

Consultancy Service for Programme Integrated Financial and Economic Analysis for the SICRAF-Mali Programme

1 Background and Context

1.1 Country and Economic Context

Mali is among the most climate-vulnerable countries in the Sahel region, with over 80% of rural household's dependent on rain-fed agriculture. The country faces intensifying climate hazards including shortened rainfall seasons, extreme storms, prolonged droughts, and flash floods. Agricultural financing in Mali is highly constrained, with credit-constrained households investing significantly less in climate-smart technologies, resulting in lower productivity and greater vulnerability to climate shocks.

The Scaling Inclusive Climate-Resilient Agriculture Finance in Mali (SICRAF-Mali) Programme aims to remove systemic barriers to climate finance and promote adoption of climate-smart agriculture (CSA) and renewable energy practices among smallholder farmers, cooperatives, and agribusiness micro, small, and medium enterprises (MSMEs). The Programme comprises two core components:

1. **Component 1:** CSA Concessional Credit Line supporting CSA and low-emission technologies and Targeted Smallholder Climate Finance Facility for vulnerable smallholder farmers
2. **Component 2:** Catalysing Access to Climate Finance through technical assistance

BNDA allocated approximately 52% of its total loan portfolio to the agricultural sector in 2023, amounting to around 240 billion FCFA. Access to finance is the binding constraint across all nodes of the agricultural value chain, preventing farmers, processors, traders, and agribusinesses from investing in climate-resilient and low-emission technologies.

1.2 Rationale for This Assignment

Activity 2.3.2 of SICRAF-Mali Programme includes technical training on CSA lending and risk appraisal, equipping participating financial institutions (PFIs) with skills to assess the technical and financial viability of CSA investments beyond traditional collateral. To operationalize climate-responsive lending, standardized financial models for individual CSA technologies are required.

The assignment is also critical to underpin the financial and economic robustness of the SICRAF-Mali Programme by developing a comprehensive integrated financial and economic analysis framework. This includes assessing the viability, profitability, and bankability of CSA investments across targeted value chains, while demonstrating the Programme's efficiency and effectiveness in line with the GCF investment criterion. The assignment will also provide a strong justification for the concessionality of GCF financing by identifying financial barriers, risk profiles, and gaps that limit private sector participation. Furthermore, it will support the structuring of the Programme's financial architecture, including credit flow mechanisms, repayment arrangements, and sustainability pathways beyond the project lifecycle, ensuring the long-term scalability and impact of climate-resilient agricultural finance in Mali.

This consultancy provides the farm and enterprise-level financial and economic evidence base. It is the sole ToR responsible for:

- CSA technology investment profiling (financial specifications for each technology)
- Farm-level financial analysis (NPV, IRR, BCR, payback) of individual CSA practices
- Societal economic cost-benefit analysis (ENPV, EIRR, EBCR), GHG quantification, and social impact valuation
- Climate scenario-based financial simulations (using yield adjustment factors from the Programme Climate and Crop Risk Assessment)
- Repayment capacity modelling and portfolio-level risk aggregation tools
- Financial appraisal toolkits for loan officers

2 Objectives

The overall objective is to conduct comprehensive financial and economic analysis of CSA technologies and practices, develop standardized mini financial models, perform climate scenario simulations, and produce operational appraisal tools that enable evidence-based, climate-responsive lending under SICRAF-Mali.

2.1 Specific Objectives:

1. Develop standardized mini financial models for up to 10 prioritized CSA practices covering crops, livestock, irrigation, renewable energy, and post-harvest systems.
2. Conduct integrated financial analysis from farmer/enterprise perspective: NPV, IRR, BCR, payback period, cash flows under commercial and concessional financing scenarios
3. Perform economic analysis from societal perspective incorporating externalities, climate and environmental benefits, and social returns.
4. Link mini financial models to climate scenarios to simulate performance under SSP2-4.5 and RCP5-8.5 projections.
5. Conduct sensitivity and stochastic risk analysis including repayment capacity and default probability modelling
6. Develop financial viability thresholds and break-even analyses to inform loan structuring (*these thresholds feed into loan product design and TCVC framework*)

3 Scope of Work

3.1 Work Package 1: CSA Technology Selection and Investment Profiling

Note: These profiles serve as inputs to all financial models and feed into the Design of the CSA Concessional Credit Line and Smallholder Climate Finance Facility.

3.1.1 CSA Technology Inventory and Prioritization

1. Compile comprehensive inventory of CSA technologies eligible for SICRAF-Mali financing: improved crop varieties, water management technologies, soil fertility

management, renewable energy, post-harvest technologies, livestock systems, climate information services, mechanization

2. Prioritize approx. 10 CSA practices for detailed modelling based on Programme financing priorities, GCF climate impact potential, adoption potential, economic importance, geographic relevance, and gender/youth inclusion considerations

3.1.2 Investment Profile Development

1. Develop detailed investment profiles for each prioritized CSA practice documenting: technical specifications, capital investment costs (equipment, installation, infrastructure), operating costs (inputs, labor, maintenance, energy), implementation requirements, expected outputs and yields, market linkages, climate resilience attributes, technology lifespan and replacement cycles
2. Segment profiles by scale: smallholder (<2 ha), small commercial (2–5 ha), medium-scale (5–20 ha), agribusiness enterprises
3. Differentiate profiles by agroecological zone reflecting cost and performance variations
4. Document all assumptions, data sources, and key parameters

Output: CSA investment profiles delivered to Design of the CSA Concessional Credit Line and Smallholder Climate Finance Facility.

3.2 Work Package 2: Mini Financial Model Development

3.2.1 Model Design and Structure

1. Design standardized Excel-based mini financial models with consistent structure across all CSA practices including: investment costs module, operating costs module, production and yields module, revenues module, financing module (loan amounts, interest rates, tenors, grace periods, repayment schedules), monthly and annual cash flow projections, financial indicators dashboard (NPV, IRR, BCR, payback), sensitivity analysis module, and climate scenario integration module
2. Ensure models are user-friendly with clear input cells, embedded instructions, and automatic calculations
3. Design for 10–20-year time horizons depending on technology lifespan
4. Build in flexibility for user adjustments of key parameters

3.2.2 Revenue and Yield Data Integration

1. Integrate yield data from: research station trial results, farmer field demonstrations, national agricultural statistics, crop modelling outputs (*primary source for climate-adjusted yields*)
2. Collect price data from market information systems (SIMA, OMA), off-taker price agreements, and historical price series
3. Model yield improvements attributable to CSA adoption under conservative, moderate, and optimistic scenarios

3.2.3 Financial Indicator Calculations

1. Calculate private financial returns from farmer/enterprise perspective: NPV (10–12% discount rate), IRR, BCR, payback period, ROI, break-even analysis
2. Calculate financial indicators under different financing scenarios: full cash, commercial loan (10–15%), concessional loan (4–8%), blended financing, and subsidy scenarios
3. Assess impact of financing terms (interest rate, tenor, grace period) on financial viability and affordability

Output: Mini financial model package (Excel), fully documented with user guides, for use in pricing calibration and to BNDA for loan appraisal.

3.3 Work Package 3: Economic Analysis and Externalities Valuation

3.3.1 Economic Analysis Framework

1. Conduct economic analysis from societal perspective using shadow prices adjusted for: market distortions, exchange rate effects for tradable goods, labor shadow pricing, and externalities
2. Calculate ENPV, EIRR, EBCR
3. Compare financial and economic returns to identify gaps requiring public support or concessional financing

3.3.2 Climate and Environmental Benefits Quantification

1. Monetize GHG reductions using social cost of carbon
2. Quantify adaptation benefits: avoided production losses from climate shocks, enhanced resilience, water savings, soil health improvements
3. Monetize adaptation benefits using damage cost avoided approach
4. Assess the economic benefits for the environmental co-benefits from CSA technologies, including (but not limited to): Enhanced soil carbon sequestration and reduced land degradation through improved soil fertility management and conservation agriculture practices; Improved water resource efficiency and reduced pressure on water systems through climate-smart water management technologies; and Reduced deforestation and ecosystem degradation through adoption of renewable energy solutions and sustainable land and livestock management practices

3.3.3 Social Impact Valuation

1. Assess direct and indirect employment generation: farm labor, installation, input supply chains, processing
2. Calculate gender-disaggregated employment and income impacts
3. Evaluate food security and nutrition benefits
4. Assess poverty reduction contribution

5. Monetize social impacts where feasible

3.3.4 Integrated Financial-Economic Assessment

1. Synthesize financial and economic analyses to identify: commercially viable CSA practices; practices requiring public support (positive ENPV but negative financial NPV); practices viable only under concessional financing; practices generating high climate/social benefits justifying concessional support
2. Develop financing strategy matrix based on financial-economic assessment
3. Justify concessional financing levels required for each CSA practice category

Output: Integrated financial-economic assessment matrix for concessional terms justification.

3.4 Work Package 4: Climate Scenario-Based Financial Simulations

3.4.1 Integration with Climate Projections

1. Receive and integrate yield adjustment factors from Climate Risk Assessment by scenario: baseline (1980–2025), near-term SSP2-4.5/5-8.5 (2025–2040), mid-term SSP2-4.5/5-8.5 (2040–2060), long-term SSP2-4.5/5-8.5 (2060–2080)
2. Translate climate projections into financial model parameters: yield adjustments, production risk adjustments, input cost adjustments, adaptation cost requirements
3. Differentiate climate impacts by agroecological zone and crop/technology type

3.4.2 Scenario Simulations

1. Run financial model simulations for up to 10 CSA practice under: no-adaptation baseline, CSA adoption scenarios, climate risk scenarios (drought years, flood years, extreme heat), market scenarios (high/low prices, volatility), and policy scenarios (varying concessionality, insurance availability)
2. Generate probabilistic outcomes e.g., stochastic variability in yields, prices, and climate factors; probability distributions for NPV, IRR, and cash flows; Value at Risk (VaR) and downside risk metrics

3.4.3 Comparative Analysis Across Scenarios

1. Compare CSA practice performance: baseline vs. climate change, no-adaptation vs. CSA adoption, commercial vs. concessional financing, different farmer typologies
2. Identify climate-robust CSA practices maintaining positive returns across scenarios
3. Identify practices with high climate vulnerability requiring additional risk mitigation

3.4.4 Climate-Adjusted Financial Viability Assessment

1. Determine financial viability thresholds under climate scenarios: minimum yield levels for positive NPV and loan repayment, maximum affordable interest rates per climate scenario, required concessionality depth for viability under climate risk

2. Develop climate-responsive loan sizing and pricing recommendations (*inputs for final loan product design*)

3.5 Work Package 5: Sensitivity, Risk Analysis, and Repayment Capacity

3.5.1 Deterministic Sensitivity Analysis

1. Conduct one-way sensitivity analysis on: yield variations ($\pm 20\%$, $\pm 30\%$, $\pm 40\%$), price variations ($\pm 20\%$, $\pm 30\%$), interest rate variations, investment cost variations ($\pm 15\%$, $\pm 25\%$), operating cost variations ($\pm 20\%$), discount rate variations (8%, 10%, 12%, 15%)
2. Identify critical parameters with highest impact on financial viability (TORNADO diagrams)
3. Determine break-even values for critical parameters

3.5.2 Scenario-Based Risk Analysis

1. Develop pessimistic (low yields + low prices + high input costs + climate stress), moderate, and optimistic scenarios
2. Calculate financial indicators under each combination

3.6 Work Package 6: Programme-Level Financial Feasibility Assessment

3.6.1 Revenue and Financial Sustainability Analysis

1. Project loan portfolio growth over 5-year implementation period and 20-year investment duration
2. Model interest income from concessional loans at different interest rate scenarios
3. Project repayment flows and capital recycling dynamics through revolving fund mechanism
4. Calculate expected returns on investment from BNDA and GCF perspectives
5. Assess break-even timelines and conditions for financial sustainability
6. Develop financial sustainability model projecting programme beyond GCF funding period
7. Assess conditions under which programme becomes self-sustaining and model transition from concessional to market-based financing

3.6.2 Programme-Level Sensitivity and Scenario Analysis

1. Conduct sensitivity analysis on programme-level parameters: default rates, loan deployment speed, interest rates, operational costs
2. Develop optimistic, moderate, and pessimistic scenarios for programme financial performance
3. Model macro climate shock scenarios (drought, floods) affecting aggregate loan portfolio performance
4. Analyse break-even conditions and viability thresholds

5. Assess financial resilience under adverse conditions
6. Undertake post-submission technical support to address GCF Project Appraisal, CIC 3 review, and ITAP review comments for all work packages

4 Deliverables

1. Inception report detailing the methodology and work plan.
2. Mini Financial Models Package containing Excel-based models for all prioritized CSA practices with documentation, user guides, and validation results
3. Financial Analysis Report presenting financial analysis results (NPV, IRR, BCR, payback) for all CSA practices under different financing scenarios, with investment rankings and viability assessments
4. Economic Analysis Report documenting economic analysis, climate benefits quantification, social impact assessment, and integrated financial-economic assessment
5. Programme Financial Feasibility Package containing Excel-based models at Programme-level, including sensitivity and scenario analysis
6. Programme Financial Feasibility Report — Programme cost analysis, revenue projections, sustainability model, sensitivity analysis.

5 Qualifications and Requirements

The firm must demonstrate:

- At least 10 years of technical experience in business development, financial modelling, credit model development, or other related fields.
- Demonstrated experience and availability of key individuals with applicable skills to provide the requested services.
- Proven experience in financial design of credit programs, including at least 3 similar assignments carried out over the past 4 years.
- Experience producing mini financial models adopted by a financial institution for loan appraisal.
- Proven writing and analytical skills in drafting technical reports, and developing financial and/or credit models.
- Declaration that the firm has not been debarred by the GCF, World Bank, AfDB, or any other multilateral development institution
- Working knowledge in both English and French.

6 Evaluation Criteria

The evaluation of candidates will be carried out based on the information provided in the application and according to the criteria for evaluating offers and BNDA's internal policies and procedures.

	Description	<i>Maximum Score</i>
1	Specific experience of the firm in performing similar assignments in the last five years	30
2	Competence and capacity of the key staff for the assignment	20
3	Adequacy of The Proposed Work Plan in Responding to The Terms of Reference [Detailed work plan: List of proposed activities; Adequacy of proposed timelines; Synchronization of activities]	10
4	Understanding and Conformity of the Tenderer's Response to the Terms of Reference (TORs) and Completeness of Description of Methodology. Preparation of the deliverables In Line with GCF Requirements [Clarity of scope of work; Clearly explained procedure; Theoretical/conceptual framework; Clearly defined inputs and outputs]	20
5	Financial proposal put forward by the consultant	20
TOTAL SCORE		100

6.1 Administrative Documents

Under this Call for Proposals, BNDA requires bidders to submit the following administrative documents:

- A valid Commercial Registration Certificate;
- A valid Tax Clearance Certificate and proof of compliance with social security obligations;
- A Certificate of Non-Bankruptcy issued no more than three (3) months prior to the submission date.

Note: Failure to provide any of the above documents shall result in the rejection of the proposal.

In addition to the administrative documents, each bidder shall submit separately:

- Technical Proposal; and
- Financial Proposal.

6.2 Technical Proposal

The Technical Proposal shall include, at a minimum:

- A Proposal Submission Letter signed by the duly authorized representative of the consulting firm;
- A presentation of the firm, its organizational structure, areas of expertise, and key competencies;
- Relevant references and experience in carrying out similar assignments, particularly in the areas covered by these Terms of Reference (TOR);

- A clear understanding of the objectives of the assignment, the associated challenges, and the expected results;
- The proposed methodology and technical approach, including in particular:
 - the different phases of implementation;
 - the main activities to be carried out;
 - the tools and methods to be employed;
 - the quality assurance mechanisms to be applied to the deliverables;
- A detailed work plan and implementation schedule;
- An approach describing how any comments or recommendations from the Green Climate Fund (GCF) will be addressed and incorporated;
- The composition of the proposed team, specifying the roles and responsibilities of each expert;
- Detailed curricula vitae (CVs) of the key experts, signed or otherwise endorsed by the individuals concerned, highlighting their relevant qualifications and experience;
- The availability and mobilization arrangements of the proposed experts;
- Any additional information the bidder considers useful in demonstrating its capacity to perform the services covered by the contract.

6.3 Financial Proposal

The Financial Proposal shall be submitted separately from the Technical Proposal and in sufficient detail to allow for a transparent evaluation of costs.

It shall include, in particular:

- Fees of international experts;
- Fees of national experts, where applicable;
- The number of person-days allocated to each expert;
- Travel and transportation costs;
- Accommodation and subsistence expenses;
- Any other costs directly related to the performance of the services;
- Applicable taxes, duties, and other charges;
- The total amount of the Financial Proposal.

The bidder shall provide a detailed cost breakdown by activity, deliverable, or expenditure category.

The Financial Proposal shall be expressed in United States Dollars (USD).

6.4 Evaluation of Financial Proposals

The Financial Score (Nf) shall be calculated as follows:

Let Fm be the amount of the lowest-priced Financial Proposal.

This proposal shall receive a Financial Score of 100 points.

The Financial Score of the other bidders shall be calculated using the following formula:

$$Nf = 100 \times Fm / F$$

Where:

- Fm = amount of the lowest-priced Financial Proposal;
- F = amount of the Financial Proposal under evaluation.

6.5 Final Ranking and Contract Award

The contract shall be awarded to the bidder obtaining the highest combined score resulting from the technical and financial evaluations.

The Overall Score (N) shall be calculated as follows:

$$N = [80 \times \text{Technical Score (Nt)} + 20 \times \text{Financial Score (Nf)}] / 100$$

The contract shall be awarded to the bidder obtaining the highest Overall Score.

7 Proposal Submission Instructions

Bidders are invited to submit their Technical and Financial Proposals, together with all required supporting documents, in electronic format and protected by password, to the following email addresses:

- ASCOULIBALY@bndamali.com
- SETRAORE@bndamali.com
- modiallo@bndamali.com

The deadline for submission of proposals is: 10 November 2026 at 4:00 p.m. (Bamako time).

The passwords or access keys required to open the submitted files shall be transmitted separately on: 11 November 2026 to the same email addresses listed above.

Any request for clarification regarding the preparation of proposals may be submitted by email to: ascoulibaly@bndamali.com

Any proposal received after the submission deadline may be rejected as non-responsive in accordance with the provisions governing this selection process.

8 Contract Duration and Implementation Schedule

The services covered by the contract shall be carried out over a period of thirty (30) working days, commencing from the date of contract award notification to the successful bidder

The detailed implementation schedule shall be finalized with the successful bidder upon commencement of the assignment and shall comply with the requirements set out in these Terms of Reference.