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MONITORING REPORT

GSLERP : Ghana Shea Landscape Emission Reductions Project (GSLERP)

Project Title	**Ghana Shea Landscape Emission Reductions Project (GSLERP)**
Project Start Date	**21 August 2020 (Effective starting :10/05/2021)**
Project End Date	10 May 2028
Monitoring Report number	*01*
Date of Report	*4 July 2025*
Project ID	*TBD*
Monitoring Period	*May 2023 – May 2025*
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TABLE OF CONTENTS

Summary

The Ghana Shea Landscape Emission Reductions Project (GSLERP), implemented by the Global Shea Alliance with support from UNDP and the Green Climate Fund, aims to enhance women's economic empowerment by addressing structural challenges in the shea value chain across northern Ghana. Despite its importance to rural livelihoods, especially for women, the sector has faced persistent barriers—including low productivity in aging shea parklands, inefficient nut collection and artisanal processing methods, and limited market access—that have constrained income generation. Through targeted interventions in cooperative development, technical training, and sustainable resource management, GSLERP has improved production practices and market competitiveness.

The W+ Standard was applied to measure and quantify these changes in two domains: Education & Knowledge and Income & Assets, providing a structured approach to assessing the project's impacts. Results indicate significant gains in both financial earnings and educational outcomes among participants. Data was collected from a representative sample of beneficiaries and analyzed for W+ credit calculation.

Education & Knowledge Domain

The Knowledge & Education domain was applied to measure changes in knowledge levels among **370 surveyed beneficiaries**, representing **6,000 women** in total.

- The knowledge score of beneficiary households improved by **30.2 points** following the interventions.
- The overall percentage of change from baseline conditions was **96.9%**.
- The total number of **W+ credits generated was 58,144**.

Income & Assets Domain

The Income & Assets domain was applied to measure changes in income levels among **370 surveyed beneficiaries**, representing a larger group of **6,000 women**.

- The change in annual income per beneficiary was **237 Ghanaian Cedis (GHS) or 23 USD**.
- The overall percentage of change from baseline conditions was **107.8%**.
- The total number of **W+ credits generated was 64,674**.

1 PROJECT DETAILS

1.1. Summary Description of the Implementation Status of the Project

The **Ghana Shea Landscape Emission Reductions Project (GSLERP)** is situated in Ghana's northern regions and spans a broad geographic area. It includes several districts across five regions: in the Northern Region, Savannah Region, Northeast Region, Upper West Region and Upper East Region.

Despite the shea value chain's importance to rural livelihoods, particularly for women who are its main actors, the sector faces persistent challenges that limit its growth and income-generating potential. Firstly, shea parklands exhibit low productivity due to poor tree management practices, aging tree populations, and minimal reforestation or regeneration efforts. These factors lead to reduced yields and a declining supply of raw shea nuts. Secondly, the collection of shea nuts is still done using rudimentary and inefficient techniques, which not only affect productivity but also compromise quality. Inappropriate practices such as shaking trees to harvest nuts often result in the collection of immature fruits, while poor post-harvest handling and lack of standardization further diminish the market value of the nuts. Thirdly, shea butter processing remains largely artisanal, with little application of improved technology or adherence to quality control standards, resulting in inconsistent product quality and reduced competitiveness in both domestic and international markets. In addition, weak market access and a lack of strong market linkages restrict producers and processors from reaching higher-value markets, thereby constraining their income opportunities.

To overcome these barriers, women organized in cooperatives have received various forms of training delivered by implementing partners. These trainings have focused on enhancing technical knowledge, organizational capacity, and entrepreneurial skills. In terms of natural resource management, women were trained on sustainable shea parkland practices, including the creation of firebelts, protection of shea trees and seedlings, pruning, mulching, and shea grafting. These interventions aim to support the regeneration and long-term productivity of shea trees. On the organizational front, training was provided on cooperative development, business management, and marketing. These sessions covered group dynamics, record keeping, price setting, market linkages, storage and sorting, and marketing strategies such as advertising and certification. These competencies are essential to improving market competitiveness and sustaining women's economic participation. Furthermore, women received practical training on improved technologies for shea processing. They learned to identify mature, high-quality shea kernels and use better post-harvest handling methods. Modern techniques for shea butter production were introduced to ensure quality and consistency. Additionally, improved cook stoves were promoted to reduce fuel use and improve working conditions, and women were trained to use machines like kneaders to reduce labor and increase productivity.

The project's contribution to income generation for women is twofold. First, by creating employment opportunities in nurseries and shea butter processing units, the project provides women with regular and stable income, enhancing their financial independence. Second, through capacity-building initiatives that improve the selection, sorting, and processing of shea nuts, women are now better equipped to produce higher-quality kernels that fetch better prices in the market. These combined efforts contribute significantly to improving women's economic resilience and empowerment within the shea value chain.

1.2. Project Developer

Organization name	Global Shea Alliance
Contact person	Cornelius Kuukaraa
Title	Manager
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Email	c.kuukaraa@globalshea.com

1.3. Other Entities Involved in the Project

Organization name	Forestry Commission of Ghana
Role in the project	Green Climate Fund Executing Entity for the GSELRP
Contact person	Roselyn Fosuah Adjei
Title	Director, Climate Change at Ghana's Forestry Commission and National REDD+ Focal Point for Ghana
Address	
Telephone	
Email	

Organization name	UNDP
Role in the project	Funding agency
Contact person	Elizabeth Eggerts
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1.4. Project Start Date

May 10, 2021

1.5. Project Crediting Period

The crediting period is 2 years: *May 2023 – May 2025*

1.6. Project Location

The GSLERP is located in Ghana's Northern regions encompassing the following regions and districts

- Northern region: Savelugu, Kumbugu, Tolon, Yendi, Gushiegu districts
- Savannah region: Damongo, Buipe, Salaga, Central Gonja, Doboya districts
- Northeast region: Walewale, Langbensi, Yagaba districts
- Upper West region: Wa West, Wa municipal, Gbollo and Nadowli Kaleo districts
- Upper East region: Talensi, Garu, Kassena, Nankana East, Builsa North districts

1.7. Title and Reference of W+ Methods

Education & Knowledge

Income & Assets

2. IMPLEMENTATION STATUS

2.1. Implementation Status of Project Activities

The implementation of project activities effectively started in May 2021 and it is still ongoing. The implementation of all activities measured under the W+ Standard started in May 2021. Please see below for the list of activites:

Education & knowledge

1. Parkland management: firebelt, tenure and protection of shea trees, young seedlings, pruning protection, mulching, and grafting. Shea Parkland Management: Women received training on sustainable parkland management practices, including the establishment of firebelts, and the protection of shea trees and young seedlings. An additional topic was shea grafting.

2. Training on Cooperative Development, Business Management, Aggregation, and Marketing. This training aimed to strengthen the organizational and entrepreneurial capacities of women's cooperatives. It covered key topics such as group dynamics, the formation and strengthening of women's groups, basic financial and administrative skills including record keeping, and strategies for price setting and accessing pre-financing. Additionally, the training addressed aggregation techniques, market linkage development, storage and sorting practices, quality control standards, as well as marketing tools such as advertising and product certification—all essential for improving market competitiveness and income generation.

3. Training on Improved Technologies for Shea Processing. This training focused on the adoption of improved technologies to enhance the efficiency, quality, and safety of shea production processes. Women were trained on best practices for selecting high-quality shea kernels starting from the collection stage, emphasizing the importance of harvesting mature nuts and proper post-harvest handling. The sessions also introduced advanced techniques for producing high-quality shea butter, ensuring consistency and meeting market standards. Additionally, the training promoted the use of improved cook stoves, which reduce fuel consumption, thereby improving working conditions. Participants also learned to operate different equipment such as kneading machines, which significantly reduce the physical labor
involved in butter production and increase productivity.

Income & Assets

The GSLERP project contributes to strengthening women's economic empowerment by creating employment opportunities—particularly in nurseries and shea butter processing units—which provide women with a regular source of income, enhancing their financial security and autonomy. At the same time, the project builds women's capacity to engage more effectively in the shea value chain by introducing improved practices for the selection, sorting, and processing

of shea nuts. Through targeted training on quality standards, women are now able to identify and preserve high-quality kernels, enabling them to secure better prices in the market.

2.2. Where applicable, describe how non-double counting measures are being implemented.

NA

2.3. Where applicable, describe how non-permanence risk factors are being monitored and managed.

NA

2.4. Methodology Deviations

NA

2.5. Project Description Deviations

NA

2.6. Results and key findings

2.6.1. Education & Knowledge

The Education & Knowledge domain was applied to measure changes in knowledge levels among **370 surveyed beneficiaries**, representing **6,000 women** in total.

- The knowledge score of beneficiary households improved by **30.2 points** following the intervention.
- The overall percentage of change from baseline conditions was **96.9%**.
- The total number of **W+ credits generated was 58,144**.

2.6.2. Income & Assets

The Income & Assets domain was applied to measure changes in income levels among **370 surveyed beneficiaries**, representing a larger group of **6,000 women**.

- The change in annual income per beneficiary was **237 GHS equivalent**.
- The overall percentage of change from baseline conditions was **107.8%**.
- The total number of **W+ credits generated was 64,674**.

3. RESULTS

3.1. Education & Knowledge

3.1.1. Data and parameters

3.1.1.1. Data and Parameters Available

Data / Parameter	Number of women Beneficiaries
Data unit	Wc.p
Qualitative data	*NA*
Description	Number of women benefiting from the project
Source of data	Information from the project team
Justification of choice of data or description of measurement methods and procedures applied	The sample size parameters are as follows: • Population size = 6000 • Assumed proportion 50% • Level of acceptable error = 5% • Level of significance= 95% • Required sample size = 362 • Actual sample size = 370 A retrospective pre-post survey was carried out . Each interviewed woman was asked about her situation before the project and her current status.
Purpose of the data	The data was collected to compare beneficiaries' knowledge before and after the project.
Comments	*NA*

3.1.1.2. Data and Parameters Monitored

Indicator	A - Reasoning level
Data unit	Level of confidence
Description	Education / Knowledge retention from training inputs/interventions
Source of data	Survey developed following the Education & Knowledge W+ method

Description of methods to collect information and procedures to be applied	Local women Enumerators were trained and employed to apply the surveys. While conducting the surveys, the enumerators were closely supervised through visits or phone calls by the survey supervisors. Additionally, at the end of each day, enumerators submitted their results and their data was screened by survey supervisors.
Purpose of the data	This corresponds to the Education & Knowledge formula
Comments	NA

Indicator	B – Changes in behavior
Data unit	Knowledge application
Description	Behavioral changes as a result of the training interventions
Source of data	Survey developed following the Education & Knowledge W+ method
Description of methods to collect information and procedures to be applied	Enumerators were trained and employed to apply the surveys. While conducting the surveys, the enumerators were closely supervised through visits or phone calls by the survey supervisors. Additionally, at the end of each day, enumerators submitted their results and their data was screened by survey supervisors.
Purpose of the data	This corresponds to the Education & Knowledge formula
Comments	NA

Indicator	C – Challenges
Data unit	Ability of women to address socio-cultural challenges

Description	Challenges women faced in the application of the education/knowledge
Source of data	Survey developed following the Education & Knowledge W+ method
Description of methods to collect information and procedures to be applied	Enumerators were trained and employed to apply the surveys. While conducting the surveys, the enumerators were closely supervised through visits or phone calls by the survey supervisors. Additionally, at the end of each day, enumerators submitted their results and their data was screened by survey supervisors.
Purpose of the data	This corresponds to the Education & Knowledge formula
Comments	NA

3.1.2. Monitoring plan

Result Level	Statement	Indicator	Means of Verification (MoV)	Challenges / Assumptions
Impact	Women lead safe, informed, and dignified engagement in the shea value chain	% of women reporting confidence in processing, health safety, and decision-making	Endline survey, FGDs, case studies, Women's statements	Norms on women's leadership
End Outcome	Women apply and share acquired knowledge in safe, productive, and sustainable ways	% of women applying improved shea processing practices % of women following health and safety protocols	Field assessments, trainer evaluations, Women's' statements	Availability of ergonomic equipment is ensured
Intermediate Outcome	Women adopt user-friendly, safe technologies and participate in enterprise groups	# of women using energy-efficient, ergonomic tools # of women engaged in cooperative discussions	Site visits, usage logs, cooperative attendance records	Tools are tailored to diverse physical needs

Immediate Outcome	Women demonstrate increased knowledge in processing, safety, and business	% improvement in post-training test scores # of women completing safety and business training	Pre/post-tests, attendance records	Literacy, heat exposure, and physical limitations accounted for
Outputs	Training delivered on ergonomics, occupational health, and business management	# of health/safety trainings held # of toolkits distributed # of manuals developed	Attendance, distribution logs, feedback forms	Sessions are inclusive and tested across age and ability groups
Inputs	Trainers, ergonomic stoves/kits, translated materials, inclusive venues,	# of ergonomic tools, deployed availability of water/shade/rest breaks during processing	Procurement and training checklists	Technologies are co-designed with participants

Do No Harm

Indicators

Indicators	Challenges women face in participating in the project
Question (s)	Did you encounter any problems or challenges in the implementation of the project? What type of problems/challenges did you face (i.e., time burden, economic impact, intrahousehold constraints)?

Findings

To increase the long-term impact of the GSLERP and generate additional W+ credits in the future, the project could benefit from scaling up and refining its interventions in ways that directly respond to the lived experiences of women engaged in the shea value chain. Focus group discussions revealed that while the project has brought important opportunities, some unintended negative effects—particularly related to health, workload, and exclusion—have emerged. These insights present a valuable opportunity to align the project more closely with the **do no harm** principle, ensuring that efforts to empower women do not inadvertently compromise their well-being.

One critical area for improvement is **occupational safety and the inclusivity of processing technologies**. Women described the physical strain caused by heat exposure and demanding manual labor, particularly in processing units. These concerns underscore the importance of introducing energy-efficient, ergonomically designed technologies that are user-tested across diverse age groups and physical abilities. Creating safer, more comfortable working conditions would not only mitigate health risks but also enhance productivity and retention—delivering both ethical benefits and measurable gains for W+ credit generation.

Another strategic priority is to **strengthen women's collective power and market agency**. Many women shared that they feel disempowered in price-setting processes and remain reliant on intermediaries and pre-financing arrangements that limit their earnings. By supporting the formalization of cooperatives, delivering financial literacy and market training, and facilitating access to fair-trade networks and ethical buyers, the project can address these vulnerabilities while fostering greater economic autonomy. These actions would reduce dependency and help prevent exploitative practices, aligning clearly with the do no harm ethos.

In addition, the project can further its positive impact by ensuring **structured participation and inclusive leadership**. Women expressed a desire to be more meaningfully involved in shaping decisions and project activities, yet many currently lack access to formal channels to do so. Establishing participatory consultation mechanisms—such as women-led advisory groups or community forums—and promoting female leadership at the local level can ensure that women's insights guide implementation. Investing in mentorship and gender-sensitivity training for both men and women in implementation roles can help challenge restrictive norms and create a more enabling environment.

By taking proactive steps to prevent harm and center women's perspectives in decision-making, GSLERP can reinforce its commitment to empowerment, equity, and sustainability. In doing so, it not only safeguards against unintended consequences but also enhances its capacity to generate long-term benefits and future W+ credits.

3.1.3. W+ Results for Education & Knowledge

W+ Domain	Education & Knowledge
Indicator	Increase in Education & Knowledge
Description	Education & Knowledge increased by 97% from baseline conditions
Situation	The Ghana Shea Landscape Emission Reductions Project (GSLERP) has significantly invested in building the capacities of women involved in the shea value chain through a combination of technical, organizational, and entrepreneurial training initiatives. These efforts have played a central role in enhancing women's knowledge of sustainable natural resource management,

	while strengthening their cooperative structures and access to markets. Training sessions emphasized sustainable practices in shea parkland management, such as grafting, mulching, pruning, and the establishment of firebelts—actions which contribute to improved yields and long-term ecological resilience. Complementary training focused on cooperative development, business operations, and market engagement, equipping women with skills in group dynamics, pricing, record-keeping, and marketing strategies. The introduction of improved technologies in shea nut selection, processing, and use of labor-saving equipment like kneaders and improved cook stoves has not only enhanced the quality and consistency of production but also alleviated some of the physical burdens traditionally associated with processing.
Prospects	Despite these gains, women continue to face challenges. Many still rely on outdated cookstove models that fail to fully address health, efficiency, and environmental concerns, underscoring the need for wider dissemination of improved alternatives. Furthermore, there remains a critical need to promote more diverse and locally appropriate livelihood options—such as agroforestry, poultry or small livestock rearing, and off-season vegetable cultivation. These could be supported by tailored training on climate-smart agriculture, deeper community involvement in natural resource governance, and the development of early warning systems and local climate adaptation plans that specifically address the realities and needs of women.

3.1.4. Summary Analysis of Results

Current Performance

The GSLERP project, implemented across northern Ghana—including the Northern, Savannah, Upper West, Upper East, and Northeast regions—provided training to women in parkland management, improved technologies, and cooperative governance, with the goal of increasing their income. Approximately 6000 women benefited from this project by improving their knowledge.

Calculation of the percent of change

Sample size

The sample size for the survey was 370. Interviewee samples were from different villages, districts in Northen part of Ghana including Northen, Savannah, Upper East, Upper West and

North East regions. These regions are the hub of Shea production in Ghana. Sampling was done based on the proportion of project beneficiaries per region and calculated in compliance with the general guidance on sampling. The final sample size using this method is as follows:

***Table 1**: Sampling details*

Population size	6000
Assumed proportion	50%
Level of acceptable error	5%
Level of confidence	95%
Required Sample Size	362
Actual sample size	370

Sampling frame

In conducting the survey, we employed a within-subject, retrospective design to assess changes in the knowledge and income domains. Due to significant heterogeneity in baseline knowledge levels and the difficulty in identifying a suitable control group with comparable pre-intervention characteristics, the use of a conventional control-treatment design was deemed methodologically inappropriate. Intervention households demonstrated advanced domain-specific knowledge that could not be reliably matched with external respondents. To address this, we applied a retrospective baseline approach, asking the same beneficiaries to reflect on their knowledge levels prior to the intervention. This enabled the construction of a credible counterfactual, minimizing recall bias while preserving respondent consistency.

Similarly, income-related data were collected on current earnings from activities supported by the intervention and compared with income from analogous activities conducted prior to project implementation. This strategy allowed for a robust estimation of program effects while controlling for individual fixed effects, thus enhancing the internal validity of the evaluation in the absence of a randomized or matched control group.

W+ Results Calculation for Education & Knowledge

The total increase in Education & Knowledge for women benefiting from project interventions is calculated by comparing the increase in their knowledge after the project intervention compared to before it.

For the calculation, knowledge, behavior and challenge scores are the variables considered. The percent change is calculated by comparing the average knowledge score for beneficiaries before and after the project implementation.

The formula used for calculating the percent of change score is as follows:
Percentage change score = [(Average knowledge score for beneficiary after the project implementation - Average knowledge score for beneficiaries before the project implementation /Average knowledge score of beneficiare before the project implementation]*100

Table 1: Average knowledge score of beneficiaries before and after project intervention

Household Type	**n**	**Average Knowledge Score**
Beneficiary After	370	61.4
Beneficiary Before	370	31.2

Table 2: W+ Results Calculation

Change in Knowledge score(After project score -Before project score)	30.2
Percentage Change After project score -Before project score)/Before project score	96.9%
Total beneficiaries (Wc,p)	6000
Total beneficiaries*Percentage of change =Wc,p *% change)	**581,437**

W+ Credit Issuance
Based on the W+ Impact calculated, WOCAN will issue **58,144 W+ credits**, through its policy to assign one W+ credit to every 10 % of change times the number of women beneficiaries.

Table 3: W+ credits

W+ Credits **[=(**Total beneficiaries*Percentage of change**)*0.1]**	**58,144**

3.2. Income & Assets

3.2.1. Data and parameters

3.2.1.1. Data and Parameters Available

Data / Parameter	Number of women Beneficiaries
Data unit	Wc.p

Qualitative data	*NA*
Description	Number of women benefiting from the project
Source of data	Income and Assets survey
Justification of choice of data or description of measurement methods and procedures applied	The sample size parameters are as follows: • Population size = 6000 • Assumed proportion 50% • Level of acceptable error = 5% • Level of significance= 95% • Required sample size = 362 • Actual sample size = 370 A retrospective pre-post survey was carried out . Each woman interviewed was asked about her situation before the project and her current status.
Purpose of the data	The data was collected to compare beneficiaries' income before and after the project
Comments	*NA*

3.2.1.2. Data and Parameters Monitored

Indicator	Income
Data unit	Total number of Beneficiaries
Description	Average income generated as result of project interventions
Source of data	Survey developed following the Income & Assets W+ method
Description of methods to collect information and procedures to be applied	Local women were trained and employed as enumerators to conduct the surveys. While conducting the surveys, the enumerators were closely supervised through visits or phone calls by the survey supervisors. Additionally, at the end of each day, enumerators submitted their results and their data was screened by survey supervisors. At the end of each day, enumerators submitted their results.

Purpose of the data	This corresponds to the Income & Assets method
Comments	NA

Indicator	Income
Data unit	Increase in income generated
Description	Established by comparing income before and after project started calibrated on a per person basis
Source of data	Survey of 370 women
Description of methods to collect information and procedures to be applied	Enumerators were trained. Data was collected using ODK collect. At the end of each day, enumerators submitted their results.
Purpose of the data	This corresponds to the Income & Assets method
Comments	NA

3.2.2. Monitoring Plan

Result Level	Statement	Indicator	Means of Verification (MoV)	Challenges Addressed / Assumptions
Impact	Increased leadership and decision making power	% of women reporting decision-making power over income	Household surveys, income tracking, FGDs Women's' statements	Pre-financing dependency and climate shocks are addressed
End Outcome	Improved livelihoods and income security	# of women with secondary livelihood sources	Cooperative reports, off-season activity logs Women's' statements	Cooperatives are participatory and resilient to shocks
Intermediate Outcome	Functioning cooperatives Women negotiate prices collectively and diversify income sources Investing additional income to acquire assets	% of transactions done collectively # of alternative income activities initiated % of income, they save # of assets, they acquired	Buyer agreements, seasonal income analysis Cooperative's records and accounting	Market intelligence and climate knowledge is accessible

		# of cooperatives with market linkages Price increase		
Immediate Outcome	Increased income Women gain skills in collective bargaining, market intelligence, and adaptation	# of training sessions on pricing, negotiation, and adaptation % increase in price awareness % increase in average income # of women in cooperatives	Training attendance, post-tests, buyer interviews	Climate-resilient options are locally appropriate and appealing
Outputs	Training and mentoring provided on group organization, fair trade, and resilience Forming cooperatives	# of formalized groups # of market intelligence updates shared # of women trained in diversification	Group registrations, info bulletin records, workshop logs	Effective facilitation and access to ethical markets are in place
Inputs	Advisors, facilitators, mentorship programs, early warning systems	# of mentors assigned # of climate-smart materials distributed # of pricing bulletins disseminated Partner with key organizations specialized in strengthening collective action and cooperative governance to enhance sustainability and scale of women-led groups.	Monitoring reports, bulletin archives	Gender-sensitive facilitation and platforms for feedback are functional

Do No Harm indicators

Indicators	Women benficiaries report on the challenges they face in participating in the project
Questions	Did you encounter any problems or challenges in the implementation of the project? What type of problems/challenges did you face? ; time burden, economic impact, intrahousehold constraints

3.2.3. W+ Results for Income & Assets

W+ Domain	Income & Assets
Indicator	increased knowledge in processing, safety, and business from project participation
Description	• Income for women increases by participating in the project • Users were able to invest the additional income mainly to households' goods and education of their children • 107,8% change from baseline conditions • As a result of the project, 39% of the women surveyed reported a significant increase in their income, while 52% indicated a slight increase
Situation	The project led to a significant increase in women's income, substantially strengthening their economic resilience. However, despite these positive outcomes, persistent structural barriers continue to limit the full realization of income potential. Women still face limited bargaining power and collective agency in markets, remain vulnerable to climate-induced income shocks, and are often inadequately consulted in the planning and implementation of initiatives.
Prospects	To ensure the sustainability and long-term impact of the project, key prospects include (1) Strengthening women's market power by supporting the development of cooperatives, promoting price transparency, and fostering ethical and equitable trade linkages and (2) Promoting climate resilience by diversifying livelihood options and implementing localized adaptation strategies.

3.2.4. Summary Analysis of Results

Current Performance

The GSLERP project, implemented across northern Ghana—including the Northern, Savannah, Upper West, Upper East, and Northeast regions—provided training to women in parkland management, improved technologies, and cooperative governance, with the goal of increasing their income.
Approximately 6000 women benefited from this project by improving their income.

Calculation of the percent of change

Sample size

The sample size for the survey was 370, whith whom a before and after project questionnaire was carried out. Interviewee samples were from different villages, districts in Northen part of Ghana including Northen, Savannah, Upper East, Upper West and North East regions. These regions are the hub of Shea production in Ghana. Sampling was done based on the proportion of project beneficiaries per region.

Sampling frame

Sample size was calculated in compliance with the general guidance on sampling. The final sample size using this method is as follows.

***Table 4**: Sampling details*

Population size	6000
Assumed proportion	50%
Level of acceptable error	5%
Level of confidence	95%
Required Sample Size	362
Final considered sample size	370

Calculation of Results (% of Change)

The total increase in income for women due to the projects' interventions is calculated by comparing their current income to their income prior to the project.

Table below shows the monthly income of the women before the project and currently. The average total net monthly income of the households currently is 456 Ghanaian cédi (44 US$) /month, compared to 220 Ghanaian cédi (21US$)/month before the project .

Table 5 : Beneficiaries' average monthly income before the project and currently

Household Type	n	Average Gross Annual Income (Ghanaian cedi)
Beneficiary After	370	456
Beneficiary Before	370	220

The increase in income by applying technology learned from the project is equal to 456 – 220 = 237 Ghanaian cedi (23 USD).

Calculation of Results (Percent of Change)

In order to calculate the percent change in income increase from baseline (before the project), we calculated the average income gained currently compared to their income before the project and then divided this difference by baseline value and multiplied by 100.

[Currently income after project- Income before the project) / Income before the project]*100

The table below details the calculation of the percentage change of the income:

Table 6: W+ calculation for income

Income change and saving change Beneficiary income after -Beneficiary income before)	237
Percentage Change from baseline After project score -Before project score)/Before project score	107.8%
Total beneficiaries (Wc,p)	6,000
Total beneficiaries*Percentage of change =(Wc,p *% change)	646,745

W+ Credit Issuance

Based on the W+ Impact calculated, WOCAN will issue **64,674 W+ credits**, through its policy to assign one W+ credit to every 10 % of change times the number of women beneficiaries.

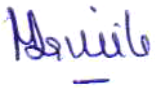
Table 7: W+ credits

Final W+ Credits **[=(**Total beneficiaries*Percentage of change**)*0.1]**	**64,674**

Signatures of Preparers

This W+ Monitoring Report was prepared by:

RAMIARAMANANA Danièle	Consultant	WOCAN	4 july 2025
Name	Title	Organization	Date



Signature

This W+ Monitoring Report was prepared by:

Larissa Dominguez	Consultant	WOCAN	4 july 2025
Name	Title	Organization	Date

Signature

Appendix: Detailed analysis of results

INTRODUCTION

The Ghana Shea Landscape Emission Reductions Project (GSLERP) has made meaningful strides in strengthening the capacities of rural women across the shea value chain. Efforts have focused on three main areas: sustainable natural resource management, cooperative and entrepreneurial development, and the adoption of improved shea processing techniques. Although the project did not include dedicated activities explicitly aimed at promoting women's leadership, the combination of enhanced technical skills, organizational capacity, and better access to markets and technologies has led to a notable increase in women's leadership roles. Women are increasingly recognized as key contributors to household welfare, environmental stewardship, and community-level economic activity.

These positive developments highlight the transformative potential of targeted capacity-building efforts. At the same time, opportunities remain to deepen and sustain this impact. Further dissemination of improved cookstoves, along with the promotion of locally appropriate, diversified livelihood options—such as poultry, agroforestry, and off-season vegetable farming—would help strengthen resilience and reduce workload burdens. Continued investment in climate-smart agricultural practices, early warning systems, and local adaptation planning, tailored to women's needs, can further reinforce their roles as leaders and agents of change.

The next section provides a detailed overview of the outcomes achieved across the project's core areas of intervention.

Surveys location

Survey sampling was carried out proportionally to the number of project beneficiaries in each region. The Northern Region had the highest number of surveys (145), followed by the Savannah Region (110), reflecting their larger beneficiary populations.

Table 8: Geographical distribution of respondents

Region	# surveys	%
NorthEast	72	19%
Northern	145	39%
Savannah	110	30%
Upper East	24	6%
Upper West	19	5%
Total	370	100%

Age of beneficiaries

The average age of respondents across all regions is 40 years, with ages ranging from 19 to 78 years old.

Table 9 : Age of beneficiaries

Region	Min	Max	Average
NorthEast	22	72	42
Northern	19	65	40
Savannah	19	69	40
Upper East	23	78	42
Upper West	21	58	36
Total	19	78	40

Table 10: Level of literacy

Most of them could neither read or write. The situation is most critical in the Northern Region, where illiteracy affects 91% of respondents.

Region	Cannot write, cannot read		Read only		Write and read		Write only		Do not want to answer	
	#	%	#	%	#	%	#	%	#	%
NorthEast	60	83%		0%	11	15%	1	1%		0%
Northern	132	91%	1	1%	11	8%	1	1%		0%
Savannah	83	75%	3	3%	17	15%	6	5%	1	1%
Upper East	12	50%		0%	12	50%		0%		0%
Upper West	10	53%	1	5%	7	37%		0%	1	5%
Total	80%		5		58		8			

Education & Knowledge

The following results present a detailed picture of the project's impact on women's education and knowledge across key areas of the shea value chain. Four central domains are explored—**tree management and ecological knowledge**, **storage and market preparedness**, **processing and quality standards**, and **business development and financial literacy**. Across all these areas, there is clear and consistent evidence of increased technical understanding and applied confidence. Women reported substantial improvements in their ability to manage tree health, store and market their products effectively, adhere to international processing standards, and navigate

core business and financial tasks. For instance, knowledge of how to determine tree density rose from just 14% of participants before the intervention to nearly 69% after; similarly, familiarity with international market quality standards grew from 13% to 73%. These gains illustrate not only improved technical capacity but also a heightened readiness to share knowledge and take on leadership roles within their cooperatives and communities.

Crucially, these advances in education and knowledge were accompanied by a marked reduction in perceived barriers. As the final section on challenges shows, the proportion of women identifying key constraints—such as lack of family support, doubts in their own skills or confidence, or fear of failing because of their gender—as "highly challenging" dropped dramatically. Most of these concerns are now viewed as "least challenging," highlighting how the project helped shift not just knowledge levels but also internal attitudes and social perceptions. These results suggest that when educational interventions are thoughtfully designed and contextually grounded, they can empower women to become more confident actors in both economic and civic spaces, unlocking greater agency and long-term resilience.

Tree management and ecological knowledge

The table below consolidates eight questions related to tree health, pruning, economic value, and knowledge-sharing confidence. Across all indicators, there is a consistent and marked increase in the number and percentage of women reporting 'High' knowledge or confidence levels. For instance, confidence to explain the health of regional trees rose from 20.3% to 83.8%, while knowledge of tree density increased from 14.3% to 68.6%. Such shifts illustrate the project's strong impact on women's ecological awareness and their readiness to disseminate that knowledge within their communities.

Question Summary	Before (n)	Before (%)	After (n)	After (%)
q_101_a. Before the project, did you have knowledge on how to ensure effective growth and health of regional trees?	75	20.3%	310	83.8%
q_101_b. Before the project, did you have knowledge on how to determine tree density?	53	14.3%	254	68.6%
q_101_c. Before the project, did you have knowledge on how to reduce degradation of shea trees (pest control, pruning techniques, etc)	68	18.4%	283	76.5%

q_101_d. before the project,did you have knowledge on the economic value of shea trees?	101	27.3%	335	90.5%

Storage and market preparedness

The table below summarizes key knowledge and confidence-related indicators under the theme: Storage and Market Preparedness. Across all indicators, there is a clear upward trend in the proportion of women reporting 'High' levels. These shifts point to successful knowledge transfer and capacity-building efforts, with women significantly more equipped to apply and share their knowledge post-intervention.

Question Summary	Before (n)	Before (%)	After (n)	After (%)
q_102_a. Did you have any knowledge on storage techniques for shea before the project, ?	89	24.1%	333	90.0%
q_102_c. Did you have any knowledge on setting prices for shea Before the project, ?	37	10.0%	238	64.3%

Processing & quality standards

The table below summarizes key knowledge and confidence-related indicators under the theme: Processing & Quality Standards. Across all indicators, there is a clear upward trend in the proportion of women reporting 'High' levels. These shifts point to successful knowledge transfer and capacity-building efforts, with women significantly more equipped to apply and share their knowledge post-intervention.

Question Summary	Before (n)	Before (%)	After (n)	After (%)
q_103_a. Did you have any knowledge on how to choose the quality shea kernels Before the project, ?	81	21.9%	332	89.7%
q_103_b. Did you have any knowledge on how to properly clean, sort, roast, package, and store the shea kernels Before the project, ?	80	21.6%	327	88.4%
q_103_c. Did you have any knowledge on standards for quality of shea for the international market requirements Before the project, ?	49	13.2%	270	73.0%

Business development and financial literacy

The table below summarizes key knowledge and confidence-related indicators under the theme: Business Development and Financial Literacy. Across all indicators, there is a clear upward trend in the proportion of women reporting 'High' levels. These shifts point to successful knowledge transfer and capacity-building efforts, with women significantly more equipped to apply and share their knowledge post-intervention.

Question Summary	Before (n)	Before (%)	After (n)	After (%)
q_105_c. before the project, did you have any knowledge on the types of business you could establish?	73	19.7%	261	70.5%
q_105_d. before the project, did you have any knowledge on the importance of savings?	82	22.2%	307	83.0%
q_105_e. Did you have any knowledge on bookkeeping/record keeping before the project, ?	50	13.5%	202	54.6%

Challenges

The table below provides a comparative overview of the key challenges reported by women before and after their participation in the project. It captures changes in how women perceive barriers such as lack of family support, social discouragement from assuming public roles, and the difficulty of balancing domestic responsibilities with work. Importantly, it also reflects internal challenges, including doubts about their own confidence, skills, and communication abilities, as well as the perception of failure linked to being a woman. Across all categories, there is a significant decline in the proportion of women rating these issues as “highly challenging,” and a corresponding rise in those identifying them as “least challenging.” These shifts suggest that the project contributed meaningfully to reducing both structural and psychological barriers, fostering greater self-confidence, social acceptance, and resilience among participating women.

	Before		**After**	
	n	%	n	%
Lack of support from family members				
Highly Challenging	104	28%	63	17%
Moderately Challenging	125	34%	90	24%
Least challenging	141	38%	217	59%
Family members actively discourage your taking public role (e.g too time consuming; does not pay off; create too many enemies in business; not a woman’s role etc)				
Highly Challenging	76	21%	44	12%
Moderately Challenging	133	36%	102	28%

Least challenging	161	44%	224	61%
Balancing conflicting interests of home and work (eg time limitations, limitations on mobility)				
Highly Challenging	73	20%	43	12%
Moderately Challenging	141	38%	102	28%
Least challenging	156	42%	225	61%
Lack of resources				
Highly Challenging	214	58%	119	32%
Moderately Challenging	102	28%	111	30%
Least challenging	54	15%	140	38%
Doubts on your confidence				
Highly Challenging	94	25%	29	8%
Moderately Challenging	159	43%	123	33%
Least challenging	117	32%	218	59%
Doubts of your skills				
Highly Challenging	89	24%	22	6%
Moderately Challenging	173	47%	113	31%
Least challenging	108	29%	235	64%
Doubts of your communication skills				
Highly Challenging	92	25%	28	8%
Moderately Challenging	147	40%	112	30%
Least challenging	131	35%	230	62%
Feel that you may fail because you are a woman				
Highly Challenging	88	24%	21	6%
Moderately Challenging	116	31%	90	24%
Least challenging	166	45%	259	70%

Income & Assets

Income gains were disaggregated by region and season (Shea and off-season). Significant income increases were recorded in the **Northern (156%)**, **Upper West (128%)**, and **North East (92%)** regions. These results highlight region-specific impacts and affirm that the interventions were particularly successful in northern territories where Shea activities are dominant.

Comparison of Monthly Seasonal Shea Income by Region

	Average income in Shea Season		Average income in Shea off- Season		Average Income (Both seasons)		%
Region	Before	After	Before	After	Before	After	**Difference**

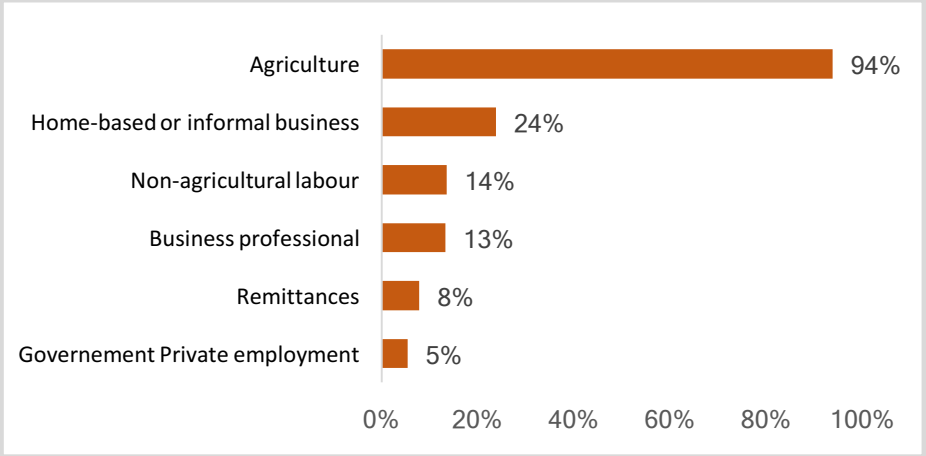
Northern	245	591	187	516	216	554	156%
Savannah	191	307	177	274	184	290	58%
Upper East	116	142	72	86	94	114	21%
Upper West	210	388	125	378	168	383	128%
North East	422	843	253	453	337	648	92%
Total	**253**	**516**	**186**	**397**	**220**	**456**	**108%**

**The results are rounded up.*

Although the figure is not accompanied by quantitative data, it provides a visual overview of the primary income sources for surveyed households. The chart highlights the continued importance of traditional activities such as **shea nut collection** and **shea butter processing**, while also reflecting increasing engagement in **non-traditional income sources**, including **nursery parkland work**, **small-scale trade**, and **cooperative initiatives**.

This diversification indicates a shift from sole reliance on natural resources toward a broader economic participation. The emergence of multiple streams of income also suggests that women are leveraging project interventions to explore more resilient and sustainable livelihoods.

Current source of income for the households



This table tracks women's involvement in six primary income-generating activities before and after the project. While participation in traditional roles like shea nut collection and butter processing slightly declined, there were marked increases in **nursery parkland work (+25%)**, **cooperative/group business (+12%)**, and other diversified roles. These shifts indicate a broadening of economic engagement among women post-intervention.

Table: Involvement in Income-Generating Activities Before and After Project intervention

Activities	**Before Project**	**After Project**	

	(N =370)		(N =370)		
	n	**%**	**n**	**%**	**Change**
Shea nut collection	307	83%	295	80%	↓ -3%
Shea butter processing	258	70%	250	68%	↓ -2%
Nursery parkland work	51	14%	145	39%	↑ +25%
Shea business trade	155	42%	168	45%	↑ +4%
Cooperative or group business	56	15%	99	27%	↑ +12%
Aggregation warehouse work	12	3%	27	7%	↑ +4%
Others	14	4%	17	5%	↑ +1%

Household Income Portion from Project Activities

A majority of respondents—**67%**—reported that at least **26% or more** of their household income now comes from project-related activities. Of these, **18%** noted that over **75%** of their income came from such sources, demonstrating strong dependency on and effectiveness of the interventions in supporting household livelihoods.

Approximately what portion of your current household income comes from the project intervention activities?

Portion of income	**n**	**%**
Less than 10%	66	18%
10%–25%	51	14%
26%–50%	92	25%
51%–75%	89	24%
More than 75%	68	18%
Don't know	4	1%

Survey results show that **91%** of women reported income increases, with **39%** saying their income increased significantly and **52%** slightly. This validates the overall success of the intervention in improving economic conditions.

Table: How has your household income changed compared to before the project?

Régions	Decreased		Increased significantly		Increased slightly		Stayed the same		Don't know		Total
Upper West	1	5%	11	58%	5	26%	1	5%	1	5%	19

Upper East		0%		0%	23	96%	1	4%		0%	24
Savannah		0%	29	26%	60	55%	3	3%	18	16%	110
Northern	5	3%	73	50%	62	43%	5	3%		0%	145
NorthEast		0%	30	42%	42	58%		0%		0%	72
Total	6	2%	143	39%	192	52%	10	3%	19	5%	370

An encouraging **79%** of beneficiaries reported being able to **save or reinvest** their earnings as a result of the project. This suggests that beyond immediate consumption, women are leveraging income gains to build longer-term financial stability or expand their economic activities.

Have you been able to save or reinvest your income as a result of the activities after project intervention?

REGION	Yes		Not sure		No	
	#	%	#	%	#	%
Upper West	11	58%	1	5%	7	37%
Upper East	23	96%		0%	1	4%
Savannah	76	69%	14	13%	20	18%
Northern	119	82%	6	4%	20	14%
NorthEast	64	89%	1	1%	7	10%
Total	293	79%	22	6%	55	15%

The top uses of additional income were **household consumption goods (80%)**, **education (71%)**, and **health expenses (57%)**. Additionally, **56%** of women reported reinvesting in their businesses, indicating a thoughtful balance between welfare and productive use of funds.

Additional income spending headings

Additional income spending (N=370)	**n**	**%**
Household consumption goods	233	80%
Education	208	71%
Health related expenses	166	57%
Re-invest in income-generation business	163	56%
Purchase of assets	89	30%
Technology communication	54	18%
Entertainment or Recreation	1	0%

*Multiple choices so total may be greater than 100%

Regions	Purchase of assets		Re invest in income business		Education		Household consumption		Technology		Entertainment		Health		TOTAL (Yes)
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#
Upper West	1	9%	5	45 %	6	55 %	9	82%		0%		0%	3	27 %	11
Upper East	2	9%	5	22 %	16	70 %	18	78%	1	4%		0%		0%	23
Savannah	35	46%	37	49 %	55	72 %	62	82%	16	21 %		0%	46	61 %	76
Northern	35	29%	82	69 %	85	71 %	103	87%	21	18 %	1	1%	80	67 %	119
NorthEast	16	25%	34	53 %	46	72 %	41	64%	16	25 %		0%	37	58 %	64
Total	89	30%	163	56 %	208	71 %	233	80%	54	18 %	1	0%	166	57 %	293

When ranked, women prioritized spending on **household consumption**, **education**, and **health**. **Business reinvestment** and **asset acquisition** followed, revealing a practical mix of basic needs, self-improvement, and long-term investment.

Rank the spending from additional income you have on different headings?

	Rankings [1= Lowest, 5 = Highest]					
Headings	***1***	***2***	***3***	***4***	***5***	***NA***
Purchase of assets	28%	11%	10%	8%	12%	31%
Re-invest in income-generation business	17%	16%	15%	12%	24%	16%
Education	11%	12%	15%	15%	39%	8%
Household consumption goods	7%	7%	18%	16%	51%	1%
Technology communication	39%	18%	8%	6%	5%	23%
Entertainment or Recreation	30%	12%	7%	2%	4%	45%
Health related expanses	11%	10%	24%	18%	36%	1%

Participants ranked **health (47%)**, **well-being (39%)**, and **business growth (28%)** as the most important benefits resulting from increased income. These responses reflect a shift from survival toward improved quality of life and autonomy.

Benefit ranking led by additional income and savings 1- 5 (1= Lowest, 5= highest)

	Rankings [1= Lowest, 5 = Highest]					
	1	***2***	***3***	***4***	***5***	***NA***
Increased input into household decisions	21%	17%	21%	15%	21%	5%
Increased access to community decisions	35%	18%	17%	10%	8%	11%
Greater income equality in household	17%	21%	23%	16%	22%	1%
Growing your business	13%	12%	20%	15%	28%	11%
Time for income-generating activities	14%	19%	19%	16%	26%	6%
Health	7%	7%	24%	22%	39%	1%
Well-being	10%	10%	19%	20%	39%	2%

The survey showed high levels of decision-making autonomy for **shea butter sales (32% rating '5')** and **household food production (34% rating '5')**, while slightly lower autonomy was noted for non-farm income and aggregation work. This suggests that while gains have been made, more support is needed to elevate women's authority in all areas of income generation.

Decisions about income generated from the following activities, and to what degree?

	Rankings [1= Lowest, 5 = Highest]					
Decision making on	***1***	***2***	***3***	***4***	***5***	***NA***
Level of decision on Shea butter sales	11%	12%	16%	21%	32%	8%
Level of decision on the food grown primarily for household	13%	12%	21%	19%	34%	2%
Level of decision on Food grown for sale in market	19%	15%	22%	14%	16%	13%
Level of decision on Non-farm activities: Shea business trading	16%	12%	19%	16%	24%	12%
Level of decision on income from Aggregation cooperative work	17%	18%	22%	17%	14%	12%

69% of respondents believed their assets increased due to the project. This suggests that income gains translated into tangible improvements in material well-being, enhancing long-term security.

Do you think your assets have increased due to the overall income from project related economic activities?

	n	%
Yes	257	69%
No	55	15%
Not Sure	58	16%

Among those who saw asset increases, the most common types were **home improvements (64%)**, **financial savings (53%)**, and **durable household goods (46%)**. These reflect foundational investments that elevate living standards and economic resilience.

q_302. Which asset categories have increased?

q.302 (N=257)	n	%
House improvements	165	64%
Financial	137	53%
Durable household goods	117	46%
Physical Material Transport Agriculture	84	33%
Water and sanitation facilities	57	22%
Non-durable household goods	37	14%
Leadership, networking and social status	33	13%
Land	9	4%

Respondents rated **health (47%)** and **well-being (47%)** as the top benefits of increased assets, followed by **time for income generation (30%)** and **business growth (32%)**. This shows how material gains improve both physical welfare and productivity.

Benefits led by additional assets [Rank the benefits 1-5 (1= Lowest, 5= Highest)]

	Rankings [1= Lowest, 5 = Highest]					
Benefits [N=257]	***1***	***2***	***3***	***4***	***5***	***NA***
Increased input into household decisions	9%	18%	25%	21%	26%	2%
Increased access to community decisions	26%	21%	23%	16%	9%	5%
Greater income equality in household	10%	15%	24%	25%	24%	2%
Growing your business	10%	12%	19%	21%	32%	7%
Time for income-generating activities	8%	18%	26%	18%	30%	1%
Health	2%	6%	19%	26%	47%	0%
Well-being	5%	7%	16%	23%	47%	2%

While only **16%** of women had individual bank savings accounts, a high **79%** were part of savings groups. This underscores the ongoing importance of informal financial systems, particularly in underserved communities.

[N =370]	Yes	
	n	%
q_401. Do you have a bank savings account by yourself?	60	16%
q_402. Are you a member of a savings group?	293	79%

Average monthly household savings varied across regions, with the highest in **North East (152)** and **Savannah (141)**. This suggests regional variations in surplus income and saving behaviors that may relate to market access, seasonal patterns, or training reach.

Average monthly saving by a household

region	Mean	Std. Dev.
Northern	125	195
Savannah	141	165
Upper East	133	100
Upper Wes	84	84
North-East	152	88
Total	133	159

TWhat type of problems/challenges did you face?

	Beneficiary (N=68)			
	Yes		No	
	n	%	n	%
Did the time needed to participate in project prevent you from participating in other income-generating activities or employment?	75	20%	295	80%
Did you spend more time than anticipated in the project?	62	17%	308	83%
Has the participation in the project led to any physical or emotional abuse, marital troubles? Household level	12	3%	358	97%
Has the participation in the project led to any physical or emotional abuse? Community level	9	2%	361	98%
Have you had to sell assets (jewelry, livestock etc.) in order to pay for aspects of the project?	33	9%	337	91%