

SOKOTO STATE GOVERNMENT

Ministry of Finance, Budget and Economic Planning
Public-Private Partnership Unit

PPP PROJECT DOCUMENTATION

SOKOTO STATE INTEGRATED FADAMA IRRIGATION DEVELOPMENT PPP (SSIFID-PPP)

Build–Operate–Transfer (BOT) | 25-Year Concession

Project Reference: SSG/PPP/AGRIC/2024/001

Date: November 2024

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SECTION A: PROJECT IDENTIFICATION BRIEF

A.1 Background and Context

Agriculture is the backbone of Sokoto State's economy, employing over 70% of the active population and contributing approximately 45% of the state's Gross Domestic Product (GDP). Despite this significance, agricultural productivity in the state remains chronically constrained by inadequate irrigation infrastructure, over-reliance on rain-fed farming, and the progressive degradation of existing water management systems.

Sokoto State lies within the Sudan Savanna agro-ecological zone, characterized by a short rainy season (June–September) and prolonged dry spells for the remaining eight months of the year. This climatic reality renders rain-fed agriculture insufficient for year-round food production and income generation. The state's extensive network of rivers — including the Sokoto, Rima, and Kebbe rivers — provides substantial potential for irrigation development that remains largely untapped.

The Federal Government's Sokoto-Rima River Basin Development Authority (SORBDA) has historically managed large-scale irrigation schemes in the basin, but inadequate maintenance funding, aging infrastructure, and institutional gaps have significantly reduced operational capacity. A 2024 assessment commissioned by the State Ministry of Agriculture identified over 140,000 hectares of cultivable fadama land across the state, of which fewer than 12,000 hectares are under active irrigation — representing less than 9% utilization.

In response to this structural deficit, the Sokoto State Government (SSSG) has resolved to mobilize private sector participation through a structured Public-Private Partnership to develop, finance, operate, and maintain a new Integrated Fadama Irrigation Development facility in the Kebbe, Rabah, and Silame Local Government Areas — a contiguous corridor with the highest density of irrigable fadama land in the state.

A.2 Project Description

Project Title

Sokoto State Integrated Fadama Irrigation Development PPP (SSIFID-PPP)

Project Location

Kebbe, Rabah, and Silame Local Government Areas, Sokoto State, Nigeria

Project Reference Number

SSG/PPP/AGRIC/2024/001

Proposed PPP Structure

Build–Operate–Transfer (BOT) — 25-Year Concession

Lead Ministry

Ministry of Agriculture and Natural Resources, Sokoto State

Originating/Sponsoring Ministry

Ministry of Finance, Budget and Economic Planning — PPP Unit

Estimated Project Value

₦28,750,000,000 (Twenty-Eight Billion, Seven Hundred and Fifty Million Naira)

Project Scope

The SSIFID-PPP project encompasses the following core infrastructure components:

- Construction of a gravity-fed and pump-assisted irrigation canal network spanning approximately 180 kilometres, serving an initial 30,000 hectares of fadama land in the three LGAs
- Development of two (2) main weir structures and associated intake works on the Kebbe and Rima rivers to divert water into the irrigation network
- Construction of 12 secondary distribution canals with sluice gate control systems
- Installation of on-farm water delivery infrastructure including tertiary canals and field channels for 5,000 smallholder farm holdings
- Development of a water management operations centre equipped with SCADA (Supervisory Control and Data Acquisition) systems for real-time monitoring
- Establishment of three (3) agri-service hubs providing storage, processing support, and input distribution services
- Design and implementation of a Farmer Cooperative Management System linking 12,000 registered smallholder beneficiaries
- Operation and maintenance of all infrastructure for the full 25-year concession period

A.3 Strategic Rationale and Development Objectives

The SSIFID-PPP aligns directly with the Sokoto State Economic Transformation Agenda (SSETA 2023–2027) and the Federal Government’s Agricultural Transformation Roadmap. The project responds to four strategic imperatives:

Food Security and Nutrition: Year-round irrigation will enable two to three cropping cycles annually, substantially increasing production of rice, vegetables, wheat, and cowpea — staple crops that the state currently imports at significant cost from neighbouring states and Niger Republic.

Rural Income and Employment: The project is projected to directly benefit 12,000 smallholder farming households and generate an estimated 45,000 direct and indirect employment opportunities across the three LGAs during the operational phase.

State Revenue Enhancement: Water use levies, land improvement charges, and the agri-processing hub concession fees will generate an estimated ₦850 million annually in state revenue by Year 5 of operation, rising to ₦1.4 billion by Year 10.

Climate Adaptation: Structured water management infrastructure reduces vulnerability to the increasing irregularity of rainfall patterns projected under medium-term climate scenarios for northwest Nigeria, building climate-resilient agricultural systems.

A.4 Preliminary Project Data

Command Area	30,000 hectares (Phase 1)
Estimated Irrigable Land	140,000 ha (state total) — this project: 30,000 ha
Beneficiary Farmers	12,000 registered smallholder households
Estimated Capital Cost	₦28.75 billion
Annual O&M (Concession Period)	₦1.2 billion (Year 1, escalating at 8% p.a.)

Concession Period	25 years (Build–Operate–Transfer)
Revenue Model	Water user charges, agri-hub fees, government viability gap
Estimated Construction Period	36 months
Expected First Irrigation Season	Q3 2028
Government Land Contribution	Right-of-way and fadama land (in-kind)
Viability Gap Funding (VGF)	Est. ₦4.5 billion over 5 years

A.5 Proposed PPP Structure

The project is structured as a Build–Operate–Transfer (BOT) concession with a 25-year term. Under this arrangement:

- The Special Purpose Vehicle (SPV) to be incorporated by the selected private concessionaire will be responsible for design, financing, construction, commissioning, operation, maintenance, and transfer of all project assets.
- The Sokoto State Government will grant the SPV exclusive rights to collect water user charges and operate the agri-service hubs within the defined concession area.
- A Viability Gap Fund (VGF) contribution of up to ₦4.5 billion will be provided by the SSSG over the first five (5) years to bridge the financial gap arising from the concessional water tariff set at a level affordable to smallholder farmers.
- At the end of the 25-year concession period, all infrastructure assets shall be transferred to the State Government at no cost, in a fully operational and well-maintained condition.
- A PPP Agreement regulating the rights and obligations of the State and the Concessionaire, along with a Farmland Access and Management Framework governing smallholder participation, shall be executed prior to financial close.

A.6 Preliminary Risk Allocation Summary

Risk Type	Government	Private Partner
Land acquisition and right-of-way	Primary	
Political and regulatory risk	Primary	
Hydrology and water availability risk	Shared	Shared
Construction cost overrun		Primary
Technology and design risk		Primary
Revenue and demand risk	VGF backstop	Primary
Maintenance and operations		Primary
Force majeure	Shared	Shared

A.7 Recommended Next Steps

1. Formal approval of Project Identification Brief by the Commissioner for Finance and the Governor's Office

2. Commission full Feasibility Study and Value for Money Assessment (estimated 12 weeks)
3. Engagement with the Infrastructure Concession Regulatory Commission (ICRC) for federal regulatory alignment
4. Environmental and Social Impact Assessment (ESIA) registration with the Federal Ministry of Environment
5. Preparation and issuance of Request for Qualifications (RFQ) to shortlist qualified private investors
6. Stakeholder consultations with farmer cooperatives, LGA authorities, and civil society in the three target LGAs
7. Preparation of PPP Agreement, Concession Agreement, and ancillary legal documents

A.8 Identification Brief Certification

This Project Identification Brief has been prepared by the Sokoto State PPP Unit in accordance with the ICRC PPP Policy Framework (2021) and the Sokoto State PPP Guidelines (2023). The brief has been reviewed and is hereby certified as a basis for proceeding to full feasibility assessment.

Alhaji Sani Umar Zarewa

Director, PPP Unit

Date: 22 July 2024

Hon. Aminu Abdullahi

Commissioner for Finance, Budget & Economic Planning

Date: 30 July 2024

SECTION B: FEASIBILITY & VALUE FOR MONEY ASSESSMENT

B.1 Executive Summary

This Feasibility and Value for Money (VfM) Assessment has been prepared by the Sokoto State PPP Unit with technical support from Switch Advisory Limited pursuant to the approved Project Identification Brief (PIB) for the Sokoto State Integrated Fadama Irrigation Development PPP (SSIFID-PPP). The assessment evaluates the technical, economic, financial, and commercial feasibility of delivering the project through a Public-Private Partnership arrangement, and provides a comparative analysis against the conventional public procurement alternative (Public Sector Comparator).

The assessment concludes that the SSIFID-PPP is technically and economically feasible, and that delivery through a BOT PPP structure offers superior value for money relative to traditional government procurement, primarily by transferring construction and operational risk to the private sector, bringing in private sector technical innovation, and unlocking project financing without immediate burden on the State's capital budget.

B.2 Technical Feasibility

Hydrological Assessment

A desk-top hydrological review of the Kebbe and Rima river systems, based on available SORBDA data and the 2022 National Water Resources Masterplan, confirms adequate water availability to sustain the proposed 30,000-hectare command area during both wet and dry seasons, subject to proper dam and weir intake design. Mean annual river discharge data (1990–2023) for the Kebbe River at Kebbe gauging station indicates a minimum dry-season flow of 42 m³/s — well above the estimated project abstraction requirement of 18 m³/s at peak irrigation demand.

Soil and Land Suitability

Satellite imagery analysis and soil classification data from SORBDA's 2020 fadama mapping exercise confirm that the project area comprises predominantly Class I and Class II irrigable soils with favorable permeability, pH balance (6.2–7.1), and drainage characteristics. No significant soil contamination or geological constraints have been identified in the primary command area.

Infrastructure and Engineering

The proposed canal network, weir structures, and distribution system configurations have been verified against standard hydraulic engineering parameters. The project site is accessible via federal and state highways, reducing logistics and construction cost risks. Three pre-feasibility engineering studies conducted between 2020 and 2023 by SORBDA and FMAFS have consistently confirmed the engineering viability of irrigation development in this corridor.

B.3 Economic Viability Analysis

An economic cost-benefit analysis was conducted using a 30-year appraisal horizon at a social discount rate of 12% per annum. The analysis captures both direct agricultural productivity benefits and broader economic multiplier effects.

Economic Net Present Value (eNPV)	₦31.4 billion
Economic Internal Rate of	18.6%

Return (eIRR)	
Benefit-Cost Ratio (BCR)	2.1:1
Direct employment created	45,000 (direct + indirect)
Projected increase in annual farm income (per household)	₦480,000 average (Year 5)
Estimated annual food production increase (rice equivalent)	240,000 metric tonnes
Import substitution value	₦12.5 billion per annum (Year 5)

The BCR of 2.1 confirms that for every ₦1 invested, the project generates ₦2.10 in economic returns. The eIRR of 18.6% significantly exceeds the social discount rate, confirming strong economic justification for the investment.

B.4 Financial Analysis and Public Sector Comparator

Financial Internal Rate of Return (without VGF)

Without government support, the project's financial IRR is estimated at 6.8% — below the private sector threshold of approximately 18-20% required by infrastructure investors in Nigeria's current market environment. This viability gap justifies government VGF support.

Financial IRR (with VGF of ₦4.5 billion)

With the proposed VGF of ₦4.5 billion disbursed over Years 1–5 of the concession, the project financial IRR rises to 19.3%, which falls within the acceptable return range for private irrigation infrastructure in West Africa.

Public Sector Comparator (PSC) vs. PPP Option

Parameter	PSC (Government Direct)	PPP Option
Total Capital Cost (NPV)	₦28.75 billion	₦24.1 billion (private)
Government Capital Outlay	₦28.75 billion	₦4.5 billion (VGF only)
Contingency (risk-adjusted)	+₦7.2 billion (25% uplift)	+₦1.8 billion (transferred)
O&M Cost (30-yr NPV)	₦18.4 billion	₦14.2 billion (transferred)
Total Fiscal Risk-Adjusted Cost	₦54.35 billion	₦20.6 billion
VfM Saving (PPP vs. PSC)	—	₦33.75 billion (62% saving)
Construction Timeline	Est. 60–72 months	Est. 30–36 months
Risk Transfer to Private	None	High

The PSC analysis demonstrates a quantified VfM advantage of ₦33.75 billion in risk-adjusted net present value terms, representing a 62% saving relative to the government's direct procurement alternative. This is attributable principally to: (i) the complete transfer of construction, design, and operations risk to the private concessionaire; (ii) the private sector's superior project management

efficiency (reflected in a 40–50% reduction in projected construction time); and (iii) avoidance of the chronic cost overruns historically associated with government-managed irrigation projects in Nigeria.

B.5 Risk Register

Risk Category	Probability	Impact	Rating	Mitigation
Political/Regulatory Risk	Low	High	Medium	VGF commitment backed by law; ICRC oversight
Hydrological Variability	Medium	Medium	Medium	SCADA-enabled adaptive water management
Construction Cost Overrun	Medium	High	High	Fixed-price EPC; performance bond requirement
Demand/Revenue Shortfall	Low	High	Medium	Minimum Revenue Guarantee (Yr 1–5)
Farmer Adoption Risk	Medium	Medium	Medium	Extension worker deployment; cooperative structure
Environmental/Social Risk	Low	Medium	Low	ESIA and Stakeholder Engagement Plan
Force Majeure/Climate	Medium	Medium	Medium	Insurance pool; shared-risk agreement
Land Acquisition Disputes	Medium	High	High	Pre-acquisition community consultation framework

B.6 Socio-Environmental Screening

A preliminary social and environmental screening has been undertaken in accordance with the World Bank Environmental and Social Framework (ESF) Category B standards applicable to irrigation development projects. No Category A environmental risks (i.e., large dam construction, involuntary resettlement exceeding 200 households) have been identified at this stage. Key screening findings include:

- No significant wetland areas or protected forest reserves fall within the proposed command area boundary.
- An estimated 340 households occupy fadama lands within the project footprint; a Community Resettlement Action Plan (RAP) will be developed as part of full project preparation.
- The project is likely to generate positive gender impacts given women's predominant role in smallholder vegetable and grain production in the fadama corridor. A Gender Action Plan will be incorporated into the PPP Agreement.
- A full Environmental and Social Impact Assessment (ESIA) will be commissioned as part of the next project preparation phase, prior to any procurement commencement.

B.7 Feasibility Conclusion

On the basis of the technical, economic, financial, environmental, and social analyses presented in this report, the SSIFID-PPP is assessed as:

- **Technically feasible — existing hydrological, soil, and engineering data confirm the viability of the proposed infrastructure**

- **Economically justified** — the project generates a BCR of 2.1 and an eIRR of 18.6%, both exceeding the required thresholds
- **Financially viable with government support** — VGF of ₦4.5 billion generates an acceptable private sector return of 19.3%
- **Superior VfM through PPP** — the PPP structure generates ₦33.75 billion in risk-adjusted savings compared to public procurement
- **Environmentally and socially manageable** — no Category A risks identified; ESIA recommended for full preparation phase

The PPP Unit hereby recommends that the SSIFID-PPP proceed to the procurement and concession development phase.

Alhaji Sani Umar Zarewa

Director, PPP Unit

Date: 19 August 2024

Hon. Aminu Abdullahi

Commissioner for Finance, Budget & Economic Planning

Date: 27 August 2024

SECTION C: PPP UNIT RECOMMENDATION MEMORANDUM

TO	H.E. Alh. (Dr) Ahmed Aliyu Sokoto, PhD, FCNA, Governor, Sokoto State
THROUGH	Hon. Aminu Abdullahi, Commissioner for Finance, Budget & Economic Planning
FROM	Alhaji Sani Umar Zarewa, Director, PPP Unit
REF	PPP/MEMO/2024/AGRIC/003
DATE	16 September 2024
SUBJECT	Recommendation for Executive Approval: Sokoto State Integrated Fadama Irrigation Development PPP (SSIFID-PPP) — BOT Concession
CLASSIFICATION	CONFIDENTIAL

C.1 Purpose of This Memorandum

The purpose of this Memorandum is to present to His Excellency the Governor and the State Executive Council the PPP Unit's formal recommendation for the approval and advancement of the Sokoto State Integrated Fadama Irrigation Development PPP (SSIFID-PPP) to the procurement phase. This recommendation follows the satisfactory completion of the Project Identification Brief (July 2024) and Feasibility and Value for Money Assessment (August 2024) for the project.

C.2 Project Summary

The SSIFID-PPP proposes a 25-year Build–Operate–Transfer concession for the development of a 30,000-hectare integrated irrigation scheme covering Kebbe, Rabah, and Silame LGAs, at a total capital investment of ₦28.75 billion. The project will benefit 12,000 smallholder farmers, generate 45,000 direct and indirect jobs, and produce an estimated economic return of ₦31.4 billion in NPV terms over the appraisal horizon. The State Government's direct financial obligation is limited to a Viability Gap Fund (VGF) contribution of ₦4.5 billion over Years 1–5 of the concession.

C.3 PPP Unit Assessment Summary

The PPP Unit has reviewed all preparatory documentation and hereby confirms the following:

- The project satisfies the ICRC PPP suitability criteria under Section 7 of the ICRC Act (2005, as amended) and qualifies for registration as a Federal Government-backed PPP project.
- The VfM analysis demonstrates a ₦33.75 billion advantage for the PPP route over the Public Sector Comparator, representing a 62% risk-adjusted saving to the state.
- The proposed BOT structure appropriately allocates risk to the party best placed to manage it, consistent with international best practice for irrigation PPPs.
- The Viability Gap Fund of ₦4.5 billion has been assessed as fiscally sustainable within the state's Medium-Term Expenditure Framework (MTEF 2026–2028), representing 3.1% of Sokoto State's projected three-year capital budget.
- The project is aligned with the SABER (State Action on Business Enabling Reforms) PPP sub-indicator framework, and its approval and disclosure will directly support Sokoto State's SABER Year 2 compliance obligations under the World Bank-supported programme.

- The project does not require Federal Government co-investment and will be registered under the Sokoto State PPP Disclosure Portal in compliance with the SABER R3 (Business Enabling Environment) requirements.

C.4 Regulatory and Compliance Framework

The SSIFID-PPP will be structured and implemented in accordance with the following regulatory instruments:

- Infrastructure Concession Regulatory Commission (ICRC) Act, 2005 (as amended)
- Sokoto State PPP Policy Framework and Guidelines (2023)
- National PPP Policy (2020)
- World Bank Environmental and Social Framework (Category B)
- Federal Ministry of Agriculture and Food Security Irrigation Policy (2021)
- Sokoto State Fadama Development Masterplan (2022–2032)

C.5 Procurement Strategy

The PPP Unit recommends a competitive procurement process comprising the following stages:

8. Publication of Expression of Interest (EOI) — Q1 2025
9. Request for Qualifications (RFQ) and shortlisting of qualified bidders — Q2 2025
10. Request for Proposals (RFP) issuance to shortlisted firms — Q3 2025
11. Bid evaluation and preferred bidder selection — Q4 2025
12. Concession Agreement negotiation and financial close — Q1–Q2 2026
13. Construction commencement — Q3 2026
14. First irrigation season — Q3 2028

C.6 Formal Recommendation

Based on the comprehensive assessments completed, the PPP Unit formally recommends that:

- **The Sokoto State Executive Council approve in principle the SSIFID-PPP project for advancement to the procurement phase.**
- **A budgetary provision of ₦900 million be made in the 2025 Appropriation for project preparation activities, including ESIA, detailed engineering studies, legal advisory, and transaction advisory services.**
- **The Commissioner for Finance, Budget and Economic Planning be authorized to engage a Transaction Adviser for the SSIFID-PPP through competitive selection.**
- **The SSIFID-PPP be formally registered on the Sokoto State PPP Disclosure Portal and notified to the Infrastructure Concession Regulatory Commission (ICRC).**
- **A Project Steering Committee be constituted under the chairmanship of the Commissioner for Agriculture and Natural Resources, with membership drawn from Finance, Works, Environment, and the PPP Unit.**

Alhaji Sani Umar Zarewa

Hon. Aminu Abdullahi

Director, PPP Unit
Date: 16 September 2024

Commissioner for Finance
Date: 19 September 2024

SECTION D: EXECUTIVE COUNCIL APPROVAL RESOLUTION

SOKOTO STATE GOVERNMENT
OFFICE OF THE GOVERNOR
STATE EXECUTIVE COUNCIL RESOLUTION

Resolution Number	SSG/SEC/RES/2024/PPP/004
Meeting Date	4 November 2024
Venue	Executive Council Chambers, Government House, Sokoto
Presiding	H.E. Alh. (Dr) Ahmed Aliyu Sokoto, PhD, FCNA, Governor of Sokoto State
Subject Matter	Approval of Sokoto State Integrated Fadama Irrigation Development PPP (SSIFID-PPP)

D.1 Preamble

THE STATE EXECUTIVE COUNCIL of Sokoto State, constituted pursuant to Section 192 of the Constitution of the Federal Republic of Nigeria (1999, as amended), and having duly deliberated upon the PPP Unit's Recommendation Memorandum (Ref: PPP/MEMO/2024/AGRIC/003) presented by the Honourable Commissioner for Finance, Budget and Economic Planning at the Regular Session of the State Executive Council held on Monday, 4 November 2024;

HAVING CONSIDERED the Project Identification Brief (SSG/PPP/AGRIC/2024/001) and the Feasibility and Value for Money Assessment confirming the technical, economic, and financial viability of the project;

NOTING the alignment of the project with the Sokoto State Economic Transformation Agenda (SSETA 2023–2027), the Federal Agricultural Transformation Roadmap, and the state's obligations under the World Bank SABER programme;

RECOGNIZING the significant potential of the project to improve food security, generate rural employment, and enhance state revenue in Kebbe, Rabah, and Silame Local Government Areas;

D.2 Resolutions

THE STATE EXECUTIVE COUNCIL HEREBY RESOLVES AS FOLLOWS:

15. APPROVAL OF PROJECT: The Sokoto State Integrated Fadama Irrigation Development PPP (SSIFID-PPP) is hereby approved in principle for advancement to the procurement and concession development phase, subject to satisfactory completion of the Environmental and Social Impact Assessment.
16. VIABILITY GAP FUND COMMITMENT: The State Executive Council approves in principle a Viability Gap Fund (VGF) contribution of up to ₦4,500,000,000 (Four Billion, Five Hundred Million Naira) to be disbursed over Years 1–5 of the concession, subject to appropriation by the Sokoto State House of Assembly.

17. PROJECT PREPARATION BUDGET: The Commissioner for Finance, Budget and Economic Planning is authorized to include a provision of ₦900,000,000 (Nine Hundred Million Naira) in the 2025 Appropriation Bill for project preparation activities.
18. TRANSACTION ADVISER: The Commissioner for Finance, Budget and Economic Planning is hereby authorized to procure a Transaction Adviser through open competitive selection in accordance with the Sokoto State Public Procurement Law.
19. PROJECT STEERING COMMITTEE: A Project Steering Committee is hereby constituted under the chairmanship of the Honourable Commissioner for Agriculture and Natural Resources, with membership as specified in the PPP Unit Recommendation Memorandum.
20. DISCLOSURE AND NOTIFICATION: The PPP Unit is directed to register the SSIFID-PPP on the Sokoto State PPP Disclosure Portal and notify the Infrastructure Concession Regulatory Commission (ICRC) within fourteen (14) days of this Resolution.

D.3 Attestation

This Resolution was duly passed by the Sokoto State Executive Council at its regular session on 4 November 2024. It is hereby certified as a true and accurate record of the Council's deliberations and decisions.

Alh. (Dr) Ahmed Aliyu Sokoto,
PhD, FCNA

Governor, Sokoto State
Date: 4 November 2024

Alh. Idris M. Gobir

Deputy Governor, Sokoto State
Date: 4 November 2024

Mohammed Bello Sifawa

Secretary to the State Government
Date: 4 November 2024

OFFICIAL SEAL OF SOKOTO STATE GOVERNMENT

[SEAL]