



FINAL REPORT

EXTERNAL EVALUATION OF THE PROGRAMME FOR SUSTAINABLE CO-MANAGEMENT OF FOREST RESOURCES AROUND THE BOUGOUNI-YANFOLILA PROTECTED AREAS COMPLEX IN THE SIKASSO REGION OF MALI

Including the Independent Environmental and Social Evaluation

July 2022

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Commissioned by: Embassy of the Kingdom of Norway (NORAD)

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Abbreviations and Acronyms

Abbreviation	Definition
CASE	Economic Services Access Centres (Centres d'Accès aux Services Économiques)
CBD	Convention on Biological Diversity
COVID-19	Coronavirus Disease 2019
CREDD	Strategic Framework for Economic Recovery and Sustainable Development
E&S	Environmental and Social
ESMS	Environmental and Social Management System
ICT	Information and Communication Technologies
ICRAF	World Agroforestry Centre
MFC Nyetaa	Mali-Folkecenter Nyetaa
NTFPs	Non-Timber Forest Products
PA	Protected Areas
PDESC	Economic, Social and Cultural Development Programme
SDG	Sustainable Development Goal
SEL	Soutien à l'Économie Locale (Support for the Local Economy)
TOR	Terms of Reference
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change

Summary

From 16 June to 15 July 2022, the final evaluation of the Arbre-SEL Phase II project (June 2018 – December 2021) was conducted in the Bougouni-Yanfolila area, Sikasso Region, Mali. The project was funded by the Embassy of the Kingdom of Norway (NORAD) and implemented by Mali-Folkecenter Nyetaa (MFC Nyetaa). The evaluation was conducted by ARADI-Sahel using a participatory and iterative methodology combining documentary review, 10 village visits, focus groups, and semi-structured interviews with all categories of stakeholders.

This report presents the complete findings of the external evaluation and integrates a dedicated Environmental and Social (E&S) evaluation covering the environmental and social performance of MFC Nyetaa's operations across the project cycle. Key findings are summarised below.

Relevance:

The Arbre-SEL II project responds directly to the needs of local populations for development, self-promotion, and rural entrepreneurship. It aligns with Mali's CREDD framework and SDGs 1, 2, 4, 5, 7, 8, 12, 13 and 15. The project's inclusive, participatory approach is well-adapted to beneficiary realities.

Effectiveness:

Despite a limited three-year duration compounded by COVID-19 and security constraints, all planned activities were successfully completed. Key results include 12 market gardens, 7 shea butter processing units, 3 CASE, 39 training sessions reaching 1,119 beneficiaries (799 women), and financing of 75,204,400 FCFA to 2,038 persons.

Efficiency:

The total budget of 1,839,402,400 FCFA was used efficiently. Infrastructure investments were cost-effective given the remote locations and difficult road conditions.

Sustainability:

Activities are grounded in community ownership, skills transfer, land tenure security, and local convention frameworks, offering strong prospects for durability.

Environmental and Social Performance:

The E&S evaluation finds that MFC Nyetaa's approach is environmentally and socially sound. The programme institutionalised co-management through formal conventions, reduced forest pressure, strengthened biodiversity conservation, and achieved strong gender inclusion results (87% of financial beneficiaries were women). E&S risks identified — principally water access, phytopathological disease management, and transhumance pressure — are manageable with recommended corrective measures.

I. Project Context

Mali is a Sahelian country of 1,241,000 km² of which two-thirds are covered by the Sahara. The country nevertheless holds important natural forest resources in its southern and central regions; the Sikasso region in particular has a vegetation cover of 48.21%. The combined effects of climate change and anthropogenic activities have significantly degraded forest resources in the Bougouni-Yanfolila area, where encroachment of protected areas and classified forests for agricultural and pastoral purposes by drought-displaced communities is accelerating.

The Bougouni-Yanfolila complex, covering 200,000 hectares and classified as State forest, faces fragile biodiversity and the risk of disappearance of approximately fifteen endemic fauna species, due to weak forest control, inadequate surveillance systems, and insufficient participatory management. In response, Mali-Folkecenter Nyetaa initiated the Arbre-SEL programme in 2015, with Phase I (June 2015 – May 2018) followed by Phase II (June 2018 – December 2021, extended six months due to COVID-19), both funded by the Norwegian Embassy (NORAD).

Phase I established a comprehensive dialogue framework around natural resource management and launched the planning of two forest massifs under the Arbre-SEL model. Phase II built on these achievements to professionalise value chains, deepen community co-management, and strengthen economic resilience of riverside communities in eight communes across the Bougouni and Yanfolila districts.

II. Objectives and Expected Results

2.1. Overall Objective

Contribute to the preservation and restoration of biodiversity in Mali through sustainable co-management of natural forest resources.

2.2. Specific Objectives

- SO1: Support and strengthen the capacity of young people (women and men) to become responsible citizens with regard to their environments for the development of their communities within a peaceful social framework;
- SO2: Build on the achievements of the Arbre-SEL project in the intervention area, towards professionalisation of selected value chains and access to the national market;
- SO3: Strengthen and support existing consultation frameworks to enable ownership of the new 2018 forestry legislation and preserve the interests of local communities.

2.3. Expected Results

- R 1.1: Three CASE are operational to foster emergence of leadership, creativity and innovative trades (renewable energy, ICT, climate, etc.) for graduated and non-graduated young people;

- R 1.2: Access to financing is facilitated for young people and their cooperatives through the youth coaching and support mechanism;
- R 2.1: Phase I activities (market gardening, dairy, cashew, honey, fodder, wire mesh, etc.) are strengthened and sustained;
- R 2.2: An exchange platform between young leaders from the intervention area and other support platforms is established and functional;
- R 3.1: Relations and responsibilities between stakeholders in the co-management of forest resources are defined in a consultative manner and assumed by all parties.

2.4. Environmental and Social Objectives

In addition to the programme's development objectives, the evaluation assesses MFC Nyetaa's environmental and social performance against the following E&S objectives, which are embedded throughout the project design:

- Reduce anthropogenic pressure on the Bougouni-Yanfolila forest complex by providing viable alternative livelihoods to riverside communities;
- Preserve and restore biodiversity through co-management, agro-forestry, and sustainable land use practices;
- Promote inclusive and gender-equitable economic development, with particular attention to women, youth, and persons with disabilities;
- Strengthen environmental governance through multi-stakeholder consultation, local conventions, and capacity building on forestry legislation;
- Prevent and mitigate social and environmental risks associated with project activities.

III. Methodology

3.1. Scope of the Evaluation

The evaluation covers the full implementation period of Arbre-SEL Phase II (June 2018 – December 2021) across 8 communes in the Bougouni and Yanfolila districts, Sikasso Region. It assesses performance against the five standard evaluation criteria (relevance, effectiveness, efficiency, sustainability, and impact) and, as an integrated component, applies Environmental and Social (E&S) evaluation criteria to assess the programme's environmental and social performance at both operational and outcomes levels.

3.2. General Evaluation Methodology

The evaluation team — comprising Mr. Hady DIALLO (forest management and project evaluation expert), Mr. Mohamadine HAÏDARA (socio-economics expert), and a field assistant — used a participatory and iterative methodology. This combined:

- Documentary review of the project document, logical framework, activity reports, partnership agreements, and local convention texts;
- Site visits to 10 villages across 5 communes (2 villages per commune selected according to activity type and community involvement);
- Focus groups by social category: women's focus groups on market gardening and shea kernels; youth focus groups on beekeeping and agro-forestry;

- Semi-structured individual interviews with 5 well-informed informants per village (youth, women, cooperative managers, opinion leaders, traditional authorities);
- Interviews at commune and district level with mayors, District Council Presidents, technical services (Water and Forests, agriculture, livestock), prefect and deputies, and the Governor's advisors.

Quantitative data were entered and analysed in Excel. Qualitative data were processed through content analysis, with individual and focus group responses compared to identify convergent and divergent tendencies.

3.3. Environmental and Social Evaluation Methodology

The E&S evaluation is conducted as an integrated component of the overall external evaluation. It applies a dedicated methodological approach structured around four dimensions:

3.3.1. E&S Criteria and Framework

The E&S evaluation assesses performance against the following criteria, informed by international good practice for environmental and social safeguards in development programmes:

E&S Criterion	Assessment Dimension
Environmental performance	Biodiversity impact, forest pressure, land use, natural resource management, energy use
Social performance	Gender inclusion, youth empowerment, disability inclusion, community participation
Governance and compliance	Co-management institutionalisation, forestry legislation compliance, land tenure security
Risk identification and mitigation	Environmental risks (water, soil, ecosystem), social risks (conflict, exclusion, transhumance)
Sustainability of E&S outcomes	Community ownership, relay mechanisms, institutional durability of E&S gains

3.3.2. E&S Data Collection Methods

- Review of programme documents for embedded E&S provisions (partnership agreements, local forestry conventions, land transfer certificates, training curricula);
- Direct observation during 5 field site visits: assessment of physical environmental conditions, infrastructure quality, forest buffer zones, water management, and site-level social dynamics;
- Targeted E&S questions integrated into all interview guides (see Annex 3), covering: environmental awareness, gender relations, conflict history, grievance mechanisms, land rights, and community attitudes toward natural resource protection;
- Triangulation of E&S findings across informant categories (technical services, community organisations, local authorities, and individual beneficiaries).

3.3.3. E&S Risk Assessment Approach

Environmental and social risks were identified through field observation and stakeholder interviews, then characterised by likelihood, severity, and reversibility. For each risk, the evaluation documents existing mitigation measures and recommends improvements where gaps are identified. The risk assessment applies a traffic-light classification (Low / Moderate / High) based on field evidence.

3.3.4. Limitations of the E&S Evaluation

- Absence of a quantified environmental baseline at project start (no zero-state E&S study was conducted at launch) as was not part of project proposal limits quantitative assessment of some environmental outcomes; the evaluation relies on qualitative evidence and trend data reported by stakeholders;
- The six-day field mission duration constrained the depth of ecological assessment; no formal biodiversity transect surveys or soil quality measurements were conducted as was not part of project proposal and submitted budget;

IV. General Evaluation Findings

4.1. Project Coherence

The Arbre-SEL project is coherent with Mali's Strategic Framework for Economic Recovery and Sustainable Development (CREDD 2019–2023), contributing notably to: SO1.1.2 (strengthening citizenship); SO1.3.1 (improving local governance); SO3.1.3 (poverty-reducing growth); and SO3.2.1 (agricultural productivity).

It aligns with Sustainable Development Goals 1, 2, 4, 5, 7, 8, 12, 13 and 15, as well as with Mali's international commitments under the Convention on Biological Diversity (1992), the UNFCCC (1994), and the UNCCD (1996). Project objectives are also coherent with Government policy on the expansion and sustainable management of protected areas.

4.2. Implementation Strategy

The intervention strategy is founded on an inclusive, participatory, and iterative approach maintaining permanent dialogue between local authorities, technical services, traditional authorities, and beneficiaries. The strategy was correctly applied throughout implementation, promoting inclusive economic activities. Positive features include early establishment of relations with local authorities, continuous community communication from project identification to implementation, and consistent emphasis on vulnerable groups — particularly women.

Noted weaknesses: non-re-election of almost all Yanfolila area mayors disrupted continuity of co-management roles; collaboration with Water and Forests departments for activity monitoring needed strengthening; agricultural and livestock technical services were insufficiently involved as their participation require high perdiem which was not in the project budget.

4.3. Relevance

The project directly addresses the needs of local populations for development, women's self-promotion, and rural entrepreneurship. It responds to community needs for sustainable forest co-management, resilience-building through agro-forestry and energy access, income-generating economic activities around the complex, vocational training and professionalisation, and access to information, education, and agricultural inputs. The level of adequacy between project activities and beneficiary priorities was assessed as strong across the five communes surveyed.

4.4. Key Activities and Results

4.4.1. Economic Services Access Centres (CASE)

Three CASE were established at Sélingué, Filamana, and Garalo. The Garalo centre (over 2 ha, solar-powered, with accommodation, training hall, and workshop spaces) was visited by the evaluation team and confirmed operational, having delivered numerous training and coaching sessions. Through CASE-facilitated linkages with financial institutions (Nyetaa Finance), 15 cooperatives, 51 solidarity groups, and over 40 young micro-entrepreneurs received financing totalling 75,204,400 FCFA for approximately 2,038 persons (1,771 women; 327 men).

4.4.2. Co-Management of Forest Resources

Relations and responsibilities between stakeholders are formalised in management contract documents. A formal convention was signed between Arbre-SEL/MFC Nyetaa and the Regional Water and Forests Authority of Sikasso. Village surveillance committees (one guard per village) were trained on locally translated forestry texts and equipped with motorcycles. Inter-municipal consultation frameworks (Benso-Yanfolila and Bougouni-Sud) were strengthened, and local forestry conventions were adopted by consensus. Customary land commissions were put in place.

4.4.3. Agro-Forestry and Value Chain Professionalisation

12 market gardens were installed on plots with formal land transfer certificates to woman associations. 7 shea butter processing units for women cooperatives are fully operational, processing 24,741 kg of kernels by 2022 (compared to 9,000 kg in 2018 from a single cooperative). The introduction of the motorised churn (an innovation by a local artisan) drastically reduced women's physical workload. Additional value chains include: kinkeliba valorisation (Sandougoula), sesame agro-forestry (Sirimana, Degné), genetic seed banks in partnership with ICRAF, and beehive manufacturing by persons with disabilities.

4.4.4. Capacity Building and Training

39 training sessions were organised across various themes (market garden production, product processing, agricultural marketing, climate change, leadership, forest protection). These reached 1,119 beneficiaries (799 women; 320 men). Beneficiary satisfaction was very high, reaching 100% in Sirimana and 93% in Solakorani.

4.5. Effectiveness

All planned activities were successfully completed despite COVID-19 constraints and the adverse security environment. The project achieved or is progressing toward all three specific objectives. The only exceptions are two market garden plots which cannot be operationalised due to failed boreholes (attributed to insufficient geophysical studies), pending installation of large-diameter wells.

4.6. Efficiency

The total budget of 1,839,402,400 FCFA (averaging ~613,000,000 FCFA/year) was used efficiently. Market garden infrastructure totalled 286.8 million FCFA; shea butter processing units 152 million FCFA; and CASE infrastructure 107 million FCFA. Economies of scale were achieved by selecting zone-based contractors and prioritising local labour. The six additional no-cost months effectively mitigated COVID-19 and security delays.

4.7. Sustainability

Sustainability prospects are strong. The project triggered community ownership through skills transfer to cooperative bureau members and management committees; land tenure security through land transfer certificates from traditional and local authorities; inter-community

consultation frameworks and local forestry conventions; and a relay strategy through local facilitators within cooperatives and the private sector. Community enthusiasm for income-generating activities further reinforces continuation.

V. Environmental and Social Evaluation

This section presents the findings of the independent environmental and social (E&S) evaluation of the Arbre-SEL Phase II programme. It covers E&S performance across the programme's activities, documents positive E&S outcomes, identifies risks and negative effects, and formulates targeted E&S recommendations.

5.1. Evaluation Identification

Parameter	Information
Commissioning funder	Embassy of the Kingdom of Norway in Mali (NORAD)
Evaluation firm	ARADI-Sahel (Mr. Hady DIALLO, forest management and project evaluation expert; Mr. Mohamadine HAÏDARA, socio-economics expert)
Period covered	Arbre-SEL Phase II, June 2018 – December 2021 Evaluation: June–July 2022
Intervention area	8 communes, Bougouni and Yanfolila districts, Sikasso Region
Programme budget	1,839,402,400 FCFA (NORAD funding)
E&S methodology	Participatory and iterative: documentary review, 10 villages visited, focus groups, semi-structured interviews across all stakeholder categories
E&S criteria	Environmental performance, social performance, E&S governance, risk identification and mitigation, E&S sustainability

5.2. Environmental Evaluation Findings

The evaluator concludes that the programme is environmentally coherent with SDGs 13 (Climate Action) and 15 (Life on Land), and with the international conventions ratified by Mali (CBD, UNFCCC, UNCCD). The following positive environmental outcomes were documented across the programme's activities.

5.2.1. Co-Management and Forest Governance

The institutionalisation of co-management of the Bougouni-Yanfolila forest complex is one of the programme's most significant environmental contributions. The following governance mechanisms were documented:

- A formal convention between Arbre-SEL/MFC Nyetaa and the Regional Directorate of Water and Forests of Sikasso was signed and operational, defining the roles and responsibilities of each party in monitoring and managing the complex;
- Village surveillance committees were established (one guard per village), trained on forestry legislation translated into local languages, and equipped with motorcycles. The committees were positively assessed by both communities and the Water and Forests service;
- Local access conventions for NTFPs were adopted through consensus-based community consultations, providing a customary regulatory framework for forest resource use;

- Inter-municipal consultation frameworks (Benso-Yanfolila and Bougouni-Sud) strengthened coordination among communes on forest protection, contributing to cross-boundary environmental governance;
- A community forest was created at Gouanan through inter-village consultation, replicating the complex management model at a smaller scale.

The evaluator notes that, despite these achievements, the Water and Forests service highlighted the need to further strengthen surveillance committees — both in membership size and in providing means of protection and motivation (food provisions or monthly allowances).

5.2.2. Biodiversity Conservation and Agro-Forestry

Several activities directly supported biodiversity conservation and sustainable agro-forestry:

- Genetic seed banks of indigenous tree species were established in partnership with ICRAF, with nurseries installed and species in production as seedlings. This initiative combats genetic erosion of plant diversity in the area;
- Tree grafting and girdling techniques were introduced for shea trees. Women from Madina Diassa and Koloni confirmed improved productivity following the treatment of mistletoe parasites on shea trees, though laboratory verification remains pending;
- Agro-forestry promotion through sesame cultivation in Sirimana and Degn  provided farmers with a high-value commercial crop, reducing the economic incentive for commercial timber felling;
- Kinkeliba valorisation at Sandougoula directly incentivised communities to protect the forest complex as the natural habitat of this species, demonstrating a successful link between NTFP income and conservation motivation;
- Fodder species were identified and their multiplication techniques disseminated, contributing to better stabilisation of local livestock and reducing grazing pressure on the forest;
- Reforestation campaigns have become an annual mobilisation event for youth in localities including Koloni, Sirimana, and Solakoroni, with progressive consolidation each year.

5.2.3. Renewable Energy and Green Technology

The programme systematically embedded renewable energy solutions across all infrastructure:

- All 12 market garden plots are equipped with solar-powered water pumping systems, eliminating reliance on fossil-fuel-powered irrigation;
- The Garalo CASE is solar-powered, providing a model for sustainable energy use in rural service infrastructure;
- The motorised churn for shea butter processing was invented and manufactured by a local artisan. Solar-powered adaptation of this churn is being planned, representing a locally-rooted green technology innovation;
- Young micro-entrepreneurs were trained in the installation and maintenance of solar photovoltaic systems, creating a local skills base for renewable energy deployment.

5.2.4. Reduction of Forest Pressure

The evaluator documented a measurable reduction in forest pressure, attributable to the combination of alternative livelihoods and environmental awareness activities:

- Reduction in abusive tree felling was observed and confirmed by communities across visited sites;
- Abandonment of fire-setting and encroachment practices within the reserve perimeter was reported by community informants;
- Community mobilisation against illegal grazing of transhumant and sedentary livestock within the complex was noted, though the transhumance challenge remains unresolved at scale;
- The valorisation of NTFPs (shea, kinkeliba, cashew, honey) created direct economic interest among communities in maintaining healthy forest ecosystems.

5.3. Social Evaluation Findings

The evaluator characterises the programme's approach as 'participatory, iterative, gender-sensitive, and strongly inclusive'. The following key social data and outcomes were documented.

5.3.1. Key Social Indicators

Social Indicator	Value Documented
Women beneficiaries of AGR loans	1,711
New women market garden plot beneficiaries	1,241
Total financing mobilised (15 cooperatives, 51 solidarity groups, 40+ young people)	75,204,400 FCFA
Share of women among financial beneficiaries	87% (1,771 of 2,038 persons)
Training beneficiaries	1,119 (including 799 women and 320 men)
Shea butter processing units operational	7 cooperatives → 24,741 kg processed (vs. 9,000 kg in 2018)
Farmers supported for seasonal input loans (seeds + fertiliser)	173 (including 27 women)

5.3.2. Gender Inclusion and Women's Empowerment

The programme placed women at its centre both as beneficiaries and as agents of change:

- Market garden plots were formally assigned to women's cooperatives through legally valid land transfer certificates from traditional and local authorities, providing unprecedented security of tenure for women;
- 1,711 women received micro-loans for income-generating activities through Nyetaa Finance, improving their financial autonomy;
- The introduction of the motorised shea churn eliminated a major source of physical hardship, freeing women's time and increasing production volume and quality;
- Women reported tangible improvements in purchasing power, enabling them to pay school fees, cover health expenses, and meet household food needs — as illustrated by testimonies collected during field visits;
- Women have progressively taken on leadership roles within cooperative management committees, contributing to local democratic governance;

- Training sessions on agricultural marketing, community management, and product commercialisation built women's business capacities.

5.3.3. Youth Inclusion and Entrepreneurship

- Young men and women were targeted through CASE-based coaching and training in innovative trades: renewable energy, ICT, agro-ecology, metal joinery, and NTFP processing;
- More than 40 young micro-entrepreneurs received financing to launch or consolidate their activities;
- Youth-led civic platforms (Nyetaa Baro), fairs, and radio broadcasts fostered civic responsibility and environmental awareness among young people;
- Youth actively supported women's cooperative activities in visited localities, demonstrating inter-generational solidarity and leadership transfer.

5.3.4. Inclusion of Persons with Disabilities

- The cooperative of persons with disabilities in Garalo was integrated as the primary producer of wire mesh fencing for the programme's market garden plots, generating inclusive economic opportunities;
- Persons with disabilities were included in project infrastructure construction works, contributing to inclusive local employment;
- CASE workshops were designed to be accessible and inclusive, enabling persons with disabilities to develop vocational skills.

5.3.5. Social Governance, Cohesion and Conflict Prevention

- Consultation frameworks between farmers and herders are operational, and the programme has actively contributed to managing land use conflicts between agricultural and pastoral communities;
- Forestry legislation was translated into local languages and disseminated via community radios and animation sessions, enabling grassroots ownership of legal frameworks;
- An inter-village community forest was created at Gouanan through community consultations, demonstrating replication of the co-management model;
- A vigilance mechanism is in place to prevent conflicts, strengthen social cohesion, and preserve local community interests.

5.3.6. Land Tenure Security

One of the most significant social governance achievements of the programme is the establishment of land transfer certificates (actes de cession foncière) issued by traditional and local authorities for all women's market garden plots. This provides legal security for investments made and creates durable economic rights for women cooperative members — a foundational prerequisite for sustainable agricultural development. Local land commissions were also set up within the project's legal framework.

5.4. Environmental and Social Risks and Negative Effects Identified

The evaluator identified the following E&S risks and negative effects, along with measures taken and recommended responses:

Risk / Negative Effect	Risk Level	Field Finding	Measures Taken	Recommended Action
Water access shortage in market gardens	Moderate	Boreholes in 2 villages (Solaba, Yorobougoula) yielded no water due to insufficient geophysical studies; demand exceeded capacity in functional plots	Water management reorganised; communities and municipalities planning large-diameter wells	Mandate detailed geophysical studies prior to any borehole installation in future programmes; review water sharing rules among plot users
Phytopathological diseases in market gardens	Moderate	Insufficient management of crop diseases on market garden speculations; agriculture technical services not sufficiently mobilised	Commitment to stronger involvement of agricultural technical services; technical training planned	Formally integrate agriculture technical services with dedicated budget lines; provide annual crop disease management training
Transhumance pressure on forest resources	High	Continuous pressure from transhumant and sedentary livestock on forest resources; communities observe without adequate response capacity	Farmer-herder consultation frameworks established; early warning system in place	Advocate for political decision on delimitation and development of pastoral areas; strengthen transhumant actor participation in consultations
Elected official turnover / co-management continuity	Moderate	Non-re-election of most Yanfolila-area mayors disrupted transfer of co-management roles and documentation	MFC Nyetaa undertook specific work to support new municipal teams in ownership of project	Establish formal co-management handover protocols documented in municipal archives; ensure new elected officials receive dedicated project orientation sessions
Absence of environmental and social baseline	Low – now addressed	No detailed zero-state E&S study was conducted at project start, limiting quantitative impact assessment	MFC Nyetaa committed to systematic E&S baseline development at programme start going forward	Systematise a robust E&S baseline study at programme launch, including biodiversity indicators and social welfare data
Risk of water over-extraction from solar-powered pumping	Low	No evidence of aquifer depletion documented; solar pumps calibrated	No specific mitigation currently in place	Conduct hydrogeological assessment of borehole yield sustainability as

		for current plot sizes		plots expand; establish water extraction monitoring protocols
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5.5. Overall Environmental and Social Judgement

The evaluator concludes that MFC Nyetaa's environmental and social performance under Arbre-SEL Phase II is overall positive and demonstrates an organisationally embedded commitment to inclusive and sustainable development. The programme's participatory, gender-sensitive, and multi-stakeholder approach produced verifiable E&S outcomes across biodiversity conservation, renewable energy, gender inclusion, social cohesion, and environmental governance.

E&S strengths include the institutionalisation of co-management through formal conventions, the systematic use of renewable energy across all infrastructure, the integration of persons with disabilities as economic actors, and the creation of women's land tenure rights. The programme achieved an 87% female share among financing beneficiaries, demonstrating strong gender mainstreaming.

E&S weaknesses principally relate to the absence of a pre-project E&S baseline, insufficiently resolved water management challenges in two villages, and the as-yet unresolved transhumance pressure on forest resources, which requires a response beyond the programme's scope. These weaknesses are acknowledged by MFC Nyetaa and corrective measures are underway or planned.

The evaluator explicitly recommends replication of the Arbre-SEL model in other Malian localities, citing its holistic integration of livelihood improvement, forest governance, and environmental awareness as an effective model for sustainable community-based natural resource management.

VI. Conclusions and Recommendations

6.1. Conclusion

At the conclusion of the external evaluation of the Arbre-SEL Phase II project (June 2018 – December 2021), the project is found to have achieved its objectives effectively, efficiently, and with strong prospects for sustainability. Key achievements include 12 women's market gardens generating measurable income and food security improvements, 7 shea butter processing units operating at nearly three times their initial capacity, 3 multi-functional CASE facilitating entrepreneurship and skills development, and financing of over 75 million FCFA mobilised for 2,038 community members.

From an environmental and social perspective, the programme demonstrably reduced pressure on the Bougouni-Yanfolila forest complex, institutionalised multi-stakeholder co-management, promoted biodiversity through agro-forestry and NTFP valorisation, introduced renewable energy infrastructure, and achieved strong gender inclusion results. The programme's approach — which synergises formation, coaching, and financing in a rural context — is innovative, replicable, and merits sustained support and wider dissemination.

Areas requiring continued attention include the unresolved water access deficit in two villages, the need to further strengthen surveillance committees and agricultural technical service involvement, and the critical challenge of transhumance pressure on forest resources, which demands political decision-making beyond the programme's direct scope.

6.2. General Recommendations

6.2.1. Market Garden Activities

To MFC Nyetaa:

- Strengthen community management capacities for women, youth beneficiaries, and village leaders in riverside villages;
- Further involve agriculture technical services in Arbre-SEL market garden activities for sustained technical management;
- Extend market gardens to all riverside villages in any future project phase.

To State authorities and agricultural technical services:

- Provide sustained technical monitoring and support for market garden activities, including maintenance of infrastructure and management of water demand;
- Initiate community market gardens in non-covered villages to strengthen resilience;
- Support combating phytopathological diseases in existing plots.

To communities:

- Expand plots or create additional ones to ensure food self-sufficiency and supply local and regional markets;
- Diversify income-generating activities to reduce economic vulnerability.

6.2.2. Shea and Cashew Processing Units

To MFC Nyetaa:

- Facilitate transport of products to markets to meet quality and shelf-life requirements;
- Identify additional buyers for shea butter, particularly through fair-trade and organic market channels;
- Create processing units in all riverside communes not yet covered;
- Organise annual training to sustain know-how and disseminate innovations.

To local authorities:

- Support shea and cashew value chains through dedicated communal budget lines for anti-poverty and employment initiatives;
- Grant entrepreneurship funds to women and youth to capitalise on received training.

6.2.3. Forest Surveillance and Co-Management

To MFC Nyetaa:

- Create two-person surveillance tandems (village representative + forest guard) for more effective reserve monitoring;
- Strengthen surveillance committee capacity building and improve working conditions, including financial motivation.

To the Water and Forests Service:

- Strictly enforce forestry legislation against infractions;
- Take vigorous action against large-scale clearing and illegal forest exploitation;
- Conduct periodic tours in the reserve to deter illegal activities;
- Sanction dishonest agents issuing false permits or authorising illegal practices.

To communities:

- Actively oppose any new clearing within the complex;
- Regard and protect the reserve as ancestral heritage;
- Report all forestry infractions to competent authorities.

6.2.4. Recommendations to the Financial Partner (NORAD)

- Maintain and strengthen collaboration with MFC Nyetaa for continued community support;
- Preserve budgetary flexibility that proved well-adapted to the choice of activities and actor synergy;
- Increase the financial envelope to meet the important and pressing needs identified, particularly in villages not yet covered by the project.

6.3. Environmental and Social Recommendations

The following recommendations are specifically directed at improving E&S performance in future programme phases:

6.3.1. E&S Baseline and Monitoring

- Conduct a robust E&S baseline study at programme launch for all future phases, including biodiversity indicators (vegetation cover, fauna diversity, NTFP abundance), social welfare data (income, food security, gender indicators), and water resource data (borehole yields, aquifer depth);
- Establish an E&S monitoring system with measurable indicators tracked annually throughout implementation, enabling evidence-based adaptive management;
- Integrate results from the E&S baseline and monitoring into annual programme reports submitted to NORAD.

6.3.2. Water Resource Management

- Make geophysical studies a mandatory prerequisite in the technical specifications for all borehole installations in future programmes;
- Develop formal water management plans for each market garden site, including usage rotation rules, maintenance responsibilities, and conflict resolution mechanisms;
- Conduct a hydrogeological sustainability assessment as market garden areas and user numbers expand.

6.3.3. Biodiversity and Agro-Forestry

- Expand agro-forestry activities (sesame, kinkeliba, genetic banks) to additional riverside villages, with a particular focus on villages with the highest forest pressure;
- Conduct scientific laboratory verification of the productivity improvements associated with girdling and mistletoe treatment of shea trees, to build an evidence base for wider dissemination;
- Develop a monitoring protocol for vegetation cover and forest boundary integrity, supported by annual satellite imagery review.

6.3.4. Transhumance and Agro-Pastoral Conflict

- Advocate to national and regional authorities for the designation and demarcation of pastoral corridors in the Bougouni-Yanfolila zone, as a necessary complement to community-level co-management;

- Integrate transhumant community representatives into co-management consultations, addressing their mobility and instability constraints through specific outreach strategies;
- Strengthen farmer-herder mediation capacity within local consultation frameworks.

6.3.5. Gender and Social Inclusion

- Systematise gender-disaggregated data collection across all programme activities, including access to training, financing, and land;
- Develop a targeted strategy for second-generation beneficiaries — daughters of current cooperative members — to ensure intergenerational transmission of skills and rights;
- Increase involvement of the cooperative of persons with disabilities in future infrastructure contracts, beyond wire mesh manufacturing.

6.3.6. Co-Management Continuity

- Establish formal co-management handover protocols for periods of elected official turnover, including mandatory documentation and archiving of co-management agreements in municipal records;
- Provide new elected officials with a structured project orientation session within 90 days of taking office;
- Strengthen the Water and Forests service's capacity and budgetary resources for field monitoring activities in the complex.

Bibliography

1. Arbre-SEL Phase II Project Document: Sustainable Co-Management of Forest Resources around the Bougouni-Yanfolila Protected Areas Complex in the Sikasso Region of Mali.
2. Management and Development Plan for the Bougouni-Yanfolila Classified Forests and Protected Areas Complex.
3. Final Project Report: Sustainable Co-Management of Forest Resources around the Protected Areas Complex in the Sikasso Region of Mali (Arbre-SEL II).
4. Project Monitoring, Evaluation and Management Manual.
5. Partnership agreement between MFC Nyetaa and women beneficiaries of market garden plots in programme villages.
6. Convention between Arbre-SEL/MFC Nyetaa and the Regional Directorate of Water and Forests of Sikasso.

Annexes

Annex 1 – List of Persons Consulted

1.1 Cooperative and Association Members – Yanfolila District

Traditional authorities at Koloni:

- Momoudou SANGARE, Village Chief
- Dramane SANGARE, Counsellor
- Lanseni SANGARE, MFC Nyetaa project relay

DJIGUISEME Women's Cooperative, Koloni (market gardening and organic shea kernels):

Name	Role
Djégué SIDIBE	President
Sitan SANGARE	Member
Oulema SANGARE	Administrative Secretary
Fanta SIDIBE	Member
Sitan SAMAKE	Member
Kany TOURE	Member
Amina SIDIBE	Member
Sitan SIDIBE	Member
Fatoumata SANGARE	Member
Minata DIAKITE	Member
Maïmouna SANGARE	Member

NYETAA Women's Cooperative, Médina Diassa (organic shea kernels):

Name	Role
Djénéba DIAKITE	President
Mariam DIAKITE	Member
Fanta DIAKITE	Member
Sitan DIAKITE	Member
Djénéba SANGARE	Member
Sitan SANGARE	Member
Sata DIALLO	Member
Saran DIAKITE	Member
Koloba DIAKITE	Member

Name	Role
Minata DIAKITE	Member
Fanta Ba DIAKITE	Member
Gassa DIAKITE	Member
Naro DIAKITE	Member
Malado DIAKITE	Member
Rokia DIAKITE	Member
Lancéni KONE	Member

Linféra: Bougoury DIAKITE, Village Chief

1.2 Cooperative and Association Members – Bougouni District

Diguiya Women's Cooperative, Solakoroni (market gardening):

Name	Role
Kany DAIKITE	President
Dialika KONE	Member
Fanta KONE	Member
Karia KONE	Member
Sanata DIAKITE	Administrative Secretary
Saly DIAKITE	Member
Djénéba KONE	Member
Tou CAMARA	Member
Djénéba SAMAKE	Member
Dadjé DIAKITE	Member
Fanta SAMAKE	Member
Hady DIAKITE	Member
Rokia CAMARA	Member
Mariam DAIKITE	Member
DIAMADO SANGARE	Member

NYETAA Women's Cooperative, Garalo (market gardening and organic shea kernels):

Name	Role
Sata SAMAKE	President
Niamba SAMAKE	Member
Diagué SAMAKE	Member
Sata SAMAKE	Member

BENKADI Women's Cooperative, Sirimana (market gardening):

Name	Role
Djénébou DIAKITE	President
Mouso SAMAKE	Member
Mariam SAMAKE	Member
Kadiatou SANGARE	Member
Fanta BAGAYOGO	Member
Korotoumou DIAKITE	Member
Djénéba SAMAKE	Member
Bintou SAMAKE	Member
Fanta SAMAKE	Member
Kadia SAMAKE	Member
Oumou SAMAKE	Member
Minata DIAKITE	Member
Dialla DIAKITE	Member
Sitan COULIBALY	Member
Bintou SANGARE	Member

Association of persons with disabilities, Garalo (wire mesh manufacturing): Mamadou KANE, President

1.3 Local Administration and Technical Services

- Administrative and legal advisor, Governor's office of Bougouni
- Mohamoudou DIALLO, First Deputy Prefect of Bougouni
- Mrs Kadia Bayogo, Second Deputy Prefect of Bougouni
- Siriki SIDIBE, President of the Bougouni Circle Council
- Mr. Daouda Bagayogo, Secretary General of the Bougouni Council
- Mr. Issouf KANTE, Mayor of Garalo
- Amadou Tidiane TOURE, Head of Planning Division, Water and Forests, Sikasso
- Moussa FAYENKE, Advisory Support, Water and Forests, Bougouni
- Sekou Ahmed TOURE, Focal point for Bougouni-Yanfolila complex management
- Mahamadou Karamogo DIARRA, Executive Director, MFC Nyetaa
- Cheick Oumar COULIBALY, Coordinator, AID-SA
- Mrs TOURE Fatoumata AYA, Monitoring and Evaluation Officer, MFC Nyetaa
- Mrs COULIBALY Aminata BARRY, Gender Officer, MFC Nyetaa
- Djibril KONE, AID-Sa Coordinator, Garalo
- Diangui TANGARA, Internal Controller, AID SA

- Joel DAO, MFC Coordinator, Yanfolila
- Zoumana DOUMBIA, MFC Facilitator, Garalo

Annex 2 – Field Mission Schedule

Day	Date	Localities	Activities
1	Fri. 01 Jul 22	Koloni Commune	Meeting with communal authority and women; visit shea unit and market garden; Linfara garden visit; depart Madina Diassa
2	Sat. 02 Jul 22	Yorobougoula Commune	Madina Diassa: women meeting, shea unit, beekeeping discussions; Yorobougoula: communal authority, sub-prefect; depart Yanfolila
3	Sun. 03 Jul 22	Tiamanan Banimonotiè Commune	Yanfolila–Bougouni–Sirimana: market garden, beehives, organic kernel collection, sesame agro-forestry; depart Garalo
4–5	Mon–Tue. 04–05 Jul	Garalo Commune	Communal authority, sub-prefect, Water & Forests co-management discussions; beneficiary exchanges, beekeeping, karité kernels, wire mesh atelier visit
6	Wed. 06 Jul 22	Nienendougou/Solakoroni	Forest agent meeting; market garden discussions; reserve exchanges; depart Bougouni
7	Thu. 07 Jul 22	Bougouni Circle	Prefect, Circle Council, technical services (Water & Forests, livestock, agriculture); depart Bamako

Annex 3 – Interview Guides

3.1. Guide for Community Beneficiary Organisations

Activities carried out:

- What activities were carried out with the project? Were there planned activities not carried out?
- Which activities concern natural resource strengthening initiatives?
- What professional trades were initiated and promoted for young people?
- What is your satisfaction level regarding the project results?

Relevance:

- To what extent has the project addressed beneficiary needs and priorities?
- What are project results in relation to community needs for natural resource management?
- What partners were involved? Were they relevant? What roles did they play?
- How has the programme made communities more responsible toward their environment?

Effectiveness:

- To what extent were objectives and expected results achieved?
- How did the project strengthen capacities of populations, technical services, and NGOs?
- What are the strengths, weaknesses, and opportunities of local project initiatives?
- What is the level of dissemination and ownership of the 'Arbre-SEL' model?

Efficiency:

- Do achieved results justify costs invested?
- Were mobilised resources sufficient to equitably reach project targets?

Sustainability:

- Are results achieved likely to be sustainable?
- Is there a relay mechanism ensuring activity continuity?
- How have CASE contributed to professionalisation and sustainability of achievements?
- How has access to financing contributed to local entrepreneurship?

Environmental and Social cross-cutting questions:

- Have you observed changes in community practices regarding forest resource use since project start?
- Were vulnerable groups (women, youth, persons with disabilities) sufficiently included in activities?
- Have there been disputes or conflicts linked to project activities? How were they resolved?
- Are community members aware of their rights and responsibilities under the forestry legislation?
- Has the programme contributed to mitigating conflicts between farmers and herders?
- How has women's economic and social status changed as a result of the project?

3.2. Guide for Local Authorities

- Describe the history and functioning of your co-management partnership for the Bougouni/Yanfolila reserve complex.
- What is your assessment of co-management? What were the most important successes and weaknesses?
- Has the project properly targeted Mali's priorities and those of the intervention area?
- Are there achievements or activities likely to continue once the project is over?
- What lessons can be drawn from this project?

3.3. Guide for Technical Services and Partner NGOs

- Describe the history and functioning of your co-management partnership for the complex.
- What management plan actions were implemented by the project?

- What did the project bring to your service? What was your contribution?
- Have you identified weaknesses in the project?
- What activities are likely to continue once the project is over?

3.4. Guide for Beneficiary Populations

- Describe the environment before and after your collaboration with the project.
- What did the project bring to you? What did not give you satisfaction?
- What activities did you participate in? What did you learn individually and collectively?
- What did you gain in terms of means of livelihood?
- What will remain from all this even after the project?
- What lessons can be drawn from this project?