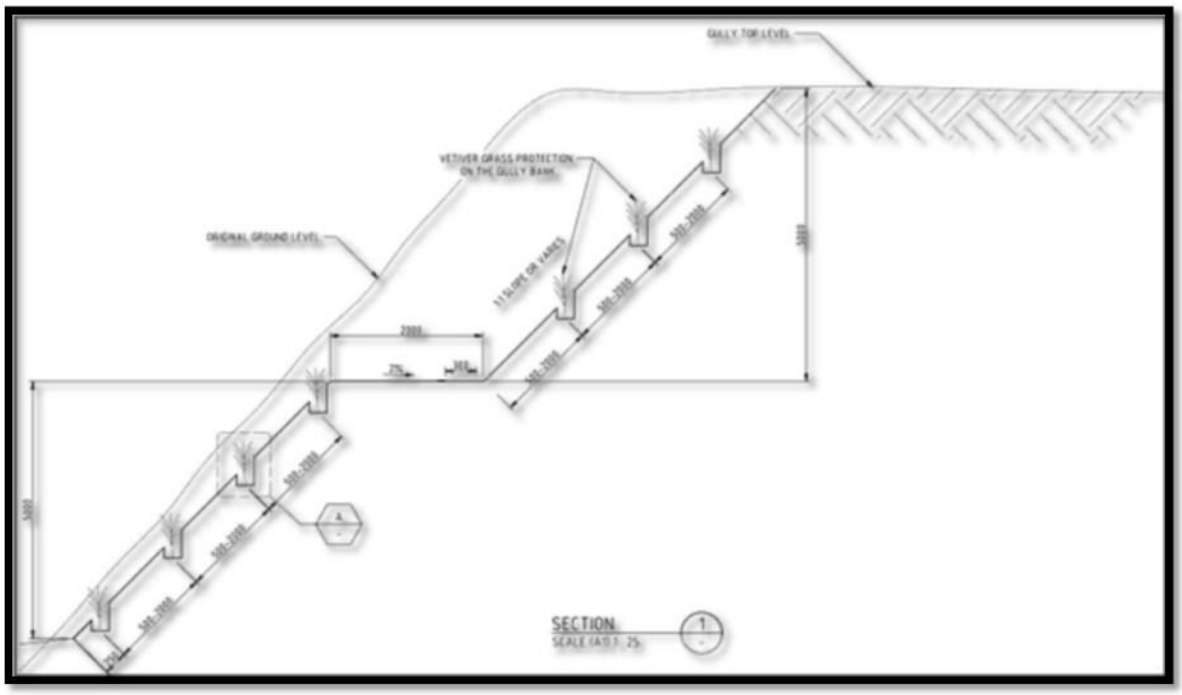


Fig 3.7: Proposed Bio-engineering measures on gully banks with Vetiver grass

Source: HJKYBTF Challawa Gorge Dam ESIA Report 2021, pg 90

Table 3.4: Project Component

S/No	Project Component	Component Description
1	Check Dam Design	- Check dams are one of the most practical and effective erosion control measures used for the stabilization of gullies and erosion sites. - They are also provided to stabilize active gullies and steep slopes in Challawa Gorge Dam Pilot Sub Watershed areas. - Check dams are provided to stabilize the gradient of the gully bed in the steep slope reaches.
2	Sediment Trap	- At the outlet of stable bed gullies, slope of the gully tend to be milder because of significant sand deposition. - The sand deposition is lowering the channel capacity promoting lateral stream bank erosion. - Therefore, once the check dams capture a portion of sediment the remaining will be captured at the sediment trap and will be used for different purposes for the community such as construction activity.
3	Sediment Trap Design	- Gullies with steeper slopes and active gully bed erosion are provided with check dams to stabilize the gully bed and to trap sediments upstream of check dams, while gullies with relatively stable slopes are provided with sediment traps at the outlet. - Theses sediment traps will serve to trap sediments which comes from the agricultural land until the agricultural and bio-remediation erosion control measures will fully develop and reduce sediment.
4	Dewatering Orifice	- Basin dewatering will be done with orifice structure provide at the downstream direction. The discharge orifice should be sized to dewater the live storage zone within a stated time period 24 hours
5	Grading and trimming	- The middle reach of the gully has relatively narrow and deep very exposed gully bank section; the existing slope is from 45 to 50 degrees. This slope is not stable for such poorly structured geological formations. Therefore, the slope of gully banks is proposed to be graded with the following recommendations: - Provision of a graded slope of 1:1.5 with a 4m wide berm at the middle of the bank, the proposed graded bench is horizontal and along the contour, and interceptor drainage is provided every 10m elevation interval to intercept the storm water and evacuate to the collector drain. - Provision of bio-degradable geo-matt on the treated surface where the gully slopes are steep and exposed, the geo-matt will create a support for the banks until the bio-remediation is fully developed.
6	Bio-remediation (Vetiver grass)	- Even with bank stabilizing measures, the gully banks are still vulnerable to further erosion by uncontrolled surface stormwater runoff from the surrounding areas. Hence, protection measures are

S/No	Project Component	Component Description
		to be provided. After careful analysis of various types of bank protection measures, vetiver grass was selected. - The non-vegetated slopes are subject to frequent and sometimes serious erosion processes, due to storm water runoff. - The gully banks are exposed in active reaches of the gully and are vulnerable to surface erosion from direct rainfall. These exposed surfaces shall be covered with vetiver or other fast-growing deep-rooted grass to minimize the formation of rill type of waterways. Bio-remediation measures can be used to protect gully bank walls and prevent erosion. - Vertiver grass provides important resistance to erosion forces and is more aesthetic and environmentally friendly than other structures. - Vetiver grass is to be planted on gully bank slopes of less than 40^0.
7	Gully Slope Stabilization	- The vetiver vegetation is being used as a natural and effective bio-engineering tool to control erosion and stabilize slopes against sheet flow erosion; this is because: - Vetiver roots can penetrate a compacted soil profile providing a good anchor for fill and top soil. - Vetiver's extensive and thick root system binds the soil. - When planted closely together Vetiver plants form dense hedges that reduce flow velocity, spread and divert runoff water and create a very effective filter that controls erosion. - Acting as a very effective filter, vetiver hedges reduce the turbidity of surface runoff. Since new roots develop from nodes when buried by trapped sediment, Vetiver continues to rise with new ground level and terraces form at the face of the hedges. The fertile sediment typically contains seeds of local plants which facilitate their re-establishment
8	Erosion Control measures on Farm: Contouring	This is the practice of orienting field operations such as ploughing and planting along the contour. - Contours are level lines across a slope at a constant elevation. - It reduces surface runoff by trapping water in small depressions and decreases the incidence of rill formation. - Contouring is proposed in steep cultivated lands of Pilot sub-watersheds with slopes exceeding 5%. - Vegetative barriers (such as grassy strips) will be located on the contour to control soil erosion. - Water flowing down the slope picks up the soil. When it reaches a contour barrier it slows down, the soil particles settle out, and more water enters into the soil.
9	Strip Cropping	- For water erosion control the strips may be aligned along the contour and the crops follow a different rotational sequence so that the entire field is never bare.

S/No	Project Component	Component Description
		- Buffer strips may also be used to protect sensitive areas of the field from erosion, or to create areas that will retard runoff and trap sediment.
10	Conservation Tillage	- One of the most important agricultural conservation measures being adopted in many areas of the world in recent years is the reduction in tillage (turning off the soil). - Under conservation tillage, the crop stubble is left standing and the residue is evenly spread across the field as mulch instead of being ploughed under. - Weeds are controlled by cutting and herbicide. - Compared to conventional tillage, conservation tillage can increase soil organic matter, reduce erosion by as much as 90%, enhance infiltration, and reduce moisture loss. - When implemented across a watershed, enhanced infiltration can reduce peak discharge and downstream flood damages.
11	Grassed Waterways	- This is a shallow drainage way in which vegetation protects the channel against erosion, thereby increasing the permissible (non-erosive) velocity compared to bare soil; - Maximum permissible velocities depend on the type of grass, but are generally limited to about 1.2 m/s and slopes not exceeding 5%. - For streams that have a base flow, a stone center is provided. Scour resistance may be enhanced by geo-synthetic reinforcement;
12	Terraces	- Terraces work against gravity, interrupting the tendency of water to flow down- the slope. - It is recommended to use stiff grass hedges in the Challawa Watershed area by planting a dense hedge of stiff grass on the contour, which retards runoff and causes water to pond and deposit sediment on the uphill side of the hedge. - Because it is living, the grass hedge will become stronger with time and can grow as sediment collects and the terrace height increases. - Deposited sediment fills in low spots, runoff tends to become more evenly dispersed and less erosive with time, and the hedge tends to naturally build terraces that follow the contour.
13	Riparian buffers	In the Challawa Gorge Dam watershed, the provision of riparian buffer around the reservoir and maintenance of existing riparian buffers in their natural condition has been identified as one of the most effective means of protecting Challawa Gorge Dam reservoir sedimentation, including water quality, hydrology, natural communities, and watershed ecosystem function. *The objective of the buffer strips* - Reduce erosion runoff of sediment, nutrients and other potential

S/No	Project Component	Component Description
		pollutants - Remove pollutants from water runoff - The objectives of the proposed buffer strip are mainly to: - Intercept sediments remove nutrients and other non-point source pollutants from surface runoff and also serve to prevent erosion of soil through soil stabilization. - Attenuate runoff. Maintenance of riparian vegetation or stream buffer strips and reduction of erosion lowers the potential for substance movement by surface runoff, thereby reducing the potential for water quality degradation. - Enhance the landscape diversity, providing visual appeal, and also serve to conserve and/or supplement open space. - Reservoir buffers are recommended in different widths around the reservoir as per the required purpose. To design and maintain an effective buffer it is important to assess the physical condition of the reservoir corridor. However, for this preliminary design a reservoir buffer width of 30m is recommended, as per literature, is proposed.
14	Stream Buffer Strip Design	- The spatial placement of buffer strips within a watershed can have profound effects on water quality. - Riparian buffers in headwater streams (i.e., those adjacent to first-, second-, and third-order systems) have much greater influences on overall water quality within a watershed than those buffers occurring in downstream reaches; - Downstream buffers have proportionally less impact on polluted water already in the. On the other hand, buffer strips on the downstream rich of the river will have a significant impact on stream bank erosion. *Location within Watersheds* - The location of the buffer strip depends on its objective and purpose. The main purpose of stream buffer strips in this Project is for stream banks stabilisation. This will focus on the reach of the stream where bank erosion is active; - Therefore, buffer strips are provided at downstream reaches of gullies.

Source: HJKYBTF Challawa Gorge Dam ESIA Report Pg 95

3.2.4 Erosion control structures: The Engineering Construction Component of the Project

Structural (engineering) measures to control gully formation and check channel and reservoir siltation

are to be constructed inside the gullies while bio-remediation and agricultural measures are to be provided on eroded gully banks and adjacent farm lands respectively to stabilize soil, and reduce surface flow. Gabion check dams and sediment traps are the main structural measures to be provided at selected sites. The selection was done in an earlier study (SMEC, SAP 2019) after proper identification of erosion processes and hydraulic phenomena, including water surface and velocity profile inside the gully channel.

A comparison was made in the existing and stable slope. The unstable section of gully is designed to be provided with check dams to stabilize flow and promote sediment deposition upstream of c
heck dams. Check dams are designed for 10-year return period design floods and their stability is checked for a 25-year return period. Generally, over 50 Gabion check dams (Plate 3.2), differing in size, are to be provided in Pilot sub-watersheds of the Challawa Gorge Dam. Gullies with relatively stable slopes will be provided with embankment-filled sediment traps at their outlet locations. Theses sediment traps will serve to trap sediments that come from agricultural land until the agricultural and bio-remediation erosion control measures fully develop and reduce sediment. Four sediment traps at the outlets of finger gullies are also to be provided in the two pilot sub-watersheds. Each sediment trap is equipped with a rock riprap (Plate 3.3) overflow spillway and concrete pipe dewatering orifice. The spillway is designed to pass the 25-year return period design flood while the orifice is designed to empty the 10-year design flood volume in 24 hours.

Plate 3.2: Gabion Check Dam to counter erosion

Plate 3.3: River Rock Riprap for Stream Bank Erosion control

Source: *www .riparian+buffer+zone+definition&sxsrf*

3.2.5 Gully Bank Treatment with Bio-Remediation and Agricultural Measures

On eroded banks of gullies and adjacent agricultural lands, bio-remediation and agricultural erosion control measures are to be provided. Gully banks and steep agricultural lands are proposed to be protected with provision of bio engineering (bio remediation) and agricultural erosion control measures respectively. Bio remediation focuses on provision of vetiver grass on eroded gully banks by trimming and grading steep gully banks before planting, while the agricultural measures focus on controlling soil loss from the agricultural lands with the provision different agricultural practices such as terracing and strip cropping measures. The following subsections discuss these two major erosion control measures and their preference in the Challawa Gorge Dam pilot sub-watershed areas. Slopes of gully banks are proposed to be graded as shown in plate 3.4.

Plate 3.4: Vetiver Grass Planting on Riverbank

Source: *www .riparian+buffer+zone+definition&sxsrf*

3.2.6 Riparian Buffer Strip

The other source of sediment for Challawa Gorge Dam Reservoir is from the surrounding adjacent agricultural lands and stream bank erosion in the upland watershed as non-point sources. These non-point sources are to be treated by providing vegetated buffer zones. Buffer zones refer to lands directly adjacent to water bodies such as reservoirs and streams. These areas have a significant impact on controlling non-point source pollution by trapping suspended sediments and stabilizing stream banks. The ability of buffer strips to meet specific objectives is a function of their position within the watershed, the composition and density of vegetation species present, buffer width and length, and slope. Accordingly, in this project, 15m and 30m wide vegetated buffer zones are to be established along the main streams banks of the Watersheds and around the Challawa Reservoir area respectively.

The riparian buffer (fig.3.2) shall consist of an area of trees and other vegetation located in areas adjoining and up gradient from surface water bodies and designed to intercept surface runoff, wastewater, subsurface flow, and deeper groundwater flows from upland sources to remove or buffer the effects of associated nutrients, sediment, organic matter, pesticides, or other pollutants especially from agricultural activities, before entry into surface waters and groundwater recharge areas. The three vegetated riparian buffer zones, shall include a zone of stabilization at the stream edge, a tree and shrub area, and an area of dense grasses. The first zone next to the stream should be 15 feet wide, measured perpendicular to the stream to be comprised of the tree shrub vegetation used in stream stabilization. The second zone consists of an area with a minimum width of 60 feet, measured wide and on the land side of the first zone. It consists of trees, shrubs, and their litter of leaves and branches as an energy source to capture

agricultural chemicals that pollute streams. Based on the recommendation given in the Guidelines and the actual site condition, the nature and extent of bank erosion in the specific site a stream buffer width of 15m on both sides is provided in both Pilot 1 and 2, as shown in Figure 3.8:

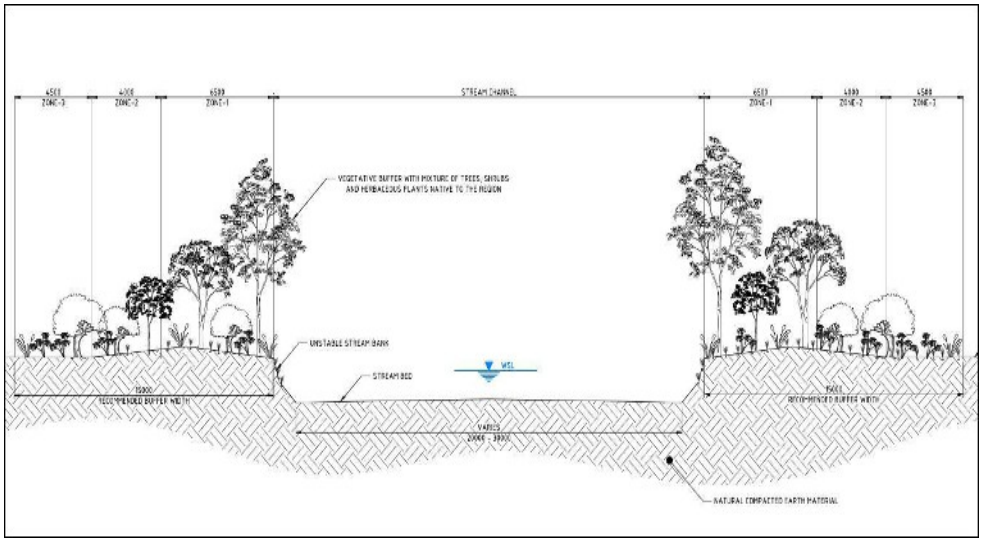


Figure 3.8: Proposed three-zones forest buffer width for Pilot Watersheds 1 and 2

3.3 Project Phases and Activities

The implementation schedule for the proposed challawa gorge dam watershed management project would follow the under-listed duration. It should be noted that some of the phases and activities will run concurrently to save time.

The phases are discussed under the following sub-headings:

- Mobilisation or preconstruction phase,
- Construction phase,
- Operation/Maintenance Phase, and
- Decommissioning phase

3.3.1 Preconstruction Phase

This phase entails mobilizing the labour force, equipment, materials, and acquisition of various permits such as ESIA approval as required by the country laws and AfDB guidelines. Other activities during this phase include a topographical survey, hydrological survey, geotechnical investigation, identification of sources of construction materials, such as rocks for gabions, riprap, sources of vetiver grass, required tree species and seedlings, land for raising trees and vetiver grass nurseries, storage, etc. The preconstruction activities are expected to be achieved within one to two years of project inception. Types, Quantities, and Sources of material requirements during the preconstruction phase of the project are shown in Table 3.5.

Table 3.5: Types, Quantities, and Sources of Materials for Preconstruction Phase

Requirements	Type	Source	Estimated Quantity Required
Raw Materials (inorganic)	Rock boulders	From the nearby existing commercial quarries	64,000m^3
	Gabions	Same as coarse aggregates	50,000 m^3
	Cement	From commercial suppliers	104,000 m^3
	Coarse rocks	From commercial suppliers	40,000 m^3
	Rock Shingles	Local cement depot	78,809 tons
	Iron bars	reinforcements are readily available in local iron and steel stores	
Bio-Engineering	Early Maturing Mango seedlings	Locally and from Agricultural Research institutes in Nigeria	
	Early maturing Avocadoes seedlings	Locally and from Agricultural Research institutes in Nigeria	
	Orange seedlings	Locally and from Agricultural Research institutes in Nigeria	

Source: HJKYBTF Challawa Gorge Dam ESIA Report, 2021 pg 115

3.3.2 Construction Phase

The major construction activities, requirements, and estimated costs are highlighted in Table 3.6. The duration of this phase will be one (1) year.

Table 3.6: Project activities summary of requirements and estimated capital cost[#]

Item	Description	Amount(N)
	A. Earthwork and Excavation	
1.	Clearing of Site	8,512,434.06
2.	Excavate over the site to strip topsoil to a maximum depth of 150mm	48,642,480.35
3.	Excavate any material except rock in cuttings and lined drains	8,711,264.77
4.	Backfill, shape, and compact with approved imported laterite the material behind structure walls.	45,953,754.92
	Sub-total	111,819,934.11
	B. Gabion and Reno mattress works	
1.	Level and compact the bottom of the excavations to placing gabion box.	24,321,240.17
2.	Galvanized gabion box and Reno mattress filled with durable rocks for gabion check dams.	1,089,686.95

Item	Description	Amount(N)
3.	Non-woven Geotextile at the back and bottom of Gabion Check dam and Reno Check dams.	48,041,035.72
4.	400mm Rock Riprap at the Spillway and entrance section of sand trap width D50 200mm.	5,223,209.43
5.	50mm sand filter beneath rock riprap	712,255.83
6.	Concrete grate C15 in Excavations	10,000.00
7.	Grade C30 reinforced concrete to dewatering orifice head wall rate to include formwork	380,000.00
8.	Reinforcement to dewatering orifice head rate to include formwork	180,000.00
	Sub-Total	1,168,766,428
C. Bio-Engineering measures and Buffer-strip		
1.	Placement of sand bags and planting of fast-growing grass (including Mtce for at least 3 months	2,471,799,125.50
2.	Planting of trees, shrubs, and grass along the stream and reservoir buffer.	1,502,640,000.00
3.	Implement agricultural practices such as contour, strip cropping and conservation tillage.	1,125,000,000.00
	Sub-Total	5,099,439,126.00
Grand Total		**6,380,025,488.00**

Source: HJKYBTF Challawa Gorge Dam ESIA report 2021 pg 116

Overall, it is estimated that the project will cost a total of Naira N6,380,025,488 (US$20,918,120). Bio-engineering, agricultural measures, and buffer strips account for close to 80 % (N 5,099,439,126) with the bulk of the cost (N 2,471,799,125.50) going to the placement of sand bags and planting of fast-growing grass such as vetiver, elephant grass, etc. on the slopes. However, this does not include the cost of operation and maintenance.

3.3.3 Operation/Maintenance Phase

The actual usage of the infrastructure is expected to immediately commence after the construction works. The design period is 25 years. However, within the period, there will be routine maintenance of the Dam. Maintaining the trees, shrubs, and grasses, monitoring the gabions, riprap, and sediment traps. Marketing of fruits from the trees, (avocadoes, mangoes, oranges, etc. to raise income. Other activities may include dredging, water supply, routine maintenance of gabions, ripraps, sediment traps, constant protection of planted trees and grasses from unapproved interference, monitoring, and evaluation of project conditions

3.3.4 Decommissioning Phase

The decommissioning phase will be in two stages;

I. Decommissioning after the 25years period of its operation

II. Decommissioning of unwanted structures immediately after construction activities. Activities include proper demobilization and dismantling of unwanted structures and proper restoration of the site. Other activities would include the rehabilitation of service facilities and other structures nearer to the original condition, and the clearance of all sorts of wastes, including used oil, sewage, and solid wastes (plastics, wood, metal, and papers). All wastes shall be deposited at authorized dumpsites and contracts terminated following legal contract agreement after fulfilling all terms and conditions of the contract

3.4 Coverage of RAP

The Challawa Watershed Management project is aimed at erosion and gully control and reducing sediment deposition in the reservoir through watershed management intervention. The proposed watershed management work largely includes the provision of erosion control structures in the upland active watersheds producing large amounts of sediments. For this purpose, two pilot sub-watersheds were selected and the selected Pilot sub-watersheds have been designated as pilot sub watershed_1 (Figure 3.9) and Pilot sub watershed_2 (Figure 3.10) each containing its own main and finger gullies.

Thus, the RAP was carried out within the gully fingers as identified in the two sub-watersheds (PSW_1 and PWS_2) with a Right of Way of 25 m on both sides to accommodate the vegetation planning within the buffer zones of the Gulley's fingers and 30m around the Challawa dam reservoir area (figure 3.11).

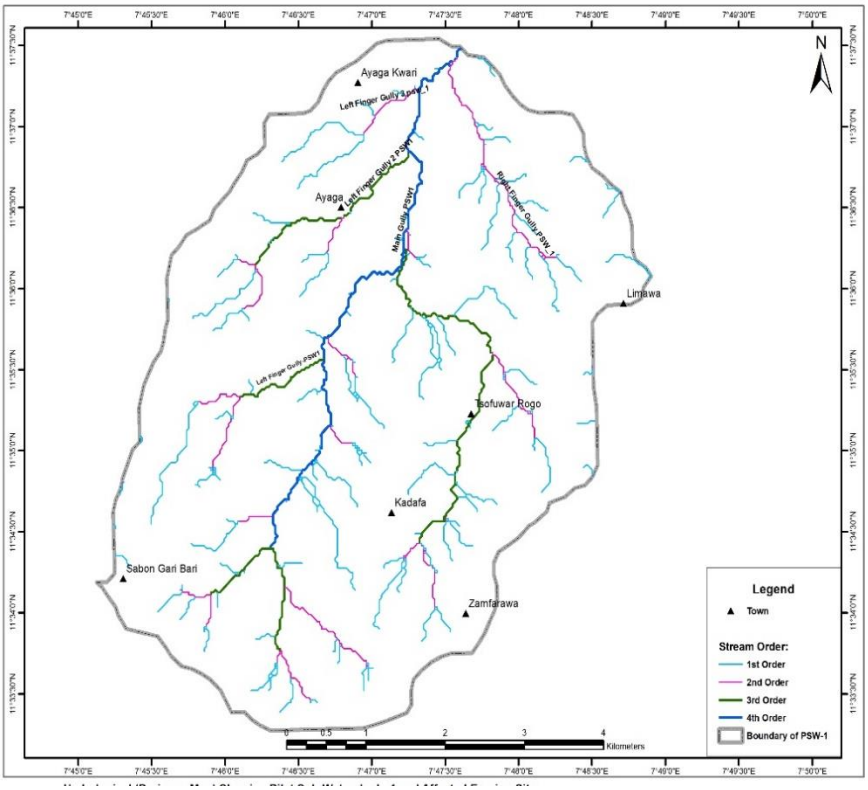


Figure 3.9: Pilot sub-watershed_1 showing its gully fingers

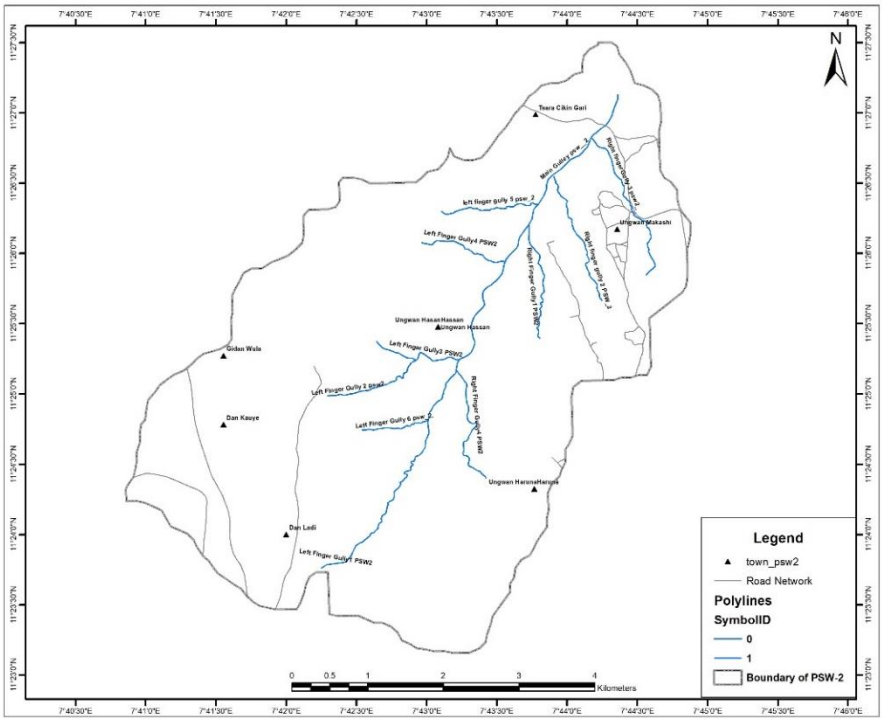


Figure 3.10: Pilot sub-watershed_1 showing its gully fingers

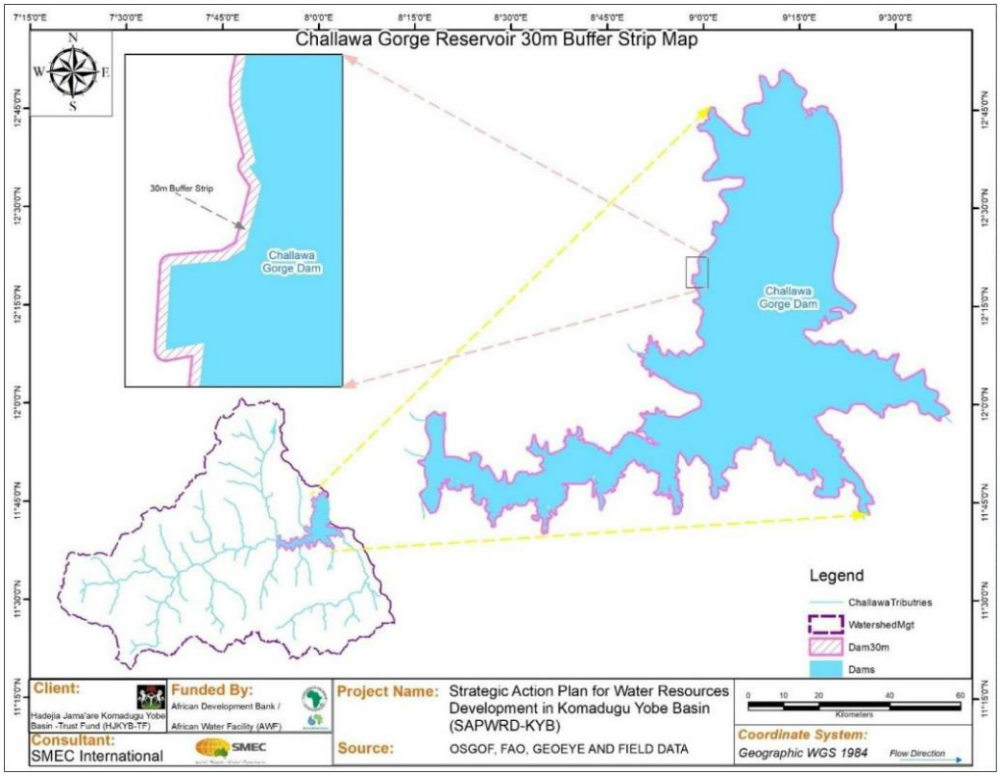


Figure 3.11: Challawa Gorge Dam reservoir area and proposed buffer zone

CHAPTER 4

POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK GOVERNING RESETTLEMENT

4.1 Introduction

It is imperative to analyze the laws and regulations relevant to this project. This will help in understanding the legalities and procedures in implementing the project and identifying gaps that need to be strengthened to comply with the AfDB Operational Safeguard Policy on resettlement and rehabilitation of project-affected persons as well as national legislation.

The Challawa Gorge Dam is under the control of the Federal Government of Nigeria and managed by HJRBDA but the compensation and resettlement issues fall under the jurisdiction of various levels of government in Nigeria, which are governed by a range of legislation. Some of the principal government institutions and laws and their impacts are described below:

4.1.1 Policy Framework

- **Land Acquisition and Compensation policies**

Land required for the construction of the proposed watershed management project shall be acquired and allocated to the project by the Government. The legal framework provides the basis for three key elements of the Resettlement Action Plan (RAP). They include:

- Establishing rates for compensation;
- Determining eligibility for compensation and resettlement assistance, including development initiatives aimed at improving the social and economic well-being of affected populations;
- Establishing mechanisms to resolve grievances among affected populations related to compensation and eligibility.

Land ownership in Nigeria is subject to a range of diverse cultural and traditional practices and customs. Land can be classified according to the following broad categories:

***Community land*:** or land commonly referred to as ancestral land, is owned by all the people.

***Communal land**:* consists mostly of under-developed forests and is owned by the community collectively and not a particular individual. Those individuals who clear it first claim ownership.

Clan or family land: is owned by clans and families, as the name suggests.

Institutional land: land allocated to traditional institutions such as traditional authorities and chiefs.

***Individual land**:* land acquired by an individual, which may be inherited by the immediate family, depending on customary practices

The legal framework for land acquisition and resettlement in Nigeria is the Land Use Act (LUA) of 1978, reviewed under Cap 202, 1990, and now Cap L5, Laws of the Federal Republic of Nigeria (LFN), 2004.

The relevant Bank policy (OP) 4.12, which addresses land acquisition and resettlement, was adopted in 2001.

The differences between the Land Use Act and the Bank's OP mostly concern rehabilitation measures, which are neither proscribed, underprovided for, nor mandated in the Act.

National Land Policy

The legal basis for land acquisition and resettlement in Nigeria is the Land Use Act Cap L5, LFN 2004, According to the Act, all lands in Nigeria are vested in the Governor of each State, to be held in trust for the use and common benefit of all people. Lands are further classified into urban and rural (non-urban) for administrative purposes.

The administration of urban land is directly under the control and management of the Governor; whereas non – urban land is under the control and management of the Local Government Area.

The Governor had the right to grant Statutory Rights of Occupancy to all lands. Local Government has the right to grant Customary Rights of Occupancy over non-urban lands.

The Land Use Act gives Governor the power to revoke both Statutory and Customary rights to land for the overriding public interest.

In doing so, the Act requires that the State or Local Government should pay compensation to the current holder or occupier with equal value. The Act also requires the State or Local Government to provide alternative land for affected people who will lose farmlands and alternative residential plots for people who will lose their houses instead of monetary compensation.

There is a need for an integrated approach towards land use planning and coordination of activities of all stakeholders in land use in the context of this project. Specifically, the involvement of land owners, community groups, women, youth, and the less privileged in making land use-related decisions that affect them is considered critical to the successful implementation of the proposed use policy.

The imperative for the Challawa watershed management project to have land adequate for the planned purpose predisposes the adoption of this policy in this project.

- **National Gender Policy**

The policy seeks to promote gender equality and eliminate discrimination based on gender, ethnicity, religious beliefs, etc. The key policy areas are focused around 5 critical areas:

(i) Culture re-orientation and sensitisation to change gender perceptions and stereotypes;

(ii) Promotion of women's human rights and in particular focusing on sexual and gender based violence (SGBV) and in supporting new legislations and legal rights of women;

(iii) Promoting the empowerment of women and integrating gender within key sectors as highlighted within the NGP – (Agriculture/Rural Development; Environment/Natural ReSource: Gender and HIV/AIDS; Health and Reproductive Health/Rights; Education/Training; Labour/Employment);

(iv) Women's political participation and engendered governance including gender and conflict management and

(v) Supporting institutional development including the use of ICT and building strategic partnerships, including identifying new partnerships with men's organisations, faith-based organisations and traditional institutions.

4.2 Legal Framework

Compensation and resettlement issues fall under the jurisdiction of various levels of government in Nigeria. They are also governed by a range of legislation. Some of the principal government institutions and laws and their impacts are described below.

4.2.1 The 1999 Constitution of the Federal Republic of Nigeria

Property ownership is guaranteed alongside other fundamental human rights like freedom of speech, association, and movement. Specifically, Section 43 confers the right to acquire immovable property by citizens, and Section 44 reserves the government's power of eminent domain and prescribes how this power is to be exercised by the government.

Section 44 (1) provides that *"no moveable property or any interest in an immovable property shall be taken possession of compulsorily and no right over or interest in any such property shall be acquired compulsorily in any part of Nigeria except in the manner and for the purposes prescribed by a law that, among other things:*

(a) requires the prompt payment of compensation therefore and

(b) gives to any person claiming such compensation a right of access for the determination of his interest in the property and the amount of compensation to a court of law or tribunal or body having jurisdiction in that part of Nigeria.

This implies that non-compliance concerning the manner (process), purposes recognized by law, and is met with promptitude in the payment of compensation and allowing claimant unfettered access to the property being taken to ascertain claims and /or reserves affected persons to adjudicate on the quantum of the compensation would void an otherwise valid acquisition or resettlement. The basic land tenure law which is the Land Use Act Cap L5, LFN 2004 operationalizes the provisions of Section 44 of the Constitution.

4.2.2 Land Use Act of 1978

The Land Use Act of 1978 is the applicable law regarding ownership, transfer, acquisition, expropriation, and all such dealings on Land in Nigeria. The administration of the urban land is vested in the Governor, while land in rural areas is vested in the Local Government Councils. At any rate, all land irrespective of the category belongs to the State while individuals only enjoy a right of occupancy as contained in the certificate of occupancy, or where the grants are "deemed".

Thus, the Land Use Act is the key legislation that has direct relevance to resettlement and compensation in Nigeria. Relevant Sections of these laws concerning land ownership and property rights, resettlement, and compensation are summarized in this section.

The Governor administers the land for the common good and benefits of all Nigerians. The law makes it lawful for the Governor to grant statutory rights of occupancy for all purposes; grant easements appurtenant to statutory rights of occupancy and demand rent. The Statutory rights of Occupancy are for a definite time (the limit is 99 years) and may be granted subject to the terms of any contract made between the state Governor and the Holder.

Local governments may grant customary rights of occupancy to land in any non-urban area to any person or organization for agricultural, residential, and other purposes, including grazing and other customary purposes ancillary to agricultural use. But the limit of such a grant is 500 hectares for agricultural purposes and 5,000 for grazing except with the consent of the Governor. The local Government, under the Act, is allowed to enter, use and occupy for public purposes any land within its jurisdiction that does not fall within an area compulsorily acquired by the Government of the Federation or of relevant State; or subject to any laws relating to minerals or mineral oils.

Where a Right of occupancy is revoked on the grounds either that the land is required by the Local, State, or Federal Government for the public good, the holder shall be entitled to compensation as follows:

- Land: an amount equal to the ground rent, if any, paid by the occupier to the government during the year in which the right of occupancy was revoked.
- Structure: An amount equivalent to the value of the structure less any depreciation.

- Crops: An amount equal to the value as prescribed and determined by the appropriate officer, which may not be the market value.

The Act also provided that where the occupier of the land is doing so illegally (e.g., occupying land belonging to someone else), he/she is not entitled to compensation.

4.2.2.1 Requirement of the Land Use Act

The State is required to establish an administrative system for the revocation of the rights of occupancy and payment of compensation for the affected parties. So, the Land Use Act provides for the establishment of a Land Use and Allocation Committee in each State that determines disputes as to compensation payable for improvements on the land. (Section 2 (2) (c).

In addition, each State is required to set up a Land Allocation Advisory Committee, to advise the Local Government on matters related to the management of land. The holder or occupier of such revoked land is to be entitled to the value of the unexhausted development as of the date of revocation. (Section 6) (5). Where land subject to the customary right of Occupancy and used for agricultural purposes is revoked under the Land Use Act, the local government can allocate alternative land for the same purpose (section 6) (6).

If the local government refuses or neglects within a reasonable time to pay compensation to a holder or occupier, the Governor may proceed to effect assessment under section 29 and direct the Local Government to pay the amount of such compensation to the holder or occupier. (Section 6) (7).

Where a right of occupancy is revoked on the ground either that the land is required by the Local, State, or Federal Government for a public purpose or the extraction of building materials, the holder and the occupier shall be entitled to compensation for the value at the date of revocation of their unexhausted improvements. Unexhausted improvement has been defined by the Act as *anything of any quality permanently attached to the land directly resulting from the expenditure of capital or labor by any occupier or any person acting on his behalf, and increasing the productive capacity the utility or the amenity thereof and includes buildings plantations of long-lived crops or trees, fencing walls, roads and irrigation or reclamation works, but does not include the result of ordinary cultivation other than growing produce*.

Developed Land is also defined under **Section 50 (1)** as follows: *Land where there exists any physical improvement like road development services, water, electricity, drainage, building, structure, or such improvements that may enhance the value of the land for industrial, agricultural, or residential purposes.*

It follows from the foregoing that compensation is not payable on vacant land on which there exist no physical improvements resulting from the expenditure of capital or labour. The compensation payable is the estimated value of the unexhausted improvements at the date of revocation.

Payment of such compensation to the holder and the occupier as suggested by the Act is confusing. Does it refer to the holder in physical occupation of the land or two different persons entitled to compensation perhaps in equal shares? The correct view appears to follow from the general tenor of the Act. First, the presumption is more likely to be the owner of such unexhausted improvements. Secondly, the provision of **section 6 (5)** of the Act, which makes compensation payable to the holder and the occupier according to their respective interests, gives a pre-emptory directive as to who shall be entitled to what.

Again, the Act provides in **section 30** that where there arises any dispute as to the amount of compensation calculated following the provisions of **section 29,** such dispute shall be referred to the appropriate Land Use and Allocation Committee. It is clear from **section 47 (2)** of the Act that no further appeal will lie from the decision of such a committee. If this is so, then the provision is not only retrospective but also conflicts with the fundamental principle of natural justice, which requires that a person shall not be a judge in his cause. The Act must, in making this provision, have proceeded on the basis that the committee is a distinct body quite different from the Governor or the Local Government. It is submitted, however, that it will be difficult to persuade the public that this is so since the members of the committee are all appointees of the Governor.

Where a right of occupancy is revoked for public purposes within the state of the Federation; or on the ground of the requirement of the land for the extraction of building materials, the quantum of compensation shall be as follows:

- *In respect of the land, an amount equal to the rent, if any, paid by the occupier during the year in which the right of occupancy was revoked.*
- *in respect of the building, installation, or improvements therein, for the amount of the replacement cost of the building, installation, or improvements to be assessed based on the prescribed method of assessment as determined by the appropriate officer less any depreciation, together with interest at the bank rate for delayed payment of compensation. With regards to reclamation works, the quantum of compensation is such cost as may be substantiated by documentary evidence and proof to the satisfaction of the appropriate officer.*
- *in respect of crops on the land, the quantum of compensation is an amount equal to the value as prescribed and determined by the appropriate officer.*

Where the right of occupancy revoked is in respect of a part of a larger portion of land, compensation shall be computed in respect of the whole land for an amount equal in rent, if any, paid by the occupier during the year in which the right of occupancy was revoked less a proportionate amount calculated concerning the area not affected by the revocation; and any interest payable shall be assessed and computed in the like manner. Where there is any building installation or improvement or crops on the portion revoked, the

quantum of compensation shall follow as outlined above and any interest payable shall be computed in like manner.

4.2.3 Forestry Act

This Act of 1958 provides for the preservation of forests and the setting up of forest reserves. It is an offense, punishable with up to 6 months imprisonment, to cut down trees over 2ft in girth or to set fire to the forest except under special circumstances. Nigeria is at present a wood deficit nation. To ameliorate the situation, the policy on forest resources management and sustainable use is aimed at achieving self-sufficiency in all aspects of forest production through the use of sound forest management techniques as well as the mobilization of human and material resources. The overall objectives of forest policy are to prevent further deforestation and to recreate forest cover, either for productive or protective purposes, on already deforested fragile land.

Specifically, the National Agricultural Policy of 1988 in which the Forestry Policy is subsumed, provides for:

- Consolidation and expansion of the forest estate in Nigeria and its management for sustained yield.
- Regeneration of the forests at rates higher than exploitation.
- Conservation and protection of the environment viz: forest, soil, water, flora, fauna, and the protection of the forest resources from fires, cattle grazers, and illegal encroachment.
- Development of the Forestry industry through the harvesting and utilization of timber, its derivatives, and the reduction of wastes.
- Wildlife conservation, management, and development through the creation and effective management of national parks, game reserves, tourist and recreational facilities, etc.

4.2.4 Institutional Framework

This section gives highlights on relevant institutions through which planning, and implementation of the project will be affected. A number of institutions have been identified and will be involved in the overall implementation of this project. These include:

- The Federal Government of Nigeria (FGN);
- Federal Ministry of Water Resources
- Hadejia Jama'are River Basin Development Authority
- Hadejia Jama'are Komadugu Yobe Basin Trust Fund
- Federal Ministry of Environment

- National Environmental Standards and Regulatory Enforcement Agency

4.3 State Legislations

The relevant state ministry is the:

- Kano State Ministry of Lands and Survey;
- Kano State Ministry of Environment;
- Kano state ministry of Agriculture
- Kano state ministry of women affairs and social development
- Kano state physical and urban planning

Some of the functions of the State Ministry related to this RAP include taking up responsibility for all forms of land policies within the state. It advises the government on land tenure issues and also manages government land and properties. The Ministry is also tasked with administrative rights to land use decree, urban development, city and town rejuvenation as well as environmental protection.

4.3.1 Local Government Authorities

Three Local Government Areas (LGAs) are involved in this project – Kiru Local Government Area, Karaye Local Government Area, and Rogo Local Government Area in Kano State. The roles and responsibilities of the local authorities (physical planning or works department) are in the administration of lands in rural areas and hence, will be involved in the resettlement process.

4.3.2 The Customary District Councils

The council Emir, district head (Hakimi), and village chiefs within the Karaye Emirate have important roles to play in the project concerning mobilization of the community members to support the project, grievance redress, peace and security of personnel, equipment, and facilities to be installed. Close contact and regular consultation shall be maintained with customary chiefs throughout the life of the project.

4.3.3 Witness NGO

To enhance transparency and trust from PAPs it is suggested that a witness NGO, recognized and credible in the project area, be retained, through a public proposal and selection process, by the PIU to provide independent advice and report on RAP implementation and management focusing on consultation activities, compensation and resettlement related activities and grievances management. This NGO could be a recognized and credible Human Rights advocacy group or an NGO active in environmental management or rural development.

This outside look will ensure that proper procedures and stated compensation processes are followed, that PAP grievances are well taken care of, and that PAPs are treated with fairness.

This NGO will revise reports of the compensation payment process, meet with PAPs, check the implementation of the measures, reconstruction, etc. in the field, and provide comments and recommendations. All PAPs will be informed of the NGO's role and function and need to have access to its representatives, confidentially, if necessary, to explain and discuss their difficulties or grievances.

4.4 International Standards and Guidelines Related to Involuntary Displacement

In addition to the need to adhere to Nigerian legislative requirements, the RAP of the Challawa watershed project will also need to be aligned to international best practice standards in involuntary land acquisition and compensation. As the main funding agency, the RAP will need to be aligned with the requirements of the AfDB's Integrated Safeguards Standards (ISS) Operational Safeguards 2: Involuntary resettlement: land acquisition, population displacement, and compensation as well as the Bank's Involuntary Resettlement Policy of 2003. The policy was developed to cover involuntary displacement and resettlement of people caused by a Bank-financed project and it applies when the project results in relocation or loss of shelter by the persons residing in the project area, assets are lost or livelihoods are affected.

4.4.1 The African Development Bank Group's (AfDB) Integrated Safeguard System (ISS)

In 2013, the African Development Bank Group updated its policy on Involuntary Resettlement and created an Integrated Safeguards System (ISS) to improve clarity, coherence, and consistency as well as overall operational effectiveness. Resettlement is covered under Operational Safeguard 2 (*Involuntary Resettlement: Land Acquisition, Population Displacement, and Compensation*), which includes comprehensive notions of livelihood and assets, accounting for their social, cultural, and economic dimensions. It also adopts a definition of community and common property that emphasizes the need to maintain social cohesion, community structures, and the social interlinkages that common property provides. It furthermore stresses the importance of improving living conditions for PAPs through a Livelihood Restoration program. OS2 has the following specific objectives:

- avoid involuntary resettlement where feasible, or minimize resettlement impacts where involuntary resettlement is deemed unavoidable after having explored all other alternative project designs.
- ensure that displaced people are meaningfully consulted and given opportunities to participate in the planning and implementation of resettlement programs.
- ensure that displaced people receive significant resettlement assistance under the project, so that their standards of living, income-earning capacity, production levels, and overall means of livelihood are improved beyond pre-project levels.

- mitigate the negative impacts of displacement and resettlement, actively facilitate social development and establish a sustainable economy and society; and
- set up a mechanism for monitoring the performance of involuntary resettlement programs and remedying problems as they arise to safeguard against ill-prepared and poorly implemented resettlement plans.

4.4.2 Benchmarking of Relevant Nigerian Legislation and the AfDB's OS2

The primary difference between national legislation and AfDB's resettlement standards is that Nigerian law concentrates on compensation for lost assets, whereas the AfDB Safeguards have an additional focus on livelihood enhancement (or, as a minimum, restoration). Emphasis is not only on compensation for lost assets but also on assisting people to improve (or at least restore) standards of living, incomes, and livelihoods. This includes providing access to income-earning opportunities such as agricultural production or to natural resources deemed critical for subsistence.

Nigerian legislation does not provide any compensation for the value of lost land (except for reimbursement of any rent paid by the occupier during the year in which the right of occupancy was revoked). OS2 of the AfDB stipulates that affected people are compensated for all their losses at full replacement costs before their actual move; before land and related assets are taken; and, if the project is implemented in phases before project activities begin for each particular phase. The borrower or client gives preference to land-based resettlement strategies and as a matter of priority offers land-to-land compensation and/ or compensation-in-kind instead of cash compensation where feasible; further, the borrower or client clearly explains to affected people that cash compensation very often leads to rapid impoverishment.

Concerning the loss of access to commonly held resources, Nigerian legislation provides that, where a right of occupancy of land owned by the community is revoked for public purposes, compensation for unexhausted improvements on the land, taking account of depreciation, may be paid to the community at the relevant governor's discretion and such payment may be to the relevant chief on behalf of the community or into a specially designated fund for the benefit of the community. OS2 on the other hand provides for compensation to offset restrictions on access to communal resources. Assistance measures may include initiatives to enhance the productivity of the remaining resources, to which the community will continue to have access, in-kind or cash compensation for the loss of access or access to alternative sources of the lost resource.

The Challawa Dam watershed resettlement project will follow Nigerian legislation and will also implement such additional measures as necessary to achieve outcomes that are consistent with AfDB OS2 requirements, in consonance with the applicable laws of Nigeria.

Table 4.1 below compares the AfDB Operational Safeguard 2 (OS2) and Nigerian legislation for those categories of displacement impacts that Project activities are expected to incur. The table also prescribed what will be adopted for the Challawa Dam watershed resettlement Project.

Table 4.1: Benchmarking of Nigerian Law and Principles of the AfDB on Involuntary Displacement

Category	Nigerian Legislation (Land Use Act)	AfDB OS 2	Challawa Dam Watershed Project
Minimise Land Take and Involuntary Displacement	Explore all viable alternative project design options to ensure minimization of impacts (Land Use Act of 1978)	Project proponent to consider feasible alternative project designs to avoid or minimize physical or economic displacement.	AfDB OS 2
Consultation and Disclosure	A notice of acquisition is usually prepared by the Ministry of Lands, in conjunction with the survey description. This notice is then published in two newspapers (one national and one local and the government gazette	Open, inclusive, and effective consultation with local communities is required	AfDB OS 2 and Land use Act
Eligibility	Under Nigerian legislation, all land rights constitute occupancy rights rather than ownership rights, and accordingly, eligibility for compensation for loss of land is not provided for. Anyone possessing a statutory or customary right of occupancy to affected land is entitled to compensation for unexhausted improvements made to that land. Encroachers are not recognized as an eligible group and are thus not entitled to any compensation provisions.	AfDB identifies three groups of displaced people that shall be entitled to compensation or resettlement assistance for the loss of land or other assets taken for project purposes: ● Those who have formal legal rights to land or other assets recognized under the laws of the country concerned. ● Those who may not have formal legal rights to land or other assets at the time of the census/asset survey can prove that they have a claim that would be recognized under the customary laws of the country. ● Those who have no recognizable legal right or claim to the land they are occupying in the project area of influence, and who do not fall into either of the two categories described above, but are entitled to resettlement assistance instead of compensation for land to improve their former living standards (compensation for loss of livelihood activities, common property resources, improvements (structures and crops), etc.), provided that they or witnesses can demonstrate that they occupied the project area of influence for a reasonable time (at	AfDB OS 2

Category	Nigerian Legislation (Land Use Act)	AfDB OS 2	Challawa Dam Watershed Project
		least six months) before a cut-off date established by the borrower or client and acceptable to the Bank.	
Census and Asset Inventory	A survey to record the dimensions of the affected land parcels needs to be carried out. The enumeration process is asset-driven and not household driven. There is no particular format that is currently used by the Land Department. The process mostly comprises generic questions that are administered orally.	A census, asset inventory, and comprehensive socioeconomic survey are required with gender disaggregated information.	AfDB OS 2
Livelihood	No provisions	Strategies to improve the livelihoods of PAPs are required.	AfDB OS 2
Gender	No provisions	Special consideration has to be paid to the needs and rights of women. In the context of gender vulnerability, the client must consider actively facilitating consultation with both women and men in ways that are sensitive to the social and political constraints and barriers that women and men may face. The land-taking report (RAP) must include a specific protocol specifying safeguards for the quality and quantity of land to be allocated to women, especially widows, and divorcees, to ensure their means to generate income and achieve food security. Specifically, applicable to resettlement, land titles at the resettlement site are to be in the name of both spouses or of single heads of household, regardless of gender, if this does not conflict with the borrower or client's laws and legislation. Compensation payments to families are made to both husbands and wives when this is technically feasible and socially acceptable.	AfDB OS 2

Category	Nigerian Legislation (Land Use Act)	AfDB OS 2	Challawa Dam Watershed Project
Timing of Compensation	Once the compensation amounts have been discussed with the affected people.	Compensation is to be made before land and related assets are taken; and, if the project is implemented in phases before project activities begin for each particular phase.	AfDB OS 2
Compensation	Cash compensation is generally made based on government rate as well as depreciation value. Whilst in principle there is an allowance for in-kind compensation or replacement of assets, cash compensation is common practice	PAPs are compensated for all their losses at full replacement cost. PAPs can be offered a range of different compensation packages, resettlement assistance, and livelihood improvement options. Engagement is key to determining the appropriate compensation packages.	AfDB OS 2
Communal resources	Section 29 subsection 3 only provides for compensation where the holder or the occupier of land entitled to compensation is a community	Page 32 of the ISS mentions compensation for the loss of communal resources.	AfDB OS 2
Livelihood Assistance	No provisions	Displaced people are provided with targeted assistance to ensure that their standards of living, income-earning capacity, production levels, and overall means of livelihood are improved beyond pre-project levels.	AfDB OS 2
Vulnerable People	Many Nigerian policies address the needs of vulnerable people, such as the Gender Policy, Child Act, or NEEDS framework. However, there are no specific provisions related to physical or economic displacement.	Special attention needs to be paid to vulnerable groups and special provisions are required in the livelihood restoration process.	AfDB OS 2
Grievances	Section 30 of the Land Use Act 1990 6 v: "Where there arises any dispute as to the amount of compensation calculated following the provisions of section 29, such dispute shall be referred to the appropriate Land Use and Allocation Committee."	There is a requirement to establish a culturally appropriate and accessible grievance and redress mechanism to resolve, in an impartial and timely manner, any disputes arising from the land-taking process and compensation procedures. PAPs must be informed about the mechanism.	AfDB OS 2

Category	Nigerian Legislation (Land Use Act)	AfDB OS 2	Challawa Dam Watershed Project
Monitoring	No provisions	An independent third party is required to monitor the implementation of large-scale or complicated resettlement or livelihood restoration plans, with regular feedback from PAPs. For large-scale displacement operations quarterly reviews are recommended, and in-depth reviews of 6 months' progress, consistent with the overall project scheduling, are critical.	AfDB OS 2

CHAPTER 5
METHODOLOGY

The preparation of the RAP commenced with review of the HJKYBTF Challawa Gorge Dam ESIA report 2021 and other relevant literature including the harmonized rates for compensation for North western States, legal documents, AfDB safeguard policy, conducting several consultation activities with concerned stakeholders and PAPs in the communities located in the project area. Subsequently, the RAP study was conducted through;

5.1 Sensitization and Familiarization

5.1.1 Site Handover/Kickoff Meeting

The kick-off meeting was held on 29th March 2023 in the office of the Director Hydrogeology (Engr. Muhammad Mustapha) at Hadejia-Jama'are River Basin Development Authority (HJRBDA) headquarters in Kano (Plate 5.1), with a representative from Hadejia-Jama'are Komadugu Yobe Basin Trust Fund (Mr. Marcus) and the stakeholders' engagement consultant in attendance. This meeting allowed all parties involved to discuss the assignment to ensure cohesion and coherence. The Work Plan that identified activities to be performed, links between studies, and the target dates, was presented at that meeting.

Plate 5.1: Kick-off meeting in Hadejia-Jama'are River Basin Development Authority (HJRBDA) headquarters in Kano with a representative from Hadejia-Jama'are Komadugu Yobe Basin Trust Fund (Mr. Marcus) in attendance.

5.1.2 Site Reconnaissance

The RAP team led by the Challawa Gorge Dam Project Manager Mr. Umar Zaruwa and Mr. Marcus, representative from Hadejia-Jama'are Komadugu Yobe Basin Trust Fund conducted reconnaissance visits to the project sites (Plate 5.2, 5.3, and 5.4). Our team carried out a preliminary survey on the project site to acquaint ourselves with useful information about the challawa reservoir dam, pilot sub-watershed_1 & 2 to prepare a work schedule for the RAP process and logistics arrangement.


Plate 5.2: RAP Team Visit to the Challawa Gorge Dam Reservoir.


Plate 5.3: Visit to the Pilot sub-watershed_1 project site


Plate 5.4: Visit to the Pilot sub-watershed_2 project site

5.1.3 Community Sensitization

We undertook a robust and rigorous sensitization exercise to create awareness about the project amongst the project-affected communities as shown in Table 5.1 with a Letter of Introduction from the Hadejia-Jama'are river basin development authority (Appendix 1). In the course of these, we interfaced with the prospective claimants and their community leaders. We educated them on what is required of them from this RAP exercise and also on what generally the RAP exercise entails. It was an interactive session and had in attendance representatives of the Challawa Dam Project Manager, the representative from Hadejia-Jama'are Komadugu Yobe Basin Trust Fund, and various community leaders. At each of the community meetings, the RAP team explained the purpose of the meeting and formally introduced members of the team to the communities. He further provided an overview of the RAP as related to the Challawa Gorge Dam watershed Management project and also highlighted the objectives, activities, outputs, and work schedule of the assignment. Thereafter, questions, comments, observations, or suggestions from the respective communities to which answers and necessary responses were provided.

Table 5.1: List of Project-Affected Communities

Project-defined Component	LGA	Community
Pilot 1	Rogo	Ayaga Kwari
		Ayaga Tudu
		Ayaga Kusari
		Ungwan Datti
Pilot 2	Rogo	Ruwan Bago
		Tsara
		Tsara cikin Gari
		Tsara Kuringa
		Tsara Kwalwa
Challawa Dam Reservoir Area	Karaye	Turawa
		Yola
		Tinikas
		Magaji Haji
		Magaji Gari
		Ma Village
		Kyari
		Kwarin Mallam
		Gudal
		Daura
		Chimata

Project-defined Component	LGA	Community
		Tsohuwar
	Kiru	Sakarma

The results of the consultation activities conducted with the community leaders and PAPs are presented in Chapter 9.

5.2 Detailed Assessment of project impact Right of Way

The detailed survey was carried out within the gully fingers in the two sub-watersheds (PSW_1 and PWS_2) with a Right of Way of 25 m on both sides of the gully to accommodate the check dams, vegetation planning within the buffer zones of the Gulley's fingers and 30m vegetative buffer around the Challawa dam reservoir area (figure 3.11).

The pilot sub-watershed_1 is made up of 5 gully fingers;

- Mid Gulley (MG)
- Left Finger Gulley 1 (LFG-1)
- Left Finger Gulley 2 (LFG-2)
- Left Finger Gulley 3 (LFG-3)
- Right Finger Gulley 1 (RFG-1)

While Pilot sub-watershed_2 is made up of 9 gulley fingers 2 with lengths as outlined in Table 5.2;

- Mid Gulley (MG)
- Left Finger Gulley 1 (LFG-1)
- Left Finger Gulley 2 (LFG-2)
- Left Finger Gulley 3 (LFG-3)
- Left Finger Gulley 4 (LFG-4)
- Left Finger Gulley 5 (LFG-5)
- Right Finger Gulley 1 (RFG-1)
- Right Finger Gulley 2 (RFG-2)
- Right Finger Gulley 3 (RFG-3)

Table 5.2: Length of Gulley's fingers

Description	Length (m)	Proposed Work	Remark
MG	4,581	Bank protection, Check Dams, sediment trap, and buffer	PW_1
LFG-1	1,006	Bank protection and Check Dams	PW_1
LFG-2	2,124	Bank protection and Check Dams	PW_1

Description	Length (m)	Proposed Work	Remark
LFG-3	787	Bank protection and Check Dams	PW_1
RFG1	2,612	Bank protection	PW_1
MG	8,047	Bank protection, Check Dams, sediment trap, and buffer	PW_2
LFG-1	654	Bank protection	PW_2
LFG-2	760	Bank protection and Check Dams	PW_2
LFG-3	705	Bank protection and Check Dams	PW_2
LFG-4	955	Bank protection and Check Dams	PW_2
LFG-5	937	Bank protection and Check Dams	PW_2
RFG1	902	Bank protection and Check Dams	PW_2
RFG2	1,984	Bank protection	PW_2
RFG3	2,152	Bank protection	PW_2

5.2.1 PDF Maps Survey

The PDF map software was used as the navigation tool for the survey (Fig 5.1). High-resolution satellite imagery of pilot sub-watershed 1, pilot subwatershed 2 and Challawa dam reservoir was acquired using the right of way of 25m on both sides of the finger gulleys and 30m around the Challawa dam reservoir as shown in Fig 5.2.

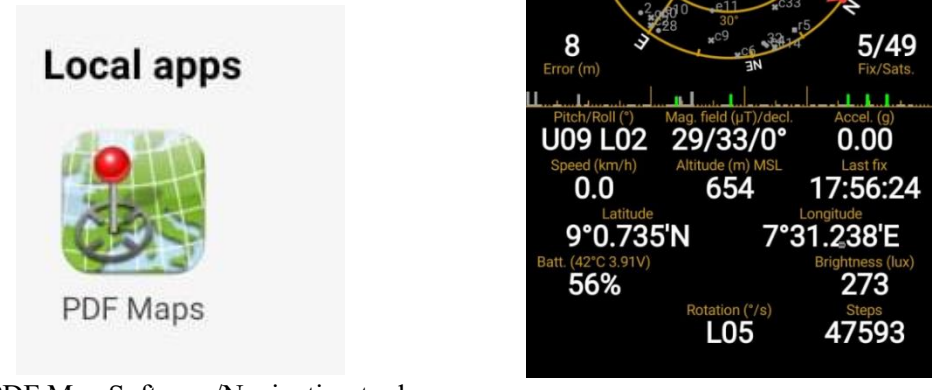


Fig 5.1: PDF Map Software/Navigation tools

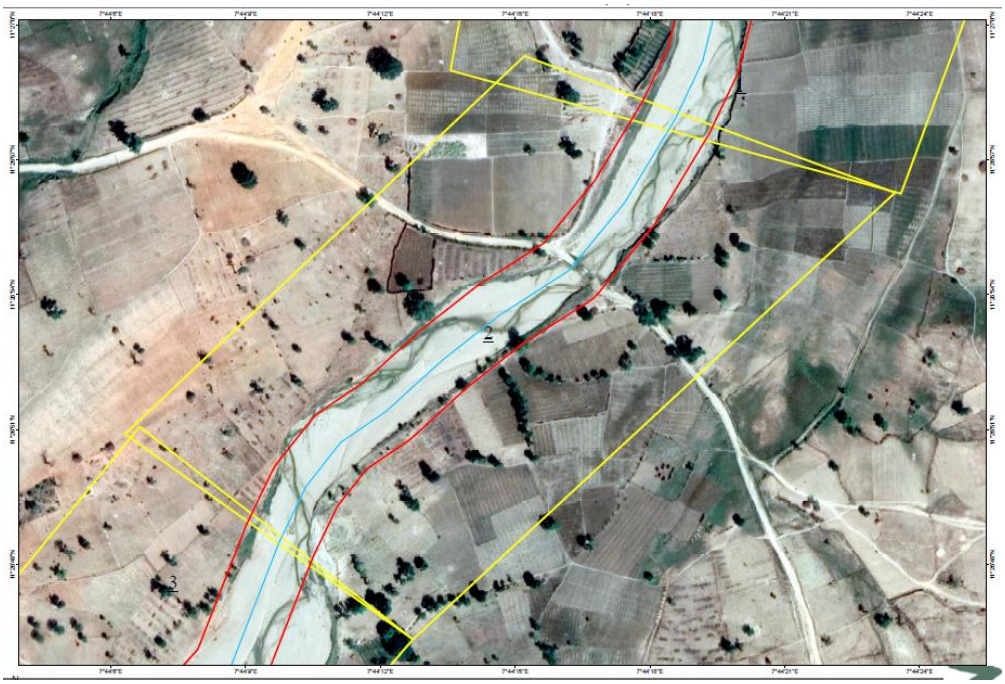


Fig 5.2: Navigation Map showing the Right of way

The information gathering was undertaken using questionnaires (Appendix 2) as well as PDF maps to aid navigation and identification of the right of Way clearance. The output was subsequently exported to Microsoft Excel worksheets and analyzed after incorporating the following information;

- List of affected lands such as farmlands and affected structures.
- List of owners and tenants;
- GPS coordinates and description of all properties (use, size, the proportion of lands affected, etc.);
- Photographic records of all structures (houses, Fulani settlements, etc.);
- Number and type of trees in community and forest reserves and private plots with an indication of the size and other characteristics useful to establish compensation;

The method/results of valuation are presented in Chapter 10 and Chapter 15.

To ensure the quality of data collection, several activities and quality-control mechanisms were implemented:

- Training of surveyors,
- Constant supervision with daily verifications of work quality by a trained supervisor;
- Validation of the completed questionnaire by each pap, and HJKYBTF representative.

Plate 5.5: Enumeration of PAPs by the RAP team

The census and socioeconomic studies were conducted between 10th April and 23rd April 2023. The first survey was meant to assess the affected households' assets and socioeconomic circumstances and the second survey assessed the community's characteristics and assets that would be affected by the project implementation.

CHAPTER 6

DESCRIPTION OF THE PROJECT-AFFECTED AREAS

The data presented in this section were based on information from literature as well as interviews and field survey conducted in the affected communities in April 2023. Interviews were conducted with community leaders in the affected communities to supplement data obtained from National Bureau for Statistics. Interviews were also conducted with households that are in the corridor but within the affected communities as a control group. The analyses of the census data of affected people is in Chapter 7.

6.1 Country Location

Nigeria lies between latitudes 4º and 14º north of the equator and longitudes 3º and 15º east of the Greenwich Meridian on the west coast of Africa. It covers a total area of 923,766 square kilometers consisting of 910,768 square kilometers of land and 13,000 square kilometers of water with the coastline stretching up to 853 kilometers. The entire country is divided into 36 states and a federal capital territory. These are further subdivided into 774 local government areas which form the third tier of government while the central and state governments form the first and second tiers respectively. The country practices the presidential system of government, consisting of three arms government: the executive, the legislature, and the judiciary (Nigerian 1999 Constitution). The executive consists of both elected and appointed members, while members of the legislature, both at federal and state levels are elected. This pattern is similar to what obtains at the local government level, except that there is no third arm (the judiciary). Another major difference between the central government structure and that of the state is the presence of two legislative chambers at the center (i.e. the Senate and the House of Representatives), while the states have just one. The LGA administration is run by an elected Executive Chairman and appointees of the Chairman representing the executive arm of local government administration. There is also the legislature made up of Councillors, elected from the wards in the LGA. The Chairman is the chief security officer of the LGA and the office is important in the operations of the proposed project.

The communities have a well-defined hierarchical political structure with traditional leadership through kings, chiefs, and community Heads. The traditional authority structures are similar in all the communities across the country. In the Northern part of the country, where Kano state fall, the traditional authority structure at the community level hardly varies from one community to another with the traditional head and chiefs jointly administering their political, economic, and social affairs. The topmost unit in the traditional political hierarchical structure is the emirate which is controlled by an Emir, such as the Emirs of Karaye. The emirate is divided into several districts, each controlled by a district head (Hakimi). The

district in turn consists of several towns, villages, and hamlets. Each town/village has its own Head/Chief called a Sarki, also called, Dagaci Aren or Mai Anguwa (Hamlet Heads).

The village is made up of wards containing several walled compounds. Each ward is controlled by a ward head (Wakili) who is usually the eldest male person of the leading compound in the ward. The ward head is directly responsible to the village head who in turn is responsible to the district head and the district head to the Emir. The village head cannot make laws. He only carries out rules and regulations passed down to him by the emir through the district head. To successfully institute any change or innovation at the village level the consent of the Emir must be sought first, he has full control over his domain and subordinates followed by that of the village head. This governance structure under each ethnic group is graphically represented in Fig 6.1.

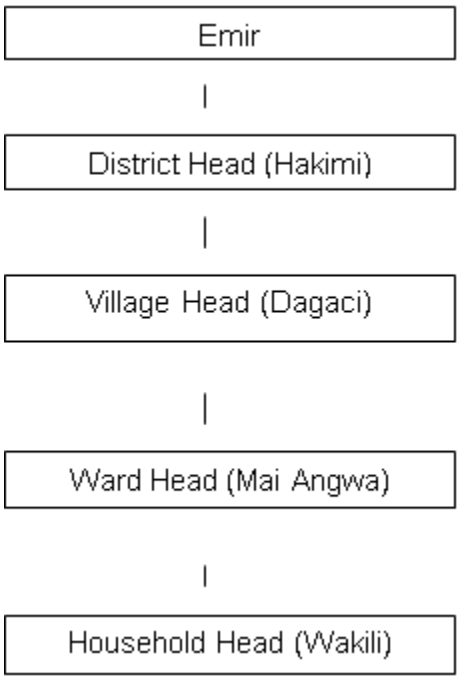


Fig 6.1: Traditional Tiers of Authority

Organizational structure is hierarchic; the centralized kingdoms, known as emirates, are the primary groupings; districts are secondary and village areas tertiary. The institutions of kinship, clientship, and office (and, in the past, slavery) in the emirates, have provided the fundamentals of Hausa government from the sixteenth century until the middle part of the twentieth century. Rank regulates relations between commoners and rulers.

Traditional and modern government proceeds through a system of titled offices, each of which is, in theory, a unique indissoluble legal corporation having definite rights, powers, and duties, special relations to the

throne and certain other offices, special lands, farms, compounds, horses, praise songs, and clients. In most areas, major offices are traditionally distributed among descent groups, so that rank and lineage intertwine. The traditional offices differ in rewards, power, and function, and are territorially based with attendant obligations and duties. Within communities, the various occupational groups distribute titles, which duplicate the ranks of the central political system. Client ship links men of unequal status, position, and wealth. It is a relationship of mutual benefit, whereby the client gains advice in his affairs at the minimum and protection, food, and shelter at the maximum. The patron can call upon the client to serve as his retainer.

6.2. Administrative structure

The administrative structure of Nigeria is presented in Table 6.1.

Table 6.1: Administrative structure of Nigeria and affected Kano state

<table>
<tr><td colspan="3">System of Government

Nigeria operates a Three-tier arm of Government. Federal, State, and Local Government Areas. She operates a Presidential System of Government</td></tr>
<tr><td rowspan="5">Federal Arm</td><td colspan="2">Executive - Implementation of laws, maintenance of law and order, initiates bill into parliament. It is headed by a President</td></tr>
<tr><td colspan="2">Legislature- Nigeria operates a bicameral (Senate and House of Representatives) legislature. They make laws, approve the annual budget, ratification of the treaty negotiated by the executive and conduct oversight functions on government activities. The Senate is headed by the President of the Senate and the House of Representatives is headed by a Speaker.</td></tr>
<tr><td>Senatorial District</td><td>House of Representative</td></tr>
<tr><td>There are 109 senatorial districts in Nigeria. Kano has 3 senatorial districts, the project area falls within Kano South senatorial district.</td><td>There are 360 House members in Nigeria. Kano has 24 federal constituencies. The project area falls within the;
- Kiru/Bebeji Federal Constituency
- Karaye/Rogo Federal constituency</td></tr>
<tr><td colspan="2">Judiciary - There is the supreme court, appeal Court, federal court, Industrial Court, customary courts of appeal, and magistrate court. They Interpret laws and protects the right of individuals. It is headed by a Chief Justice.</td></tr>
<tr><td></td><td colspan="2">Executive- There are 36 states in Nigeria and the Federal Capital Territory. The Executive arm of the state government is headed by an elected Governor. The proposed project is in Kano state.</td></tr>
</table>

System of Government Nigeria operates a Three-tier arm of Government. Federal, State, and Local Government Areas. She operates a Presidential System of Government	
State Arm of Government	**Legislature** - Kano state operates a unicameral system headed by a Speaker of the State House of Assembly.
	Judiciary -There is the State High Court, customary courts, and Magistrate courts. The head of the state judiciary arm is the Chief Judge.
Local Government Arm of Government	**Executive**-The executive arm is headed by a Chairman. This arm performs similar functions to that of the President and Governor at federal and State levels respectively. The proposed project falls within the; - Kiru Local Government Area - Karaye Local Government Area - Rogo Local Government Area

6.2.1 Conflict Resolution

Civil cases in the communities are arbitrated by the Chiefs-in-Council, Elders-in-Council, religious leaders, traditional priests, age grade, women groups, or family heads. On the other hand, inter-communal conflicts are resolved by the representatives (Chiefs) of the communities involved. If it cannot be resolved at that level, the case is taken to the Paramount ruler for adjudication. Criminal cases are referred to government law enforcement agents. Nevertheless, the communities have organized themselves into vigilante groups to complement the security architecture provided by the State.

Concerning the project, predicted sources of conflicts include:

- non-recognition of communities as critical stakeholders;
- borderland disputes;
- agitation for employment/contracts;
- issue of non-payment of compensation before construction
- perceived intimidation of the communities;
- perceived "divide and rule tactics"; and
- ineffective communication channels.

6.3 Population and Sex

Following the 2006 census, the National Population Commission (NPC) published the population of Nigeria as 140,431,790 comprising 71,345,488 males and 69,086,302 females. The age and sex structure of the population in Kano state (Table 6.2) depicts the unique outlook of the state's population. About 47% of the population is aged 0 - 14 years, 48% 15 to 59 years, while the remaining 5% are 60 years and above. This suggests not only the youthful nature of the population but also its vulnerability to rapid growth. Moreover, the sex ratio is moving concurrently between males and females with a slight difference of 1.6% in 1991 and about 2.5% in 2006 (See Table 6.2). Thus, the sex distribution index (number of males per 100 females), depicts an inconsiderable excess of males in the state.

Table 6.2: Age structure of population Kano State 2006

Age Group	Population	Percent (%)	Cumulative %
0-9 years	3,322,489	35.3	35.3
10-19 years	2,079,592	22.1	57.4
20-29 years	1,570,195	10.8	68.2
30-39 years	1,015,902	16.7	84.9
0-49 years	629,731	6.7	91.6
50-59 years	356,584	3.8	95.4
60-69 years	194,580	2.1	97.5
70-79 years	120,312	1.3	98.8
80+ years	111,903	1.2	100
Total	9,401,288	100	

Source: NPC, 2006 Census

Another remarkable issue is the population-land ratio. With a total land area of 21,276.87Km^2, Kano state had in 1991 contained an average of 273 persons per square kilometer but in 2016, the density had increased by about 1.6 times (over 150%) with a density of about 441/km^2.

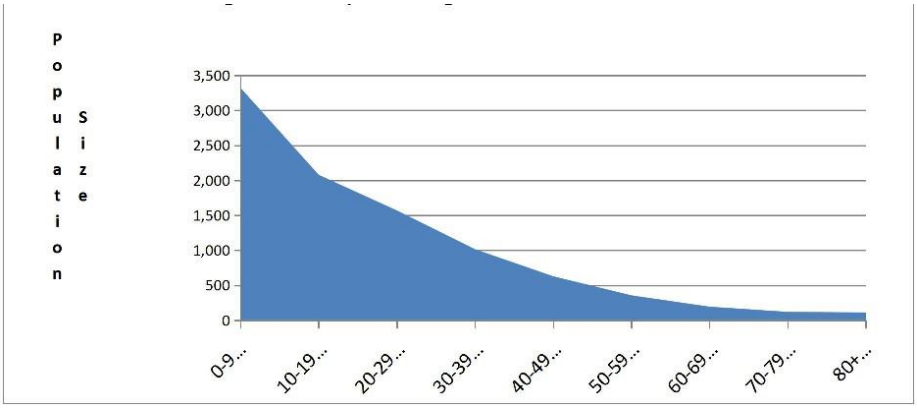


Fig 6.2: Age structure of population Kano state 2006 (HJYKBTF Challawa Gorge Dam ESIA Report 2021)

Table 6.3: Projected Population for three riparian Local Governments of Challawa Gorge Dam Project Area

Local Government Area	Projected Population Size (2016)*	Land Area (km^2)	Population density/ km^2
Karaye	200,400	419.9	477.3
Rogo	316,600	801.8	394.8
Kiru	371600	937.1	396,5
Total	888,600	2158.8	411.6

NB; *3.4% Annual Population Change 2006

Three broad groups are identifiable in each of the communities – male elders, youths, children, and women. The role of male elders is traditional governance of the communities, with the children being represented, followed by the youths. They dominate the political sphere and are solely responsible for the welfare of every member of the household. Women on the other hand are hardly allowed to play active economic and political roles, and have very limited and strictly monitored, regulated social roles. The youth population, especially the males, just like their elderly counterparts, are also active and well represented in the day-to-day governance of the communities, as they have organizations at different levels of the social structure.

Table 6.4: Population Structure in Kano State by Sex and Age 1991 to 2006

State	1991 Census					2006 Census				
	Total Pop.	Male	%	Female	%	Total Pop.	Male	%	Female	%
Kano	5,810,470	2,958,736	50.9	2,851,734	49.1	9,383,682	4,844,128	51.6	4,539,554	48.4
Age	Total %	Male %		Female %		Total %	Male %		Female %	
0 -14	42.8	22.1		20.7		47	25.1		21.9	
15- 59	50.8	26.5		24.3		48	24.8		23.2	
60+	6.4	3.9		2.5		5	2.7		2.3	
Total	100	52.5		47.5		100	52.6		47.4	

NBS (2012)

The three most central local government areas that make up over 80% of the Challawa Gorge Dam Watershed area are Karaye, Rogo, and Kiru LGAs with a total projected 2016 population of 888,600 and a total land area of 2158.8 km^2. The people of the project area are predominantly of Islam religion (Muslims).

6.4 Settlement Characteristics

The settlements system consists of permanent structures made from mud, wood, grass, and in a few cases, concrete blocks and iron roofs (Plate 6.1) The main settlements are Karaye, Rogo, and Kiru which are LGA headquarters. Several other towns such as Tsara, Turawa, and Soho Rogo are fairly big settlements with many other smaller villages such as Unguwan Datti, Dayi, and temporary Fulani herdsmen huts scattered around.

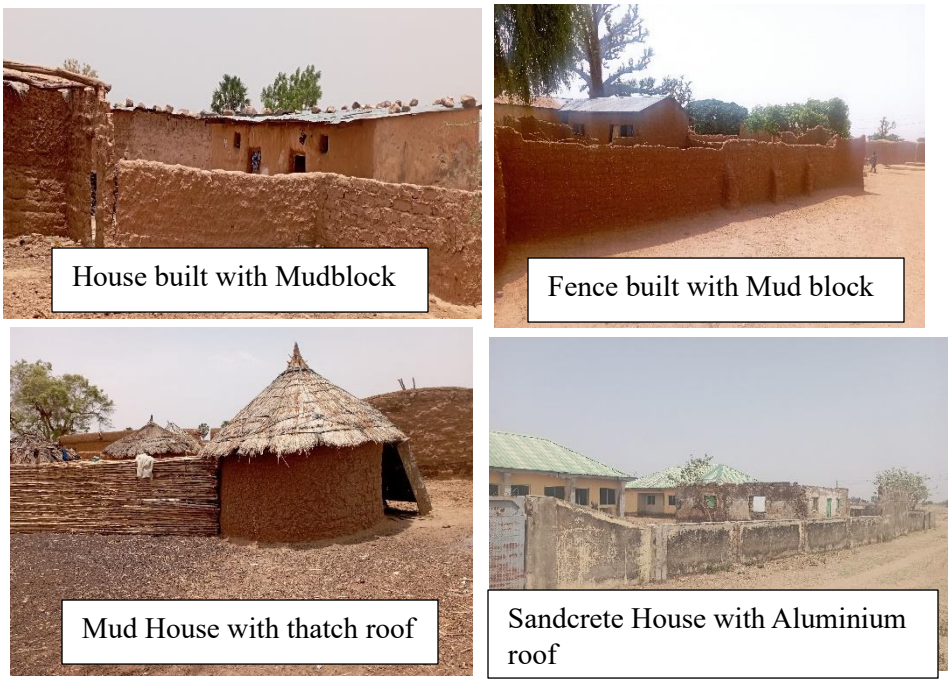


Plate 6.1: Housing types

The family system is mainly polygamous but it is mostly dictated by the economic resources of the man. The average number of births per woman is eight and each household has about eight to twenty people.

Land ownership: Land ownership is vested in the state. Farmers hold usufructuary rights, and the rights to a particular piece of land can be passed on by inheritance, sale, or rental. The land owned by a particular family is often in fragmented holdings within a varying radius of the village. Islamic inheritance law has resulted in a continuous subdivision of existing holdings among family members. The two main customary forms of land tenure are *gandu*, under which the land right is vested in the family head but the land is worked and its produce shared by all family members, and *gayauna*, under which the land is worked by the family member who has the right to its use. The gandu is of particular importance as it enables the individual to hold off-farm employment while still enjoying the benefits of agriculture. Land pressures have mounted due to population growth, continual, land accumulation by wealthy individuals, and public requirements (roads, schools, irrigation schemes, etc.).

Religion: The people of the project area are predominantly of Islam religion (Muslims). A large number of the Hausa population is Muslim practicing Islam, based on the teachings of the prophet Muhammad and the instructions of the Holy book, the Qur'an. It is said that the religion was brought to them by traders from North Africa, Mali, Borneo, and Guinea during their trade exchanges, and they quickly adapted the religion. Muslims pray five times a day, fast during the month of Ramadan, and strive to make the pilgrimage to the holy land in Mecca. Muslims believe in Allah and Mohammed as his prophet. They pray five times each day, read the holy scriptures, fast during the month of Ramadan, give alms to the poor, and aspire to make the pilgrimage (hajj) to the Muslim holy land in Mecca. Religion affects nearly all aspects of Hausa's behavior, including their dress, art, house types, rites of passage, and laws.

Plate 6.2: Mosque within the study area

In the rural areas, there are still a few communities of people who do not follow Islam. These people are referred to as *M aguzaw a,* who are linguistically and culturally Hausas, but they are of the Christian faith. Within the Challawa project area, the *Maguzawa* community is found in small farming villages within the Rogo and Karaye Local Government Area.

Language: Hausa is the most widely spoken language in the area. One can find it extremely difficult to live in the area without being able to speak at least a few Hausa life-saving words and phrases. The official language of Kano State is English but the Hausa language is commonly spoken. The state is mostly populated by Hausa people. There are however, vibrant communities of all the ethnicities of Nigeria and some neighboring countries speaking various languages including Igbo, Yoruba, Igala, Idoma, Kanuri, etc among several other Nigerian Languages.

6.5. Agricultural Characteristics

It is estimated that over 60% of Kano State's 43,000 km2 land area, some 2.6 million ha, is under cultivation. In the densely populated areas of Karaye, Rogo, and Challawa `80-90% of the cultivable land in the area is cultivated. The bulk of the agricultural lands are upland and used for rainfed crops such as sorghum, millet, cowpeas, groundnuts, maize, and cotton. In addition to the upland areas, considerable agricultural potential does exist in the valleys along the main river systems (Challawa, Gumshi, Tankwarya, etc), known as fadama lands. Accurate data are not available but it has been estimated that the main fadama systems and their floodplain areas cover about 48,000 ha in the project area. During the rainy season rice, maize, sugarcane, sorghum, and some tobacco are grown in the fadama lands, while onions, tomatoes, other vegetables, and wheat are grown during the dry season under irrigation (plate 6.3)

Plate 6.3: Irrigation Farming within the study area

This is very common around challawa gorge dam site and near major tributaries to the challawa river. On the fringes of the fadama lands, sorghum and maize are the main crops. Cultivation is overwhelmingly carried out by hand, although tractors are also used in some cases, especially by large-scale farmers. Work-oxen (Plate 6.4) is very common both as a tool for farming and a beast of burden to convey agricultural products, firewood, etc. from the farms to home.

Plate 6.4: Work oxen used to convey agricultural products

Fadama areas are worked intensively to produce high-value cash crops, but most farm enterprises are rainfed. There is no evidence of any particular rotational system because intense land pressure has reduced or eliminated the fallow period in virtually all parts of the project area. Individual farm holdings vary in size from as small as 0.2 ha in areas near major settlements such as Karaye, Kiru, Rogo, Tsoho Rogo, Zarewa, and Getso and on Fadama lands, to land holdings over 20 ha. The average farm holding (both family and individual holdings) in the area is about 2.5 ha. Farms are generally fragmented and the sizes vary significantly due to the influence of population expansion and the inheritance system under Islamic laws. Most of the cultivators (75%) are Hausa, the remainder generally being settled Fulani pastoralists (who now cultivate crops as well as keep animals, and other migrants ethnic groups from other parts of the country including Kanuri and people of Yoruba extraction.

The bulk of agricultural production comes from manually cultivated rainfed crops. Fadama areas contribute substantially to the farmer's income as they produce most of the cash crops, mainly during the dry season. The most important crops produced in the area where rainfall is higher, maize, cowpeas, guinea corn, groundnuts, and sweet potatoes are popular. Intercropping of two or more crops is very common. About 85% of the farmers reported that mixed cropping or intercropping of two or more crops on the same piece of land is highly beneficial as it permits filling-in of a crop that may not have germinated well, increase the average cropping density on the farm and therefore provides better utilization of available soil and allows adjustment to uncertainty in the event that one crop may fail due to unexpected drought, insect pest attack, and other unforeseen environmental events.

6.6 Livelihood and Economic Activities

Farming is the mainstay of the people with their production of varieties of cash crops throughout the year. Fishing, dyeing, weaving, carving, and blacksmithy are among the traditional industries of the people. The

Economic activities are mostly farming, commerce/trading, informal businesses such as hawking of processed food by young girls and other forms of street food vending by older females including married women within the settlements, shoe shining by young uneducated youths, water vending, etc. On the farm, the men mostly do the tedious jobs of cultivation, making ridges and irrigation canals for water reticulation and transportation of harvested crops to markets for sale and home for food, while the women participate in planting, weeding, and harvesting. In families that have no active men, the women do all the tasks. Animal husbandry is very common and stocks are very few averaging 2-10 per family. Cows are more common because they serve as farming tools and transport goods and materials (plate 6.5). The Cows used for ploughing on farms also serve as means of income where they are used in ploughing for pay/cash. The children, boys only, attend to the animals mostly while the women do household domestic duties including fetching firewood, participating in weeding on farms, and harvesting and processing crops for food and for sale at the local markets. There are periodic markets (Plate 6.6) gathering after every seven days. The commercial activities are mostly smaller trading with some bigger traders selling grains and animals.

Plate 6.5: Cow rearing within the study area

Plate 6.6: Periodic markets looking deserted on a non-market day

CHAPTER 7

CENSUS AND SOCIO-ECONOMIC SURVEYS

7.1 Introduction

This aspect of the RAP of the proposed Challawa water management project presents the findings of the socio-economic assessments as well as the concerns and expectations of the people of the area.

Specifically, the study focused on determining the impacts of the project on settlements, cultural treasures, population, social and physical infrastructures, predominant economic structures, and the baseline health status of the people. It also aimed at documenting the views of the affected population, industries, and other relevant institutions/agencies in terms of environmental problems, perceived community problems, and needs.

Other objectives of the consultation process include:

- to enable the stakeholders, to understand the process involved in the development of the proposed project.
- to dispel any form of social unrest among various levels of stakeholders that might arise from the development of the proposed project.
- to consider the views and opinions of stakeholders concerning the proposed project.
- to enhance the robust relationship between the proponents, the communities, land owners, and land speculators.

This socio-economic survey conducted from 10th to 23rd April 2023 sought to determine the socio-cultural, demographic, and quality of life of the population around the project site. Structured questionnaire interviews (Appendix 2) and group discussions were used primarily to obtain necessary information from households and other target groups. Other sources of information included similar studies and existing records in the local government and other public institutions.

7.2 Social Environment

7.2.1 Socioeconomic baseline conditions of PAPs

The following Sections show how the residents of the project area responded to the socioeconomic survey administered to them by holding consultations, focus group discussions (FGDs), and interviews as well as using residents of the community in administering the household questionnaire during census. These

interactions provided opportunities to intimate the groups about the proposed project activities and potential impact. Summary of of the people affected by the project are outlined in Table 7.1a;

Table 7.1a: Project Affected Areas and Person

State	Project-defined Component	LGA	Community	Number of PAPs
Kano	Pilot 1	Rogo	Ayaga Kwari	62
			Ayaga Tudu	45
			Ayaga Kusari	3
			Ungwan Datti	41
			Tsohon Rogo	11
			Total	**162**
	Pilot 2	Rogo	Tsara cikin Gari	1
			Ruwan Bago	9
			Tsara	61
			Tsara Kuringa	8
			Tsara Kwalwa	9
			Total	**88**
	Challawa Dam Reservoir Area	Karaye	Ma	26
			Turawa	42
			Yola	10
			Tinkis	26
			Magaji Hajji	87
			Magaji Gari	66
			Kyari	40
			Kwarin Mallam	41
			Gudal	48
			Daura	79
			Chitama	12
		Kiru	Sakarma	105
			Tsohuwar	10
			Total	**592**
			Grand Total	**842**

Plate 7.1: Pictures of Focus Group Discussion within the study area

7.2.2 Gender, Age, and Household Size Distribution

The survey data indicated male/female distribution of 62/38% for households in the project area. The household data is reflected in Figure 7.1.

Men in the project area are mainly involved in farming. Farming is the mainstay of the people with their production of varieties of cash crops throughout the year. Both men and women are significantly involved in the general pursuits of livelihoods. The age distribution data (Figure 7.2) indicated that the percentage of household members 21 years of age and below within the project area is 63.5.0% which indicates a high percentage of dependency in the project area. The survey further showed that 28% are between the youthful ages of 22 and 45 years which indicates the presence of an adequate workforce to be engaged as local labor during the project.

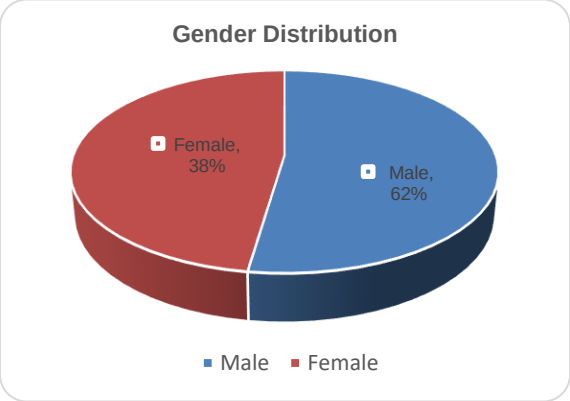


Fig 7.1: Gender Distribution of the study area

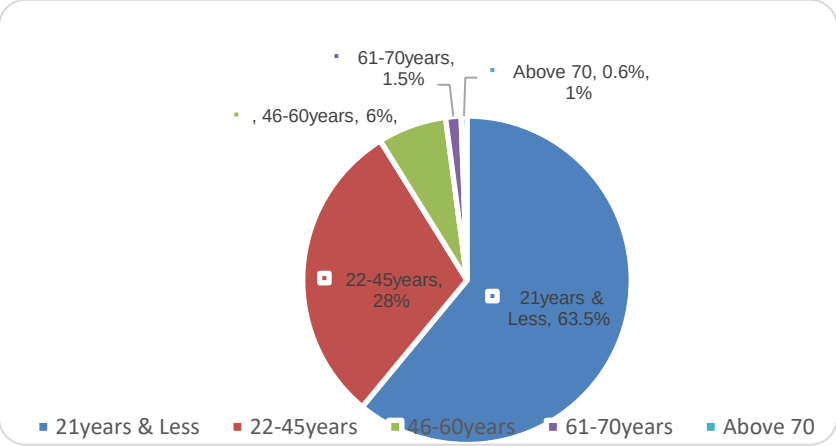


Fig 7.2: Age structure of the population of the study area

The household size distribution from the survey ranged from a minimum of one person to a maximum of 22 persons. The average size of households is 10 persons for the project area community. For the Study area about 65% had more than one wife. On the extreme household size ends, the project area has 9.3% of the households with one to two members and 38.6% of the households with more than 8 persons (Figure 7.3). About 24.7% of the households have sizes of 7 or 8 persons while 18.1% showed sizes of 5 or 6 persons. The data showed 9.3% of households have sizes of between 3 and 4 persons.

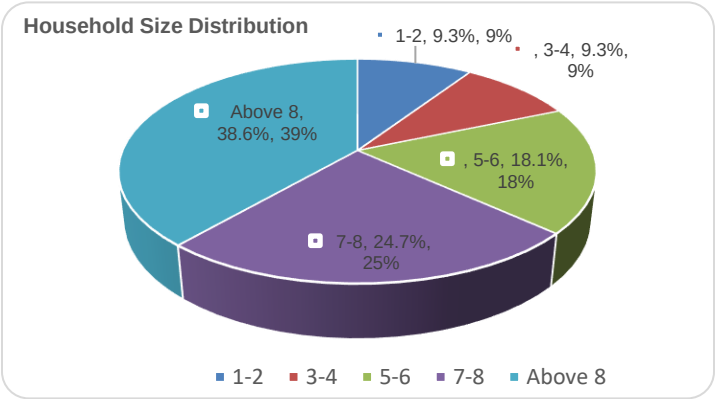


Fig 7.3: Household size of the study area

7.2.3 Marital Status of Respondents

The survey data showed that 35% of respondents in the project area are married, 21% are children of non-marriageable age, 43.8% are single, 0.1% are separated and 0.1% are widowed. The traditional marriage within the study area is mostly based on Islam, and not as time-consuming or expensive as the Igbo and Yoruba traditional marriage ceremonies. However, the process leading up to the marriage is slightly similar to what obtains in other regions of Nigeria. When a man sees the woman he wants to marry, he has to, first of all, seek permission from her parents. The family of the bride-to-be will then investigate the background of the man to determine his religious beliefs, ethics, moral and family customs, as well as every important detail concerning his upbringing. The groom-to-be if approved by the woman's family, is allowed to see her briefly but any form of physical contact, romance, or courting before marriage is highly discouraged. Once the woman accepts the marriage offer, the man sends his parents or guardians as well as elderly relatives to formally ask for her hand in marriage. However, this may not be the same for all the tribes in the Hausa communities, as each of them has different customs regarding marriage rites, though the process mentioned above is the most common method.

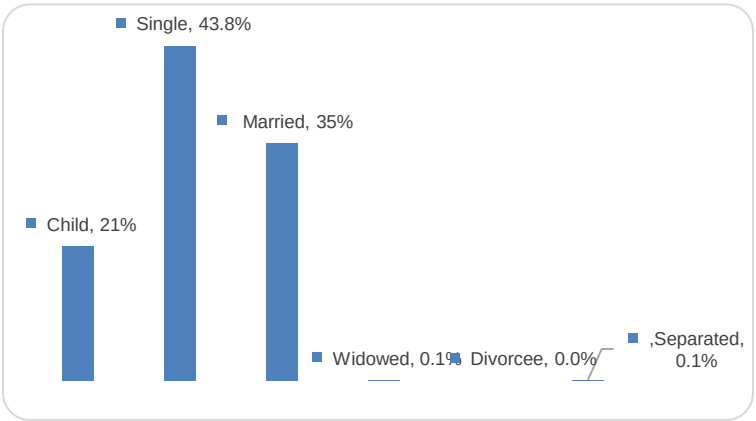


Fig 7.4: Marital Status

7.2.4 Access to Education

The survey responses indicated that in the project area, the population of schooling age who never attended school is 34.6%; 32.4% had basic primary school education (FSLC), 27.7% attended Secondary school (SSCE), 3.2% are Undergraduates, 1.5% are Graduates and 0.5% had a Post-Graduate degree. The very low literacy level within the project-affected area is reflected in the significantly low number of existing educational infrastructure support within the area. The belief that male issues are more important than female is rampant. Even in the issue of education, some families prefer to educate male children at the expense of the female. This is one of the reasons why the illiteracy rate is higher among women than men.

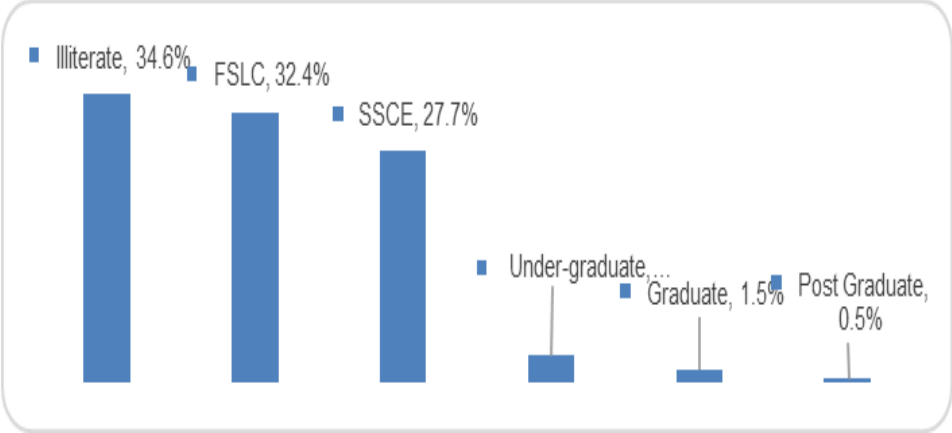


Fig 7.5: Educational Distribution of the study area

Plate 7.2: Public school at Rogo and Islamic School at Tsara Community

7.2.5 Access to Health Infrastructure

There are Primary healthcare centers (PHC) and a couple of private clinics within the study area. The PHCs are headed by Community Health Officer (In-Charge) with 5-7 staff each comprising of Community

Health Assistants, Laboratory Assistants, one or two cleaners, and at least two security men working on shifts. The grossly inadequate health facilities are generally inaccessible and the quality of the health care services in the areas is poor, most of the PHCs are dilapidated and abandoned (Plate 7.3 & 7.4)

Plate 7.3: Dilapidated PHC in Tsara Chikin Gari community

Plate 7.4: Dilapidated and Abandoned PHC in Tsara Chikin Gari community

Due to poverty, Interactions with various respondents reveal that most residents are now patronizing quacks and medicine shops for their medical treatment. It should be anticipated that there will be increased pressure in the demand for health facilities in the communities resulting from the influx of persons during the implementation of this project. The common diseases in the communities are malaria, typhoid, cholera, pneumonia, tetanus, and injuries arising from the use of traditional working tools, especially farm implements, measles, dysentery/diarrhea, etc. Apart from injuries from the use of farms and other associated implements, all other diseases are caused by environmental factors. Since access to portable clean water is a challenge in many communities the occurrence of environment-related diseases becomes obvious.

However, the FGD also reveals that the cost of medical care generally affordable by most families induced by poverty necessitated patronizing traditional herbs for the treatment of simple diseases such as malaria, typhoid fever, cholera, high blood pressure, and hyperglycemia (diabetes). Herbs used for such treatments

include Neem Leaves; Paw Paw leaves and seeds; Moringa leaves seeds; the leaves and bark of guava leaves; as well as hibiscus flour etc.

7.2.6 Access to Social Infrastructure

The socioeconomic infrastructures (road system, electric power, and access to water) within the study area are generally in a poor state. Public access to potable water is non-existent (Plate 7.5) and power is generally not steady. There is a public power supply system from the national grid in the main towns but no power supply to the smaller villages in the project area. Consequently, the major source of power is fuel wood and farm waste which are sourced from dead trees, shrubs, and cornstalks. Some utilize generators but mostly for commercial phone charging. There are periodic markets (Plate 7.6) gathering after every seven days. The tarred roads and paths that exist are plied by trucks, motorcycles, and animals for the transportation of goods, which is their main means of transportation within the study areas, to and from farms, and to local markets.

Plate 7.5: Sources of water within the study area

Plate 7.6: Village Periodic market looking deserted on a non-market day

Thus, the Implementation of the project will result in an influx of persons seeking gainful employment with the project contractors or to gain any social privileges within the project communities. It should be anticipated that there will be increased pressure in the demand for social infrastructures and amenities in

the communities resulting from the influx of persons during the implementation of the project. The influx of persons will inevitably put pressure on existing social service resources like water, electricity, transportation, etc. in the communities. The use of existing facilities will be on the rise.

7.2.7 Occupational and Income Distribution of Respondents

The occupational distribution data from the questionnaires indicated that of surveyed households in the study area, 46.4% are farmers, 24.5% are in the private sector, 0.2% are civil servants, 26.8% are students and 3.6% are unemployed. This implies that land take shall be applicable in the RAP budget, this will help mitigate the major impact on agricultural activities in the area.

The main source of income for the households surveyed came from farming and trading/business across the communities. Based on the income data provided, 42.0% earned less than N10,000 monthly, 23.2% earned between N10,000 -15,000 monthly, 12.5% earned N15,000-20,000 monthly, 15.5% earned N20,000-25,000 monthly, 6.8% earned above N25,000 monthly. The margin of error in the information provided on incomes may be significant considering that some of the respondents may have grossly inflated data provided with the intent to receive compensation following incomes indicated in the survey. The data provided could not be independently verified.

Plate 7.7: Household Main Occupations

7.2.8 Structures and Farmlands within the Project affected areas

There are 13 structures and 683 farmlands measuring (1167 hectares) with 147 economic trees within the project-affected areas as outlined in Table 7.1 and all will be compensated fully. Annual crops cultivated include maize, beans, yam, sorghum, millet, cassava, ground nut, okra, rice, etc. These parcels also have some permanent crops (tree crops) that bear edible fruits or have some medicinal value.

Table 7.1b: Number of Structures and Farmlands within the study area.

Project-defined Component	Community	Number of PAPs	No. of PAPs for Crops	No. PAPs for Economic Trees	No. of structures affected	Hectarage of Farmland (m^2)
Pilot 1	Ayaga Kwari	62	27	31	4	89.01
	Ayaga Tudu	45	6	39	0	178.09
	Ayaga Kusari	3	2	1	0	0.14
	Ungwan Datti	41	14	23	4	55.02
	Tsohon Rogo	11	11	0	0	0.56
	Total	**162**	**60**	**94**	**8**	**322.82**
Pilot 2	Tsara cikin Gari	1	1	0	0	3.05
	Ruwan Bago	9	9	0	0	18.06
	Tsara	61	50	11	0	93.12
	Tsara Kuringa	8	5	3	0	12.13
	Tsara Kwalwa	9	9	0	0	17.40
	Total	**88**	**74**	**14**	**0**	**143.75**
Challawa Dam Reservoir Area	Ma	26	24	2	0	95.75
	Turawa	42	30	8	4	43.39
	Yola	10	10	0	0	6.04
	Tinkis	26	22	4	0	22.48
	Magaji Hajji	87	87	0	0	46.49
	Magaji Gari	66	66	0	0	65.54
	Kyari	40	40	0	0	48.54
	Kwarin Mallam	41	41	0	0	99.21
	Gudal	48	46	2	0	67.35
	Daura	79	75	4	0	88.93
	Chitama	12	12	0	0	7.54
	Sakarma	105	92	13	0	104.42
	Tsohuwar	10	4	6	0	5.55
	Total	**592**	**549**	**39**	**5**	**701.22**
	Grand total	**842**	**683**	**147**	**13**	**1167.79**

Source: RAP Fieldwork 2023

7.2.9 Potential Security Risk Challenges

As severally indicated, implementation of the project will result in an influx of persons seeking gainful employment with the project contractors or providing social services of various types, or gaining any social privileges within the project communities. Different types of persons, including criminals of sorts, may be expected to find their way into the project communities within this time. Such movement of persons will inevitably increase the potential for criminal activities within the project communities, in addition to the already existing insecurity issues of kidnapping and Banditry, especially within the Pilot sub-watershed 2. For example, during RAP exercises, it was reported that areas of pilot sub-watershed 2 are areas to watch in terms of kidnapping and other forms of criminality.

It should therefore be anticipated that there will be increased pressure in the demand for police services and other security issues in the project area. Additionally, the cumulative unemployment levels in the project

communities resulting from the influx of employment-seeking persons to the area will pose security risks for both the communities and the security institutions.

CHAPTER 8

IMPACT OF THE PROJECT ON THE HUMAN ENVIRONMENT

This section presents a summary description of the project's impacts on the human population. Potential environmental impacts are described in the EIA report of the project. The social and economic impacts of resettlement will be detailed in the present chapter. These impacts were assessed using data collected from field surveys, relevant documents, and consultations with various stakeholders and PAPs.

8.1 General

The Challawa watershed management project is aimed at erosion and gully control and reducing sediment deposition in the reservoir through watershed management intervention. The proposed watershed management work largely includes the provision of erosion control structures in the upland active watersheds in pilot 1 and pilot 2, and the provision of riparian buffer around the Dam reservoir as described in section 1.3 and Table 1.1. This will greatly impact on agriculture and productivity within the project area.

For the project-affected persons and communities, negative impacts occurring during the construction phase include:

- Dust, noise, and exhaust gas emissions;
- Soil erosion and properties of affected land;
- Loss of arable land and crop damage as a result of the clearing of trees for temporary access, work areas, and work camps;
- Degradation of water and soil quality resulting from an accidental spill of hydrocarbons and other material, which could be accentuated by poor waste management practices. The spill could occur from machinery and vehicles, in workplaces and work camps;
- Disturbance and displacement of fauna due to noise-generated vehicular movement or from construction and maintenance activities;
- Conflicts or grievances related to the resettlement of affected households;
- Potential perturbation of communities or households associated with the arrival of workers and conflict over the distribution of jobs and other economic activities related to line construction.

The main long-term impacts are:

- Permanent loss of crop areas and tree plantation in the project-affected areas;
- Prohibition of constructing any structure (houses, shed, etc.) in the project-affected areas;
- Potential perturbation of communities or households associated with the arrival of workers and

conflict over the distribution of jobs and other economic activities related to the project.

The following positive social impacts are identified for this project:

- Improvement of agriculture and productivity within the project area;
- Return of people who have been displaced by the gully erosion back to their settlements
- Emotional and psychological relief from potential damage to, or loss of properties as well as loss of remaining ancestral lands;
- Improved landscape vista anticipated with a sustained corridor of economic trees within the project area;
- Temporary employment opportunities created by the project. Both skilled and unskilled laborers will benefit from job opportunities during the construction phase.

8.2 Impacts on Houses

Structures affected by the project are mainly residential houses, Fulani settlements, and no community structures. There is a total of 13 structures that will be removed from the projected affected areas. The owners of these structures will be compensated to reconstruct their houses. However, this relocation will result in loss of time, income and disruption of the organization for the daily life of affected households. It would need to be mitigated.

As indicated (see Chapter 9), the consultations carried out as part of this preliminary assessment showed that many affected households are concerned about not receiving adequate and timely compensation for resettlement and loss of crops, trees, or land. An adequate and timely compensation should therefore be given, before the beginning of construction or any other activities capable of disrupting the PAPs. Where properly managed, the envisaged impacts will be minimal.

8.2.1 Commercial Structures

Within the project affected comminities, there are no commercial structures affected.

8.2.2 Community Structures and Site

There are no community structures affected.

8.2.3 Impacts on Loss of Economic Trees/Farm Crops

During the construction phase, economic trees/farm crops within the Project affected areas and any land required as a setback for construction may be destroyed. Owners of damaged economic trees/farm crops

shall be compensated based on fair market values plus the cost of regrowth of those economic trees (replacement cost).

The identified project-affected assets are summarized in Table 8.1. All the identified PAPs in the project area are persons whose houses, farmlands, and economic trees/crops would be affected by project activities.

Table 8.1: Summary of Project-Affected Assets

S/No	Project-defined Component	Assets Affected by the Project				
		Total Number of PAPs	Structures within Project Communities	No. of PAPs for crops within Project Communities	Hectarage of Farmland (m^2)	No of PAPs with Economic Trees/Crops
1	Pilot sub-watershed 1	162	8	60	322.82	94
2	Pilot sub-watershed 2	88	0	74	143.75	14
3	Challawa gorge dam reservoir area	592	5	549	701.22	39
TOTAL		**842**	**13**	**683**	**1167.79**	**147**

Source: RAP fieldwork 2023

8.3 Cumulative Impacts

Traffic: The construction phase will require large amounts of material and equipment to be transported to the Project site. Given the foregoing, there is increased potential for accidents and disruption to the road traffic network for local users associated with the increase in traffic movements from overlapping construction traffic. It is expected that the traffic management plan to be developed for the project will consider other traffic movements associated with the development of the project in view which will help to mitigate this impact. However, in overall consideration, this impact is considered to be moderate due to the high likelihood of accidents occurring.

Economy, Employment, and Skills: It should be noted that expectations regarding economic development, employment, and skills development will be high amongst stakeholders in the local community and as such, the cumulative impacts of the proposed project on the economy, employment opportunities, and skills development within the communities is expected to be positive.

8.4 Economic Impact of Construction and Maintenance

There will be no significant adverse impacts on the local and regional economy during the line construction even though temporary unskilled jobs may be available for a few people in the communities. The impacts

on the villages and communities located within the project-affected areas will be relatively small due to the limited duration of the project, and the limited number of workers involved.

Moreover, the livelihoods of the affected households may be affected by the acquisition of their lands. Appropriate compensation will be provided to replace the economic loss. This risk is quite low since firstly, despite the land use density, it is possible to find alternative plots including through family and village solidarity. About 842 families will lose a piece of cropland or house. These will be compensated adequately. In this context, the risk of loss will be greatly reduced.

Overall, the project will bring positive impacts to the local economy and livelihoods of people by;

i. Return of people who have been displaced by the erosions back to their settlements

ii. Emotional and psychological relief from potential damage to, or loss of properties as well as loss of remaining ancestral lands;

iii. Temporary employment opportunities created by the project. Both skilled and unskilled laborers will benefit from job opportunities during the construction phase.

8.5 Impacts on Gender

Project impacts on women will primarily be felt during the construction phase because women do not own land although the land law is such that the land belongs to the family. This makes women's situation unfavorable since men control resources such as land and other important assets. Due to limited ownership and access to resources, There are 10 women identified within the PAPs and women play a very minor role in the decision-making process. This situation increases the risk for women, as many examples show that men may tend to use compensation for purposes other than those for which they are dedicated (reconstruction, acquisition of land, amounts allocated to the compensation) to marry more wives. This is why it is important to make compensations in kind (i.e. land for land and house for house) rather than cash compensation or to put in some control and information mechanisms to reduce those risks.

8.6 Impacts on Vulnerable Groups

Vulnerable group refers to the people who by gender, age, physical or mental disability, economic disadvantage, or social status may be more adversely affected by resettlement than others and who may be limited in their ability to claim or take advantage of resettlement assistance and related development benefits. There are 73 persons identified and considered particularly vulnerable by physical disability, age, and gender/illness. These persons are:

(1) vulnerable on account of physical disability; and,

(2) vulnerable on account of age (elderly person over 70 years old)

In addition to the support to be provided for the PAP group, special provisions of NGN 6,830,000.00 for the vulnerable group will be made to enhance their livelihood through subsistence support for a total period within which the major aspect of the project intervention works ought to have been completed.

8.7 Impacts on Minority Groups

No minority groups are threatened by the project in the area. Migratory groups of herdsmen are present in the area but they can still graze the land when construction is completed and no obstacle will impede their movement.

8.8 Risk

The risks foreseen for this project are related to the following issues:

- Insecurity: There is a high rate of insecurity (kidnapping and banditry) within the project area, especially in pilot sub-watershed 2.
- Compensation and resettlement are also major issues. Bad management of compensation and reconstruction can create a lot of frustration among PAPs and delay the project. Transparency in compensation schedule and scales, supervision of the process by a witness NGO, rapid creation of the Local Resettlement Committee and the grievances mechanisms, and early implementation of the RAP are all measures that are proposed here to reduce this risk.

CHAPTER 9

PUBLIC CONSULTATION AND DISCLOSURE

Public consultation and participation are essential because they afford Project Affected Persons (PAPs) the opportunity to contribute to both the design and implementation of the project activities and reduce the likelihood of conflicts. It also provides an avenue where the benefiting communities will contribute significantly to the success of the project thereby making their observations and suggestions most especially about the existing environmental and social sensitivities of the project locations. The consultation process will ensure that all those identified as stakeholders are consulted. Information about the project was shared with the stakeholders, to enable meaningful contributions, and enhance the success of the project

The public consultation strategy for the RAP activities revolved around the provision of a full opportunity for involvement for all stakeholders, especially the PAPs. Concerns raised by the stakeholders are documented and incorporated in this report and used to develop mitigation and/or enhancement measures for the Grievance Redress Mechanism (GRM).

The following were taken into full account:

1. The project will have foreseeable social impacts, especially on the people and structures around the corridor of the project sites.
2. The priority concerns raised by PAPs and other relevant stakeholders will be put into account and incorporated into project planning.

The stakeholders were informed of the visits through the Challawa Gorge Dam Project manager via phone calls and letters (Appendix 1) to the respective community leaders who in turn passed the information to their subjects.

9.1 Identification of Stakeholders

Generally, five (4) broad categories of stakeholders were identified for this project based on the degree to which the project activities may affect or involve such persons or groups of persons. These stakeholders are grouped as shown in Table 9.1

The identification was based on the following considerations:

i) Any persons or parties whose line of duties whether officially, socially, economically, or culturally has a direct or indirect bearing on any aspects of project activities. These parties may

include individuals, groups, institutions, or organizations that may be affected by the construction activities; and,

ii) Any persons or parties whose specific interests in the project result from (a) the project's benefit(s) to such persons; (b) potential changes that may occur to the routine activities of the persons due to the project; and, (c) the project activities that may cause damage or conflict for the persons. The identified persons or group of persons in this category will ultimately represent the project Affected Persons (PAPs) or Households (PAHs).

Table 9.1: Identified Stakeholder Groups

Group	Description	Role(s) in Community Process
Group-1	Individuals or groups of persons whose day-to-day lives/livelihoods may be directly affected by project activities. These are people who either reside or carry out their daily livelihood activities within the project-affected areas.	The identified persons or group of persons in this category will ultimately represent the project-affected persons (PAPs) or households (PAHs)
Group-2	Individuals or groups of persons whose day-to-day traditional or administrative functions include oversight of developmental activities within the project areas.	This category of persons serves as mobilization points around which community members and other project area residents are rallied and/or reached out to.
Group-3	The Vulnerable Individuals or groups of persons within the project areas.	Widows, physically challenged, aged, etc.
Group-4	Individuals or groups of persons who are political office holders and have significant responsibilities toward community members and developments within the project areas.	This group of individuals is collectively responsible for the political and general socio-economic development of the communities, among others within their respective political zones.

9.2 Stakeholders Engagement Activities

The stakeholders' consultation started with a visit to the Hadejia-Jama'are River Basin Development Authority (HJRBDA) headquarters in Kano on 29th March 2023, then a visit to the palace of the Hakimi of Rogo on 30th March 2023, Hakimi of Magaji haji on 10th April 2023 and Hakimi of Ma on 11th April 2023. The consultation with other community leaders and ward heads was held between the 10th to 23rd of April 2023 with Project Affected Persons and other groups at the community level. The consultations provided an opportunity to interact with the opinion leaders in the host communities and intimate them about the proposed project.

Plate 9.1: Visit to Hadejia-Jama'are River Basin Development Authority (HJRBDA) headquarters in Kano

Plate 9.2: Visit to the Palace of Hakimi of Rogo.

Plate 9.3: Visit to the Palace of Hakimi of Magaji Haji.

Plate 9.4: Visit to the Palace of Hakimi of Ma village

Consultation with identified vulnerable persons was approached on an individual basis. Identified vulnerable PAPs were interviewed during census and inventory and their peculiar requests and concerns were taken. These were later analyzed and formed the basis for their recommendation for inclusion in the Livelihood Enhancement program. Table 9.2 outlines the different consultations carried out and their dates.

Table 9.2: Consultation dates

Sn	Consultation	Date
1	Consultations with HJRBDA Kano	29th March 2023
2	Consultations with the Hakimi of Rogo,	30th March 2023
3	Consultations with the Hakimi of Magaji Haji	10th April 2023
4	Consultations with the Hakimi of Ma Village	11th April 2023
5	Consultations with wards/Village heads at the community level	10th to 23rd April 2023
6	Consultation with PAPs	10th to 23rd April 2023

Source: RAP fieldwork 2023

The meetings with the Hakimi were held at the respective Hakimi Palaces while the meetings with the wards/village head were held at the villages. At each of the community meetings, the RAP team explained the purpose of the meeting and formally introduced members of the team to the communities. He further provided an overview of the RAP as related to the Challawa Gorge Dam watershed Management project and also highlighted the objectives, activities, outputs, and work schedule of the assignment.

He called upon the community members to render sustained support by providing any necessary information/data that will help in the RAP exercise. Thereafter, questions, comments, observations, or

suggestions from the respective communities to which answers and necessary responses were provided. The meetings all ended with an expression of gratitude to the State and Federal Governments as well as the AfDB for coming to the aid of the communities in resolving the dam and erosion challenges. Plate 9.5 shows photos taken at the various communities.

Plate 9.5: Consultation Pictures with other village heads and PAPs

9.3 Participants' Feedback and Comments

During the community meetings, several participants expressed their views and made comments and suggestions relative to the project. All the speakers expressed the appreciation and gratitude of the community to HJKYBTF, the Kano State Government, the Federal Government, and the AfDB for the proposed intervention works. The community members also expressed anxiety that work should commence expeditiously to prevent the occurrence of further erosion damages from the next rainy season. Consultations and stakeholder involvement in the project will continue in a manner that allows the communities and the project affected persons (PAPs) to make contributions aimed at strengthening the development project while avoiding negative impacts as well as reducing possible conflicts. The consultations will also remain an ongoing exercise throughout the entire project, particularly with the potentially affected individuals and households relating to resettlements and compensations to minimize the chances of every possible conflict.

Information and data gathering involved a broad spectrum of activities that included interviews and discussions with community members who have historical knowledge of the site and the history of erosion problems in the affected areas.

9.4 Social Issues/Risks/Concerns

The RAP aims at ensuring the PAPs are not worse off than they would have been without the project. It seeks to ensure that any losses incurred by the PAPs are addressed in a manner that gets them to share the project benefits. These people should be assisted to develop their social and economic potential to improve or restore their incomes and living standards to pre-project levels. In developing this RAP, consideration was particularly given to the peculiarities of the need for disabled persons, women, children, and other vulnerable groups. The key social issues that emerged through the above processes include:

1. Community safety – Concerns regarding community safety with the next cycle of the rainy season were keenly expressed. The community is quite apprehensive of the advancement of the gullies particularly about safety risks posed to existing homes, human lives, and farmlands;

2. Further erosion in the area would lead to damage and loss of crops and personal possessions, and the spread of diseases such as typhoid, cholera, diarrhea, malaria, etc.

3. Livelihoods – loss of access to croplands and pasture.

4. Resettlement – impacts and compensation measures for economic and physical displacement during project implementation.

5. Consultant Safety – Concerns regarding the safety of any consultant or EPC contractors were keenly expressed. The community is quite apprehensive due to the insecurity situation (kidnapping and banditry) especially within the Pilot sub-watershed 2 project site.

CHAPTER 10
VALUATION AND COMPENSATION

10.1 Introduction

Valuation of assets and other forms of losses occasioned by the project was conducted by a qualified Estate Surveyor and Valuer to ascertain individuals whose properties or livelihoods will be directly or indirectly affected by the project activities. A general principle adopted in the formulation of the compensation valuation is that lost income and assets will be valued at their full replacement cost such that the project-affected populations should experience no net loss. This is following AfDB Policy on involuntary resettlement -OS 2 as well as the Nigerian Land Use Act discussed under Section 4.2.2. In line with the above principle, an all-encompassing survey and valuation of the assets and loss of income by the project-affected persons (PAPs) was conducted.

10.2 Eligibility Criteria

The AfDB involuntary Resettlement Policy requires compensation for the lost assets and replacement costs to both titled and non-titled landholders and resettlement assistance for lost income and livelihoods. In this project, the absence of formal titles will not constitute a barrier to resettlement assistance and rehabilitation. Furthermore, the principles adopted herein contain special measures and assistance for vulnerable affected persons, such as female-headed households, physically challenged persons, and the poor. The social impact of the project on the affected persons shall be minimized by using the following measures.

- Economic Rehabilitation
- Asset Based Compensation
- Cash Compensation
- Mitigating Risks of Impoverishment
- Consultation With Affected Populations, and
- Grievance Redress Mechanisms

10.2.1 Notification

Before the conduct of surveys and administration of study questionnaires, the PAPs were officially notified of the enumeration exercise through a letter (Appendix 1) addressed to the various projected

Affected LGA chairmen and Emir of Karaye Emirate. Furthermore, the RAP team engaged all village chiefs in several consultation meetings held in each affected community. These public consultations served as an avenue to educate them on the purpose of the project and the possible associated impacts and their respective rights before the implementation of the RAP Study.

In the course of administering the questionnaire and census, useful interactions between the field staff and the PAPs revealed their disposition to the project and PAPs' willingness to support HJKYBTF in achieving the project. All parties mentioned in this RAP report were adequately notified before the commencement of surveys and will be engaged for the payment of compensation, resettlement activities, and disbursement of project assistance planned by HJKYBTF.

10.2.2 Value of Land

The land use Act does not provide for compensation for land, only for assets and improvements. However, AfDB Policy on involuntary resettlement -OS 2 provides for land replacement, asset replacement as well as restoration of livelihoods. Therefore, there is no justification to make a presentation on the value of lands that the PAPs currently occupy under the laws of Nigeria. Nevertheless, going by the principles of payment of compensation adequate and in such a way that PAPs are not left poorer or impoverished because of the project, HJKYBTF will give adequate assistance to the PAPs to enable them to obtain another land to relocate the affected assets to as well for restoration of livelihoods.

10.3 Entitlement Matrix for Resettlement Activities

This provides a framework for entitlement for each category of impacts of the project. To determine the eligible person for compensation the Land Use Act and the Criteria set by the AfDB OS 2 were both considered, and the more stringent applied (See Table 10.1 and 10.2).

The RAP for the project is aligned with the AfDB OS 2 which indicates best practices for the restoration of the livelihoods of people affected by the implementation of the project. Hence, where there are gaps between the Land Use Act (1978) and the AfDB OS 2, concerning compensation of PAPs, the more stringent requirement will apply. This ensures compliance with OS 2 without going against the Land Use Act. The principles adopted thus form the basis for establishing eligibility and make the provision for all types of losses (land, structures, business/employment, and workday wages). All affected persons shall be compensated at full replacement costs.

Table 10.1: Nigerian Land Use Act Vs AfDB OS 2

S/N	Category of PAPs	Nigeria Law (Land Use Act)	AfDB OS2	What was applied for the Challawa Dam watershed management Project
1	Landowners	Cash compensation is based on market value.	Entitled to compensation for land, priority is given to land-to-land compensation and/or compensation-in-kind instead of cash compensation. When cash payments are made, the affected people should be provided with counseling to ensure that they have the knowledge to use the compensation wisely. Compensation for other assets at full replacement costs.	Adapt the provisions of **Nigeria Law**
2	Land Tenants	Entitled to compensation based on the number of rights they hold upon the land	Entitled to resettlement assistance and compensation for all their assets such as crops, structures, and other livelihood activities at full replacement cost.	Adapt the provisions of AfDB OS2
3	Land users/Squatters	Not entitled to compensation for land, entitled to compensation for crops	Not entitled to compensation for land but are entitled to resettlement assistance including compensation for loss of livelihood activities, structures, crops, etc to improve their former living Standards.	Adapt the provisions of AfDB OS2
4	Owners of "Non-permanent" Buildings	Cash compensation is based on market value.	These groups are entitled to resettlement assistance to improve their former living standards (compensation for loss of livelihood activities, structures, crops, etc.).	Adapt the provisions of AfDB OS2
5	Owners of "Permanent" buildings	Cash Compensation is based on market value. (that means the depreciation is allowed)	Entitled to resettlement assistance and compensation for all their losses at full replacement costs before their actual move.	Adapt the provisions of **Nigeria Law**
6	Losers of livelihoods (farmers,	No consideration other than cash values for assets as described above by asset category	Compensation factors in the "total economic cost" include the social, health, environmental, and psychological impacts of the project and the displacement, which may disrupt productivity and social cohesion. Considerations are given	Adapt the provisions of **Nigeria Law**

S/N	Category of PAPs	Nigeria Law (Land Use Act)	AfDB OS2	What was applied for the Challawa Dam watershed management Project
	business people, employees		to the loss of livelihood and earning potential of the affected people. Affected people are provided with targeted resettlement assistance to ensure that their standards of living, income-earning capacity, production levels, and overall means of livelihood are improved beyond pre-project levels.	
7	Grievance Procedure	No specific requirement for establishing an independent grievance mechanism	Requires the establishment of a culturally appropriate and accessible grievance redress mechanism to resolve, in an impartial and timely manner, any disputes arising from the resettlement process and compensation procedure as early as possible in the resettlement process. The borrower or client is required to work with informally constituted local committees made up of representatives from key stakeholder groups and, in particular, vulnerable communities to establish the grievance and redress mechanism. The grievance redress mechanism, which should be monitored by an independent third party should not impede access to judicial or administrative remedies but must inform affected people about the Bank's Independent Review Mechanism (IRM).	Adopt the provisions of AfDB OS2
8	Rejection of Compensation	No categorical statement	No categorical statement	Put the compensation value in an escrow account and continue to negotiate using the GRM to resolve issues before proceeding with take over

Table 10.2: Entitlement Matrix

Asset	Impact	PAPs	Nigeria Requirement	Additional compensation or measures in line with AfDB's OS2	Livelihoods Support
Land	Permanent/ Temporary land take	Registered owners with title deed for land	Compensation at state rates or support to find replacement land of similar size and quality.	PAPs are consulted to confirm their compensation preferences (land-for-land or cash). Compensation at replacement cost (in cash) or where possible, replacement land of the same quality and close to the location of the original land plot. Livelihood restoration and alternative income earning opportunities e.g. skills training offered. Support before, during, and after taking cultivated land plots to cover a reasonable period necessary for PAPs to re-establish their new land plots (which they either were allocated or bought with the received cash compensation).	Livelihood restoration options for affected farmers: continuous crop cultivation on alternative plots, agricultural skills improvement training, or small livestock package
		Non-registered occupants of land who either cultivate such land based on customary ownership rights	Compensated for lost assets other than land (such as crops and structures) at replacement cost.		
Crops and Economic Trees	Loss of crops and productive trees (fruit/nut)	All PAPs regardless of legal status	None (crops are typically harvested before displacement)	Cash compensation at replacement cost based on type, age, and the market price of tree and crops (the compensation amounts to be determined by a	Crops-Training in improved agriculture methods and seeds provided for three seasons (18 months)

Asset	Impact	PAPs	Nigeria Requirement	Additional compensation or measures in line with AfDB's OS2	Livelihoods Support
			Compensation for perennial crops at existing compensation rates Trees are categorized as saplings, productive, or old.	certified evaluator during the LRP stage)	Trees-Training in improved agriculture methods and saplings provided for fruit trees and perennial crops
Permanent loss of Structure	Loss of homes/dwellings Tenants	Tenants and original owners of the house and land Physically displaced Economically displaced	Cash compensation for loss of built-up structures at full replacement costs. Owners of affected structures will be allowed to take and reuse their salvageable materials for rebuilding and rehabilitation of the structure. In case of relocation, transfer allowance to cover the cost of shift (transport plus loading/unloading) the effect and material will be paid on an actual cost basis or current market rates	Housing unit at chosen relocation site; or Cash compensation at replacement cost value; Relocation assistance such as transport of belongings within a 25 km radius, etc. One-time cash assistance is equivalent to 4-month rent moving to an alternate premise.	Compensation for loss of livelihood or livelihood development support for economically displaced Transfer allowance to cover cost of shifting (transport plus loading/unloading) personal effects paid on an actual cost basis or current market rates
	Owners of the structure other than the house, whether or not the land on which the structure stands is legally occupied.	Tenants and original owners of the structure and land			

Asset	Impact	PAPs	Nigeria Requirement	Additional compensation or measures in line with AfDB's OS2	Livelihoods Support
Special provision for vulnerable PAPs Re-establishing and/ or enhancing livelihood	Women-headed households, disabled or elderly persons, and the landless	Women-headed households, disabled or elderly persons	Needs-based special assistance is to be provided either in cash or in kind.	Empowerment training to be carried out alongside cash support.	Support before, during, and after training.
Change in livelihood for women and other vulnerable PAPs that need to substitute their income because of adverse impact Loss of grazing area	Vulnerable PAPs, particularly women. Owners whose landholding has been reduced to less than 5 acres Cattle rearers	Vulnerable PAPs particularly women Cattle rearers	Restoration of livelihood (Vocational training) and subsistence allowance at an agreed rate per day for a total of 6 months while enrolled in a vocational training facility Relocation to new grazing areas where possible assists the cattle herdsmen to locate new grazing fields.	Needs-based special assistance is to be provided as incentives. Consider possible compensation for loss of income for the period of locating a new grazing area	Support before, during, and after training. Same as additional compensation or measures.

10.4 Cut-off Date

A rigorous census and inventory of affected assets and property were conducted. Notice of entry was served on the communities as mentioned in Section 10.2.1. This was to notify them about the crops/property enumeration and valuation of assets within the proposed project's sites for compensation/ resettlement. The notification also included the dates for the census of PAPs and property enumeration in the communities.

The date of commencement of the enumeration established the cut-off date, which was 10th April 2023. Therefore, any improvements made by any body on their parcel or structures shall not be eligible for compensation. The enumeration was conducted from January 10th to 23rd April 2023.

10.5 Proof of Eligibility

Various forms of evidence as proof of eligibility were considered and they cover the following:

- PAP with formal legal rights, documented in the form of land title registration certificates (certificate of occupancy or right of occupancy), leasehold indentures, tenancy agreements, rent receipts, building and planning permits, business operating licenses, and utility bills among others: unprocessed/unregistered formal legal documents will be established.
- PAP with no formal or recognized legal rights criteria for establishing non-formal, undocumented, or unrecognized claims to eligibility shall be established paying attention to each situation and its peculiarities. Alternative means of proof of eligibility will include;
  - Witnessing or evidence by recognized traditional authority, customary heads, community elders, family heads and elders, and the general community.

However, only PAPs enumerated during the baseline survey shall be eligible for either compensation or resettlement. Any new structures or additions to existing structures carried out after the cut-off date and their occupants will not be eligible for compensation or resettlement.

10.5.1 Method of Compensation

Individual and household compensation will be made in cash, in kind, and/or through assistance in the knowledge and presence of both man and wife and adult children or other relevant stakeholders, where applicable. The preference for cash (through bank cheque) compensation has been an individual choice although every effort was made to instil the importance and preference of accepting in-kind compensation especially when the loss amounts to more than 20% of the total loss of productive assets, which is hardly the case for crops and economic trees.

10.5.2 Entitlement for Compensation

Entitlements for compensation are based on the eligibility criteria and the various categories of losses identified earlier and the actual census during the preparation of the RAP.

10.5.3 Method of Valuation

The method of valuation used took into a consideration the Land Use Act, the African Development Bank's OS2 and, most importantly, the statutory replacement cost method which is according to the dictates of the Nigerian Institution of Estate Surveyors and Valuers and whose body is empowered by law to carryout valuation.

The cost of replacing a building is the cost of creating a building or improvement having the same or equivalent utility on the basis of current prices and using current standards of materials and design. It is also used where the law provides that this method shall be used whether or not there is a better alternative. For example, section 29, subsection 4, paragraph b, of the Land Use Act of 1978 recommended the cost approach in valuation for compensation in Nigeria.

10.5.4 Valuation Prodcedure using the Replacement Cost Method

The affected structures are in the rural areas and predominantly constructed with mudblocks and we applied the rate appropriate per meter square for the structures. The BOQs (Bills of Quantity) were obtained from three different quantity surveyors for constructing an equivalent replica type of structure within the project area. This formed part of the basis used in building up the rates applied for valuation. This forms the estimated unit cost per square meter used in multiplying by the gross floor area

- estimate the market value of the site as if vacant and undeveloped/ land replacement.
- add cost of movement and relocation allowance
- no depreciation was deducted in compliance with the Bank's OS 2, add the market value of the site to the indicated value of improvements to arrive at the value of the existing property

Table 10.3: Building rates for construction of structures and livelihood packages

S/N	Component Of Structure	Rural Area (Cost Per sq m/meter Run)
1.	Bungalow Built With Mudbricks Block Wall	NGN 35,000
2.	Tenement Built With Mudbricks Block Wall	NGN 25,000
3.	Land Replacement For Structure/ building plot	NA

S/N	Component Of Structure	Rural Area (Cost Per sq m/meter Run)
4.	Movement / Disturbance Allowance For Structure	NGN 50,000
5.	Valuation Of Crops & Trees	Harmonized rates for compensation in the Northwest geopolitical zone (the rate sheet attached as Appendix 3)
6.	Land Replacement Assistance For Crops/Trees	NGN 800,000 – NGN 1,500,000
7.	Assistance to Vulnerable Persons	NGN 6,830,000.00 (USD 14,688.17)
8.	Livelihood Restoration Program	NGN 143,739,813.54 (USD 309,117.88)

Source: RAP fieldwork 2023

10.6 Basis for Valuation of Losses and Budgets

Valuation of assets to be affected by the implementation of the project was conducted using a general principle adopted in the formulation of the compensation valuation which follows the AfDB involuntary resettlement safeguard policy that lost income and assets will be valued at their full replacement cost such that the PAPs should experience no net loss.

The land to be used for the construction of the project is owned by the individuals and communities located in the project area. It is noteworthy that both public consultation with the stakeholders, project communities, and the census showed that the affected communities accept the project as a means for development. Therefore, project-affected persons (PAPs) are mainly those whose structures (residential houses), economic trees, and farms/ crops will be displaced. As a result of the predominantly rural nature of the project area, the project's development has a serious impact on businesses, houses, or means of livelihood of the people. The Harmonised Compensation Rate for North West approved by the National Technical Forum on Land Administration (NTDF) was used as a basis for the computations. As a result, Project Affected Persons (PAPs) would be entitled to the following types of compensation and rehabilitation measures.

10.6.1 PAPs Losing Structures

The mechanism for compensating for the loss of residential structures will be:

a) PAPs with legal rights of land use:

- The cash compensation reflecting the full replacement cost of the structures without depreciation or deduction for salvaged materials.
- The provision of replacement residential land (house site and garden) of equivalent size,

satisfactory to the PAPs or in cash at the replacement cost.

- If the residential land and /or structure is only partially being affected by the project and the remaining residential land is not sufficient to rebuild the residential structure lost in accordance with the prevailing standards, then at the request of the PAPs, the entire residential land and structure will be acquired at full replacement cost, without depreciation.
- All relocated PAPs will be provided with transportation and subsistence allowances as specified in AfDB OS 2.
- Severely affected PAPs and vulnerable groups will receive shelter or other forms of economic rehabilitation from the proponent if deemed necessary and where applicable.
- In case of partial impact on structures and where the remaining structures remain viable for continued use, PAPs will also be entitled to an additional allowance for the repair of remaining structure.

b). PAPs without legal rights of land use.

- The Land Use Act 1978 did not make provision for their compensation. However, going by the AfDB OS 2, there will be no land compensation, but their houses, structures, and other assets on land will be compensated as PAPs with legal rights of land use.

c) In the case of commercial structures, sections a) and b) are applied in addition to the following allowances:

- business loss due to relocation, calculated based on the number of earnings lost during the movement

10.6.2 PAPs Losing Agricultural Land and Crops

The mechanism for compensating for the loss of farmland includes:

✓ The provision of assistance to obtain alternative sites of equal size within the same community;

✓ Cash compensation for lost crops and/or economic trees at the full market price of estimated produce. This is arrived at by employing the appropriate valuation methodology over the types of crops or acreage covered as well as the economic trees to be affected.

✓ PAPs will also be provided with compensation at full replacement cost, without deduction or depreciation for salvaged materials or any other fixed assets in part or total by the project, such as tombs and water wells.

10.6.3 Compensation for Trees

Some of the households in the project area have economic trees. These trees will have to be cut and cannot be replanted within the project area. This will be a permanent loss over the years. Evaluation of the number of trees for each family has been done based on the investigation results. These trees will be compensated.

10.6.4 Access Roads and Workers Camps

The allowance required for workers to access roads to account for the damages or temporary impacts on land for which the owners must be compensated shall be included in the EPC contract.

10.7 Implementation Schedule

The chronological steps in implementation of the RAP is presented in Table 10.4.

To complete the acquisition process, HJKYBTF shall serve notice of intention to States Ministries of Lands and Survey. Attached to this notice, the authorities will find the project descriptions including what the land will be used for, technical description, maps and coordinates, etc.

Upon approval by State government, the state government through the Lands Ministry issues notice for acquisition and revocation of all statutory grants falling within the right of way.

Notice shall show exact extent of land required and published appropriately

Notice shall give a minimum of 6 weeks prior to yielding of possession

Notice shall give or reserve rights of affected persons to enter (and their agents) for purposes of inspection/determination of their acquired interests.

- Notice must state an effective date for the acquisition.
- HJKYBTF shall publish list of claims/undertake verification /resolve objections
- HJKYBTF shall proceed to resettlement / payment of compensation /receive /compile indemnity data
- HJKYBTF shall take over the acquired site.

Table 10.4: RAP Implementation Schedule

	Project Components	Preparation Period (Months)							EPC & Operations (Years)	
		2023							2024	2025
		6	7	8	9	10	11	12		
1	Submission of Final RAP Report									
2	RAP Review and Approval									
3	Procurement of RAP Implementation Consultant									
4	RAP Implementation kickoff									
5	Update RAP									
6	Accrediation of Witness NGO									
7	RAP Immplementation workshop for HJKYBTF, LRC/GRC, NGO									
8	Engagement with PAPs									
i	Disclosure/Negotiation of resettlement package									
ii	Grievance Management									
iii	Compensation Payment to PAPs									
iv	Implement Livelihood improvement									
9	RAP Implementation Monitoring & Evaluation									
10	RAP Implementation Completion Reporting									
11	RAP Implementation Completion Audit & Closure									

CHAPTER 11

INCOME AND LIVELIHOOD RESTORATION PLAN

The Hadejia-Jama'are Komadugu Yobe Basin Trust Fund is encouraged to use the AfDB Operational Safeguard 2 for *Involuntary Resettlement* which includes comprehensive notions of livelihood and assets, accounting for their social, cultural, and economic dimensions stressing the importance of improving living conditions for PAPs through a Livelihood Restoration program. Additionally, it requires that displaced individuals be assisted in their efforts to improve their living standards or to at least restore them to the highest standard between pre-displacement or standards prevailing before the beginning of the project implementation. To define income and develop livelihood restoration strategies, HJKYBTF should involve participation to foster ownership at an early stage.

11.1 Project-Affected Communities

As discussed in Chapter 10 of this report, it is recommended to inform the PAPs of the project at least 6 months before the start of the construction. In all cases, PAPs shall be advised to construct new structures at locations near the previous ones within the affected community to reduce the disruption of community life, and established spatial organization and services. A special case is made for some project-affected communities with no/dilapidated healthcare centers such as Tsara Chikin Gari, Ayaga, and Sakarama communities.

Plate 11.1: Dilapidated Health care center in Tsara Chikin Gari Community

Plate 11.2: Abandoned Health Care Center in sakarama community

In addition to reconstructing and equipping the health centers, the EPC contractor shall provide some of the communities with boreholes for potable drinking water and electricity.

Also worthy of mentioning is the fact that many of the project-affected communities have experienced workers that can be hired during the construction phase. Local experienced workers and entrepreneurs with the necessary experience and capacity should be given priority work opportunities, if applicable. Also, as suggested through consultations, the general contractor should liaise with village chiefs to maximize local hiring as well as the purchase of relevant local materials and services.

The Community Development Fund (CDF) of NGN150,000,000.00 Naira (USD 322,580.65) is a local fund that can be utilized to improve existing community facilities and services by funding the construction or refurbishment of public buildings (schools), services (dispensaries) and infrastructures (water supply, roads). Equitable distribution of the fund is highly recommended and communities should be given a choice to decide if they prefer something else for the amount due to them.

11.2 Income Restoration and Improvement

Different restoration packages will be required for each of the various categories of PAPs and will depend on the type and magnitude of loss suffered, the vulnerability level of the PAPs' household, the indicated preferences associated with their family characteristics, and other relevant circumstances. NGN 143,739,813.54 (USD 309,117.88) of the compensation cost has been budgeted for Livelihood Restoration Program of the RAP implementation.

11.2.1 Land base

As stated in Chapter 10 of this report, the 830 affected households that will lose a piece of land will receive sufficient compensation to be able to buy new land and offset the loss of crops.

Further investigations paired with experience on similar projects indicate that in most cases it would be difficult and cumbersome for the HJKYBTF to find and propose replacement land for different reasons (risk of speculation, administrative burden, PAP lack of trust, etc.). It is thus preferable to pay cash compensation to the PAPs with land replacement cost to provide them with an opportunity to purchase new land and condition it themselves and continue farming.

However, to limit impoverishment risk, adequate compensation levels and implementation conditions are essential. The conditions discussed in chapters 10, 12, and 14 need to be given to PAPs and are summarized below:

- → Sufficient time to find and evaluate their option and possible replacement land and organize the resettlement;
- → Support for all legal aspects of the transaction;
- → All "transaction costs" such as registration fees, transfer taxes, or customary tributes are to be compensated;
- → Adequate control of PAPs' use of compensations by project authorities through different mechanisms like progressive verification of land purchase should be taken.

PAPs whose crops are to be negatively impacted by the project should be provided seedlings, seeds, and irrigation machines for their gardens and crops on their replacement land. Furthermore, compensation should cover the cost of the improvement (fertilized, tilled, weeded, fenced, etc.) to reach the productive condition of the original plot. Affected households will be paid by the project to do this work as much as possible, by themselves.

Additionally, technical assistance will be provided for at least two years to help the impacted households improve their situation. As discussed in Chapter 12 Project Implementation Unit is encouraged to engage the services of an experienced Agronomist who will also ensure coordination with governmental agricultural departments for the coordination and efficiency of the work. This specialist will assess concerns, needs and the most relevant aspects of livelihood improvement with PAPs and local administration as well as it will propose improvement and support activities.

This help could include the following:

- → Practical training courses on improved agricultural techniques;
- → Improved crop varieties;
- → Fertilization;
- → Small-scale irrigation;
- → Animal traction and related equipment;
- → Post-harvest grain conservation;
- → Agroforestry, other relevant techniques.

Women should be targeted as a specific group of interest, with specific engagement methodologies.

11.2.2 Trees

A total of 147 natural and planted trees are present on a small number of parcels. These will be destroyed during the construction. Compensation to households will be allocated according to the prescribed rates up to replace these trees. The PIU specialist will help the affected households to plant trees to restore their source of income and livelihoods.

11.2.3 Structures

In a limited number of cases, 13 houses and Fulani settlements that are located within the project areas will have to be displaced. In that case and during the survey campaign, the PAPs indicated that with adequate compensation they would not have a problem obtaining an available land to relocate their houses to.

Those buildings should therefore be rebuilt on new land where the risk of spatial disruption of household activities is the lowest. All necessary steps will be taken by the HJKYBTF and the PIU or consultants in charge of compensation to make sure that the PAPs find suitable land for reconstruction and enough time for reconstruction and proper compensation is paid. Reconstruction is to be done on parcels adjacent to the piece of land being displaced, where possible. Each of these households will receive Movement / Disturbance Allowance OF NGN 50,000.00.

11.2.4 Vulnerable Groups

A special focus must be given to the livelihood improvement of vulnerable groups before the construction of the project. Vulnerable groups include low-income families, women, children, or handicap-headed households.

Vulnerable households will be consulted at the onset of the operation to evaluate their concerns and needs. Special help that could be provided includes, among others:

- → Support to an open bank account;
- → Help with administrative transactions (land titling);
- → Relocation logistics and other support for the physically resettled households such as :
  - Transport assistance;
  - Reconstruction advice (on materials, type of structures, etc.) to ensure the quality of construction;
- → Psychological support (information, counseling, discussion);
- → Special transitional funds are specific to vulnerable households.

Members of affected households should also benefit from the proposed training programs. Household members within vulnerable households are to be given priority for the allocation of project-related employment and other benefits.

The PIU will assess the applicability of lessons learned from previous projects with relevance to the planned resettlement and compensation activities. The PIU will therefore propose compensation in kind (house reconstruction, equivalent in locally bought food for crop damage) because this type of compensation tends to protect the weakest in the community (females and children, vulnerable people) while cash compensation is detrimental to them[1]. Given the current place of females in rural communities, when cash compensation is the only acceptable option, the following possible mitigation measures should also be examined and implemented when feasible:

- → Awareness programs on issues directed towards authorities, local administrators, and communities;
- → The assistance of PIU to inform and assist vulnerable people and groups;
- → Seeking full consent of females in the households and explaining to them the proposed compensation options;
- → Careful monitoring.

11.3 Non-Financial Components

11.3.1 Employment and Other Benefits

Priority should be given to all able-bodied members of resettled households during the labour recruitment process. This applies to the following employment and contract opportunities: clearing of the sites; porterage for movement of construction materials to sites, construction of access roads and construction camps, reconstruction of community buildings and houses, provision of services and goods to the workers; administration of the compensation program, monitoring activities, etc.

Furthermore, all the affected households and communities should be given all the wood that is cut on their parcel for their use or sale. The materials salvaged from the affected structures should also be left to the affected households and communities.

All goods and services (sand, cement, food, etc.) should be bought locally when possible. This applies to all contractors and specific provisions to that effect must be included in the construction Terms of Reference.

11.3.2 Community Development Fund (CDF)

The project will have many impacts on land use and many households and the positive impacts of the communities are limited to jobs during construction. It is therefore recommended to dedicate some funds to general development objectives, with communities taking the lead in determining which project they wish to prioritize and implement as well as how the project should be implemented. An engagement program will be put in place at the onset of the RAP implementation to inform and engage the leaders and communities on the importance of prioritizing their objectives.

It is proposed that NGN 6,521,000 per project-affected community be added to the cost of the project to finance the CDF. The CDF amounts to NGN 150,000,000.00 (USD 322,580.65) The CDF aims at providing impacted communities with developmental benefits beyond mitigation impacts, and household and community compensations for the loss of assets.

CHAPTER 12

INSTITUTIONAL ARRANGEMENT FOR RAP IMPLEMENTATION

12.1 Actors Involved and Organizational Structure

This section highlights relevant institutions through which the planning and implementation of the RAP for the project will be conducted. Several institutions were identified and will be involved in the overall implementation of this RAP.

These include:

- The Federal Government of Nigeria (FGN);
- Hadejia-Jama'are Komadugu Yobe Basin Trust Fund
- Hadejia-Jama'are River Basin Development Authority
- Kano State Government responsible for;
  - Lands administration;
  - Physical Planning,
  - Agriculture
  - Women and Social Services
- Affected Local Government Authority (LGA)
- Karaye Customary Chiefdoms, District Council, and Village Chiefs.

12.2 Procedures and Responsibilities

The responsibilities and roles of each of the institutions are discussed in Chapter 4 of this report. However, in addition to the described roles, we recommend to the PIU the establishment of a Local Resettlement Committee (LRC) and the hiring of a Compensation and Resettlement Manager (CRM) who shall be an independent consultant, as described in Section 12.3.

12.3 Institutional Arrangement

Responsibilities in the implementation and monitoring of the RAP are shared between multiple stakeholders, including the funding agencies, competent ministries, departmental authorities, and HJKYBTF. In other to encourage the coordination of decisions as well as the application of the various measures in an appropriate way, HJKYBTF should consider the possibility of hiring a Compensation and

Resettlement Manager (CRM). Furthermore, as discussed, an LRC should be put in place and a witness NGO should be invited to participate in the process.

Figure 12.1 illustrates the functioning of such an institutional arrangement.

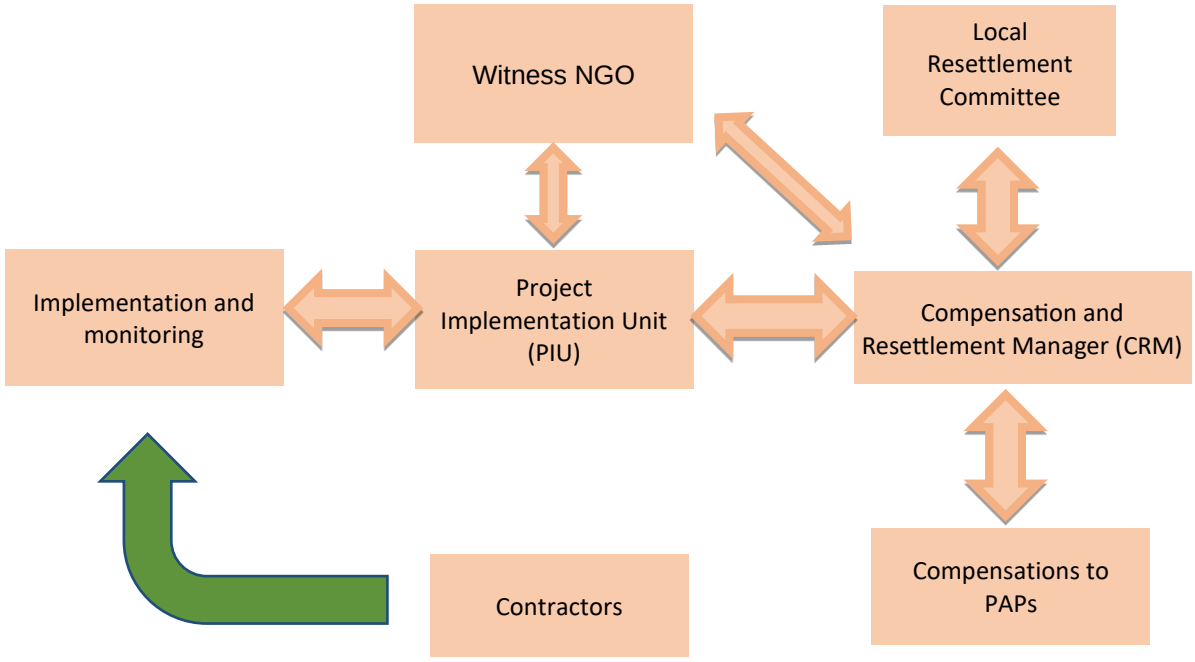


Figure 12.1: Institutional Arrangements for RAP Implementation

12.3.1 Project Implementation Unit (PIU)

Responsibility for the good implementation of the RAP lies with HJKYBTF through the PIU. It is thus its responsibility to ensure the hiring of a Compensation and Resettlement Manager (CRM), the witness NGO, and establishing the Local Resettlement Committee (LRC). This structure will take care of the implementation of the RAP, including the monitoring activities.

12.3.2 Compensation and Resettlement Manager (CRM)

The CRM should be Consultant or NGO with good credentials and knowledge about the project area, with the following responsibilities;

- Prepare compensation and resettlement plan
- Provision of information on compensation and resettlement activities and consultation with the PAPs;
- Ensure proper information and participation of PAPs and affected communities;
- Management of compensation payments;

- Monitoring the resettlement work, including the implementation of community-approved projects financed through the CDF;
- Production of reports for the RAP implementation to appropriate government authorities, HJKYBTF, and the contractor in charge of the construction.

The CRM must rely on a team of professionals and support staff able to conduct all the tasks described, including;

- **Support staff**: secretarial services, drivers, security and legal personnel, general accountants;
- **Survey, Identification & Appraisal Team**: surveyors, appraisers, "option disclosure and agreement" officers in charge of relations with each PAP household (negotiation, compensation payment, PAP feedback, etc.);
- **Cash compensation**: compensation officers, accountants, security officers;
- **Database management**: database officers/documentation officers;
- **Livelihood restoration and community forest**: agronomist / agro-foresters;
- **Consultation specialist**: Community engagement specialist in charge of the information and participation program;
- **CDF community project**: technicians or engineers on an ad-hoc basis providing technical advice for community projects and supervising the contractors.

The envisaged compensation amounts and resettlement modalities for each PAP will have to be approved and endorsed by the PAPs, the competent governmental authorities, and HJKYBTF.

Communities' and households' fears regarding the non-payment of the Claims are important and widespread. To reduce those fears, it is strongly recommended that the approval of the start of the construction of the project be conditional on the transmission of a satisfactory progress report from the CRM. This report must establish, with the support of evidence, that compensations were paid, and that resettlement projects were successfully carried out before the initiation of the construction phase. The confirmation of the witness NGO of this report is essential.

12.3.3 Local Resettlement Committee (LRC)

This committee shall be established in each LGA, including Village Chiefs, elected representatives of affected PAPs, and LGA authorities to ensure proper management of compensation processes, reconstruction, and CDF project management. As mentioned, it is proposed that 3 LRCs, one each for Kiru, Rogo, and Karaye LGA, be created.

The composition of these LRCs would be:

LGA Lands or works department representative;

- Affected village chiefs;
- 3 representatives of affected PAP with at least one woman;
- 1 representative a neutral, respected person, like a respected Iman or church priest to be nominated by Customary Chiefdom (Emir or Paramount Ruler), that can act as chairman so meeting procedures are followed.

LRCs are considered local partners for the implementation of the RAP and work with the PIU and the CRM to ensure proper and equitable treatment of all PAPs and communities.

They will:

- Offer assistance to identify and select the resettlement sites;
- Will be witnesses of the final agreement with the PAP concerning compensation valuation, signing of agreements with households, and selection of resettlement sites;
- Involve in monitoring procedures;
- Identification of vulnerable people and households and work with PIU to address specific concerns of these people.

12.3.4 Witness NGO

To enhance transparency and trust from PAPs it is suggested that a witness NGO, recognized and credible in the project area, be hired, through a public proposal and selection process, by the PIU to provide independent advice and report on RAP implementation and management focusing on consultation activities, compensation and resettlement related activities and grievances management. This NGO could be a recognized and credible Human Rights advocacy group or an NGO active in rural development.

This 'outside' look will ensure that proper procedures and stated compensation processes are followed, that PAP grievances are well taken care of, and that PAP is treated with fairness. This mode of supervision was experienced in other projects and gave good results in terms of the reduction of grievances in particular[2].

This NGO will review and validate CRM reports, meet with PAPs, check the implementation of the measures, reconstruction, etc. in the field, and provide comments and recommendations. All PAPs will be informed of the NGO's role and function and need to have access to its representatives, confidentially, if need be, to explain and discuss their difficulties or grievances.

[2] Burnside and Associates Limited, 2006, Bujagali Interconnection Project Resettlement and Community Development Action Plan

12.3.5 Stakeholder Engagement Program

To ensure the interests of the affected persons are fully entrenched in the RAP process and income restoration, an engagement program shall be developed at the onset of the RAP implementation process. These program goals are transparent information and meaningful participation of PAPs, representatives of affected and interested groups, and the various administrative and government departments through the project.

This participation will be done through the creation of the Environmental Committee of the PMU, the LRC, and a vigorous program of information and consultation of affected communities and PAPs. This information and consultation will concern compensation rules and procedures, livelihoods programs, PAPs rights, grievances mechanisms, etc.

Many means should be used leaflets, community meetings with graphical displays to help illiterate people, radio messages in local languages, recorded approval of the project by local authorities, etc.

12.4 Institutional Capacity Reinforcement

Concerning the above, training and information transmission are important issues to raise awareness of current environmental and compensation legislations and regulations governing the project. A training program must be implemented as part of the LRC and witness the NGO set-up process to properly train key personnel involved with the supervision of compensation evaluation, procedures, and implementation of other mitigation and compensation measures. Training on grievance procedures and negotiations should also be provided to the personnel in charge of supervising compensation and resettlement issues shall be provided by the CRM to the PIU, LRC, and NGO. The CRM shall be responsible to ensure its staff has the requisite expertise and experience to handle the assignment.

Table 12.1 outlines the training proposed for the PIU, LRC, and witness NGO. The training is focused on the practical aspects of compensation and resettlement, the compensation process, monitoring, and management. The proposed content is a minimum that can be expanded depending on the competency of the trainees and their experience. The costs associated with this training program shall be included in the CRM budget.

Table 12.1: Training Program

Training Recipients	Type of Training	Minimum Issues to be Covered	Facilitator/Trainers
PIU team of compensation supervisors and witness NGO	• Workshops • Lectures • Case studies	• Compensation and resettlement process • Grievances management, • negotiation and • mediation techniques	Resettlement Expert Legal and/or negotiation experts
LRC and other stakeholders	• Workshops • Lectures • Case studies	• Compensation and resettlement process • Grievances management, • negotiation and • mediation techniques	Resettlement Expert Legal and/or negotiation experts

CHAPTER 13

MONITORING, REVIEW, AND EVALUATION

The purpose of resettlement monitoring is to ensure that measures developed for compensating the losses were effective in restoring PAPs' living standards and income levels. Monitoring will be implemented by the PIU.

During the monitoring phase, the existing grievance mechanism will be regularly reviewed for improvement and correspondingly, additional and more user-friendly forms, which enable the field staff to forward complaints and demands of local people to the PIU.

Throughout the Project lifecycle, monitoring and evaluation activities will be reviewed; restructured, or removed in case the previously produced tools and forms are inefficient.

Monitoring and Evaluation (M&E) procedures establish the effectiveness of all land and asset acquisition and resettlement activities, in addition to the measures designed to mitigate adverse social impacts. The procedures include internal track-keeping efforts as well as independent external monitoring.

The purpose of resettlement monitoring for the proposed Challawa Gorge watershed management Project will be to verify that:

- Actions and commitments described in the RAP are implemented;
- Eligible project-affected people receive their full compensation before the start of the rehabilitation activities on the corridor;
- RAP actions and compensation measures have helped the people who sought cash compensation in restoring their lost incomes and in sustaining/improve pre-project living standards;
- Complaints and grievances lodged by project-affected people are followed up and, where necessary, appropriate corrective actions are taken;
- If necessary, changes in the RAP procedure are made to improve the delivery of entitlements to project-affected people.

Monitoring will provide both a warning system for the PIU and the project sponsor (HJKYBTF) and a channel for the affected persons to make known their needs and their reactions to resettlement execution.

PIU monitoring and evaluation activities and programs shall be adequately funded and staffed. PIU monitoring will be verified by the witness NGO to ensure complete and objective information.

13.1 Monitoring Framework

The purpose of resettlement monitoring will be to ensure that compensation measures were effective in restoring PAPs' living standards and income levels. Also, the effectiveness of the grievance mechanism provided will be followed up. As part of the monitoring and evaluation process, changes in RAP procedures will be put into effect if necessary.

The monitoring and evaluation framework consists of three elements:

- PIU monitoring
- External monitoring is undertaken by the Witness NGO; and
- Independent RAP Completion Audit.

Indicators have been established to measure RAP activities, results, objectives, and goals. There are five categories of indicators for performance monitoring.

The first three (3) Internal Performance Monitoring are *input, output, and process indicators*.

They are mostly used for medium-term measures to ensure that the RAP is relevant, effective, and efficient. The last two Impact monitorings are *outcome and impact indicators.* They are mostly used for long-term measures for assessing the results.

Table 13.1: RAP Monitoring Framework

Component Activity	**Type of Information/ Data Collected**	**Source of Information/ Data Collections Methods**	**Responsibility for Data Collection, Analyses, and Reporting**	**Frequency/ Audience of Reporting**
Internal Performance Monitoring	Measurement of input, process, output, and outcome indicators against the proposed timeline and budget, including compensation disbursement	Quarterly narrative status and compensation disbursement reports	PIU team, including public relations representatives	Semi-annual or as required by the HJKYBTF Environmental Committee and AfDB
Impact Monitoring	Tracking the effectiveness of inputs against baseline indicators Assessment of affected people's satisfaction with inputs, processes, and outputs.	Annual quantitative and qualitative surveys. Regular public meetings and other consultations with project-affected people; review of grievance mechanism outputs.	PIU team, including the public affairs representative Witness NGO	Annual

To effectively report on the effectiveness of RAP implementation, PIU will monitor the following key indicators, in keeping with AfDB requirements on involuntary resettlement:

- The timely disbursement of compensation;
- Compensation disbursement to the correct parties;
- Public consultation and grievance procedures in place and functioning;
- The physical progress of resettlement and rehabilitation, where applicable.

PIU monitoring will provide the RAP management team with feedback on RAP implementation and help ensure that adverse impacts on affected people are mitigated promptly. M&E will be the main mechanism to alert management of any delays and problems and will help HJKYBTF measure the extent to which the main objectives of the resettlement plan have been achieved.

RAP monitoring and evaluation activities will be adequately funded, implemented by qualified specialists, and integrated into the overall PIU budget and activities.

PIU monitoring and evaluation activities will be supplemented and verified by monitoring efforts of the witness NGO.

The establishment of appropriate indicators in the RAP is essential since what is measured is what will be considered important. Indicators will be created for affected people as a whole, for key stakeholder groups, and special categories of affected groups such as women.

The most important indicators for the RAP in the near-term concern outputs, processes, and outcomes since they define whether the planned level of effort is being made and whether early implementation experience is being used to modify/redesign RAP features. Over the medium to long term, outcome and impact indicators are critical since they are the ultimate measure of the RAP's effectiveness in restoring people's livelihoods.

Monitoring indicators may have to be defined or re-defined during project in response to changes to project-related conditions. Consequently, implementation and mitigation measures may have to be adopted to incorporate these changes into the M&E plan.

13.1.1 Indicators

- **Input indicators**

These cover the human and financial resources that are utilized in the RAP activities.

- **Output indicators**

Include activities and services produced with the inputs, which can be a database of land acquisition, compensation payments made for the loss of assets, etc.

- **Process indicators**

Process indicators represent the change in the quality and quantity of access and coverage of the activities and services. Examples of process indicators in the RAP include:

1. The creation of grievance mechanisms;
2. The establishment of stakeholder channels so that they can participate in RAP implementation;
3. Information and dissemination activities.

- **Outcome indicators**

The delivery of mitigation activities and measures to compensate physical and economic losses created by the project such as restoration and compensation of agricultural production and overall income levels, changes in PAPs and community attitudes towards the project, and use of compensation payments for income-generating activities.

- **Impact indicators**

Impact indicators define the change in medium and long-term measurable results in behavior and attitudes, living standards, and conditions. Impact indicators aim to assess whether restoration activities of the RAP are effective in maintaining and even improving the social and economic conditions of PAPs.

In addition to quantitative indicators, impact monitoring will be supplemented by the use of qualitative indicators to assess client satisfaction and the satisfaction of the affected people with the choices that they have made in re-establishing themselves.

Tracking this data will allow PIU to determine the following types of information:

→ The extent to which quality of life and livelihood has been restored;

→ The success of the resettlement;

→ Whether Project Affected Persons have experienced any hardship as a result of the project.

13.2 Internal Monitoring

Internal monitoring measures the progress of activities defined in the RAP. The PIU will be responsible for this process with support from appointed experts as necessary. It is the responsibility of the PIU to conduct regular internal monitoring of the resettlement efforts and performance of the operation through LRC and grievances committee which will be responsible for implementing resettlement activities and managing

grievances. The monitoring shall be a systematic evaluation of the activities of the operation about the specified criteria of the condition of approval.

13.2.1 Objectives of Internal M&E

The objective of internal monitoring and supervision shall be:

- To verify that the valuation of assets lost or damaged, and the provision of relocation, resettlement, and other rehabilitation entitlements, has been carried out following the resettlement policies.
- To oversee that the RAP is implemented as designed and approved
- To verify that funds for implementation of the RAP are provided by the HJKYBTF promptly and amounts sufficient for their purposes and that such funds are used by the provisions of the RAP.
- Ensure the identification and signature/thumbprint of PAPs before and during receipt of compensation entitlements.
- Record all grievances and their resolution and ensure that complaints are dealt with promptly.

13.3 External Monitoring and Evaluation

External monitoring activities will verify the process defined in the RAP which is realized by PIU. The witness NGO shall be established to periodically carry out external monitoring and evaluation of the implementation of the RAP. The general objectives for external monitoring are:

- To provide an independent source of evaluation during the implementation process of resettlement and compensation. The external monitor will offer if needed, external support and technical expertise to RAP compensation committees and implementing agencies;
- To contribute advice to solve both anticipated and unanticipated problems that may arise as the programs defined in this RAP are carried out;
- To provide an overall assessment of RAP programs from a broader, long-term socio-economic perspective.

The following parameters will be monitored and evaluated through PIU reports and sites visits:

- Public Consultation and Awareness efforts of Compensation distribution.
- PAPs should be fully informed and consulted about all resettlement activities, including land acquisition, leasing land, and relocation activities;

- The witness NGO representative should attend some public meetings to monitor consultation procedures, problems, and issues that arise during the meetings and solutions proposed;
- Levels of PAPs' satisfaction with various aspects of resettlement and compensation will be monitored and recorded; and (b) operation of the grievance redress mechanism, redress results, and effectiveness of grievance resolution will be monitored.
- Standards of Living - throughout the resettlement implementation process, the trends of living standards of PAPs will be observed and surveyed, and any potential problems in the restoration of living standards will be recorded and reported.

The witness NGO should have qualified and experienced staff and their terms of reference acceptable to the financing AfDB. In addition to verifying the information furnished in the internal supervision and monitoring reports, the independent monitoring unit shall visit a sample of 10% of PAP in each relevant project site, six (6) months after the RAP has been implemented to:

- Determine whether the procedures for PAPs participation and delivery of compensation and other rehabilitation entitlements have been done following the Policy Framework and the respective RAP.
- Assess if the RAP objective or enhancement or at least restoration of living standards and income levels of PAPs have been met.
- Gather qualitative indications of the social and economic impact of project implementation on the PAPs.
- Suggest modification in the implementation procedures of the RAP, as the case may be, to achieve the principles and objectives of this policy framework.

The terms of reference for this task and selection of qualified NGO and Consultant will be prepared by the PIU in collaboration with HJKYBTF and the AfDB at the beginning of the project implementation stage. Both internal and external monitoring will be ended with RAP Completion Audit.

13.4 RAP Completion Audit

A RAP completion audit will be undertaken when previous monitoring has indicated that there are no significant outstanding issues regarding livelihood restoration and resettlement. It is expected that this final audit will be performed 3 years after the resettlement. The RAP completion audit will be undertaken by an Accredited Agent with support from PIU and HJKYBTF as required.

The RAP completion audit will provide a final indication that the livelihood restoration is sustainable and no further interventions are required.

Therefore, the independent audit assessing compliance programs resettlement/compensation with the provisions described in the RAP, the Nigerian legal framework applicable, and the requirements of AfDB as required. The evaluation report will be made public through the PMU Environmental Committee, LRC meeting, and public announcement through appropriate media.

13.5 Reporting

RAP monitoring reports will be prepared following AfDB guidelines. Progress will be reported for the following tasks:

- Internal monitoring;
- External monitoring;
- Compensation;
- Completion audit.

The PIU team will have primary responsibility for the implementation of all internal monitoring activities. Designated staff will collect relevant data in a standardized format. PIU will use a device such as a bar chart/Gantt chart or MS Project table to assess and present information on the progress of time-bound actions.

13.5.1 Frequency/Audience of Reporting

Monthly performance monitoring reports will be prepared by the CRM and witness NGO for the PIU, beginning with the commencement of any activities related to resettlement, including income restoration. These reports will summarize information that is collected and compiled in the quarterly narrative status and compensation disbursement reports and highlight key issues that have arisen. As a result of the monitoring of inputs, processes, outputs, and outcomes of RAP activities, project management will be advised of necessary improvements in the implementation of the RAP.

13.5.2 Type of Information/Data Collected

To measure the project process and impact performance and to assess the effectiveness of project impact mitigation measures, PIU will collect information on all the input, process outcome, and impact indicators.

Impact monitoring data will be collected at appropriate intervals through qualitative and quantitative surveys, and include a review of grievance mechanism outputs. The PIU will consult directly with the affected populations through regular public and LRC meetings. Monitoring data will be reported to the PIU

and relevant external agencies quarterly or more frequently as required. The monitoring will continue for about 2 years beyond the completion of the displacement process.

CHAPTER 14

GRIEVANCE MECHANISM

During the implementation of the project activities, disputes/disagreements between the project developer and the PAPs may occur especially in terms of compensation, boundaries, ownership of crops or land, etc.

There are great challenges associated with grievance redress, especially in a project of this magnitude. The practice of grievance arbitration over resettlement issues in Nigeria is conducted within the framework of the Land Use Act (LUA) of 1978, reviewed under Cap 202, 1990. Two stages have been identified in the grievance procedure: customary mediation and judiciary hearings.

14.1 Customary Mediation

All the communities affected by this project have internal mechanisms for the resolution of disputes through customary chiefdoms. Such customary avenues should provide a first culturally and amicable grievance procedure that will facilitate formal and/or informal grievance resolution.

A Customary Grievance Redress Committee shall be set up by the PIU in each LGA to address complaints. PAPs' complaints should first be lodged verbally or written in the grievance register through the customary chief, who in turn will invite the PIU. The PIU and the customary chiefs and other council-in-chief will try to resolve the issue amicably. If the complaint cannot be resolved at this level, or if the plaintiff is not satisfied with the settlement proposed, the matter should be reported to the regulatory agencies.

14.2 Regulatory Agencies

The Federal Ministry of Environment and Kano State Ministry of Environment has the statutory responsibility for oversight and monitoring the implementation of the RAP. The agencies shall pronounce judgment on any environmental complaint or dispute reported to them based on regulatory requirements. At this stage, if the plaintiff is still not satisfied with the settlement, he/she can then proceed to the official legal procedures.

14.3 Court of Law

The judicial process following applicable laws will be followed and the law courts will pass binding judgment on the matter.

14.4 Grievance Resolution Procedures

The first level is the Village Chief and the PIU: The aggrieved person shall first report the matter to the Village Chief for resolution. Issues that can be resolved at this level include ownership tussle, management

of deceased property, boundary issues, etc. The type of issues to report to the PIU for possible include perceived damage to property or means of livelihood, incorrect PAP data, the inadequacy of compensation received, etc. If the issue is not resolved at this stage, it can then be escalated to customary mediation and if still no acceptable resolution is achieved, the parties may choose to go to the regulatory agencies and thereafter to the court following the laws of the Federal Republic of Nigeria. Figure 14.1 illustrates the procedure for grievance resolution.

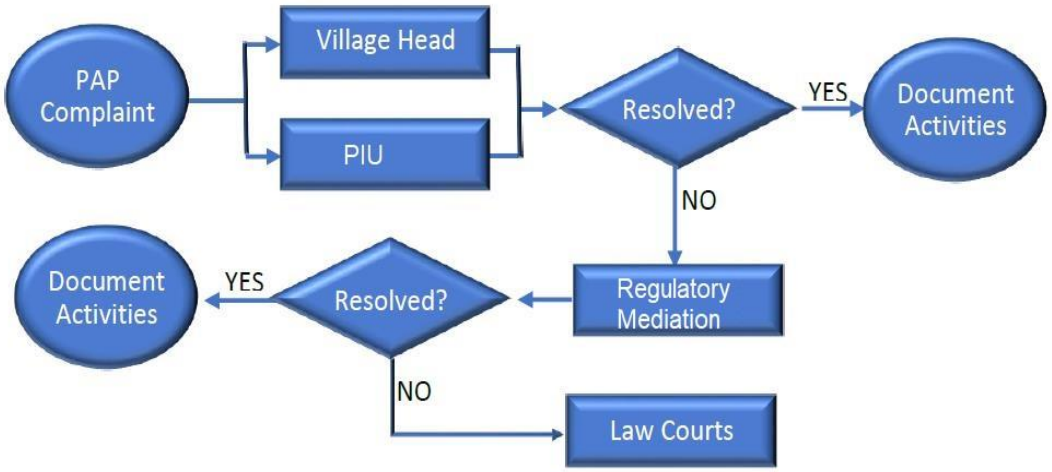


Figure 14.1: Grievance Resolution Procedure

14.5 Grievance Redress Process

There is no ideal model or one-size-fits-all approach to grievance resolution. The best solutions to conflicts are generally achieved through localized mechanisms that take account of the specific issues, cultural context, local customs, and project conditions and scale.

In its simplest form, grievance mechanisms can be broken down into the following primary components:

- Receiving and registering a complaint.
- Screening and assessing the complaint.
- Formulating a response.
- Selecting a resolution approach.
- Implementing the approach.
- Announcing the result.
- Tracking and evaluating the results.
- Learning from the experience and communicating back to all parties involved.

- Preparing a timely report to management on the nature and resolution of grievances.

The best solutions to conflicts are generally achieved through localized mechanisms that take account of the specific issues, cultural context, local customs, and project conditions and scale. For the Challawa watershed Management project, all the grievances will be channeled via the Local Resettlement Committee (LRC).

It is recognized that the formal legal mechanisms for grievance redress tend to be lengthy and acrimonious procedures, and thus an informal grievance redress mechanism through the RIC will be established. This unit will work with a committee comprising the administrative head of local governments; community/village chiefs, NGOs/CBOs, and other relevant Government organs that will be set up to address complaints.

Three levels of grievance redress channels have been identified and will be operationalized for the transmission line project:

14.5.1 First Level GRM: LRC at the Community Level

Complaints regarding project implementation and activities arising from the project area shall be channeled to the Village head, who shall convene the LRC committee at that level to review and address the complaint. The Hakimi/Village head shall head this committee while membership of the committee will consist of those outlined in Table 14.1;

Table 14.1: Membership of Community Level LRC

S/N	Membership	No of Persons	Designation
1	Hakimi/Village Head	1	Chairman
2	1 Representative from CBOs	1	Member
3	Representative Community Development Unit (LGA)	1	Member
4	2 Representatives of PAPs (male and Female)	2	Member

This committee will be expected to report to the RIC. In addition, a complaint box will be placed in the Community leader's palace, where complaints from PAPs can be dropped without retribution. The complaints are received (in written, verbal or electronic form) at various points at Community Level. After registering the complaint in the Grievance Redressal Registration and Monitoring Sheet, the Chairman of the community-level LRC would study the complaint made in detail and issue an acknowledgment letter within five working days, including an outline of the complaint review and appeal process. A written

response shall be issued within two weeks. The Community level LRC shall coordinate a meeting with the aggrieved party to address such issues. The deliberations of the meetings and decisions taken are recorded.

The resolution at the first tier will be normally done within 14 working days and notified to the concerned through a disclosure form. Should the Grievance not be solved within this period, this would be referred to the next level of Grievance Redressal. However, if the village head/chief feels that adequate solutions are being worked out and it would require a few more days for actions to be taken, he can decide on retaining the issue at the first level by informing the complainant accordingly. However, if the complainant requests for an immediate transfer of the issue to the next level, it would be accepted, and the issue would be taken to the next channel. But in any case, if the issue is not addressed within 21 days, it needs to be taken to the next level.

14.5.2 Second Level GRM: GRC Level

The GRC shall receive, hear and address complaints arising from the project implementation. The Director of Lands shall head this committee while membership of the committee shall be as outlined in Table 14.2;

Table 14.2: Membership of the GRC

S/N	Membership	No of Persons	Designation
1	Director of Lands	1	Chairman
2	A representative from the Ministry of Agric	1	Member
4	A representative from the focal NGO	1	Member
4	RIC/PIU	2	Secretary
5	Local Government Paramount Chief	3	Member
6	Security Representative (NSCDC, DSS, or Police)	2	Member
7	2 Representatives of PAPs (Male and Female)	2	Members

If the complainant is not satisfied by the first-level LRC response nor has a complaint regarding their decision-making process, they can directly write to the GRC. All complaints submitted to the GRC shall be logged with a unique ID code. Complainants shall receive an acknowledgment letter within 5 working days, including an outline of the complaint review and appeal process. The complaint shall be filed according to a tracking system, so that complaints are classified, and responded to consistently. Furthermore, the complaint shall be discussed within the GRC and responded to in writing within 2 weeks. The GRC shall also convene a meeting of the aggrieved parties if required. The GRC shall undertake a six-monthly internal

review of the complaint handling mechanism, and make necessary corrections if need be. The GRC-LRC will hold the necessary meetings with the complainant and the concerned officers and attempt to find a solution acceptable at all levels. LRC would record the minutes of the meeting. The decisions of the GRC-LRC are communicated to the complainant formally and if he accepts the resolutions, the complainant's acceptance is obtained on a disclosure form.

If the complainant does not accept the solution offered by the GRC-LRC, then the complaint is passed on to the next level / or the complainant can reach the next level. The Chairman of the GRC would be required to forward the issue to the next level through the Secretary of the GRC to facilitate exploring a solution to this at this level before transferring it to the next level. In any case, the case should be forwarded to the next level if no solution is reached within 14 days of the case reaching the second level and, in a case(s), nearing the required solution, it can be retained to an extent of 21 days. The next level is the court of Law. If the complainant does not accept the solution offered by the GRC-LRC, then the complainant can proceed to the law Court.

CHAPTER 15

RAP IMPLEMENTATION BUDGET AND SCHEDULE

15.1 RAP Implementation Budget

The RAP implementation budget is in the sum of NGN **1,968,308,641.26 (USD 4,232,921.81).** This consists of NGN **1,968,308,641.26** covering payment of compensation claims, allowance for assistance for vulnerable groups, Livelihood Restoration Program, bank charges, stamp duty, and evaluation, demolition and salvage of structures, (Table 15.1).

Table 15.1: Compensation And RAP Implementation Budget

#	Executive Summary	Number	
	Total Number of claimants	**842**	
1	Number of PAPs for structures	13	
2	Number of PAPs for economics trees	237	
3	Number of PAPs for crops	519	
4	Number of vulnerable PAPs	73	
#	**Cost Elements**	**Amount (NGN)**	**Amount (USD)**
1	Budget for structures	25,938,650.00	55,782.04
2	Budget for Land replacement assistance	1,242,162,412.06	2,671,317.02
3	Budget for cash crops/economic trees	108,311,382.22	232,927.70
4	Loss of Business/Value	54,155,691.11	116,463.85
#	**Total for 1-4**	**1,430,568,135.39**	**3,076,490.61**
5	Allowance for livelihood restoration program (10% of compensation cost)	143,739,813.54	309,117.88
6	Allowance for contingency for crops and structures (5% of compensation cost)	71,869,906.77	154,558.94
7	Support for vulnerable group	6,830,000.00	14,688.17
8	Community social development program (water & sanitation, health, school, agriculture etc.)	150,000,000.00	322,580.65
	Subtotal for 5 - 8	**372,439,720.31**	**800,945.64**
#	**Total (Compensation cost + Allowances)**	**1,803,007,855.70**	**3,877,436.25**
8	Resettlement Implementation Consultant (10% of Compensation cost)	165,300,785.57	355,485.56
#	**Grand Total (compensation cost + Allowances + RIC)**	**1,968,308,641.26**	**4,232,921.81**

15.2 RAP Implementation Schedule

The compensation payment part of the RAP implementation shall be completed before land take over. It is envisaged that it can be completed within a period of six (6) months. It is important that all structures to be

rebuilt and payments for compensation are completed before project construction is commenced. This can be done progressively so construction can start on one end.

The monitoring and evaluation activities which are scheduled to be done once a year, shall commence 6 months after completion of compensation payments.

References

1. Adamu, F. (1998): Gender Myth about secluded Women in Hausa society of North-Western Nigeria.

2. African Development Bank Group: Environmental & Social Assessment Procedures Basics For public sector operations AFRICAN DEVELOPMENT BANK GROUP COMPLIANCE & SAFEGUARDS DIVISION (ORQR.3) safeguards@afdb.org.

3. Environmental and Social Impact Assessment (ESIA) For the Challawa Gorge Dma watershed Management Project 2021 prepared by HJKYBTF.

4. SMEC Report, 2019: Priority Projects Preparation Report: Vol. 1A - Challawa Gorge Dam Catchment Management Project, March 2019.

5. NBS (2012) *Multiple Indicator Cluster Survey, 2011*. NBS; UNICEF; UNFPA. Jan. 2012 NBS (2012) *Nigeria Poverty Profile, 2010*. Abuja, Nigeria.

6. NBS (2012) *Multiple Indicator Cluster Survey, 2011*. NBS; UNICEF; UNFPA. Jan. 2012 NBS (2012) *Nigeria Poverty Profile, 2010*. Abuja, Nigeria

7. The Nigeria Land Use Act, 1978

Appendix 1 VALUATION REPORT

VALUATION CERTIFICATE FOR COMPENSATION IN RESPECT OF CHALLAWA GORGE DAM WATERSHED MANAGEMENT PROJECT

In accordance with our standard practice, the Subject site which included; economics, cash crops and structures were inspected on 10th April 2023 to 23rd April 2023 accordingly, all conclusive opinions in the report, relate to the said dates.

PURPOSE OF VALUATION:

The purpose of valuation is to determine the compensation payable to holders of interests in the delineated area. The purpose of this valuation report is to assess a fair amount of compensation, payable for the unexhausted economic crops/trees and structures on the parcel of land within the project site (PSW_1, PSW_2 and Dam Area) to the affected claimants, in accordance with the provisions of the Land Use ACT NO. 6 OF 1978 and other relevant Government Statutes, enactments, laws and schedules.

DESCRIPTION:

This said parcel of land covers a gross area of about 1167.79 hectares required for relocation purposes. The said site which is the subject of our brief, comprises 23 communities in three LGAs within Kano State. The affected communities are as listed below:

Project-defined Component	LGA	Community
Pilot 1	Rogo	Ayaga Kwari
		Ayaga Tudu
		Ayaga Kusari
		Ungwan Datti
Pilot 2	Rogo	Ruwan Bago
		Tsara
		Tsara cikin Gari
		Tsara Kuringa
		Tsara Kwalwa
		Turawa
		Yola
		Tinikas
		Magaji Haji
		Magaji Gari

Project-defined Component	LGA	Community
Challawa Dam Reservoir Area	Karaye	Ma Village
		Kyari
		Kwarin Mallam
		Gudal
		Daura
		Chimata
		Tsohuwar
	Kiru	Sakarma

BASIS OF VALUATION

The structures, economic crops/trees, and other unexhausted interests in the designated areas (PSW_1, PSW_2 and Dam area) were VALUED REBUS SIC STANTIBUS as at the period of valuation survey.

The basis of valuation in the circumstance was the application of the replacement cost for the structures and for crops/economic trees, the application of the approved NTDF Harmonized Rates for Economic Trees and Cash Crops Compensation Assessment in the North west States rates for compensation of economic crops/trees.

VALUATION ASSUMPTIONS

In carrying out the said valuation, the following assumptions have been made

- That the information with which we have been supplied in respect of this assignment by our client is correct.
- That the said economic trees, crops and site is not under lease to any third party or under any form of onerous restrictions.

COMPOSITION TEAM OF ENUMERATORS

The team was made up of the following:

The Consultant, Prof. Obafemi with his team of Estate Surveyor & Valuer, enumerators, GIS experts; Community Representatives; HJKYBTF Representative and Claimants were either physically present to identify their interest or, in very rare cases, represented by their proxies.

SOURCES OF INFORMATION

The details in this report have been obtained as follows:

- As regards descriptive and location details, partly from visual inspections and information obtained on this brief from our client HJKYBTF.
- As regards to valuation inputs from National Technical Development Forum on Land Administration with regards to the harmonized rates for North west geopolitical zone.
- HJKYBTF Challawa Gorge Dam ESIA Report 2021, as reviewed
- We also obtained information from the district and community heads.

The appropriate and adopted basis of valuation to determine the value for compensation of the economic trees, crops and improvements is as enshrined in Section 29, sub section 1 and 4 of the Land Use Act. In consonance with the African Development bank standard, referencing the AfDB`s operational safeguards OS2 we adopted the Replacement Cost Method (RC) which was used in determining the value of buildings, improvements and installations on the project sites.

VALUATION OPINION

IN OUR CONSIDERED OPINION, the current market value for compensation of economics trees and crops within the 1167.79 hectares within project area as enshrined in the Land Use Act CAP L5, 2004 as follows:

Total Number of Claimants = 842

#	**Executive Summary**	**Number**	
	Total Number of claimants	**842**	
1	Number of PAPs for structures	13	
2	Number of PAPs for economics trees	237	
3	Number of PAPs for crops	519	
4	Number of vulnerable PAPs	73	
#	**Cost Elements**	**Amount (NGN)**	**Amount (USD)**
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	Subtotal for 5 - 8	**372,439,720.31**	**800,945.64**
#	**Total (Compensation cost + Allowances)**	**1,803,007,855.70**	**3,877,436.25**

#	Executive Summary	Number	
8	Resettlement Implementation Consultant (10% of Compensation cost)	165,300,785.57	355,485.56
#	**Grand Total (compensation cost + Allowances + RIC)**	**1,968,308,641.26**	**4,232,921.81**

1 USD = NGN 450

Economic crops/trees and structures

Demolition and salvation for compensation payment

COMMENT:

We must state here that going by our physical and visual survey of the site and in company of some members of the communities laying claims to the site, we traversed the length and the breadth of the site and established that the entire project sites (PWS_1, PWS_2 and Dam area) under reclamation falls within the Kano State.

The economic crops/trees and other unexhausted interests were enumerated and inspected by a team led by the consultant, Estate Surveyor and valuer jointly with the owners of various interest were present to identify what they owned.

REFLECTED CONSIDERATIONS

In arriving at the value for the compensation, the following were considered:

- The conditions, sizes, and the projected ages of the economic crops/trees, any economic crops/trees and other unexhausted development on the designated area that could not be visually observed during our valuation inspection and enumeration are disregarded. While all other unexhausted improvements that were visually observed are adequately accounted for.
- Any increase in the value which is speculative in nature is disregarded.
- Any part of the claimants' interest which will not be destroyed has been excluded from this valuation report.

NATURE OF THE PROPERTY

The subject items of compensable values consist of economic crops/trees and structures.

LIMITATION AND ASSUMPTIONS

The subject properties valued are those shown to us as belonging to the claimants-communities and individuals. We assume therefore, that the information we were supplied with are correct.

This report is issued for use only by the addressee and HJKYBTF and no responsibility is accepted to any other person either for the whole of its contents or any part thereof.

We wish to state that if our opinion of value is to be disclosed, the basis of our valuation should be stated. Similarly, if it is intended to be published, it will be necessary for our prior approval to be obtained for the form and context in which it will be published.

LOCATION AND NEIGBOURHOOD

The said site, where the economic trees, cash crops and structures were enumerated for compensation falls within kano state. This said parcel of land covers a gross area of about 1167.79 hectares.

CERTIFICATION OF VALUE

We hereby certify that

Acting on the request of HJKYBTF, we carried out a physical inspection /assessment of the affected structures, economic crops/trees, and other unexhausted developments.

We have no past, present, prospective, direct, or indirect interest in the affected areas or in the use of this report.

In carrying out this assignment, relevant data considered necessary to arrive at the value conclusion were collected and analyzed.

Neither our employment nor our fee for this valuation /assessment assignment has been contingent on our arriving at a specified or implied value or otherwise contingent on anything else other than the delivery of the report.

To the best of our knowledge and belief, all the statements and opinions contained in this report are correct and no important facts have been withheld or over-looked.

We have conducted this valuation assignment in accordance with the professional standards of practice of the Nigeria Institution of Estate Surveyors and Valuers of which the signatory to this report is a member.

Total budget for the implementation of the RAP is in the total net sum of NGN **1,968,308,641.26 (USD 4,232,921.81)**, as shown **below;**

RAP IMPLEMENTATION BUDGET

#	Executive Summary	Number	
	Total Number of claimants	**842**	
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#	**Grand Total (compensation cost + Allowances + RIC)**	**1,968,308,641.26**	**4,232,921.81**

1 USD = NGN 450

NOTES: If the figure of valuation in this report is disclosed to persons other than the addressee, the basis of valuation should be stated. Possession of this report should not carry with it right of publication without our prior consent on use of the form or context on which this publication would appear. The valuation figure in this report has not taken into consideration tax or any expenses of realization in the event of sale.

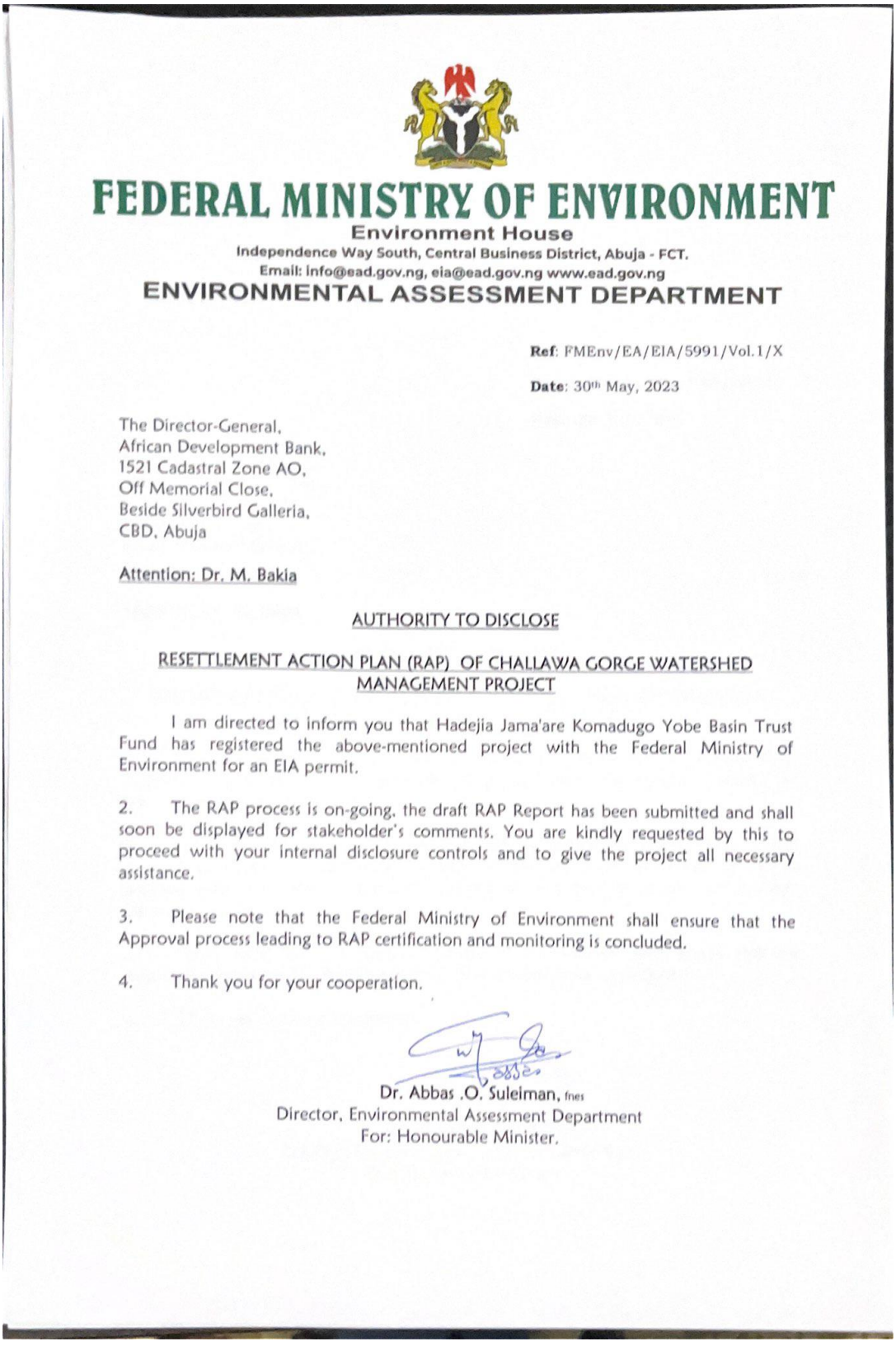
CERTIFICATION

WE CERTIFY that this valuation has been done in accordance with the ethics of the Nigerian Institution of Estate Surveyors and Valuers of which the undersigned is a member.

Yours Faithfully,

Esv. Maureen Ugwu.

Appendix A. Letter of Authorisation for Disclosure by the Federal Ministry of Environment.



FEDERAL MINISTRY OF ENVIRONMENT

Environment House
Independence Way South, Central Business District, Abuja - FCT.
Email: info@ead.gov.ng, eia@ead.gov.ng www.ead.gov.ng
ENVIRONMENTAL ASSESSMENT DEPARTMENT

Ref: FMEnv/EA/EIA/5991/Vol.1/X

Date: 30th May, 2023

The Director-General,
African Development Bank,
1521 Cadastral Zone AO,
Off Memorial Close,
Beside Silverbird Galleria,
CBD, Abuja

Attention: Dr. M. Bakia

AUTHORITY TO DISCLOSE

RESETTLEMENT ACTION PLAN (RAP) OF CHALLAWA GORGE WATERSHED MANAGEMENT PROJECT

I am directed to inform you that Hadejia Jama'are Komadugo Yobe Basin Trust Fund has registered the above-mentioned project with the Federal Ministry of Environment for an EIA permit.

2. The RAP process is on-going, the draft RAP Report has been submitted and shall soon be displayed for stakeholder's comments. You are kindly requested by this to proceed with your internal disclosure controls and to give the project all necessary assistance.

3. Please note that the Federal Ministry of Environment shall ensure that the Approval process leading to RAP certification and monitoring is concluded.

4. Thank you for your cooperation.

Dr. Abbas .O. Suleiman, fnes
Director, Environmental Assessment Department
For: Honourable Minister.

Appendix 2 Notice of Entry/Letter of Introduction

HADEJIA - JAMA'ARE RIVER BASIN DEVELOPMENT AUTHORITY

H-JRBDA
RUWA GWIWAR MANOMA

ADDRESS:
P.M.B. 3168 Maiduguri Road
Hotoro, Kano - Nigeria

TEL: +234 703 610 9450
+234 703 050 1305

HJRBDA/S-FOR-1SUB-1/2023/1210

6th April 2023.

His Royal Highness,
The Emir of Karaye,
Karaye Emirate Council,
Kano State.

Your Highness,

RE-CONSULTANCY SERVICES FOR THE PROPOSED PREPARATION OF RESETTLEMENT ACTION PLAN (RAP) FOR THE CHALLAWA GORGE DAM WATERSHED MANAGEMENT PROJECT.
Notice of Entry To Conduct Crops/Property Enumeration and Valuation

With reference to our previous letter No. HJRBDA/S-FOR-1-SUB-1/2023/127 dated 29th March 2023 on the above subject, I am pleased to request your kind support to the Consultant, Professor Andrew Obafemi (an individual consultant) for the detail exercise in carrying out enumeration and evaluation of Land, Crops and Properties for compensation at the specific areas were the Watershed Management Project will be affected. This will ensure adequate mitigation of the impacts of the project associated with involuntary resettlement when implemented.

The exercise will take place in your community between 10th April 2023 and 23rd April 2023.

Please note that the cut-off date for the exercise is 25th April 2023, after which no affected person shall carry out any improvement on his/her property as such improvement will not be compensated for.

Kindly mobilize your community accordingly and let every project-affected persons come out with a means of Government approved identification and 2 passport photographs during the enumeration exercise.

Please accept the assurances of the Managing Director's esteemed regards.

Muhammad Mustapha Umar
Director (Hydrogeologist)
For: Managing Director
HJRBDA, Kano.

Rec. by
Bashir Musa Isiho
District Head Scribe
for Wamban Karaye, H Rogo
8/4/23

Website: www.hjrbda.kn.gov.ng Email:mdceo@hjrbda.kn.gov.ng, hjrbda.kano@yahoo.com

HADEJIA - JAMA'ARE RIVER BASIN DEVELOPMENT AUTHORITY

H-JRBDA
RUWA GWIWAR MANOMA

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Hotoro, Kano - Nigeria

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+234 703 050 1305

HJRBDA/S-FOR-1SUB-1/2023/1210

6th April 2023.

His Royal Highness,
The Emir of Karaye,
Karaye Emirate Council,
Kano State.

Your Highness,

<u>RE-CONSULTANCY SERVICES FOR THE PROPOSED PREPARATION OF RESETTLEMENT ACTION PLAN (RAP) FOR THE CHALLAWA GORGE DAM WATERSHED MANAGEMENT PROJECT.</u>
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Kindly mobilize your community accordingly and let every project-affected persons come out with a means of Government approved identification and 2 passport photographs during the enumeration exercise.

Please accept the assurances of the Managing Director's esteemed regards.

[signature]

Muhammad Mustapha Umar
Director (Hydrogeologist)
For: Managing Director
HJRBDA, Kano.

Rec by
Bashir Musa [illegible]
District Head Scribe
for Wamban Karaye, [illegible]
[signature] 18/4/23

Website: www.hjrbda.kn.gov.ng Email:mdceo@hjrbda.kn.gov.ng, hjrbda.kano@yahoo.com

HADEJIA - JAMA'ARE RIVER BASIN DEVELOPMENT AUTHORITY

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+234 703 050 1305

HJRBDA/S-FOR-1-SUB-1/127

29th March, 2023.

The Hon. Chairman,
Rogo Local Government Area,
Rogo.
Kano State.

INTRODUCTION LETTER

The Hadejia Jama'are Komadugu-Yobe Basin Trust Fund (HJK-YB TF) under sponsor of African Development Bank (AfDB) has engaged Consultants for the Study of Environmental and Social Impact Assessment of Challawa Gorge Dam Water Shed Management which fall within Rogo District. The first phase of the study was completed and now another 2 Consultants were also assigned to address the following:

a. Grievances Redress Mechanism (GRM) and Stakeholder Engagement Plan (SEP),
b. Resettlement Action Plan (RAP)

In view of the above, I am directed to introduce the following Consultants for the exercises

1. Dr. Eugine Itua and his team for GRM & SEP,
2. Prof. Andrew Obafemi and his team for RAP.

Therefore the Managing Director is seeking your kind support and cooperation for the successful exercise.

Please accept the Managing Director best regard.

Muhammad Mustapha Umar
Director (Hydrogeologist)
For: Managing Director
HJRBDA, Kano.

Original received by
Muktar Khadi Idris
Magatakarda/SSH Rogo
30/3/2023
08089274416

HADEJIA - JAMA'ARE RIVER BASIN DEVELOPMENT AUTHORITY

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TEL: +234 703 610 9450
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HJRBDA/S-FOR-1-SUB-1/2023/127

29th March 2023.

His Royal Highness,
The Emir of Karaye,
Karaye Emirate Council.
Kano State.

INTRODUCTION LETTER

The Hadejia Jama'are Komadugu-Yobe Basin Trust Fund (HJK-YB TF) under sponsor of African Development Bank (AfDB) has engaged Consultants for the Study of Environmental and Social Impact Assessment of Challawa Gorge Dam Water Shed Management which fall within Rogo District. The first phase of the study was completed and now another 2 Consultants were also assigned to address the following:

a. Grievances Redress Mechanism (GRM) and Stakeholder Engagement Plan (SEP),
b. Resettlement Action Plan (RAP)

In view of the above, I am directed to introduce the following Consultants for the exercises

1. Dr. Eugine Itua and his team for GRM & SEP,
2. Prof. Andrew Obafemi and his team for RAP.

Therefore the Managing Director is seeking your Royal support and cooperation for the successful exercise.

Please accept the Managing Director best regard.

Muhammad Mustapha Umar
Director (Hydrogeologist)
For: Managing Director
HJRBDA, Kano.

Rec by Bashir Musa Tsoho.
District Head Sembe
for Wambai Karaye, of Rogo
30/3/2022
08082113424

Appendix II Sample of asset enumeration form

RESETTLEMENT ACTION PLAN (RAP) FOR THE CHALLAWA GORGE DAM WATERSHED MANAGEMENT PROJECT.

ASSET ENUMERATION FORM

GENERAL INFORMATION	
1. PAP SN: CHA/.....	
2. PAP ID: HJKYB/...../..... (cc/nn)	
2.LGA: ..... 3a. Town/Village	
4. Interviewer	
5. INFORMATION ABOUT THE PAP	
5a. Status of the respondent..... (Owner, Tenant, Informant)	
5b. Name of respondent: .....5c. Phone No:	
5d. Occupation.....5e. Gender: Male ☐ Female ☐ 5f. Household Size:	
5g. Age: .....5h. Physical Condition: .....(Fit, Crippled, Blind, Bedridden, etc)	
5i. Religion: ..... 5.j Ethnicity: .....5k. Email:	

6a. GPS coordinates: LAT 1..... LONG 1 ..... LAT 2 .....LONG2....., LAT 3..... LONG 3....., LAT 4..... LONG 4.....

7a. Describe the structure in detail.

Dimensions: Length ..... m Width ..... m

Wall material ....., roof materials ....., finishing..... fence .....

ECONOMIC TREES	No of Stands	Status (M, IM, S)
Dorowa		
Tsamiya		
Marke		
Gawo		
Aduwa		
Giginya		
Kuka		
Neem		
Dalbejiya		
Kurna		
Turare		
Others		

ECONOMIC CROPS	Size (m^2)	Status (M, IM, S)
Millet		
Maize		
Soya bean		
Sugarcane		
Wheat		
Sweet potatoes		
Tomatoes		
Onions Lettuce, carrots, etc		
Others		

Land Size:

CERTIFICATION:

I/we..... Hereby certify that the above-listed crops/structure have been accurately enumerated and that the particulars as recorded by..... are very and correct. I/We, therefore, accept the said recorded particulars unreservedly.

....

Enumerator HJKYB Respondent (Signature/thumb)

Appendix III North West Harmonized Rate Sheet for Valuation

S/NO	ECONOMIC TREES	A MATURE	B IMMATURE	C SEEDLING
1	Aduwa	3,500.00	1,750.00	875.00
2	Albijuja	2,000.00	1,000.00	500.00
3	Aliliba	1,500.00	750.00	375.00
4	Atili	3,000.00	1,500.00	750.00
5	Ayaba	3,000.00	1,500.00	750.00
6	Bagaruwa	4,000.00	2,000.00	1,000.00
7	Baura Rafi	2,000.00	1,000.00	500.00
8	Bauren Lamba	2,000.00	1,000.00	500.00
9	Baushe	3,000.00	1,500.00	750.00
10	Beans	80,000.00	40,000.00	20,000.00
11	Beniseed	60,000.00	30,000.00	15,000.00
12	Cashew	3,000.00	1,500.00	750.00
13	Cassava	200,000.00	100,000.00	50,000.00
14	Ceral grass	100,000.00	50,000.00	25,000.00
15	Chediya	3,000.00	1,500.00	750.00
16	Coconut	5,000.00	2,500.00	1,250.00
17	Cocoyam	80,000.00	40,000.00	20,000.00
18	Cocoyam	80,000.00	40,000.00	20,000.00
19	Cotton	150,000.00	75,000.00	87,500.00
20	Dabino	10,000.00	5,000.00	2,500.00
21	Dakwara	2,000.00	1,000.00	500.00
22	Dalbejiya	3,000.00	1,500.00	750.00
23	Danya	3,500.00	1,750.00	875.00
24	Digatana	100,000.00	50,000.00	25,000.00
25	Dinya	4,000.00	2,000.00	1,000.00
26	Doka	3,000.00	1,500.00	750.00
27	Dorowa	10,000.00	5,000.00	2,500.00
28	Durumi	3,000.00	1,500.00	750.00
29	Dusha	2,000.00	1,000.00	500.00
30	Faru	3,000.00	1,500.00	750.00
31	Fasadabur	3,000.00	1,500.00	750.00
32	Franshana	1,500.00	750.00	375.00
33	Gakwara	5,000.00	2,500.00	1,250.00
34	Gamji	10,000.00	5,000.00	2,500.00

S/NO	ECONOMIC TREES	A MATURE	B IMMATURE	C SEEDLING
35	Gawasa	1,500.00	750.00	375.00
36	Gawo	5,000.00	2,500.00	1,250.00
37	Geza	500.00	250.00	125.00
38	Giginya	10,000.00	5,000.00	2,500.00
39	Ginger	150,000.00	75,000.00	37,500.00
40	Giyaya	1,000.00	500.00	250.00
41	Gmshina	1,000.00	500.00	250.00
42	Goba	4,000.00	2,000.00	1,000.00
43	Goro	3,000.00	1,500.00	750.00
44	Goruba	6,000.00	3,000.00	1,500.00
45	Govt/grazing Recours	300,000.00	275,000.00	137,500.00
46	Grapes	8,000.00	4,000.00	2,000.00
47	Groundnut	100,000.00	50,000.00	25,000.00
48	Guinea corn	60,000.00	30,000.00	15,000.00
49	Gurijiya	1,000.00	500.00	250.00
50	Gwanda	2,000.00	1,000.00	500.00
51	Gwanda Dawa	2,000.00	1,000.00	500.00
52	Irish Potatoes	100,000.00	50,000.00	25,000.00
53	Kabewa	35,000.00	17,500.00	8,750.00
54	Kadauya	10,000.00	5,000.00	2,500.00
55	Kalgo shub	100.00	50.00	25.00
56	Kalgo tree	3,000.00	1,500.00	750.00
57	Kantakara	500.00	250.00	125.00
58	Kanya	4,000.00	2,000.00	1,000.00
59	Kashiya	2,500.00	1,250.00	625.00
60	Katsari	2,000.00	1,000.00	500.00
61	Kawari	2,000.00	1,000.00	500.00
62	Kawo	3,000.00	1,500.00	750.00
63	Kirya	2,000.00	1,000.00	500.00
64	Kuhu Tree	3,000.00	1,500.00	750.00
65	Kuka	10,000.00	5,000.00	2,500.00
66	Kurna	4,000.00	2,000.00	1,000.00
67	Kwarya	30,000.00	15,000.00	7,500.00

S/NO	ECONOMIC TREES	A MATURE	B IMMATURE	C SEEDLING
68	Lalle	3,000.00	1,500.00	750.00
69	Lemu Zaki	8,000.00	4,000.00	2,000.00
70	Lemun Tangerine	8,000.00	4,000.00	2,000.00
71	Lemun Tsami	8,000.00	4,000.00	2,000.00
72	Madaci	5,000.00	2,500.00	1,250.00
73	Madobiya	4,000.00	2,000.00	1,000.00
74	Magarya	2,000.00	1,000.00	500.00
75	Maize	80,000.00	40,000.00	20,000.00
76	Maje	4,000.00	2,000.00	500.00
77	Mango	10,000.00	5,000.00	2,500.00
78	Marke	5,000.00	2,500.00	1,250.00
79	Matsagi	500.00	250.00	125.00
80	Millet	60,000.00	30,000.00	15,000.00
81	Minimum	120,000.00	60,000.00	30,000.00
82	Morianga Alicafera	1,000.00	500.00	250.00
83	Neem	5,000.00	2,500.00	1,250.00
84	Neem Plantation	550,000.00	275,000.00	137,500.00
85	Nunu	2,000.00	1,000.00	500.00
86	Onions,Lettuce,Carrot etc	40,000.00	20,000.00	10,000.00
87	Palm Tree	5,000.00	2,500.00	1,250.00
88	Passion fruit	5,000.00	2,500.00	1,250.00
89	Tattasai	80,000	40,000	20,000
90	Borkano	120,000	80,000	30,000
91	Altarugu	80,000	40,000	20,000
92	Rice	100,000.00	50,000.00	25,000.00
93	Rimi	10,000.00	2,500.00	1,250.00
94	Rizga	100,000.00	50,000.00	25,000.00
95	Ruman	1,000.00	500.00	250.00
96	Sabara	1,500.00	750.00	375.00
97	Sansami	1,500.00	750.00	375.00
98	Shukwaka	500.00	250.00	125.00
99	Soborodo	50,000.00	25,000.00	12,250.00
100	Soya bean	100,000.00	50,000.00	25,000.00

S/NO	ECONOMIC TREES	A MATURE	B IMMATURE	C SEEDLING
101	Sugarcane	150,000.00	75,000.00	37,000.00
102	Sweet potatoes	50,000.00	25,000.00	12,500.00
103	Taura	3,000.00	1,500.00	750.00
104	Tigernuts	60,000.00	30,000.00	15,000.00
105	Tobacco	15,000.00	7,500.00	3,750.00
106	Tomatoes	80,000.00	40,000.00	20,000.00
107	Tsada	3,000.00	1,500.00	750.00
108	Tsamiya	8,000.00	4,000.00	2,000.00
109	Turare	3,000.00	1,500.00	750.00
110	Water Melon	35,000.00	17,500.00	8,750.00
111	Wheat	120,000.00	60,000.00	30,000.00
112	Yam	80,000.00	40,000.00	20,000.00
113	Zogale	1,000.00	500.00	250.00
114	Zuwo	500.00	250.00	125.00
115	Land	800,000-1,500,0000		

Appendix IV PAPs Consent Forms

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

By signing this sheet, I confirmed that the project has been described to my understanding and hereby agree to be interviewed/enumerated.

SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
12	Abdullahi Samaila	Kwarin Malam		15/4/23
13	Alhamadu Huda	〃		〃
14	Sa'adu Lukman	〃	AMAD	〃
15	Alh. Idi Auwal	〃		〃
16	Isah Dayyabu	〃		〃
17	Hassan Magaji	〃		〃
18	Safiyanu Imrana	〃		〃
19	Abdulkadir Liman	〃	AB	〃
20	Bashir Musbahu	〃		16/4/23
21	Auwalu Abubakar	〃		〃
22	Shamsu Yahuza	〃		〃

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
08	SHITU ABDULLAHI (Mai Ungwa)	YOLA		15/04/23
09	SALISU ABDULLAHI	YOLA	SALISU	〃 〃
10	ABDUL MUMINI IBRAHIM	YOLA		〃 〃
11	ADO MUSA	〃 〃	ADO	〃 〃
12	IBRAHIM SABO	〃 〃	IBASM	〃 〃
13	GARBA IDRIS YOLA	〃 〃		〃 〃
14	IBRAHIM IBRAHIM (SARKI)	〃 〃		〃 〃
15.	MURA ALI	CITAMA	MANI	16/04/23
16.	SANDILA MUSA	〃	SAM	〃
17.	JAFARU SANI	〃	JAFARU	〃
18.	MUSA GAYE	〃		〃

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
1	Samaila Rilwanu	Kwarin Malam	. u	15/4/23
2	Jume Sa'adu	〃		〃
3	Wada Yaji	〃	WADA	〃
4	Alh ~~Abdu~~ ~~HAMBALI~~ Jero	〃		〃
5	Alh Safiyanu Sani	〃		〃
6	Danjuma Rabiu	〃		〃
7	Mallam Bala Mani	〃		〃
8	Lukman Mani	〃		〃
9	Sule Mani	〃		〃
10	Magaji Mani	〃		〃
11	Abdullahi Magaji	〃		〃

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
12	Abdullahi Samaila	Kwarin Malam		15/4/23
13	Alhamadu Huda	〃		〃
14	Sadadu Lukman	〃	AMAD	〃
15	Alh. Idi Auwal	〃		〃
16	Isah Dayyabu	〃		〃
17	Hassan Magaji	〃		〃
18	Safyanu Imrana	〃		〃
19	Abdulkadir Liman	〃	AB	〃
20	Bashir Musbahu	〃		16/4/23
21	Auwalu Abubakar	〃		〃
22	Shamsu Yahuza	〃		〃

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
44	Umar Hussaini	Kyari	ABBA	13/4/23
45	Hamsu Ali	Dawra		〃
46	Musa Abubakar	Dawra		〃
47	Abdulkarim Gawuna	Dawra		〃
48	Yaki Sani	Turawa		14/4/23
49	Ahmad Hussaini	〃	AJU	〃
50	Sale Yahaya	〃		〃
51	Sani Yahaya	〃		〃
52	Haladu Yahya	〃		〃
T2 53	Adamu	〃		〃
struct 54	Isyaku Umar	〃	ISYA	〃

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
55	Hassan Umar	Turawa		13/4/23
56	Sule Umar	〃		〃
57	Fakuso Umar	〃	YAKU	〃
58	Hassani Hassan	〃		〃
59	Magaji Said	〃		〃
60	Dan Baba GARBA	〃	DABA	〃
61	Tajuddeen Ahmadu	〃		〃
62	Alhaji Sale	〃		〃
63	Nafiu Tukur	〃		〃
64	Ardo	〃		〃
65	Samusi Alhassan	〃		〃

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

By signing this sheet, I confirmed that the project has been described to my understanding and hereby agree to be interviewed/enumerated.

SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
	HABIBA ABDULLAHI	CUSAL		14/04/2023
	AHMED USMAN	CUSAL		14/04/2023
	ADAMU NUHU IDRIS	CUSAL		14/04/2023
	RABIU MUSA	CUSAL		14/04/2023
	AHMADU LABARAN	KWARIN MALLAM		15/04/2023
	SA'ADU MUSA	〃		〃
	SAMAILA SALIHU	〃		〃
	MATO MUSA	〃		〃
	ALHAJI SHUAIBU SALISU	〃	AS	〃
	IDI SULE	〃		〃
	DA ASIMI SHUAIBU	KWARIN MALLAM		15/04/2023

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

By signing this sheet, I confirmed that the project has been described to my understanding and hereby agree to be interviewed/enumerated.

SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
	HALIRU GARBA	KWARIN MALLAM		15/04/2023
	SULEIMAN ISHAKU	〃		〃
	HARUNA YA'U	〃		〃
	ALHAJI SHUAIBU SALIU	〃		〃
	SAFIYANU SANI	〃		〃
	KAMILU LABARA	〃		〃
	IBRAHIM YUSUF	〃		〃
	ISIAKA BASHIR	〃		〃
	MUHAMMAD SULEIMAN	KWARIN MALLAM		〃

RE-CONDUCTORING OF 132KV OSOGBO – OFFA – OMUARAN - GANMO – ILORIN, IRRUA – BENIN, IRRUA – OKPELLA, OKPELLA – OKENE, ALAOJI-ABA TOWN, ONITSHA – OJI RIVER AND PORT HARCOURT MAIN – PORT HARCOURT TOWN132KV TRANSMISSION LINES

PAP CONSENT FORM

By Signing this sheet, I confirmed that the project has been described to my understanding and hereby agree to be interviewed

S/N	VILLAGE	FAMILY name, FIRST name, MIDDLE name	SIGNATURE	DATE OF INTERVIEW
1.	Abagana	Euchana Onyeoma	U.K	
2.	Abagana	EMEKA ANIEGOR	[illegible]	
3.	"	Nwakelu Vincent N.C	[illegible]	
4.	"	Pius Nwakelu	[illegible]	
5.		Helen Nwakelu	Helen	
6.	Enugwu-Ukwu	CHIDIEBELE DILINYELU	[illegible]	
7.	Enugwu Ukwu	Echezona Ifeanyi C.	[illegible]	
8.	Enugwu Ukwu	Daniel Onah	[illegible]	
9.		Ogugua Okeke	[illegible]	
10.	Enugwu-Ukwu	Okwuchukwu F Okafor	[illegible]	
11.	Nawfia	Ikechukwu Okeke Ogundu	[illegible]	
12.	"	Barthram C. Nwankwo	[illegible]	
13.		Nwankwo Nkechi P.	[illegible]	
14.	Nibo	Oluchukwu Nwofele	[illegible]	
15.	Nveke Christian		P [illegible]	

Ugwuoba Joseph Ojita Onwumere [illegible]

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

By signing this sheet, I confirmed that the project has been described to my understanding and hereby agree to be interviewed/enumerated.

SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
34	Murtala Mudi Karaye	Magajin Gari		13/04/2023.
35	Dan Lami Musa	" "	Dan	" "
36.	Tukur Alhassan	" "		" "
37	Kamilu Awwalu Shuty	Turawa	Awwalu	14/04/2024
38	Idris Barau	" "	IDI	" "
39	Umaru Barau	" "	Um	" "
40	Zubairu Abdullahi	" "	ZAB	" "
41	Muhammad Lawan	" "	Muhammad	" "
42	Ibrahim Fando	" "	IBRAHIM	" "
43	Nasiru Danti	" "	N	" "
44	Mustapha A Sanusi	" "	Mustafa	" "

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

By signing this sheet, I confirmed that the project has been described to my understanding and hereby agree to be interviewed/enumerated.

SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
45.	Abdullahi Sarki Dawa	Turawa	[illegible]	14/04/2023
~~01~~.	KIRU LGA	~~Sakarma~~		15/04/2023
01.	Isah Zubairu	Sakarma	[illegible]	" "
02.	Abdullahi Kano	" "	JELA	" "
03	Munkaila Abdullahi	" "	MKL	" "
04.	Yusuf Hussaini	" "	YST	" "
05.	Dahiru A Abdullahi	" "	DSD	" "
06.	Mamanlada Abdullahi	" "	MMD	" "
07.	Hari Abdullahi	" "	HARI	" "
08.	Idris A. Abdullahi	" "	IDI	" "
09.	Ibrahim Umar	" "	IBRH	" "

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
10.	Kabiru Ahmadu	Sakarma		15/04/2025
11.	Abdullahi Adamu	" "		" "
12.	Abdul'aziz Abubakar	" "		" "
13.	Yunusa Garba	" "		" "
14.	Abubakar Aliyu	" "		" "
15.	Adamu Sani	" "		" "
16.	Basiru Ibrahim	" "		" "
17.	Kabiru Sani Galadima	" "		" "
18.	Isyaku Umar	" "		" "
19.	Jazuli Abdulrahman Umar	" "		" "
20	Ahmad Sani Ahmad	" "		" "

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

By signing this sheet, I confirmed that the project has been described to my understanding and hereby agree to be interviewed/enumerated.

SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
21	Mustapha Sani Inusa	Sakarma	[signature]	15/04/2023
22	Aminu Iliyasu	″ ″	[signature]	″ ″
23	Abubakar Iliyasu	″ ″	ABU	″ ″
24	Buhari Musa	″ ″	[signature]	″ ″
25	Hussaini Muhammad	″ ″	[signature]	″ ″
26	Sani Dalhat	″ ″	[signature]	″ ″
27	Sani Danbaba	″ ″	[signature]	″ ″
28	Abdullahi Hussaini	″ ″	Arw	″ ″
29	Nura Tela	″ ″	[signature]	″ ″
30	Rabiu Zubairu	″ ″	[signature]	″ ″
31	Muhammad Muddasir / Dan Hatan ~~Bakanike~~	″ ″	B.B	″ ″

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

By signing this sheet, I confirmed that the project has been described to my understanding and hereby agree to be interviewed/enumerated.

SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
42	Faisal Muhammed Dabo	Dawa	Faisal	
43	Adamu Wada	— — —	A	
44	Munkaila Ibrahim	— — —		
45	Idris Umar	— — —		
46	Dalum Ahmed	— — —		
47	Sule Sadi	— — —		
48	Yusuf Saleh	— — —		
49	Isah Umam	— — —		
50	Musa Umar	— — —		
51	Ahmad Dalum	— — —		
52	Isyaku Ibrahim	— — —		

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
32	~~Abubakar~~ Musa Wasa	Dawawa	WADA	
33	Samaila Muhammad	〃	〃	
34	Garba Aliyu	〃		
35	Aliyu Muhamad	〃	~~Abdu~~	
36	Abdu Sule	〃	ABDU	
37	Jibril Magaji	〃	JIBRIN	
	14/02/23	14/02/23	〃	
38	Muhammed A Dabo	Dawawa		
39	Bala A Dabo	〃	BALA	
40	Nasib Muhammed Dabo	〃	NASIB	
41	Musa Idris	〃	MUSA	

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
053	Ibrahim Godi	Daura		
054	Sa'adu Ibrahim	″	9	
055	Danfulani Umar	″		
056	Shuaibu Ahmadu	″		
057	Ahmed Mado	″		
058	Munkailu Ahmed	″		
059	Abubakar Suleiman	″		
060	Wada Umar	″	KA	
061	Nasiru Chiroma	″		
Camera 062	Aminu Tambaya mai hungama	″		
063	Alhassan Jinjiri	″		

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
022	Hussaini Ahmadu	Sakarma/Pitawa		
023	Makiyu Hussaini	Audun Kalu		
024	Umar Saidu	Pitawa		
025	Abubakar Bala Katsi'a	Kalu		
026	Hassan Haladu	Sakarma		
027	Sani Abdullahi	—		
28	Safiyan Hussaini	—		
029	Shagari Bello	—		

1

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
011	Nasiru Sarki Sakama	Sakama		
012	Nazifi Ibrahim Abdulkadir	"		
013	Rayyanu Lawal Idris	"		
014	Saidu Rabiu	"		
015	Buhari Illiya	"		
016	Tukur Illiya	"		
017	Ibrahim Illiya	"		
018	Ashiru Mahmud	"		
019	Abdullahi Yakubu	"		
020	Mujtaba Hudu	"		
021	Musa Umar	"		

45 - 54

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
004	Yunusa sule	Dawa		
001	Sadi Lawal	Sakarma	SADI	
002	Idris Yahaya	" —	IDI	
003	Rabiu sani	— —		
004	Ahmed Abdulmumin	— —		
005	Hamsu saidu Abdullahi	" —		
006	Wada Sani	" — —	WADA	
007	Lawal Ladan	— — —	LWA	
008	Hussaini Ishak	— —		
009	Abdulhamida Muhammed	" —		
010	Auwalu Labaran	" —	AUL	

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
1.	Saidu Muhammad	Ayaga		8/4/2023
2.	Murtala Adamu	Ayaga		8/4/2023
3.	Maryamu Adamu	Ayaga Kwa		8/4/2023
4	Abubakar Lawan	Ayaga Kwari	A. L	✓
5	Aliyu Bona	Ayaga Kwari		✓
6.	Kyari L. Bukar	Ayaga kwari		
7-	Abubakar Idris	Ayaga Kwari		✓

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date	Phone No.
1	Ereh Emmanuel	RAP Team		15/4/2023	08066227077
2	AUWALU YAIU	DAURA		15/4/2023	08127649332
3	SULEIMAN IBRAHIM	TURANOA		15/4/2023	08063542283
4	IBRAHIM ~~USMAN~~ DATTI	MAGAJIN TORANKA-WA.		15/4/2023	08160861397
5	IBRAHIM BELLO	MAH		15/4/2023	08059891410
6	Umar Usman Zarewa	P.M.C.G.D.		15/4/2023	08065861342
7	Abdullahi S. Usman	ACO CGD		〃 〃	08069173812
8	Alh. Buhari Mohd	T/Gata V.H		〃 〃	07035861632
9	Adamu Muhammad	V/H Chg/Hajji		〃 〃	08066009698
10					
11					

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
23	UMAR TAMBAYA	TINKIS		12/04/23
24	HARUNA ABDURRAHMAN	TINKIS		12/04/23
25	ISA DANKAKA	TINKIS		12/04/23
26	BASHIR ADAMU	TINKIS		12/04/23
01	MUDI AUDU	MA		14/04/23
02	USMAN ABDULLAHI	MA		✓
03	SHAFIU USMAN	GUDAL GDL		✓
04	DANJUMA HARUNA	GUDAL GDL		✓
05	ALH ALMAJU ABDULLAHI	C-DC GUDAL	DANDA	✓
06	MUSA HASHIMU	YOLAMA		15/04/23
07	NUHU ALAMU	YOLAMA		✓

Kamilu Shittu x
↓
Awwalu Shittu

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date	
1	ABUBAKAR IBRAHIM	GYADAL		12/04/23	
2	BELLO BABAU	〃		〃	
3	SULEIMAN A GAMBO	〃		〃	
4	USAMA ADAMU	〃		〃	
5	MAIGANO A. GAMBO	〃		〃	
6	AMINU MUHAMMAD	〃		〃	
7	HARUNA DAN ISAIYE	〃		〃 Rice, Groundnut, Rice, Millet, Maize	07083455 65985545
8	SHAFIU AMADU	〃		〃	
9	SIRAJO ALHASSAN GAMBO	〃		〃	
10	AUWAL MUHAMMAD	〃		〃	
11	DAHIRU IBRAHIM	〃		〃 Soybeans, Groundnut, Maize, Rice, Dawa	07011269404 25yrs 3
12	JAMILU HARUNA	〃		〃	
13	ZAYYANU SIDI	〃	〃	〃	〃 02

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
12				
13	ZAYYANU ABDULLAHI	GUDAL	ZIAYYANU	15/04/2023
14	MALLANDI UMARU	"	MALANDI	"
15	SIRAJO IDRIS WARO	"	S.I.W	"
16	KASIMU YAKUBU	"	KASIMU	"
17	YA'U YAKUBU	"	YA'U	"
20	IDI INUSA	GUDAL	IPI	15/04/2023
21	MUAZU AHMAD	"	MAAZU	"
18	IBRAHIM YAKUBU	"	IBRAHIM	"
19	MUNIRA YAKUBU	"	MUNIRA	"
22	USMAN YAKUBU	"	ABDUL	"

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
23	MURTALA MUHAMMAD	〃		〃
24	ALH YAKUBU MUSA	GUDAL	YAKUBU	05/04/2023
25	ALH. ADAMU MALLAM MUSA	〃	A. MAL ADM	
26	SAFIYANU ALHASSAN	〃		15/04/2023
27	BABLE IBRAHIM	〃		〃
~~28~~	NAZIRU MAGAJI	〃		〃
29	ANAS SHAFIU	〃	ANAS	〃
30	HARUNA USMAN	〃	HARUNA	〃

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
1 -	Suleiman Ibrahim Mohammed	Gudal		14/04/23
2-	NAZIFI Ibrahim Mohammed	Gudal		14/04/23
3-	Suleiman Ibrahim Mohammed	Gudal		14/04/23
4-	Hussaini Abdullahi	Gudal	Usaini	14/04/23
5-	Murtala Mohammed	Gudal		14/04/23
6-	Nazir A. Maman	Gudal	NAZIRU	14/04/23
6-	Adama Mohammed	Magaji Hajji		15/04/23
7-	Buhari Mohammed	Kwarin Malam		15/04/23
8-	ABDULLAHI USMAN	Magaji Hajji		15/04/23

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
79	Hashimu Lalada	Dawra	HASHIMU	13/04/23
80	Nasiru Mohammed	—		—
81	Jibril Sani	—		—
82	Yahaya Umar	—		—
83	Yusuf Muhammed	—		—
84	Usman Inuwa	—		—
85	Anwalu Yau	—		14/04/23
86	Hassan Nagoma	—		—
87	Sunusi Mukaila	—		—
88	Musitapa Sani	—		—
89	Dahiru Umar	—		—

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
90	Abdu Yusuf	DAURA		14/09/23
91	Ibrahim Ahmed	—		—
92	Hashimu Ibrahim	—		—
93	Garba Dahiru	—	Garba	—
94	Sumusiyu Mohammed	—		—
95	Yusuf Wada	—		—
96	JIBRIL Kasimu	—		—
97	Yusuf Wada	—		—
98	Yunusa Ahmed	—		—
99	Auwalu Liman	—	Auwalu	—
100	Kolam Kalam Abdulkadir	—		—

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
101	Daiyabu Wada	DAURA	[signature]	14/04/23
102	MAMMAN ILYASU	—	[signature]	—
103	UMAR TANKO		[signature]	
104	ANI HAMBELI UMAR	—	HBL	—
105	HALIFA WADA	—	[signature]	—
106	Yusuf Wada	—	[signature]	—
107	Yusuf Abdulhameed	—	[signature]	—
108	Hruma Hussaini	—	[signature]	—
109	Garba Shaibu	—	[signature]	—
110	Isyaku Haruna	—	[signature]	—
111	YAU MALAMI	—	[signature]	—

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
46	ALH. SAIDU	MAGAJIN HAJJI	Jaeli	12/04/2023
47	JATAU ALIYU	11	Jaeli	11
48	YUSUFA USMAN	11	35	11
49	AMINU BABU	11	[illegible]	11
50	SAMAILA GAMBO	11	[illegible]	11
51	ABUBAKAR MUHAMMAD	11	[illegible]	11
52	ZUBAIRU NAKWARI	11	[illegible]	11
53	BALA DOGUWA	11	[illegible]	11
54	ALH. ADO ALI	11	[illegible]	11
55	MAIKUDI IDRIS	11	[illegible]	11
56	ABDULLAHI ZAKARI	11	[illegible]	11
57	DANHASABE ADO	11	[illegible]	11
58	IDI UMARU	11	[illegible]	11

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
24	SANI IBRAHIM	UNGUWAR DATTI	B	10/04/2023
25	SANI IBRAHIM	UNGUWAR DATTI	B	10/04/2023
26	MAGAJI GABBA	MAGAJIN HAJJI		12/04/2023
27	AH. SANI ADAMU	11		12/04/2023
28	AUWALU IBRAHIM	11	Auwalu	11
29	GABBA IBRAHIM	11	Gabba	11
30	ILIYA MUSA	11	Iliya	11
31	MAGAJI DAN BITE	11	magaji	11
32	GABBA AUDU	11		11
33	MAL. MURTALA IBRAHIM	11		11
34	IBRAHIM LIETIA	11	IBRAHIM	11

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
35	IDRIS IBRAHIM	MAGAJIN HAJJI	ID1	12/04/2023
36	Nuhu IBRAHIM	11	NUHU	11
37	DANLAMI MAGAJI	11	Dallami	11
38	ABU SULEIMAN	11	ABU	11
39	ALH. GARBA IBRAHIM	11	GARBA	11
40	AUWAL IBRAHIM	11		11
41	MAGAJI WADA	11		11
42	ASHAFA ~~Abd~~ YUSUFU	11		11
43	MUSA BADIYA	11	Musa	11
44	YUSUFA SAMA'ILA	11	yusuf	11
45	SANI IBRAHIM	11		11

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
61	MAGAJI JUME	MAGAJIM HAJJI		13/04/2023
62	ALH. ABO ALHAJI ALIYU	"		"
63	MURTALA HAMZA	"		"
64	ABDULLAHI IBRAHIM	"		"
65	ILYA ALI	"		"
66	RABIU JINJIRI	"		"
67	AHMADU MASURU	"		
68	SANI SULE KWAKWACI	"		"
69	IBRAHIM SALEH	"		"
70	ILYA KWAKWACI	"		"
71	MASURU SULAIMAN	"		"

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
72	IDRIS ABDULLAHI	MAGAJIN DATTI		13/04/2023
73	ALH. MUDI	"	A.MADI	"
74	BELLO AUWALU	"		"
75	ALHAJI MAGAJI MAI KWANO	"		"
76	MUNTARI DALIBI	"		"
77	NURA ABDULLAHI	"		"
78	MAGAJI KWAKWACI	"		"
79	SANI KWAKWACI	"		"
80	ABBA KWAKWACI	"	ABBA Kwakwaci	"
81	ISAH AHMADU	"		"
82	ZULAIFU AHMADU	"		"

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
83	ISMAILA GARBA	MAGAJIM HAJJI		13/04/2023
84	TIJJANI MU'AZU KARAYE	〃		〃
85	ABUBAKAR ISYAKU	〃		〃
86	ALHAJI AHMADU ABDULLAHI	〃	A.AMDK	〃
87	AUWALU ABDULLAHI	〃		〃
88	JIBRIN SALLAU	〃		〃
89	BALA ABDULAZEEZ	〃		〃
90	ABDULRAHMAN GARBA	〃		〃
91	SANI MUHAMMAD	〃		〃
92	SHITU SAIDU	〃		〃
93	AIKASIMU MUHAMMAD	〃		〃

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)		Community/Village	signature	Date
23	Jahiru	Lawal (Dan Zaria)	Magaji Gari		12/04/2023
24	Abba	Lawal	" "		" "
25	Dahiru	Abdullahi	" "		" "
26	Sammani	Isah	" "		" "
27	Musbahu	Dahiru	" "		" "
28	Ahmad	Isyaku	" "		" "
29	Magaji	Idris	" "		" "
30	Muhammad	Ado	" "		13/04/2023
31	Auwalu	Suleman	" "		" "
32	Ibrahim	Sulaiman	" "		" "
33	Shafiu	Muhammed	" "	Shafiu	" "

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
94	ABUBAKAR UMAR	MAGAJIM HAJJI	Abubakar	13/04/2023
95	YA'U ISMA'LA	〃	Yau Ismaila	〃
96	ABUBAKAR AHMAD	〃	A.A	〃
97	MUBARAK AHMAD	〃	[illegible]	〃
98	SHAMSU ILYASU	〃	S	〃
99	AHMAD ABDULLAHI	〃	A	〃
100	UZAIRU ILYASU	〃	U	〃
101	MURTALA HAMZA	〃	[illegible]	〃

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
12.	ABDULLATEEF MUKTAR MUHAMMAD	UNGUWAN DATTI		09/04/2023
13.	ADAMU SHUAIBU MUHAMMED	UNGUWAN DATTI		09/04/2023
14	Abdulhadi Sani	UNGUWAN DATTI		10/04/2023
15.	ABUBAKAR IMAM	〃		〃
16.	MUSA SHEHU BILYAMINU	UNGUWAN DATTI		10/04/2023
17	ALHAJI AHMADU ALFA	MAGAJI HAUSA		12/04/2023
18.	LAWAL DABAIRU	〃		〃
19.	ALIYU MAGAJI ABDULLAHI	〃		〃
20	Abdullahi Sanusi	〃		〃
21	MAGAJI IDRIS	~~MAGAJI HAUSA~~		〃
22.	HAMISU ABBAS	MAGAJI HAUSA		12/04/2023

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
*	NURA ALASSAN	MALAJI HAJJI		12/04/2023
	IDRIS MUSTAPHA	〃		〃
	SALIH ABDULLAHI	〃		〃
	JIBRIN ALIYU YAYAYA	〃		
	SULEIMAN RABIU MUSA	〃		〃
	RABIU MUSA	〃		
	MUSA ABDULLAHI	MALAJI HAJJI		12/04/2023
	JINJIRI SALIHU	MALAJI HAJJI		12/04/2023
	HUSSAINI SALE	〃		〃
	DANINI YAKO	〃		〃
	SUNUSI JAFAR	MALAJI HAJJI		12/04/2023

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
33	Mukaarak Ishaku	Kyari		12/4/23
34	Muslapha Ali	"	Mustafa Ali	12/4/23
35	Muhammad Habib	"		12/4/23
36	Haroon Abubakar	"		"
37	Aminu Abubakar	"		"
38	Kabiru Abdullahi	"		13/4/23
39	Dayyabu Hussaini	"		"
40	Ahmadu Saidu	"		"
41	Yusuf Umar	"		"
42	Mustafa Usman	"		"
43	Abubakar Usman	"		"

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
22	Ismaila Ali	Kyari		12/4/25
23	Mahmuda Abdu	〃		〃
24	Isah Yunusa	〃		〃
25	Suleiman Ahmadu	〃		〃
26	Saifullahi Isyaku	〃		〃
27	Amina Musa	〃		〃
28	Muntari Magaji	〃		〃
29	Abdulkadir Lawan	〃		〃
30	Buhari Yunusa	〃		〃
31	Abdulkarim Saidu	〃		〃
32	Tijjani Ayuba	〃		〃

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
23	Murtala Adamu	Ungwa Dalli		10/04/2023
24	Wada Ibrahim	—	WADA	—
25	Wada Ibrahim	—	WADA	—
26	Amina Abubakar	—	Amina	—
27	Fatima Laman mustapha	—		—
28	Sholu Aliyu	MAGAJI GARI		12/04/2023
29	Sholu Damana KARAYE	—		—
30	Usman Abdullahi	—		—
31	Yumusa Isah	—		—
32	Nafiyu Ibrahim	—		—
33	Abdulu Yau	—		—

1,229.37 400.78 3,448.37
2,356.57
2,593.23

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

By signing this sheet, I confirmed that the project has been described to my understanding and hereby agree to be interviewed/enumerated.

SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
1	Mutawakil Lawal	Ayaga Kwai	WKL	08/04/23
2-	Abdullahi Hassan	Ayaga Kwai	✓	08/04/23
3	Yahaya Abdullahi	Ayaga Kwai		08/04/23
4	Abdulrahman Bello	Ungwan Dalli	08/02/23	
5	Rabiu Go.Ga	Ungwan Dalli		08/04/23

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
34	JAMILU IBRAHIM	MAGAJI GARI		12/04/2023
35	MUNIR YAKUBU	—		12/04/23
36	UMAR ABDULLAHI	—		—
37	IDRIS MUHAMMED MUSTAPHA	—		—
38	KABIRU MANSUR	—		—
39	SAFIYU ISAH	—		—
40	BALARABA WADA	—		—
41	Suleiman Abubakar Kawuwa	—		—
42	AMINU RABIU	—		—
43	Jibrin Yahaya Aliyu	—		—
44	NAFIYU SULEIMAN	—		—

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
45	ALIYALU BIALIYA	MAGGAJI GARI		12/04/2023
46	ALI Dahiru	—		—
47	YAU WADA	—		—
48	AMEER ALIYAL	—		—
49	Umar Ibrahim	—		—
50	MUKAILU GALE	—		—
51	MUSBAHU Kabiru Suleiman	—		—
52	MUDI UMAR	—		—
53	Shehu Mahmud	—		—
54	USMAN UMAR	—		—
55	MUSTAPHA UMAR	—		—

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
11	Umar Muhammed	Tsohon Rogo		09/04/23
12	Ibrahim Ibrahim	Tsohon Rogo		" " "
13	[illegible]	Tsohon Rogo	LAWAL	" " "
14	Tasiu Usman	Tsohon Rogo		" " "
15	Ado Nasiru	Tsohon Rogo		" " "
	10/04/23			12/04/23
16	Alhaji magaji mai kwano	Kyari		" " "
17	Alhaji Rabiu wali	"		" " "
18	Ashiru A. Yau	"		" " "
19	Munzam'lu magaji	"		" " "
20	Muhammad Adamu	"		

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
21	Muntari muhammad Adam	Gyari		12/04/23
22	Jafar mu Jafar	—		
23	Abubakar Usman	—		
24	Yahaya Imusa			
25	Isiyaku muhammed			
26	Usman Audu	—	USMAN	
27	Umar Imusa	—		
28	Fashim Mu'azu			
29	Ali Bala	—	Ali	
30	Ibrahim Jalmon	—		
31	Malam Yahaya	—		

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
12	AYDI ABDULLAHI	AYAGA	M.D	09/04/23
13	USMAN SHUAIBU	AYAGA		09/04/23
14	MUHAMMAD SANI	TINKIS		12/04/23
15	YAKUBU BALA	TINKIS	POO	12/04/23
16	ABDUSSALAM SAADU	" "	400	12/04/23
17	MUHAMMAD BELLO	" "	BELLO	12/04/23
18	DAUDA GARBA	" "	DAU	12/04/23
19	SANI MUSA	" "	MUS	12/04/23
20	ADAMU MUHAMMAD	" "		12/04/23
21	YAZIDU BELLO	" "	YALEED	12/04/23
22	SAIDU NASIR	" "		12/04/23

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
56	Abdullahi Aliyu	MAGAJI GARI		12/04/23
57	Yusuf Suleiman	—		12/04/23
55	Umar Mudi Khalid	—		—
59	Abubakar Abdullahi	—		—
60	Abdullahi Hassan Adamu	—		—
61	Kabiru Dalhat Adam	—		—
62	Abdullahi Ibrahim	—		—
63	Isyaku Muhammed	—		—
64	Nasiru Saidu	—		—
65	Abubakar muhammed Ibrahim	—		—
66	Maggaji Isah	—		—

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
1	Abdullahi Hamisu	Angga Kwari		08/04/2023
2.	Abdullahi Bala	Unguwan Dati		09/04/2023
3.	Rabiu Adamu	〃		〃
4.	SALLAU DANTINE	〃		〃
5.	ABDULSALAM SALE	〃		〃
6	HADIZA YAHAYA	〃		〃
7.	IBRAHIM GARBA	〃		〃
8.	SADA IBRAHIM	Unguwan Dati		09/04/2023
9.	ALIYU AHMAD ALIYU	Unguwan Dati		〃
10	Yusuf Sulaiman	〃		
11.	MUSTAPHA MOHAMMED GANA	Unguwan Dati		09/04/2023

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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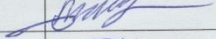
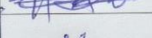
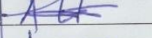
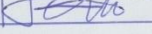
SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
67	Abdurrahman Nasiru	MAGAJI GARI		12/04/23
68	MUAZU ABDULLAHI	—		—
69	Haruna Suleiman	—		—
70	MUSA GARBA	—		—
71	Lawal Inuwa	—		—
72	Idris Isah	—		—
73	Abubakar Zubairu	—		—
74	Aminu Yusuf	—		—
75	Isah Ahmed	—		—
76	Adamu Hassan Gari	—		—
77	Aminu Aliyu	—		—
78	Jibril umar Hassan	—		—

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
12	Nasiru Muhammed	~~A~~ Albuma Dattu	NS	9/04/2023
13	Jamilu Shuaibu Ahmad	—	JM	—
14	Hamza Yau	—	[signature]	—
15	Yusuf ~~Dandabo~~ Nadabo	—	[signature]	—
16	Bitrus Danjuma	—	[signature]	—
17	Auwalu Abubakar	—	[signature]	—
18	Yahuza Shamsu	—	[signature]	—
19	Jumar Ibrahim	—	[signature]	—
20	Haruna Abdullahi	—	[signature]	—
21	Abdulkadir Abdulaziz	—	A.A	—
22	Shehu Lawaali	Ayaga Kurfi	[signature]	10/04/23

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
1	Abdulkadi Sani	Ayaga Kwari		8/04/2023
2	Abdullahi Hamisu	—		—
3	Bello Abdullahi	—		—
4	Abdullahi Hamisu	—		—
5	Samiru Laraba	TSOHO ROGO		9/04/2023
6	Aminu Saleh	—		9/04/2023
7	DANIEL BALE	UGWAN UKWALA DATTI		
8	Hussaini Bello	—		—
9	Yahaya Suleh Musa	—		—
10	MUSA SHAWAI	—	—	—
11	HASSAN AHMADU	—		—

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
1	Abdulqadir Maigaweji	Ayaga	(1	08/04/2023
2	Rabiu Abdullahi	〃		〃
3	Gambo Audu	〃	~~GA~~	〃
4	Mutari Abdullahi	〃	~~M~~	〃
5	Gambo Audu	〃	~~GA~~	〃
6	Abubakar Samaila	〃	✓	〃
7	Lawal Abdullahi	Ayaga Tudu	L A	09/04/2023
8	Abdulhadi Sani	〃	AB	〃
9	Rabiu Saidu	〃	.	〃
10	Sani Samaila	〃	SANI	〃
11	MUSA ABUBU	〃	Musa	〃

AJ

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
1	Bashiru Isah	Ayaga Kwari	BACIRU	8/4/23
2	Abdullahi Hassan	⌐	[signature]	⌐
3	Abdulhadi Sani	Ayagam Tudu	[signature]	⌐
4	Sule Jelli	UDT	[signature]	⌐
5	Mandu Alh. Sule	UDT	[signature]	⌐
6	Alhaji Sani	UDT	[signature]	⌐
7	Alhaji Bashiru Ismaila	Ayaga	[signature]	⌐
8	Anas Umar Dahiru	Ayaga	[signature]	⌐
9	Aliyu Abdullahi	AYT	Ali.	9/04/23
10	Musa Saidu	AYT	[signature]	9/04/23
11	Dahiru Abdullahi		Am	9/04/23

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
12	Abdullahi, wada	Ayagga Tudu		9/4/23
13	Shittu ~~Haruna~~ Umar	〃		9/4/23
14	Abdullahi Hassan	〃		9/4/23
15	Lawan Garba	〃		9/4/23
16	Abdulkarim muhammad	〃		9/4/23
17	Abdulazeez Hassan	〃		9/4/23
18	Abdullahi nuhu	〃		9/4/23
19	Ismail Bawale	〃		9/4/23
20	Shehu Baba Kura	〃		9/4/23
21	Sadiq Abubakar Sadiq	〃		9/4/23

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
1.	Dahiru Lawal	Ayaga	B	08/04/23
2.	Yahaya Isiyaku	Ayaga	Y/h	" " "
3.	Abubakar Samaila	Ayaga	I	" " "
4.	Gambo Hudu	Ayaga	~~GH~~	
5	Ibrahim Audu	Tsohon Rogo	J!	09/04/23
6	Tasiu Usman	Tsohon Rogo	TASIU	" " "
7	Tasiu Usman	Tsohon Rogo	TASIU	" " "
8	Rabiu Garba nashakuna	Tsohon Rogo	✓	" " "
9	Garba Ali	Tsohon Rogo	✓	" " "
10	Safiyanu Garba	Tsohon Rogo	S	" " "

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
1.	Dan Asabe Abubakar	Ayaga Kwari		08/04/2023
2.	Murtala Adamu	" "		" "
3.	Murtala Adamu	"		" "
4.	Abdullahi Hassan	" "		" "
5.	Abdullahi Hassan	" "		" "
6.	Bilya Sa'idu	Ayaga Tudu		09/04/2023
7.	Sa'idu Hamsu	" "		" "
8.	Lurwanu Sani	" "		" "
9.	Lurwanu Sani	" "		" "
10.	Rabi'u Abdullahi	" "	Rabia	" "
11.	Rabi'u Abdullahi	" "	Rabia	" "

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
12	Mika'ilu Abdullahi	Ayaga Tudu	Mika'ilu	09/04/2023
13	Hamisu Abdullahi	" "	"	" "
14	Abdullahi Hamisu	" "	"	" "
15	Zai'lani Aliyu	" "	"	" "
16	Sayyid Ibrahim Khalil	" "	"	" "
17	Yakubu Fatima Jibril	" "	"	" "
18	Fatima Abubakar Yamboi	" "	"	" "
19	Abubakar Aisha	" "	"	" "
20	Abubakar Ahmad	" "	"	" "
21	Fatima Adam Abubakar	" "	"	" "
22	Ahmadu Abdulrahman	" "	"	" "

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
1	Rabiu Abdulkadir	Ayagga kwatt		08/04/23
2	Abubakar Samaila	" "		" "
3.	Rabiu Abdullahi	" "		" "
4	Alhaji Jae Bello	" "		" "
5	Murtala Adamu	" "	Alhaji	" "
6	GARBA DAUDA	AYAGA		09/04/23
7	HAMISU YAKUBU	AYAGA	HAMISU	09/04/23
8	HARUNA ADO	AYAGA	HARUNA	09/04/23
9	ALI MUAZU	AYAGA	S	09/04/23
10	IBRAHIM ISMAIL	AYAGA		09/04/23
11	MURTALA ISMAIL	AYAGA		09/04/23

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
1	Abubakar Dahiru	Ayaga Kwari		08/04/2023
2	Ado Tuje	Ayaga Kwari		08/04/2023
3	Mallam Ali Bala Tsohuwar Rogo	Ayaga Kwari		08/04/2023
4	Abdulrahman Bello	Unguwan Dutse		08/04/2023
5	Sani Hamisu	Unguwan Dutse		08/04/2023
6	ABUBAKAR ALI	TSOHUWAR ROGO	--	09/04/2023
7	SALISU ABDU	TSOHUWAR ROGO	—	09/04/2023
8	GARBA DAUDA	TSOHUWAR ROGO		09/04/2023
9	YUNUSA ABDU	TSOHUWAR ROGO		09/04/2023
10	NASIRU MUHAMMED	T JI		09/04/2023
11	YUNUSA MAGAJI	TSOHUWAR RU		09/04/2023

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
12	Shuaibu Adamu	TSARA-KWA-LWA	[illegible]	16/04/2023
13	Jibrin Isyaku	Tsara makarshi		16/04/2023
14	Isyaku Dahiru	Tsara marshi		—
15	Usman Abubakar	—		—
16	Aliyu Haruna	Tsara-Kwalwa		—
17	Ahmed Tsoho	—	AHMED	—
18	SHAFIU SULEIMAN	—		—
19	Kabiru Dahiru	Tsara makarshi		—
20	Shuaibu M[illegible]	Tsara [illegible]	[illegible]	—
21	Hamza Haliru	Rumfan [illegible]		
22	ZULAIHAT USMAN	Tsara Kwalwa		

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
12	NAMATA IBRAHIM	TSOHUWA BOGO		08/04/2023
13	HAMISU GARBA	))		))
14	NAMATA IBRAHIM	))		))
15	IBRAHIM ILYA	))		))
16	ABBA ALI IMAM	AYAGA KWARI		10/04/2023
17	HARUNA ADAMU	AYAGA KWARI		10/04/2023
18	MUHAMMED HUSSAINI	AYAGA KWARI		10/04/2023
19	MUNTARI ABDULLAHI	AYAGA KWARI		10/04/2023
20	MUNTARI ABDULLAHI	AYAGA KWARI		10/04/2023
21	SANI IBRAHIM	UNGUWAR DATTI		10/04/2023
22	SANI IBRAHIM	UNGUWAR DATTI		10/04/2023

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
134	Yau Dauda	SAKARMA	YAU	15/04/23
135	Malami umar kura	—		—
136	Lawan Isah	—		—
137	Yahaya Umar	—		—
138	Amiru Idris	—		—
139	Halidu Hussaini	—		—
140	IDRIS YUSUF	—		—
141	BILYAMINU MAHMUDA	—		—
142	SANI Haruna	—		—
143	ISMAIL SHAIBU	—		—
144	YAKUBU SULEIMAN	—		—

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
112	Alhashim Musa	DAUDA		14/04/23
113	Ziladaini Abdulkadir	—		—
114	Abdullazeez Isah	—		—
115	Mohammed Abubakar	—		—
116	Mohammed Shaibu	—		—
117	Shettima Hamuna.	—		—
118	Hashimu Abubakar	SAKARMA	HA	15/04/23
119	Isyaku Sani	—		—
120	Liya Abdullahi	—	ILIYA	—
121	Musa Dahiru	—	MUSA	—
122	Kabiru Alyabo	—	KABIRU	—

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
123	Nafiyu Musa	SARARMA		15/04/2022
124	Yau Isah	—		—
125	Ahmed Mamman	—		—
126	Musa S. Garba	—		—
127	Usman Nasiru Bala	—		—
128	Ibrahim Limam	—		—
129	Umar Mudasir	—		—
130	Sadu Ibrahim	—		—
131	Mamuda Hussaini	—		—
132	Hassan Abdulhamid	—		—
133	Iliyasu Usman	—		—

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
01	Dayyabu Shehu	Runjan Bago		16/04/2023
02	Hamisu Tela	Runjan Bago		—
03	Shehu Mustapha	—		—
04	Mafiu Ali	Tsara Kunga		—
05	Labaru Jafar	—		
06	Gambo Haruna	Runjan Bago	GB	—
07	Samaila Zubair	—		—
08	Mustapha Samaila	—		—
09	Dan Yaro Mohammed	—		—
10	Saleh Jibrin	—	Saleh	—
11	Bilyaminu Abubakar	Tsara Kwalwa		

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
36	Usman Hauwa	Sarkamma		16/04/2023
37	Umaru yusuf	〃		〃
38	MURTALA ADAMU	〃	MU	〃
39	SULEIMAN TUKUR	〃	SL	〃
40	Kabiru Sulaiman	〃		〃
41	Muhammad Sani	〃		〃
42	Inusa ala mallam	〃		〃
43	Babagida Lawan	〃		〃
44	Isa ala Isa	〃	ISA	〃
45	Ibrahim yusuf	〃		〃
46	GAMBO Babagida	〃		〃

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
23	IDRIS MUHAMMAD	TINKIS		12/04/2023
24	Alh. Inusa Muhammad	〃	A. Inusa	〃
25	Mamman Isa	〃		〃
28	Usman Adamu	〃		〃
29	Haliru Musa	MA		14/04/2023
30	YAU MAGAJI	〃		〃
31	IBRAHIM BELLO	〃	MA	〃
32	GARBA BALA	〃	GA	〃
33	SULEIMAN LUKMAN	〃		〃
34	Bashir Ibrahim	Biawa	AB	16/04/2023
35	Inusa Idi	SAKARMA		〃

RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
12	YAU ADAMU	AYAGATUDU		09/04/2023
13	Haruna Heruna	〃		〃
14	MUSA MUHAMMAD	〃		〃
15	IDRIS SHEHU	〃	IDRIS	〃
16	SHEHU GARBA	〃		〃
17	MUTARI ABDULLAHI	AYAGA KACHARI		10/04/2023
18	AUWAL ABDULSALAM	TINKIS		12/04/2023
19	ALHAJI SANI BAKO	〃	MUS	〃
20	SALISU ISA	〃		〃
21	ILIYA ISA	〃		〃
22	IBRAHIM ABDULKADIR	〃		〃

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RAP FIELD SURVEY FOR CHALLAWA GORGE DAM WATERSHED PROJECT

PAP CONSENT FORM

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SN	Name (Family name, First name, and Middle Name)	Community/Village	signature	Date
66	Muhammad Munkaila	Turawa		14/4/23
67	Adamu Garba	〃		〃
68	Abubakar Mohammed Shettima	〃		〃
69	Araki Muhammed	〃		〃
70	Muhammed Imman Muhammed	〃		〃
71	MUHAMMAD LAWAN	〃	muhammad	〃
72	IBRAHIM FANDO	〃	IBRAHIM	〃