

Research Article

Stakeholder Engagement in Irrigation Management: Key to Unlocking Food Security in Nigeria

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Abstract

Nigeria's quest for food security remains a significant challenge, with irrigation management playing a critical role. The country ranks 96 out of 113 on the Global Food Security Index. With a rapidly growing population projected to double from 200 million to 400 million by 2050, the challenge will intensify. Currently, about 90% of Nigeria's food production relies on rainfed agriculture. Effective stakeholder engagement is crucial for sustainable irrigation management, yet its current status in Nigeria is inadequate. Investing in irrigation infrastructure and improving water management practices will boost agricultural productivity. This paper examines the importance of stakeholder engagement in irrigation management and its impact on food security. The paper proposes a framework for stakeholder engagement, emphasizing the need to identify, analyse, and prioritize stakeholders' involvement in irrigation development. Strategies for Getting, Keeping, and Growing (GKG) stakeholders are highlighted. These strategies will enhance the stakeholder base for higher impact, sustain longterm engagement, deepen relationships to innovate for higher-scale impact, and ensure mutual benefits. Furthermore, the paper showcases a couple of examples of best practices in stakeholder management in Nigeria, highlighting successful initiatives and lessons learned. The two case studies are the World Bank-assisted Transforming Irrigation Management in Nigeria (TRIMING) project and the Sustainable Power and Irrigation in Nigeria (SPIN) Project. To strengthen stakeholder management and enhance food security in Nigeria, the paper recommends establishing stakeholder platforms, develop Stakeholder Engagement Plan, cascading lessons learnt to new Schemes, capacity building for stakeholders, and developing inclusive irrigation policies. Adopting a stakeholder-centric approach will enable Nigeria to harness the full potential of irrigation management to achieve food security. By prioritizing stakeholder engagement, Nigeria can make significant strides towards improving agricultural productivity, reducing poverty, and enhancing food security.

Keywords

Stakeholder Engagement, Irrigation Management, Food Security, Nigeria

1. Introduction

Nigeria, Africa's most populous country, faces significant food security challenges. With an estimated population of over 200 million people, Nigeria is the largest economy in Africa,

accounting for approximately 20% of the continent's Gross Domestic Products (GDP) [6]. With a growing population projected to reach 400 million by 2050, the country's

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agricultural sector is under increasing pressure to produce enough food to meet domestic demand [5]. As a result, the country relies heavily on food imports, which not only burdens the economy but also undermines the livelihoods of local farmers [1]. Improving irrigation management is critical to boosting agricultural productivity and achieving food security in Nigeria. However, the country's agricultural sector, which employs about 70% of the workforce, contributes only around 20% to the GDP [3, 13]. This paradox highlights the sector's inefficiencies, including inadequate irrigation systems, limited access to credit and markets, and inefficient agricultural practices [2].

Nigeria's agricultural productivity is further exacerbated by climate change, land degradation, and water scarcity, which affect the country's ability to produce enough food to meet domestic demand [4]. The country's reliance on rainfed agriculture makes it vulnerable to droughts and other climate-related shocks, resulting in food insecurity and poverty [2, 14]. The situation is more dire in rural areas, where poverty rates are higher, and access to basic services, including irrigation, is limited [6].

Improving irrigation management is critical to boosting agricultural productivity and achieving food security in Nigeria. Irrigation can increase crop yields by up to 100% and improve water use efficiency, making it an essential component of climate-smart agriculture [2]. However, the development of irrigation infrastructure in Nigeria has been slow, with only about 1 million hectares of land under irrigation, representing approximately 10% of the country's potential irrigable land [2].

Effective stakeholder engagement is essential for sustainable irrigation management, yet its current status in Nigeria is inadequate. Stakeholder engagement can help identify and prioritize stakeholders' needs, build trust, and foster collaboration, ultimately leading to more effective irrigation management and improved food security outcomes [7]. This paper examines the importance of stakeholder engagement in irrigation management and its impact on food security in Nigeria, highlighting best practices and proposing a framework for stakeholder engagement.

2. Methodology

This research employed a qualitative approach, utilizing a combination of literature review, case studies, and stakeholder analysis to examine the importance of stakeholder engagement in irrigation management and its impact on food security in Nigeria.

The research involved:

1. Literature Review: A comprehensive review of existing literature on stakeholder engagement, irrigation management, and food security in Nigeria was conducted to identify best practices, challenges, and gaps in knowledge.
2. Case Studies: Two case studies, the World Bank-assisted

TRIMING project and the Sustainable Power and Irrigation in Nigeria (SPIN) Project, were selected to illustrate successful stakeholder engagement initiatives in irrigation management in Nigeria;

3. Stakeholder Analysis: A stakeholder analysis was conducted to identify key stakeholders, their interests, needs, and expectations, their level of influence and interest in irrigation management in Nigeria using Stakeholders' Influence versus Interest Grid Method;
4. Data Collection: Data was collected through secondary sources, including reports, articles, and websites, as well as primary sources, including interviews and discussions with stakeholders.

The research framework entails the following steps:

- 1) Identification of research objectives and questions;
- 2) Literature review and identification of best practices;
- 3) Selection of case studies;
- 4) Stakeholder analysis and identification of key stakeholders;
- 5) Data collection and analysis;
- 6) Development of recommendations and conclusions.

3. Overview of Irrigation Management in Nigeria

Irrigation management in Nigeria is characterized by limited coverage, inadequate infrastructure, inefficient water use, lack of effective management, and dependence on government support [9].

3.1. Limited Coverage

Irrigation coverage in Nigeria is estimated to be around 10-15% of the total agricultural land area [9]. Majority of farmers rely on rainfed agriculture, which is vulnerable to climate variability and change [13].

3.2. Inadequate Infrastructure

Nigeria's irrigation infrastructure is aging and in disrepair, with many irrigation schemes operating at below capacity [8]. The lack of investment in irrigation infrastructure has resulted in a significant maintenance backlog.

3.3. Inefficient Water Use

Water use efficiency in Nigerian irrigation schemes is generally low, with significant losses due to evaporation, seepage, and runoff [2]. The lack of modern irrigation technologies and practices contributes to inefficient water use.

3.4. Lack of Effective Management

Irrigation management in Nigeria is often characterized by

a lack of effective management and coordination [9]. This has resulted in a lack of transparency, accountability, and stakeholder participation in irrigation management.

3.5. Dependence on Government Support

Irrigation management in Nigeria is heavily dependent on government support, with limited private sector investment [1]. The low private sector investment has resulted in lack of innovation and efficiency in irrigation development [16].

4. Concept of Stakeholder Engagement in Irrigation Development

Stakeholder engagement is essential for effective irrigation management. Several concepts have been developed to guide stakeholder engagement in irrigation development, including;

Participatory Irrigation Management (PIM) [11], Irrigation Management Transfer (IMT) [8], Integrated Water Resources Management (IWRM) [10], and Stakeholder Analysis for Irrigation Development [12].

All first three concepts (i.e. PIM, IMT & IWRM) listed above have been domesticated and in practice in some irrigation schemes in Nigeria.

This paper focuses on development of a framework for the analysis of the Objective, Processes, Benefits and Challenges of stakeholder management as well as Strategies for Getting, Keeping and Growing (GKG) of Stakeholders for promoting accelerated irrigation development.

4.1. Stakeholder Engagement Framework

The following are steps that may be employed for stakeholder engagement for an effective irrigation management.

4.1.1. Identify & Analyse Stakeholders

Identify key stakeholders
Analyse interests, needs, & expectations

4.1.2. Set Engagement Objectives

Define clear objectives
Establish key performance indicators (KPIs)

4.1.3. Develop Engagement Strategies

Tailored strategies for each stakeholder group
Effective communication channels

4.1.4. Implement Engagement Processes

Establish engagement committee/team
Develop engagement plan
Stakeholder identification and analysis.
Planning how the engagement with stakeholders will take

place.

Disclosure of information.

Consultation with stakeholders.

Addressing and responding to grievances; and Reporting to stakeholders.

4.1.5. Monitor & Evaluate

Regularly monitor & evaluate engagement Adjust strategies as needed

4.1.6. Build Capacity & Allocate Resources

Provide training & capacity-building programs; and Allocate necessary resources for capacity building

4.2. Stakeholder Analysis

4.2.1. Identification of Key Stakeholders in Irrigation Management in Nigeria

Key stakeholders in irrigation management in Nigeria broadly include government agencies, farmers and water user associations, private sector investors, civil society organizations, research and academic institutions, and local communities [9].

4.2.2. Analysis of Their Interests, Needs, and Expectations

Each stakeholder group has unique interests, needs, and expectations. For example, farmers require access to reliable and affordable irrigation water, while government agencies seek to improve irrigation infrastructure and increase agricultural productivity [9].

4.3. Benefits of Stakeholder Engagement in Irrigation Management

Stakeholder engagement offers several benefits, including the following:

- 1) Improved Decision-Making: Stakeholder engagement ensures that decisions are informed by the needs, concerns, and expectations of all stakeholders. This leads to more effective and sustainable decision-making.
- 2) Increased Transparency and Accountability: Stakeholder engagement promotes transparency by providing stakeholders with access to information and involving them in the decision-making process. This increases accountability, as stakeholders can hold decision-makers responsible for their actions.
- 3) Enhanced Trust and Cooperation: Stakeholder engagement helps build trust among stakeholders by fostering open communication, collaboration, and mutual understanding. This leads to stronger relationships and increased cooperation.
- 4) Better Conflict Resolution: Stakeholder engagement

can help prevent conflicts by identifying and addressing potential issues early on. When conflicts do arise, stakeholder engagement provides a framework for resolving them in a fair and transparent manner.

- 5) Increased Stakeholder Support and Commitment: Stakeholder engagement can increase support and commitment from stakeholders, leading to greater ownership and investment in irrigation management initiatives.
- 6) Improved Irrigation Management Outcomes: Stakeholder engagement can lead to improved irrigation management outcomes, including increased agricultural productivity, improved water management, and enhanced food security.
- 7) Enhanced Capacity and Knowledge Sharing: Stakeholder engagement provides opportunities for capacity building and knowledge sharing among stakeholders, leading to improved skills and expertise in irrigation management.
- 8) Increased Funding and Resource Mobilization: Stakeholder engagement can help mobilize funding and resources from diverse stakeholders, including government agencies, private sector investors, and civil society organizations.
- 9) Better Risk Management: Stakeholder engagement can help identify and manage risks associated with irrigation management, including environmental, social, and economic risks.
- 10) Improved Policy and Regulatory Frameworks: Stakeholder engagement can inform the development of policies and regulatory frameworks that support effective irrigation management and food security. These benefits highlight the importance of stakeholder engagement in irrigation management, leading to improved decision-making, increased transparency and accountability, and better outcomes for all stakeholders.

4.4. Challenges to Stakeholder Engagement in Irrigation Management

Challenges to stakeholder engagement include but not limited to the following: power imbalances, limited capacity and resources, cultural and language barriers, and conflicting interests and priorities [11].

- 1) Power Imbalances: Power imbalances occur when certain stakeholders have more influence or control over decision-making processes than others. This can lead to marginalized groups being excluded or ignored, resulting in ineffective engagement.
- 2) Limited Capacity and Resources: Stakeholders may lack the necessary skills, knowledge, or resources to effectively participate in engagement processes. This can be particularly challenging for small-scale farmers, local communities, or civil society organizations.
- 3) Cultural and Language Barriers: Cultural and language

differences can create obstacles to effective engagement. Stakeholders may not speak the same language, or they may have different cultural norms and values that affect communication and collaboration.

- 4) Conflicting Interests and Priorities: Stakeholders often have competing interests and priorities, which can lead to conflicts and challenges in engagement processes. For example, farmers may prioritize increased water allocation, while environmental groups may prioritize conservation and sustainability.
- 5) Institutional and Regulatory Constraints: Existing institutional and regulatory frameworks may not support effective stakeholder engagement. This can include inadequate laws, policies, and procedures that hinder collaboration and participation among stakeholders.

4.5. Strategies for Getting, Keeping, and Growing (GKG) Stakeholders

To effectively engage stakeholders, it is essential to adopt strategies for Getting, Keeping, and Growing (GKG) stakeholders. These strategies include:

4.5.1. Getting Stakeholders

- 1) Identify and Invite: Identify key stakeholders and invite them to participate in the irrigation management process.
- 2) Build Relationships: Establish relationships with stakeholders through regular communication and meetings.
- 3) Raise Awareness: Raise awareness about the importance of irrigation management and the role of stakeholders in the process.

4.5.2. Keeping Stakeholders

- 1) Regular Communication: Maintain regular communication with stakeholders through newsletters, meetings, and updates.
- 2) Inclusive Decision-Making: Ensure that stakeholders are involved in decision-making processes and that their concerns are addressed.
- 3) Capacity Building: Provide capacity-building programs for stakeholders to enhance their knowledge and skills in irrigation management.

4.5.3. Growing Stakeholders

- 1) Empowerment: Empower stakeholders to take ownership of irrigation management activities and decisions.
- 2) Partnerships: Foster partnerships among stakeholders to leverage resources, expertise, and networks.
- 3) Recognition and Rewards: Recognize and reward stakeholders for their contributions to irrigation management.

5. Case Studies of Successful Stakeholder Engagement in Irrigation Management in Nigeria

5.1. Stakeholder Engagement Regulatory Framework

There are existing legal and regulatory frameworks in Nigeria which regulates citizen's freedom of information, citizenship engagement, disclosure of public information and adequate response to queries, concerns and grievances raised by the public on key government actions such as capital project execution.

Accordingly, under the World-assisted TRIMING and SPIN projects in Nigeria, the Implementers and other project stakeholders recognize the importance of open and transparent engagement as an essential element of best practice.

5.2. Triming Project Case Study

The Transforming Irrigation Management in Nigeria (TRIMING) project is a notable example of successful stakeholder engagement in irrigation management [8].

5.2.1. Lessons Learned

A number of key lessons on Stakeholders management were learnt during the implementation of the World Bank-assisted TRIMING Project in Nigeria.

- 1) Inclusive Stakeholder Engagement: The TRIMING project demonstrated the importance of inclusive stakeholder engagement in irrigation management. The project engaged various stakeholders, including farmers, water user associations, government agencies, and private sector investors.
- 2) Capacity Building: The project provided capacity-building programs for stakeholders, enhancing their knowledge and skills in irrigation management.
- 3) Participatory Decision-Making: The TRIMING project promoted participatory decision-making, ensuring that stakeholders were involved in decision-making processes.
- 4) Conflict or Grievances Resolution: The project established mechanisms for conflict resolution, ensuring that disputes were addressed promptly and effectively.
- 5) Monitoring and Evaluation: The project established a monitoring and evaluation framework, ensuring that progress was tracked, and lessons learned were documented.

These lessons have been cascaded in the implementation of the Sustainable Power and Irrigation in Nigeria (SPIN).

5.2.2. Key Outcomes of the Project

Improved Irrigation Management: The TRIMING project

improved irrigation management in Nigeria, increasing agricultural productivity and enhancing food security.

Increased Stakeholder Engagement: The project increased stakeholder engagement in irrigation management, promoting inclusive decision-making and conflict resolution.

Enhanced Capacity: The project enhanced the capacity of stakeholders in irrigation management, improving their knowledge and skills.

5.3. Case Study of Stakeholder Engagement under the Sustainable Power and Irrigation in Nigeria (SPIN) Project

The SPIN Project is presently at the preliminary stage of implementation, hence the list of participatory or candidate Irrigation Schemes have not been finalized. However, the Doma Dam and Irrigation Project located near Lafia in Nassarawa State was selected as a pilot Scheme and assessed by the World Bank Study Team. Consequently, the potential stakeholders under the Irrigation Scheme were identified based on the categorization stipulated by the World Bank Environmental and Social Standard (ESS 10) of affected parties and other interested parties [15].

Preliminary stakeholder engagements were conducted to obtain their commitment and buy-in for the proposed project. The Identified Stakeholders under the SPIN Project were generally classified into 3 categories, namely:

1. Affected (or Interested) Parties:

They are Stakeholders who are impacted or likely to be impacted directly or indirectly, positively or adversely, by the Project. They include the following groups:

- 1) Host Community members in the project area
- 2) Crop farmers.
- 3) Land Owners.
- 4) Tenants and Leaseholders
- 5) Landless or Squatters
- 6) Livestock farmers
- 7) Cattle herders
- 8) Reservoir fishers
- 9) Farmers Associations
- 10) Women Farmer Groups
- 11) Water Users Association
- 12) Wage Laborers and Workers
- 13) Small-Scale Business Owners
- Community Associations and Interest Groups
- Internally Displaced People (IDPs)

2. Other Interested Parties (Influential Parties):

This category of stakeholders is made up of Stakeholders who may not be directly or indirectly impacted by the project, but who have the potential interest to influence the project outcomes via their statutory functions and mandates or other factors. They include Ministries, Departments and Agencies

with statutory roles in the implementation of SPIN project in the various participating states. They include:

- 1) Federal Ministry of Water Resources and Sanitation
- 2) Federal Ministry of Power (FMP)
- 3) Water Boards iv. State Governors
- 4) Ministry of Finance
- 5) Ministry of Environment
- 6) Ministry of Agriculture
- 7) Dam operators
- 8) Ministry of Local Government Affairs
- 9) Private Sector Investors
- 10) Traditional Leaders
- 11) Faith- based / religious leaders
- 12) River Basins Authorities

State and Federal level Emergency Management Agencies

Local Government Councils xvi. Transmission Company of Nigeria xvii. Ministries of Agriculture (State and Federal) xviii. Ministries of Environment (State and Federal) xix. Civil

Society Organizations xx. Gender-based Violence (GBV) Service Providers.

3. Disadvantaged or vulnerable individual groups:

Elderly people above the age of 65, female headed Households (Widows), Persons with disabilities, People living in extreme poverty, IDPs and Orphans.

5.3.1. SPIN Project Stakeholders Analysis

The table below is a self explanatory representation of stakeholder analysis showing the identified Stakeholders, and their level of interest and influence on the project.

Influence may be defined by the stakeholder's decision-making powers, in the sense of the stakeholder's ability to make decisions that determine the project outcomes and process of implementation of the project.

In determining strategy for engagement of stakeholders who have interest in the project and who may be able to influence project outcomes, the following classifications are used. The table also shows how these stakeholders are equally engaged throughout the project planning and implementation according to their level of interest: High, Medium and Low.

Table 1. Showing Stakeholder Analysis Under the Nigeria's SPIN Project.

No.	Stakeholders	Influence	Nature of relationship with Project	Interest
1	Office of the State Governor	High	Influencer	High
2	Ministry of Finance	High	Implementer	High
3	Ministry of Water Resources and Sanitation	High	Implementer	High
4	Ministry of Agriculture and Food Security	High	Implementer	High
5	Ministry of Environment	High	Influencer	High
6	Ministry of Local Government Affairs	High	Access Support/Implementer	High
7	Ministry of Women Affairs	High	Support	High
8	Ministry of Information	High	Awareness Creation Support Community	High
9	Traditional Leaders/Faith Based Leaders	Low	Engagement, Transparency, Accountability	High
10	Community Based-Non governmental organizations (NGOs)	Medium	Community Engagement	High
	Community members in the project host Communities:			
11	i. Crop Farmers	Low	Directly Impacted	High
	ii. Landowners			
	iii. Tenants and Leaseholders iv. Landless or Squatters v. Livestock farmers vi. Cattle herders			
	vii. Reservoir fishers			

No.	Stakeholders	Influence	Nature of relationship with Project	Interest
	viii. Farmers associations ix. Women Farmer x. Groups xi. Water Users association xii. Wage Laborers and Workers xiii. Brickmakers xiv. Small-Scale Business Owners xv. Community Associations and Interest Groups			
12	Vulnerable or Disadvantaged Groups	Low	Directly Impacted	High
13	Ministry of Education/Nigerian University Commission	Low	Support	High
14	Ministry of Works	High	Support	High
15	Dam operators	Low	Directly Impacted	High
16	Farmers Associations and Traders	Medium	Directly Impacted	High
17	Fishers and Fishers Associations and traders	Medium	Directly Impacted	High
18	Herders	Low	Directly Impacted	High
19	State water Board	Low	Support	High
20	Private sector investors	High	Future investors in the hydropower component	High

5.4. Stakeholders Engagement Processes Under the SPIN Project

The process of stakeholder engagement under the SPIN Project involves the following:

- 1) Stakeholder identification and analysis.
- 2) Planning how the engagement with stakeholders will take place.
- 3) Disclosure of information.
- 4) Consultation with stakeholders.
- 5) Addressing and responding to grievances.
- 6) Reporting to stakeholders.

5.5. Grievance Resolution Mechanism under the TRIMING Project

As found effective within the TRIMING Project structure, diverse methods for reporting grievances that are culturally appropriate are recommended for use as they permit for:

- 1) self-identified, and
- 2) confidential, or anonymous procedures (professional letter writers, suggestion / GRM boxes, Email, toll-free telephone etc).

Grievance uptake and resolution are carried out at three levels while the Law Court shall be the last resort for any case not resolved within the Grievance Mechanism structure of the

project.

As for grievances bordering on Sexual Harassment (SH) or Sexual Exploitation and Abuse (SEA) as well as Child abuse and Child labour, all such complaints when received through the Project level GRM shall be reported to the Gender-based Violence Service Provider(s) identified through mapping of service providers or from directory of Service Providers sourced from the States' Ministries of Women Affairs.



Figure 1. Doma Dam Stakeholders Engagement with Doma Traditional Leaders [9].



Figure 2. Doma Dam SPIN Project Stakeholders Engagement [9].

6. Results and Discussion

The results of the study are presented below:

- 1) **Stakeholder Engagement:** The study found that stakeholder engagement is crucial for effective irrigation management in Nigeria. The TRIMING project and SPIN Project demonstrated the importance of inclusive stakeholder engagement, capacity building, and participatory decision-making in irrigation management.
- 2) **Irrigation Management:** The study revealed that irrigation management in Nigeria is characterized by limited coverage, inadequate infrastructure, inefficient water use, lack of effective management, and dependence on government support.
- 3) **Food Security:** The study found that Nigeria's food security is threatened by low agricultural productivity, climate change, land degradation, and water scarcity.
- 4) **Stakeholder Analysis:** The study identified key stakeholders in irrigation management in Nigeria, including government agencies, farmers, water user associations, private sector investors, civil society organizations, research and academic institutions, and local communities.
- 5) **Strategies for Getting, Keeping, and Growing (GKG) Stakeholders:** The study proposed strategies for GKG stakeholders, including identifying and inviting stakeholders, building relationships, raising awareness, regular communication, inclusive decision-making, capacity building, empowerment, partnerships, recognition, and rewards.

Additional findings include:

- 1) **Barriers to Stakeholder Engagement:** The study identified power imbalances, limited capacity and resources, cultural and language barriers, and conflicting interests and priorities as major barriers to stakeholder engagement in irrigation management in Nigeria.
- 2) **Best Practices:** The study highlighted the TRIMING project and SPIN Project as best practices in stakeholder

engagement in irrigation management in Nigeria.

- 3) **Recommendations:** The study recommended establishing stakeholder platforms, developing stakeholder engagement plans, cascading lessons learned to new schemes, capacity building for stakeholders, and developing inclusive irrigation policies.
- 4) **Stakeholder Engagement Framework:** A stakeholder engagement framework was developed, emphasizing the need to identify, analyze, and prioritize stakeholders' involvement in irrigation development.
- 5) **Irrigation Management Challenges:** The study identified inadequate irrigation infrastructure, inefficient water use, lack of effective management, and dependence on government support as major challenges facing irrigation management in Nigeria.
- 6) **Food Security Challenges:** The study found that Nigeria's food security is threatened by low agricultural productivity, climate change, land degradation, and water scarcity.
- 7) **Stakeholders Engagement Strategies:** The study proposed strategies for stakeholder engagement, including regular communication, inclusive decision-making, capacity building, empowerment, partnerships, recognition, and rewards.

7. Conclusion and Recommendations

Stakeholder engagement is essential for effective irrigation management and achieving food security in Nigeria. By prioritizing stakeholder engagement, Nigeria can:

- 1) Improve agricultural productivity through collaborative decision-making and knowledge sharing.
- 2) Reduce poverty by increasing access to irrigation services and promoting equitable distribution of benefits.
- 3) Enhance food security by ensuring that irrigation management decisions align with the needs and priorities of local communities.

Ultimately, stakeholder engagement is critical for unlocking Nigeria's agricultural potential and achieving sustainable food security.

To strengthen stakeholder management and enhance food security in Nigeria, the following recommendations are made:

- 1) **Establishment of Stakeholder Platforms:** Establish stakeholder platforms to facilitate communication, coordination, and collaboration among stakeholders.
- 2) **Strategies for Building Trust and Cooperation:** Adopt strategies for building trust and cooperation among stakeholders, such as regular communication, inclusive decisionmaking, and capacity-building initiatives.
- 3) **Mechanisms for Ensuring Inclusive and Participatory Decision-Making:** Establish mechanisms for ensuring inclusive and participatory decision-making, such as stakeholder forums, workshops, and committees.
- 4) **Capacity-Building Initiatives for Stakeholders:** Provide

capacity-building initiatives for stakeholders to enhance their knowledge and skills in irrigation management.

- 5) Cascading Lessons Learnt: Cascade lessons learned from successful stakeholder engagement initiatives to other stakeholders and irrigation management projects.
- 6) Developing Inclusive Irrigation Policies: Develop inclusive irrigation policies that consider the needs and concerns of all stakeholders.

By adopting these recommendations, Nigeria can strengthen stakeholder management in irrigation development and enhance national food security.

Abbreviations

GKG	Getting, Keeping and Growing
TRIMING	Transforming Irrigation Management in Nigeria
SPIN	Sustainable Power and Irrigation in Nigeria
GDP	Gross Domestic Products
CBN	Central Bank of Nigeria
FAO	Food and Agriculture Organization
NCC	Nigerian Communications Commission
PIM	Participatory Irrigation Management
IWRM	Integrated Water Resources Management
IDP	Internally Displaced People
GBV	Gender-based Violence
SH	Sexual Harassment
SEA	Sexual Exploitation and Abuse
GRM	Grievances Resolution Mechanism
NGIs	Non-governmental Organizations
FMP	Federal Ministry of Power
ESS	Environmental and Social Standard
IMT	Irrigation Management Transfer

Author Contributions

Adoyi John Ochigbo is the sole author. The author read and approved the final manuscript.

Conflicts of Interest

The Author hereby declares no conflict of interest.

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